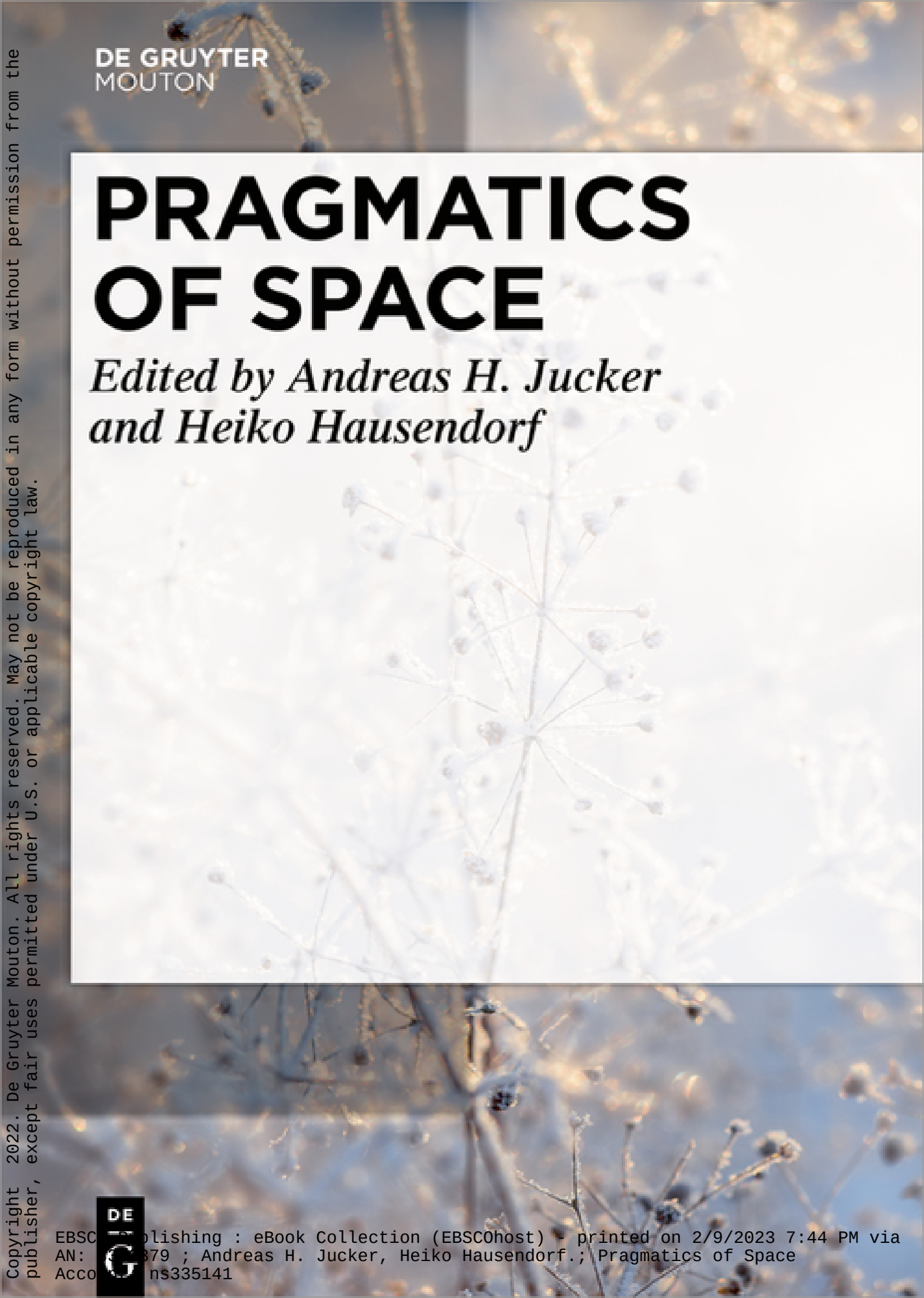

Pragmatics of Space
HoPs 14

Handbooks of Pragmatics

Editors
Wolfram Bublitz
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Klaus P. Schneider

Volume 14

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Preface to the handbook series

Wolfram Bublitz, Andreas H. Jucker and Klaus P. Schneider

The series *Handbooks of Pragmatics*, which comprises fourteen self-contained volumes, provides a comprehensive overview of the entire field of pragmatics. It is meant to reflect the substantial and wide-ranging significance of pragmatics as a genuinely multi- and transdisciplinary field for nearly all areas of language description, and also to account for its remarkable and continuously rising popularity in linguistics and adjoining disciplines.

All fourteen handbooks share the same wide understanding of pragmatics as the scientific study of all aspects of linguistic behaviour. Its purview includes patterns of linguistic actions, language functions, types of inferences, principles of communication, frames of knowledge, attitude and belief, as well as organisational principles of text and discourse. Pragmatics deals with meaning-in-context, which for analytical purposes can be viewed from different perspectives (that of the speaker, the recipient, the analyst, etc.). It bridges the gap between the system side of language and the use side, and relates both of them at the same time. Unlike syntax, semantics, sociolinguistics and other linguistic disciplines, pragmatics is defined by its *point of view* more than by its objects of investigation. The former precedes (actually creates) the latter. Researchers in pragmatics work in all areas of linguistics (and beyond), but from a distinctive perspective that makes their work *pragmatic* and leads to new findings and to reinterpretations of old findings. The focal point of pragmatics (from the Greek *pragma* 'act') is linguistic action (and inter-action): it is the hub around which all accounts in these handbooks revolve. Despite its roots in philosophy, classical rhetorical tradition and stylistics, pragmatics is a relatively recent discipline within linguistics. C.S. Peirce and C. Morris introduced pragmatics into semiotics early in the twentieth century. But it was not until the late 1960 s and early 1970 s that linguists took note of the term and began referring to performance phenomena and, subsequently, to ideas developed and advanced by Wittgenstein, Ryle, Austin and other ordinary language philosophers. Since the ensuing *pragmatic turn*, pragmatics has developed more rapidly and diversely than any other linguistic discipline.

The series is characterised by two general objectives. Firstly, it sets out to reflect the field by presenting in-depth articles covering the central and multifarious theories and methodological approaches as well as core concepts and topics characteristic of pragmatics as the analysis of language use in social contexts. All articles are written specifically for this handbook series. They are both state of the art reviews and critical evaluations of their topic in the light of recent devel-

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opments. Secondly, while we accept its extraordinary complexity and diversity (which we consider a decided asset), we suggest a definite structure, which gives coherence to the entire field of pragmatics and provides orientation to the user of these handbooks. The series specifically pursues the following aims:

- it operates with a wide conception of pragmatics, dealing with approaches that are traditional and contemporary, linguistic and philosophical, social and cultural, text- and context-based, as well as diachronic and synchronic;
- it views pragmatics from both theoretical and applied perspectives;
- it reflects the state of the art in a comprehensive and coherent way, providing a systematic overview of past, present and possible future developments;
- it describes theoretical paradigms, methodological accounts and a large number and variety of topical areas comprehensively yet concisely;
- it is organised in a principled fashion reflecting our understanding of the structure of the field, with entries appearing in conceptually related groups;
- it serves as a comprehensive, reliable, authoritative guide to the central issues in pragmatics;
- it is internationally oriented, meeting the needs of the international pragmatic community;
- it is interdisciplinary, including pragmatically relevant entries from adjacent fields such as philosophy, anthropology and sociology, neuroscience and psychology, semantics, grammar, discourse and media analysis as well as literary studies;
- it provides reliable orientational overviews useful both to students and more advanced scholars and teachers.

The fourteen volumes are arranged according to the following principles. The first three volumes are dedicated to the foundations of pragmatics with a focus on micro and macro units: *Foundations* must be at the beginning (volume 1), followed by the core concepts in pragmatics, *speech actions* (micro level in volume 2) and *discourse* (macro level in volume 3). The following six volumes provide *cognitive* (volume 4), *societal* (volume 5) and *interactional* (volume 6) perspectives and discuss *variability* from a *cultural and contrastive* (volume 7), a *diachronic* (volume 8) and a *medial* (volume 9) viewpoint. The remaining five volumes address *methodological* (volume 10), *sociomedial* (volume 11), *fictional* (volume 12), *developmental and clinical* (volume 13) aspects of pragmatics, and discuss the spatial dimension of pragmatics (volume 14):

1. Foundations of pragmatics
Wolfram Bublitz and Neal Norrick
2. Pragmatics of speech actions
Marina Sbisá and Ken Turner

3. Pragmatics of discourse
Klaus P. Schneider and Anne Barron
4. Cognitive pragmatics
Hans-Jörg Schmid
5. Pragmatics of society
Gisle Andersen and Karin Aijmer
6. Interpersonal pragmatics
Miriam Locher and Sage Graham
7. Pragmatics across languages and cultures
Anna Trosborg
8. Historical pragmatics
Andreas H. Jucker and Irma Taavitsainen
9. Pragmatics of computer-mediated communication
Susan Herring, Dieter Stein and Tuija Virtanen
10. Methods in pragmatics
Andreas H. Jucker, Klaus P. Schneider and Wolfram Bublitz
11. Pragmatics of social media
Christian R. Hoffmann and Wolfram Bublitz
12. Pragmatics of fiction
Miriam A. Locher and Andreas H. Jucker
13. Developmental and clinical pragmatics
Klaus P. Schneider and Elly Ifantidou
14. Pragmatics of Space
Andreas H. Jucker and Heiko Hausendorf

Preface

Space has always been of central relevance for pragmatics. The early textbooks already devoted substantial chapters to the ways in which language is used to refer to spatial aspects of the speech situation, and more recent ones continue to give this aspect of language use its well-deserved attention. Other aspects of language use and space, however, have often been ignored or backgrounded, or they have been treated in more specialized publications without reaching the mainstream developments of pragmatic theorizing. This handbook sets out to develop a broader perspective and bring together the many different ways in which language use and space are intertwined. The contributions to this volume provide extensive overviews of the individual research fields, and each of them adds an illustrative case study showcasing one particular aspect of the interconnection between language use and space. The volume is structured into four parts. The first part is devoted to the different ways in which language is used to describe space and spatiality in different contexts. The second contains contributions that explore the spatial organization of social interaction in face-to-face communication and beyond. The third looks at the communicative resources of constructed spaces, and the final part looks at pragmatic variability across geographical spaces and culture(s). As will become obvious in the contributions of this volume, there are multifarious connections between these four parts, and a clear separation is not always possible. However, all contributions share a common understanding that space needs to be seen as a fundamentally dynamic notion which we describe as "doing space" (see our introduction to the volume). Space is not so much a pre-existing container within which language is used, but it is an achievement that is discursively created by and through the use of language.

The idea of this volume originated within the framework of the University Research Priority Program (URPP) "Language and Space" at the University of Zurich. This program, generously funded by the university, and, in particular, its Focused Research Group "Interactional Spaces" provided the stimulating academic environment in which the cooperation among researchers interested in language and space across many different departments of the University of Zurich could grow and flourish. It is the academic home of several of the contributors of this volume, including the two editors. We are very grateful for the manifold support that we have received from the URPP.

We would like to thank all our contributors for their diligence and cooperation, and for their patience with our numerous requests. We have benefitted enormously from our dialogues with them, from their insights and erudition. We would like to thank Klaus P. Schneider, one of the series editors, for his kind support, and in particular Barbara Karlson for her unfailing enthusiasm and encouragement for this

project. We also thank Anja Leu for helping us with some of the editorial details of this volume and Michael Obrist for a lot of help with the index.

Zurich, September 2022

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IV. Pragmatics across space and cultures

1. Doing space: The pragmatics of language and space

Heiko Hausendorf and Andreas H. Jucker

Abstract: Language use and space are connected in intricate and multiple ways, and therefore pragmatics must account for the numerous dimensions of the spatial parameters of communicative interactions. At the same time, space needs to be seen not as a pre-existing, physical entity, but as something that is being done in the process of using language. This introductory chapter discusses these basic aspects, which permeate all the contributions of this volume, and it introduces three interfaces of language and space: space within language, language use within space, and language(s) in space. The pragmatics of space cannot be reduced to one of these perspectives, but they serve as useful heuristics to structure the contributions of this volume. The chapter also discusses a range of different conceptualizations of space that are relevant for pragmatics, and it proposes some perspectives for future research in the pragmatics of space.

Keywords: pragmatics, space, doing space, place, social situation, copresence, spatial indexicality

1. Introduction

Why do we need a handbook dedicated to the "Pragmatics of *Space*"? The contributions of this volume will themselves provide rich evidence for this need. In this introduction, we will answer the question from two different angles. As we will argue, pragmatics must intrinsically account for space since spatial parameters essentially belong to language use. Accordingly, there is a direct connection from pragmatics to space. Conversely, there is some reason to assume that linguistic accounts of space in themselves need pragmatics. For it is pragmatics that can best bring in the perspective that space is something to be done by the participants (see Jucker et al. 2018), i. e. not a physically given entity but something emerging in and from discourse. Taken this way, there is also a direct connection from space to pragmatics. But before turning to this twofold reasoning in favor of a genuine pragmatic vision of space and language, we will begin by illustrating the general connection between language and space that has been a challenge for linguistics right from the beginning and somehow beyond the traditional fragmentation into syntax, semantics and pragmatics. When we explore some of the important interfaces between space and language, we enter a field of research that has been massively

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discussed across several disciplines. This becomes obvious in the contributions of this volume whose authors systematically provide reviews of the literature of their specific fields. In this introduction, we will, therefore, pick out some references only selectively in order to indicate the richness and diversity of the literature without any extensive coverage of the different fields. First and foremost, our goal is to comment on the structure of this volume with its four sections and to sketch out the many ways in which the contributions approach the issue of space from the perspective of linguistics and pragmatics. First, we will argue that the pragmatics of space cuts across different interfaces between space and language (Section 2). In Section 3, we will consider the perspective from pragmatics to space, or, to put it differently, we consider the question of why and in what sense pragmatics needs space. In Section 4, we will turn the tables and look at the perspective from space to pragmatics, or, why does space need pragmatics? The last section provides a brief conclusion and some thoughts on potentials for future research directions. In all sections, we will, of course, regularly refer to the individual contributions of this volume but for actual summaries, readers are referred to the abstracts that precede the individual contributions.

2. Interfaces between space and language

The relationship between space(s) and language(s) establishes a fundamental concern for linguistics which has been accounted for again and again. Natural languages are closely and intricately intertwined with spatial parameters both on a micro level and on a macro level (called, for instance, the "double spatial indexicality of language" by Auer et al. 2013: 10). On a micro level, spatiality belongs to the speech situation in an extensive way. Particular types of discourse require particular spaces. But it already starts with the physical distance between the participants. In spoken interactions that do not rely on the help of technological devices, speakers have to be within earshot of each other, that is to say they have to share a common physical space. And actual spaces may have a very considerable impact on whether and how the interaction is possible. On a building site with loud machinery, in a disco with ear-piercing music or somewhere close to a runway with airplanes taking off and landing, spoken interaction may be close to impossible. Other surroundings are not only conducive to interactions, but they are actually purpose-built to enable certain types of interactions. This is true for most if not all types of institutional communication: Lecture theaters, assembly halls, playhouses and churches are all specifically constructed to provide the necessary affordances for specific communicative events. They generally assign specific places to speakers and listeners and make sure that listeners can hear and see the speakers even across distances that in other environments would be too large for easy spoken interactions. For this space between speaker and listener, Edward T. Hall, one of the pioneers of early interac-

tion studies, coined the term of "proxemics" (1969), which he studied across different cultures and communities. According to the title of his book, there is a "hidden dimension" of communication that becomes obvious via the participants' spatial configuration within certain formations among which the so-called "face-to-face interaction" is the most prominent and "canonical" constellation (see Haddington and Oittinen, and D'Antoni et al. this volume). This basic anthropological configuration has left its traces in the linguistic resources that help us to orient ourselves within interactional spaces, most obvious in the case of deictic expressions (or local or positional adverbs) that relate to the speaker's position (such as "here"), specify embodied differences of spatial orientation (like "in front" vs. "behind" or "right" vs. "left") or indicate directional aspects of movements (with the speaker's position as source or target: "to" vs. "from") (see Levinson 2003; as well as Auer and Stukenbrock, and Gerwien and von Stutterheim this volume).

On a macro level, natural languages are generally tied to specific spaces or localities. People who live in the same geographic area share a common linguistic code that allows them to interact. In our everyday understanding of different languages, such as French, Japanese, Igbo or Swahili, they are first and foremost bound to geographically defined spaces. Wikipedia entries on specific languages typically start with an indication on the localities where they are spoken. This is true both for languages that are restricted to a well-defined and perhaps very small area and for languages that are spoken in many different places across the entire world, such as English or Arabic. Language, that means languages, as H. Weinrich once put it in the title of one of his monographs (Weinrich 2003), and rightly so, one might add: Language, that means spaces. Accordingly, different parts of the world are defined by referring to "their" language: entire continents as in the case of "Latin America" or regions within a country as in the case of "German speaking", "French speaking" or "Italian speaking Switzerland". As a result, linguistic forms (across different levels of description from phonology to syntax, from lexis and semantics to pragmatics) can be mapped onto geographically defined spaces and can accordingly constitute linguistic areas (at different scales) which can be flagged within "linguistic atlases" (see Schneider and Félix-Brasdefer this volume). It goes without saying, however, that a fixed and stable, even nation-state vision of language and space (one territory, one language) as evoked perhaps by the tradition of cartographic representations is entirely inadequate. The relation between language and space has to be considered as a dynamic and ever-changing one including phenomena such as multilingualism, migration and diasporas. But nevertheless, language change, in itself, is situated in space, and physical proximity of speakers with different first languages inevitably leads to language contact and contact-induced change. The very process of speaking as the production of sounds allows listeners to infer the speakers' home and origin from aspects of pronunciation. In this way, relevant aspects of identity and belonging are indicated in a most effective and often inevitable way. We habitually "place" others on the basis

of the language they use, a process that is ubiquitous, for instance, in multi-lingual Switzerland.

Due to the spread of languages all over the world, there are different ways to account for the phenomenon of "space" and its manifold meanings within different languages. It is not only and not foremost a matter of translating the same concept(s) but rather a matter of conceptualizing different ways of thinking, visualizing, imagining, figuring, perceiving, treating, in short, of *doing* space by means of natural language(s). As soon as we move on to talk about issues of space in whatever dimension, for instance, when we start to talk about contested spatial issues (ranging from landscaping to urbanism, from housing to architecture, from border politics to ideologies of (trans)national territories), we come across a highly implicative system of spatial vocabulary, semantics and semiotics with smooth transitions to languages for special purposes. Space accordingly becomes a matter of explicit reflection and negotiation and becomes pervasive as a part of social discourse(s) (see Danos this volume). Without ignoring the difference between language and space, one could therefore argue that space in some sense means language, too.

It should be clear from these sketchy remarks that the relationship between language and space is multifaceted and complex, but three main interfaces come to the fore to which the four sections of this volume can directly be related (see Figure 1):[1]

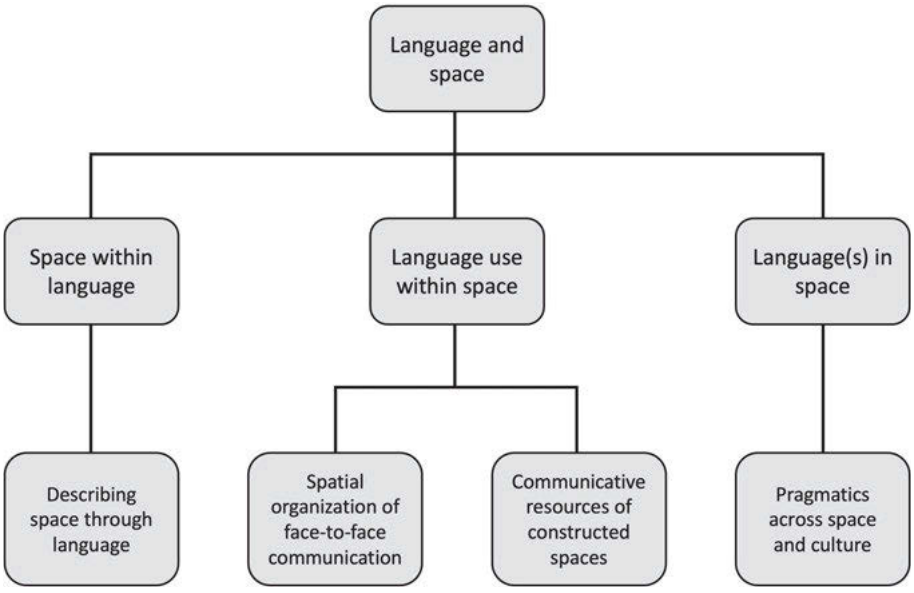

Figure 1. Language and space interfaces in relation to the four sections of this volume

[1] Figure 1 is a modified and essentially adapted version of the presentation in Hausendorf (2013: 281).

The first interface deals with space within language, that is to say with the linguistic resources that specific languages have at their disposal to refer to and to talk about space and spatiality. In the present volume, this interface will be covered by the various practices of describing space through language, including spatial references in spoken interaction or in written texts, the description of motion events as well as the creation of imaginative spaces in storytelling.

The second interface deals with the micro level of language use within space. In the present volume, this interface includes, on the one hand, the spatial organization of face-to-face communication including not only spatial arrangements of small groups and some other forms of direct interaction beyond physical copresence but also the spatial dimension of sign language and gestures. On the other hand, this interface also includes the communicative resources that are provided by constructed spaces and the ways in which these facilitate and shape communication. Take, for instance, the discourse-specific communicative affordances of a lecture theater or an assembly hall in contrast to the much more general and less specific affordances of a private living room or a public square.

The third interface, finally, deals with the macro level of language, or rather languages, in space, that is to say with the fact that languages are generally geographically located and therefore situated in specific spaces. In the present volume, this interface is devoted to pragmatics across space and cultures, i. e. the ways in which language use differs across language varieties, languages and cultures.

As should have become clear from this brief outline, there is no reason to restrict the pragmatics of space to one of the three interfaces. As this volume impressively demonstrates the pragmatics of space overlaps all these interfaces. The pragmatics of space is not a homogeneous field of linguistic research, and neither can it be easily segregated into subfields. In many ways, the contributions of this volume cut across the different aspects of space in language, language use within space, and language(s) in space. The few references to some of our contributions sporadically interspersed above already illustrate the variety of thematic aspects in this regard. We have therefore not excluded certain types of spaces and neither did we restrict ourselves to selected types of spaces by means of extant definitions. Instead, we argue that the pragmatic perspective is needed from both sides: on the one hand from pragmatics itself and on the other from specific views on space. It has sometimes been noticed critically that under the heading of language and space very different linguistic approaches treat rather different aspects of language and space without looking for overall concepts, overlaps and similarities (for instance, Auer et al. 2013). Thus, we distinguish between the interfaces outlined in Figure 1 above as a matter of convenience and in order to structure the contributions of this volume, but the contributions themselves will show very clearly that these boundaries are artificial and need to be bridged in any attempt to get to a deeper understanding of the relationship between language and space. In the remainder of this introduction, we will argue that a

deeper understanding of pragmatics requires reflection on space (Section 3) and that, vice versa, a deeper understanding of space requires inputs from pragmatics (Section 4).

3. From pragmatics to space: Why does pragmatics need space?

Pragmatics as the study of language use cannot easily be detached from space (or from time, of course, but here we want to focus on the spatial aspects). The perhaps most fundamental interface that we have introduced above (see Figure 1) is basically and essentially a pragmatic one, namely that of language use in space. It results from the pragmatic assumption that language use necessarily occurs spatiotemporally, roughly speaking, in space (and time). The somehow basic argument that language can only exist in space (and time) only holds when we think of language in terms of language use instead of language as an abstract system beyond or behind its use. To some extent, language in terms of de Saussurian "langue" can indeed be studied without accounting for space and spatial parameters. It is not by chance, that in its most abstract style of thinking (within Generative Grammar, for instance) such an approach is no longer interested in languages (as spatially defined entities) but in linguistic universals that can be abstracted away from space. A usage based pragmatic approach cannot abstract away from space since the variation of linguistic forms across situations of language use is omnipresent. It cannot be disregarded within pragmatics but has to be accounted for as one of the key factors of language use and variation.

When speaking appears, it does so in a spatially defined social situation as we have already emphasized above. This is a strong pragmatic constraint that has been called a "linguistic space-apriori" (Schmidt und Herrgen 2011: 58, "sprachliches Raum-Apriori"). It is within the social situation of language use that the spatiality of speaking and listening comes to the fore in myriads of everyday encounters anytime and anywhere. In these encounters, large scale linguistic areas (dealt with as "language(s) in space" in Figure 1) overlap with small scale interactional spaces of situational anchoring including the participants' mutual co-orientation, co-ordination and co-operation. So, what is concerned at a macro level is the spatial situatedness of individual languages and language varieties. Among the approaches dealing with this aspect, dialectology may be the most prominent and oldest linguistic subdiscipline, nowadays often understood as the traditional precursor of modern areal linguistics and area typology. Language use in space then refers to the long-term effects of spatially fixed language use, for instance, in terms of linguistic variation (cf. Auer and Schmidt 2010; Muysken 2008 with a renewed interest in concepts of space) and in terms of pragmatic variation (see Schneider and Félix-Brasdefer this volume). This also holds for contact linguistics as far as it is concerned with phenomena of contact induced areal formation and areal spread of linguistic features.

As far as space is concerned, we then think of two-dimensional spatial entities that the observed variation of linguistic forms and pragmatic patterns can be mapped onto. It is geography that has provided linguistics with such spatial entities and the necessary spatial expertise in mapping. It may appear that this interface between language and space relies more strongly on a pre-existing concept of space, i. e. geographical space. However, we would like to argue, and the relevant papers in this volume will further substantiate our claim, that these geographical spaces are also discursively negotiated by people who share a common language or language variety, not only in terms of a shared lexicon and shared language structures, but also in terms of shared usage patterns of language and shared conventions of communicative behavior. Following this line of thinking, dialectology can in fact be "pragmaticized" in some sense (see Nilsson et al. this volume).

Although language use can obviously not be restricted to speaking and listening, to spoken discourse and orality the speech situation can rightly be considered the "natural home" (Goffman 1964) of language. As such, the spatiotemporal face-to-face configuration with its communicative requirements for co-orientation, co-ordination and co-operation (see Hausendorf and Schmitt, and Meyer and Jucker this volume) can be considered the social ecology within which natural language has evolved phylogenetically (and still evolves in the ontogenesis of language acquisition). Pragmatics therefore has a fundamental interest in understanding the kind of constraints and conditions that are connected with this natural home of speech. Since Goffman's pioneering studies in the sociology of interaction (Goffman 1961), we have been used to combine the social situation with "face-to-face interaction" and, in doing so, have been prompted to conceive of the speech situation in terms of a basically spatial configuration that appears to be an anthropological constant of language use. Taking this insight as a starting point, a lot of linguistic research has been done to further explore the spatial fundamentals of speaking and listening as they come to the fore in the case of (multimodal) deixis which is therefore a genuine subject of pragmatics (rather than semantics). Deixis relates to the spatial positioning of speaker and listener in discourse, and it allows for the participants' mutual co-orientation, co-ordination and co-operation (see Auer and Stukenbrock this volume).

Space in language (another interface in Figure 1 above and sometimes termed as "spatial language", e. g. by Hayward und Tarr 1995) can, therefore, be considered a long-term sediment of the participants' orientation in interactional space(s). It is a genuine topic of pragmatics, too: Innumerable processes of situational anchoring, positioning and configuration have found their fixed and solidified forms in terms of spatial grammaticalization and lexicalization pathways. Different "grammars of space" illustrated by cross-linguistic research (cf. Levinson and Wilkins 2006) provide evidence of this kind of space within language. Cross-linguistic research on space in language has often (albeit not exclusively) adopted a cognitive science point of view directed at the cognitive basis of spatiality in language ("spatial

cognition"; cf., for instance, Levinson 2003; see also Gerwien and von Stutterheim this volume). There can be no doubt that natural language is a powerful resource for situational anchoring, but it is also true that it is not the only one. There is the human body as a mobile and intelligent sensor in space and there is a large variety of architectural affordances that both have to be accounted for as highly effective resources for situational anchoring. This is another reason why pragmatics has to be intrinsically interested in space.

In addition to basic requirements of situational anchoring, there are a lot of speech acts and verbal activity types that are directly space-related and that might have emerged from concrete configurations in space (maybe starting from early rituals and forms of exchange around stone circles: see Hochuli and Streeck this volume). As a well-established subject of pragmatics, there are particular genres that request spatial lexis and semantics and that could perhaps be characterized as spatial genres. "Describing space through language" (see Figure 1 above) noticeably comes to the fore in the case of genres such as living space descriptions, route directions or spatial descriptions of touristic places in travel guidebooks (see Schubert this volume). Even narratives can be shown to depend on spatiality with respect both to spatial aspects of the actual situation of storytelling and "replaying" (Goffman 1981) and to spatial aspects of the narrated scenario (see Heller this volume). Discourse acquisition therefore comprises developmental aspects of doing talk about space (see Filipi this volume).

There is still another genuine pragmatic aspect of doing talk about space(s) – and place(s). It has to do with the social relevance of space as a manifestation of social structures of modern society, and, thus, with social space (cf. also the way in which social classes are conceptualized in spatial terms as lower, middle and upper classes). When space becomes a contested issue and is explicitly talked about (as is typically the case when there are conflicting views on spatial issues) it becomes obvious that there are semantics of space that belong to special discourse structures. Space then proves to emerge through discourse as a social construct, typically in terms of place(s) that bear a social meaning for those who are in whatever way concerned and who relate their own idea of belonging and identity to special places (for instance, as "locals" or "visitors": Streeck 2013; and Hochuli and Streeck this volume). It is within this genuine pragmatic perspective that the linguistic reflection on the relation between language and space can benefit from what has been introduced as a "spatial" and "topographic turn" in social sciences and recent sociologies of space (cf., for instance, Schroer 2007). Within pragmatics, different strands of discourse analysis have contributed to link concepts of space to political and regulatory discourses that essentially involve space. Take, for instance, discourses on landscaping and town planning and how they shape our view of urban and rural environments, of built and furnished space. "Describing space through language" accordingly includes spaces which become a topic of negotiation and deliberation (see Danos this volume).

As acknowledged before, language use cannot be limited to the speech situation, and pragmatics, therefore, cannot be limited to speaking and listening in physical copresence. Language use obviously includes writing and reading as well, and for a long time now, people have used language beyond situations of physical copresence. Does that mean that space is fading away in such extended forms of language use? Obviously not, as one could take from many contexts and situations of language use beyond copresence. Take, for instance, the case of reading in spatial environments (inscriptions, signs, billboards, graffiti, and so on) in which the place of reading is a crucial resource for meaning (cf. "Discourse in place": Scollon und Scollon 2003; see also Kesselheim and Hottiger, and Yumul-Florendo and Muth this volume). The pragmatics of such texts have to include pragmatics of space and place. The same holds for the verbal description of spaces and places within (fictional and non-fictional) texts: Free from requirements of actual situational anchoring, writers and readers can develop new strategies of grasping complex spaces through linearization strategies (cf. Schubert this volume). Last but not least, there is language use in virtual environments. The achievement of interactional spaces among "telecopresent" participants (Zhao 2003) has accordingly become an issue of pragmatics across different settings and scenarios of virtual realities (see Meyer and Jucker this volume).

From what was sketched out as pragmatic aspects of space and spatiality, it becomes quite clear that space is a nearly ubiquitous phenomenon within pragmatics. So, one might wonder that the present handbook is the first one to give space the kind of attention that it deserves (in terms of a "pragmatics of space"). The contributions collected within this volume attest to the richness of findings and observations in this field and they show a lot of overlapping interests. At the same time, the contributions show a large variety of theoretical backgrounds (from cognitive to social, variational to interactional approaches), methodological traditions and empirical data (from text and video analysis of authentic data to questioning and participant observation and the evaluation of experimental data).

4. From space to pragmatics: Why does space need pragmatics?

There is not only a direct connection from pragmatics to space, but different conceptualizations of space also lead directly to pragmatics. What all the interfaces between language and space have in common in the way that they are treated in this handbook is that space is understood as socially constructed. In the relevant sense, space is not a pre-existing entity with which people interact, but it is discursively created in interactions. In an earlier paper (Jucker et al. 2018), we used the term "doing space" to describe the way in which interactional partners make use of the spatial affordances around them and at the same time create and maintain spatial configurations in their interactions. This basic understanding of space as achieve-

ment is here extended to all three interfaces outlined in Figure 1, and therefore the analytical approaches presented here are necessarily pragmatic ones, where pragmatics – in accordance with all the other volumes in this series of handbooks of pragmatics – is understood in its broad sense of the study of the use of language in its social and cultural context. The focus lies squarely on the use of language in the discursive construction of space for all these interfaces. In order to illustrate this point of view, we will briefly outline the different conceptualizations of space that come into sight from a pragmatic perspective. Alongside these different conceptualizations, different disciplines come into play. As we will argue, it is pragmatics that allows to bring together and to consolidate these different meanings by extending and advancing the motto of doing space.

Without claiming to account for different relevant meanings of space exhaustively and exclusively one might like to differentiate space and spatiality from the point of view of participants of social interaction. Space then can be described as differently "done" spaces. The following list of "spaces" (adapted and modified from a similar list in Hausendorf 2013: 280–281) is meant to illustrate this basically pragmatic point of view and to show the complexity and the systematics of research covered in the present volume, even if we cannot go into the details of the different spaces and their corresponding fields of research. In all these fields and within all these related disciplines, space is conceptualized in more than one way, and at this point, we merely want to provide some crosslinks between different contributions and to draw attention to some pragmatic issues of space that cut across the different sections of our volume.

Perceived and pointed space

Space is relevant as what is directly accessible to the participants' sensory perception, i. e. what is visible, audible, can be touched or sensed in whatever way and can be pointed to by the participants. This is what we call "perceived and pointed space": it is something "just here", "over there", etc. In terms of multimodal pointing, for instance verbally or/and gesturally, perceived aspects of space become relevant for what is going on in interaction. It goes without saying that this is the perhaps most prominent link between space and pragmatics. As such, it looks back to a rich tradition of reasoning, particularly with respect to linguistic theories of "deixis" (portrayed and discussed by Auer and Stukenbrock this volume and in some sense omnipresent across most of the other contributions) and related issues that in one way or another are concerned with the relationship between spatial perception, spatial cognition and spatial language. Among these issues, the contributions of the present volume deal with the description of motion events (Gerwien and von Stutterheim this volume), the relevance of gestures for pragmatics (Fricke this volume), the conceptualization of space in sign language (Wilcox, Martínez and Morales this volume), and the description of spatiality in written texts (Schubert this volume).

Used and embodied space

Space is also relevant as what is available to the participants' body movements, i. e. what is within reach, "stand-on-able", "walk-on-able" (Gibson 1977), go-through-able, pass-by-able or in whatever way answered in a corporeal way. For this, we talk about "used and embodied space": a line of seats, a passage, a pedestrian area, a virtual environment for moving avatars, and so on. In contrast to perceived and pointed space, used and embodied space has long been neglected within linguistics but has been accounted for in early research on "nonverbal communication" (as, for instance, by Ruesch und Kees 1956). Due to the spread of video-based data on the one hand and virtual environments for screen-based social interaction on the other, research on interactional space, i. e. on relevant situational aspects of movement and social action has appreciably increased over the last fifteen years or so. Mirroring these recent trends in research in conversation analysis and computer mediated communication studies, the contributions of the present volume deal with the role of space in openings (D'Antoni et al. this volume), interactional spaces in stationary, mobile, video-mediated and virtual encounters (Haddington and Oittinen this volume) and spatial configurations of communication beyond copresence in virtual environments (Meyer and Jucker this volume).

Built and furnished space

The concept of "built and furnished space" is closely connected with used and embodied space. Here, space is relevant as what has already been prepared and arranged for the participants' social interaction. Built and furnished space comes distinctly to the fore in case of socially organized (institutionalized) and highly specialized use (cf. for instance LeBaron and Streeck's analysis of an police interrogation room: LeBaron und Streeck 1997). It is not by chance that modern societies' functionally differentiated organizations have become manifest in purpose-built spaces in terms of buildings with their particular interiors. Buildings like the hospital, the court, the university, the museum, the parliament or the factory provide social interaction with spatial and social positions according to the characteristics of institutionalized communication, i. e. healthcare (hospital), judiciaries (court), science (university), learning (school), art (museum), politics (parliament) or economy (factory). This is what Hausendorf and Schmitt (this volume) propose to be analyzed as architecture for interaction (cf. also Jucker et al. 2018). Apart from its prominence in institutionalized communication, built and furnished space is ubiquitous in everyday life. It holds as well for private interiors, namely for ways of living space arrangements and furnishings which create spaces for private sociability and conviviality by defining configurations of copresence. The adjustment of distance and closeness between the participants is a relevant dimension of such configurations – and is well-known as the spatially sensitive aspect of im/

politeness in interaction (Brown and Hübscher this volume). A prominent configuration and furnishing of copresence in dwelling and housing is the so-called "lounge" ("Sitzecke" in German). Emerging in history as an essential part of the civic ("bourgeois") living room furniture, it pre-structures the way in which family members and visitors get together as an interactive ensemble (Schmitt 2013) and the way in which living room culture presents itself inwards and outwards (cf. Linke 2012 from a pragmatic point of view). Hochuli and Streeck (this volume) deal with spatial arrangement in dwelling and housing that go far back in early human history to primal configurations of copresence (for instance, configurations of exclusion and inclusion by means of stone circles and campfires) and also go to the characteristics of modern public places.

Formed space

The concept of "formed space" relates to mountains, valleys, deserts, plains, lakes, rivers, caves, and so on. It is space in the sense of what has naturally emerged during the last ice age or thereabouts and what participants treat as their natural landscape (in contrast to linguistic landscapes, see below). It contrasts with built and furnished space, which is concerned with material artifacts constructed by humans and treated as meaningful and semiotically loaded manifestations of intentional agency. It provides the larger context for used and embodied space with its natural "affordances" (Gibson 1977) for people to move and to dwell, to walk and to stay. Primal configurations of copresence as dealt with by Hochuli and Streeck (this volume, see above) might have emerged through taking advantage of such natural affordances. Albeit not accounted for in the present volume in one of its contributions, the linguistic categorization of landscape (Burenhult und Levinson 2008) could well be a subject of pragmatics (maybe as a part of named space, see below).

Ideological and imagined space

When we go further in thinking of the relationship between space and social belonging and identity and orient from a micro (local) to a macro (global) level, we come across space in terms of what is established and known by participants as a social group's place and territory. For this we suggest the term "ideological and imagined space". It relates to membership in terms of a nation, a state, a principality, a region or a town that, for instance, allows to talk about social groups' territories. Turning to the discursive production of space and place in spoken and written discourse, Danos (this volume) deals with the formation of ideological and imagined spatial distinctions between the urban center and the rural periphery.

Named and labelled space

For what is topographically defined and what participants can address as distinct spaces and/or places, we use the term "named and labelled space", which has evolved in natural languages into a complex and manifold system of toponyms at micro and macro levels of view (with names, for instance, for towns, spots, a continent, a street, a place or a region). It differs from the ideological and imagined space, which simultaneously triggers and depends on activities of naming in the sense that with the help of names, perceived and pointed space (see above) starts to become a known and solidified entity that participants can refer to without depending on a shared situation of perceiving and pointing. Onomastics, as a well-established subdiscipline in linguistics, is devoted to exactly this type of space – albeit not always and not primarily with a pragmatic perspective. Taking an interactionist's point of view on toponyms, Debois and De Stefani (this volume) sum up the onomastic tradition in linguistics, elaborate on the relevance of onomastics for pragmatics (and vice versa) and go on studying the uses of place names in naturally occurring talk.

Mapped and measured space

Natural language is not the only resource by means of which space is semiotically expressed. There is "mapped and measured space" as what is geographically outlined by means of cartography and what is available for participants in terms of mental as well as geographical maps at different levels of concretion and abstractness. Mapped and measured space typically defines borders between territories, countries, regions and areas, from small spots up to parts of the earth. It has occasionally been spelled out that mapped and measured space significantly contributes to our view on spaces as two-dimensional areas with clear-cut boundaries, i. e. to the ideological imagination of spaces belonging to *us* or *them* (Streeck 1995: 430 f.). Linguistics (dialectology in particular) has often made use of geographically measured space in order to record and to map the spread of linguistic features and has often adopted a correspondingly static and given conceptualization of space (Auer 2004). In the present volume, mapped and measured space plays an important role within the pragmatics across space and cultures without being reified as the one and only and self-evident given factor of pragmatic variation (Nilsson et al., and Schneider and Félix-Brasdefer this volume). Purschke and Schmalz (this volume) adopt the point of view of perceptual dialectology showing that the (lay) participants' understanding of dialect areas does not automatically coincide with what has been mapped and measured by expert dialectologists.

Spoken and heard space

Apart from the partly problematic implications of mapped and measured space, there can be no doubt that space is in fact something that becomes audible in everyday interaction episodes. The participants' ways of speaking different languages, varieties and/or dialects (language use in terms of diatopic variation) allow for linguistic definitions of space(s) and place(s). This is what we would like to call "spoken and heard space". It may range from linguistic areas over dialect regions to urban quarters. It is important to emphasize that it does not depend on linguistic expertise of area typologists, dialectologists or urban language specialists. In contrast, spoken and heard space emerges from the participants' routine grounds of connecting language(s) with space(s), for instance, in terms of the speakers' origin, affiliation, belonging and/or home. Connecting language(s) with space(s) based on what is heard or spoken as a dialect, an accent, or a foreign language is a largely automated and unconscious process typically unnoticed and unexpressed by the participants (as in the case of already mentioned perceptual or lay dialectology, cf. Purschke and Schmalz this volume). Spoken and heard space is maybe the most impressive proof of the close relationship between language and space and as such has been one of the oldest concerns of linguistics (as was already mentioned). Albeit not explicitly and systematically accounted for, it emerges in a number of contributions to this volume (cf., for instance, Nilsson et al.; Schneider and Félix-Brasdefer; Debois and De Stefani).

Written and read space

The linguistic definition of space and place cannot be restricted to spoken (and heard) discourse. There is "language in the material word" (Scollon and Scollon 2003), i. e. written and read discourse in terms of signboards and signposts, graffiti on walls, postings and bulletins and inscriptions of all kinds. In such cases of fixed texts, space becomes legible and readable, i. e. what we call "written and read space". In contrast to spoken and heard space, written and read space has long been neglected in pragmatics. It has only recently been noticed and studied that there are linguistic landscapes pervasive all over our urban and rural everyday environment. Linguistic landscapes are ubiquitous, but they come to the fore when there is multilingualism in signs, for instance, in place name signs, due to a supposed readership of multi-lingual, multi-ethnic and/or multi-national inhabitants. The field of linguistic landscape studies is still a recent one, but it has developed rapidly in the last fifteen years. By now, it goes far beyond the focus on multilingualism and includes the emergence of texts in different environments and on different objects. Yumul-Florendo and Muth (this volume) sketch out the state of the art and present an empirical study dealing with fixed texts on the Philippine jeepney, a most popular means of public transport and, at the same time,

a telling case of written discourse in the material world and of a "postcolonial assemblage".

Apart from linguistic landscapes, at least in the narrower sense, written and read space also holds for the way in which spatial surroundings of texts can become relevant for their understanding and how spatial aspects of the environment, vice versa, are defined and contextualized by spatially and locally fixed texts. Such cases illustrate that the actual situation of reading can become a relevant resource for readers to grasp what is meant and that it contributes to load a concrete space with a certain meaning. Take, for instance, a text that reads as follows: "A sustainable solution to protect our water resources". Dissolved away from its situational anchoring, readers could only guess as to the topic-comment structure of this obviously elliptical message. Read in its natural home as a nameplate fixed at eye level above a urinal in a men's room, it becomes obvious and is immediately inferred by users that what is treated as the given topic must have to do with the urinal (that proves to be and is "understood" as a waterless toilet). This is an important part of "language in the material world", too. And it has also long been neglected as a relevant aspect of the pragmatics of written texts. In the present volume, Kesselheim and Hottiger deal with the relationship between texts and space and give empirical evidence from texts and spaces in a science center where reading is closely connected with physical actions.

Needless to say, this list of spaces is not exhaustive. It does not include, for instance, the metaphorical concept of "pragmatic space" that Jucker and Taavitsainen (2000) developed in order to differentiate and compare neighboring speech acts. But it illustrates the range of different meanings of space. Presented in this way, space is obviously an interdisciplinary topic relevant to many disciplines and approaches: geology (formed space) and geography (mapped and measured space), cognitive, social and ecological psychology (perceived space), ethology and conversation analysis (embodied and used space), political sciences and sociology (ideological and imagined space), architecture (built and furnished space), and, last but not least, linguistics in the narrower sense (named, spoken and written space). According to the interdisciplinary variety of meanings, space has been dealt with rather differently in linguistics (in the broader sense) as far as theory and methodology are concerned. There is no reason to restrict the pragmatics of space to one of these approaches and to exclude other approaches or to restrict ourselves to selected meanings of spaces by means of arbitrary definitions (stating, for instance, that there are "physical" spaces as opposed to "interactional" ones). Otherwise, we would miss some interesting connections between the different pragmatic approaches that we have collected in this volume. And, finally, we would skip over the many ways in which all of these spaces are done by the participants: Taken from the point of view of pragmatics that we have drawn on in our account, all the different meanings of space can be related to space as something

that has to be "done" by the participants where "doing space" refers to cognition and perception as well as movement and (inter)action, to discourse and ideologies as well as natural and linguistic landscapes, to architectures for interaction as well as geographical areas, to sign language and gestures as well as to verbal deicticals, motion verbs and narratives, to physical ("natural") as well as virtual ("synthetic") 3D-environments. In this broad sense, doing space appears to be an adequate label to comprehensively bring together different contributions to the description of space through language, to the spatial organization of face-to-face interaction, to communicative resources of constructive spaces and to pragmatics across space and cultures under the common heading of "pragmatics of space."

5. Future perspectives

From what was sketched out as the pragmatics of space so far it should be clear that we are talking about a broad field of research with different approaches from different strands of linguistic traditions. It is accordingly impossible to list all the promising future perspectives of research in this field, but the conclusions to each contribution in this volume provide an outlook to what their authors see as the most challenging research questions and topics within each particular field. We will, therefore, restrict ourselves to an aspect of social change that directly relates to the pragmatics of space since it concerns the concept of "doing space" that we have made use of in this introduction. As already mentioned, space has long lived a shadowy existence in pragmatics compared to, for instance, time and the derived concept of sequentiality. This has changed only recently, and it is reasonable to assume that the new interest in space and spatiality has to do with a social change in configurations of copresence and, accordingly, in the configuration of what was introduced as the "social situation" in the 1960s. The social situation defined through the participants' mutual copresence (Goffman 1964) has long been taken for granted as something "natural", something "bio-physical" and something "local". As such the social situation could be and has been treated as a given instead of something to be done. But for some decades now, we have learned that there are social situations that are no longer natural but virtual (in the sense that they are accomplished, brought about, constructed, in short: achieved), no longer bio-physical alone but more and more technological (in that they are transferred, transmitted or in whatever way mediated) and no longer local but global (in that they have long ago left behind bodily restrictions of proximity). It is easy to see that alongside this kind of complex change, the role at least of perceived and pointed, used and embodied and built and furnished space has come to the fore: as something that could no longer be taken for granted as the given environment and "natural home of speech" (Goffman 1964) but as something that has to be taken care of, established and anchored, accounted for and elaborated, discussed and

negotiated, in short: as something that has to be "done". Computer gamers on a live streaming platform like *Twitch* provide a particularly striking example (Meyer and Jucker this volume). They negotiate and, hence, "do" their relevant spaces and places in a multilayered and entirely virtual environment. They connect themselves to a seemingly random bundle of virtual networks. And they globally share a virtual space with their co-gamers, bystanders and spectators all over the entire world.

This kind of advanced computer gaming is only the tip of the iceberg. According to some sociological theories, we have been facing a far-reaching process of "spatial transformation of contemporary society" for quite some time. It is assumed to have started as early as the 1970s and to include dynamics of "mediatization, polycontextualization and translocalization" (Knoblauch und Löw 2017). It has been referred to as a general "re-figuration of space" at the macro and micro levels of modern societies. In a seminal paper that has recently been updated and expanded, Knorr-Cetina (2009; see also Knorr-Cetina and Woermann 2021) has explicitly introduced the notion of the "synthetic situation" in order to emphasize that something relevant is going on as far as our usual settings of copresence are concerned. Explicitly addressing the Goffman tradition of micro sociology and the Garfinkel line of ethnomethodological research, Knorr-Cetina draws a distinction between (1) the local and the global, (2) the natural and the synthetic and (3) human and non-human actors. Empirical evidence is provided from studies not only of online computer gaming but from scientists working at the CERN in Geneva and bankers and dealers at exchange markets. Her suggestion is that we should shift our attention from the focus of those locally and physically copresent to those who are part of an expanded, translocal setting which is enabled by information processing and digital communication network technologies: "The extended content and capacity of synthetic situations are the result of what can be projected onto a screen and staged through a screen" (Knorr-Cetina and Woermann 2021: 406, our translation).

The recent COVID-19 pandemic has brought with it an unprecedented and extensive shift from communicative interactions in physical copresence to virtual copresence mediated via videoconferencing tools, such as Skype, Webex, Zoom or MS Teams. Interactional spaces have been transformed into virtual, mediated and screen-based spaces. Perceived and pointed, used and embodied and built and furnished spaces have changed dramatically through such tools. In addition, communication via virtual telecopresence (Zhao 2003; Meyer and Jucker this volume) is becoming more and more part of our daily lives. We communicate with an automated teller machine (ATM) in order to perform financial transactions; we communicate with a chat bot on the internet; or we communicate in the physical world with robots that mediate our communication to another person who is electronically present but physically distant. It is easy to speculate that such spatially complex and multilayered forms of communication will continue to develop. If pragmatics wants to keep up with the many different ways in which participants

are doing space in an increasingly virtual, mediated and global way, it must include space as a much more central element in its future theorizing.

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I. Describing space through language

2. Deictic reference in space

Peter Auer and Anja Stukenbrock

Abstract: In this chapter, we present an approach to spatial deixis as co-participants' embodied and situationally embedded practices of co-orientation and joint attention to entities in their sensory reach. These practices combine gaze, pointing (by different means) and other bodily practices with verbal resources provided by the respective language systems. Such an approach to deictic reference also provides the foundations for the analysis of the "lived space" and how it is constructed in interaction. We claim that an appropriate starting point for the investigation of deictic reference is Bühler's theory of the deictic field (*Zeigfeld*), which is a strictly ego-centric theory. We link Bühler's approach to phenomenological work on deixis that foregrounds the primordial role of the body (*Leib*) as the origo of all spatial indices. Against this background, we further discuss the structuration of space through spatial demonstratives of proximity and distance and show that a "sociocentric" approach to spatial deixis is not adequate, even though the establishment of joint attention via deixis is a deeply interactional process. Finally, we show how Bühler's ego-centric theory accounts for more complex forms of deixis in the imagination. We discuss examples for Bühler's first and second case of deixis in the imagination and conclude with a case of hybrid referential practices in electronic media, drawing on an example from a virtual reality game.

Keywords: deixis, demonstratives, proximity/distance, egocentricity, phenomenology, lived space, deixis in the imagination

1. Introduction

Reference is a triadic relation between a referring participant, the addressee(s) of this referring action, and an entity to which the referring participant directs the attention of the other(s) so that joint attention is achieved. The entity may be perceptually accessible (in the situation) or it may be displaced; it may be in the world or in discourse. Spatial reference establishes joint attention to a space or to an object on the basis of its location or movement in space. Three types of frames for spatial reference can be distinguished: the deictic frame ("the book is here"), intrinsic frames given by objects relative to which the spatial reference is established ("the book is behind the computer"), and absolute frames provided by spatial coordinates that remain constant across acts of spatial reference ("Freiburg

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is south of Frankfurt") (see Levinson 2003 for a short summary; also see Auer et al. 2013; Diessel 2012). The focus of this chapter is on the first case.

In deictic spatial reference, the frame of reference on the basis of which joint attention is established is the origo (deictic center). In the default case, the origo is the body of the referring speaker relative to which joint attention to sensually accessible objects in the participants' surroundings is established. The "home" of deictic spatial reference is face-to-face interaction, although it can occur in other media as well (see Section 5).

All languages have a number of linguistic resources dedicated to the task of establishing deictic reference. In the case of spatial deixis, the most important group are spatial demonstratives. Spatial demonstratives can belong to very different form classes, such as adverbials (Engl. *here*), determiners (Engl. *this & N*) or pronouns (*this*) (the latter two are often subsumed under the heading of "nominal demonstratives"). Not all demonstratives are spatial. For instance, German has a modal demonstrative for reference to manner and quality (*so* 'like this'). Languages may also have other dedicated linguistics forms for deictic spatial reference (such as motion verbs). Demonstratives can also be used non-situationally (for text deixis) and non-deictically (anaphorically or as recognitionals).

In addition to spatial deixis, there are of course many other forms of deixis (for instance, temporal deixis, deixis to the participant roles of the speaker and addressee, etc.) which remain outside the scope of this paper.

We propose that the appropriate starting point for the investigation of deictic reference is Karl Bühler's ([1934] 1990) theory of the deictic field (*Zeigfeld*), which is a strictly ego-centric theory (Section 2.1). Bühler, in our opinion, cannot be understood unless the phenomenological context of his work is taken into consideration. Phenomenological work on space foregrounds the primordial role of the body (*Leib*) as the origo of all spatial indices. Consequently, we proceed with a short outline of one phenomenological theory of space and the body which can be found in the work of Günter Stern (Section 2.2). Bühler and the phenomenologists have neither particularly focused on the interactional nor on the intercorporeal aspects of deixis, although they prepared the ground for and anticipated those aspects in their work. Therefore, Section 3 summarizes more recent empirical work and shows how body and interaction contribute to deictic reference. Section 4 focuses on the linguistic resources and gives an overview of semantic distinctions encoded in demonstrative spatial systems, particularly the distinction between proximal and distal. The discussion will confirm our view that the origo – by default – is not socio-centric in nature, but grounded in the body as the inevitable instance of perception and sense-making in the lived world, and therefore egocentric. Finally, Section 5 discusses instances in which the embodied and situationally embedded nature of demonstrative reference is reshaped in favor of hybrid, partly disembodied practices, such as deixis in the imagination (*Deixis am Phantasma*) and hybrid referential practices in electronic media, drawing on an example from a virtual reality game.

2. Background

2.1. Bühler's legacy: Egocentricity and embodiment

It is widely acknowledged today that it was the Austrian-German psychologist Karl Bühler who laid the foundations of the theory of deixis. As the first English translation of Bühler's *Sprachtheorie* (1934), in which this theory was presented, only appeared in 1990,[1] his ideas were late to enter anglophone research. In an older Anglo-American tradition, where the terms "deixis" and "indexicality" are mostly used "co-extensively" (Levinson 2004: 97) to refer to the broader phenomenon of (linguistic) context-dependency, the term "indexical ground" denotes the anchor to which context-dependent expressions are bound.

Bühler restricts the term *deixis* to those linguistic items that encode participants' subjective, body-centered orientation in the speech event. These items constitute a specific "language field" (*Sprachfeld*), termed the "deictic field" (*Zeigfeld*). It is in contrast to the "symbolic field" (*Symbolfeld*) of language and the (only marginally relevant) "pictorial field" (*Malfeld*). While the symbolic field is constituted by the content words of the language, the elements of the deictic field form a closed class of context-dependent linguistic elements. It is organized with respect to the three dimensions time, place and person, which constitute a coordinate system of orientation and perception. Its zero-point is the origo. It is the I-now-here center of the speaker's subjective, body-anchored orientation. For instance, spatial demonstratives refer to/locate proximal or distal objects relative to the speaker's *here* at the moment of utterance. The personal pronouns *I* and *you* encode the role of participants in the speech event. Temporal adverbs such as *now*, *just now*, *soon* refer to points in time relative to the coding time of the utterance.[2]

The deictic field explains how pointing is performed "by human language" ([1934] 1990: 98). Verbal deictics are "signposts" in the deictic field ([1934] 1990: 108). Just as gestures originate from the speakers' body and incarnate their position in the triadic framework of joint attention, so do deictics originate from and reflect the speaker's egocentric, embodied viewpoint in the speech situation.

Because our sensual experience of the world is structured relative to the system of coordinates established by the origo, we are "oriented", i. e. we know where we are in space and in time and we know who we are. While human beings are primarily "visual animals" for Bühler ([1934] 1990: 144), for whom spatial and

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1 The most recent edition (2011) includes an overview of Bühler's linguistic legacy and an afterword.

2 In addition to the three classical dimensions, further categories have been proposed in later research: discourse deixis (Fillmore 1997[1971]: 103–110; Levinson 2005; Lyons, 1977b), social deixis (Fillmore 1997 [1971]: 111–120), and modal deixis (Ehlich 1987; König 2015; Stukenbrock 2014b, 2015).

directional data are of vital importance, he acknowledges that spatial orientation is also informed by the tactile and auditory senses, proprioception and kinesthetics (Bühler [1934] 1990: 145). Proprioception and kinesthetics provide us with a "tactile body image" (*Körpertastbild*) (Bühler [1934] 1990: 145). We sense our body in its spatial orientation, and at the same time employ that body to point and refer. For deixis to work, we need both vision and our tactile body image ([1934] 1990: 145).

Bühler observes that the origo is not static, but "wanders in the tactile body image" ([1934] 1990: 146) in relation to the body coordinates. This idea of a fluid, or movable origo is extended to the origo shifting away from the here-and-now of perceptual space. The fluidity of both the origo and the tactile body image is Bühler's theoretical foundation to argue for a close phenomenological relationship between egocentric reference to perceivable entities in the here-and-now and reference from a displaced origo to non-perceivable entities.

Bühler distinguishes three modes of deictic reference: (1) *demonstratio ad oculos et ad aures*, i. e., reference to perceptual entities in the participants' surroundings via the visual or auditory mode (see Section 3); (2) *anaphora*, i. e., reference to elements in the context of speech (including text deixis), and (3) *Deixis am Phantasma* i. e., reference to absent phenomena available only in imagination (Section 5).

In contrast to *demonstratio ad oculos et ad aures* where, in the default case, the origo is grounded by the speaker's body and the entity referred to is in the participants' perceptual reach, *Deixis am Phantasma* refers to entities that are not in the perceptually shared space.

Bühler distinguishes three types of deixis in the imagination. In the first case, speakers refer to absent entities as if they were present. Speaker and addressee remain grounded in the actual phenomenal sphere, but include into this sphere, and jointly imagine, objects of reference that are factually not there. The second case is more radical: speakers – as well as addressees – displace themselves into an imagined spatio-temporal frame, and refer to objects, participants, actions and events as if they were present. In this case, the speakers establish a deictic point of reference (origo) that is not grounded by their body. The imagined phenomena are visualized and experienced from a place where speakers and addressees are situated in their imagination. In the third type of deixis in the imagination, the origo of the speaker is not shifted, but the referent is too far away to be perceived.

2.2. The legacy of phenomenology

Bühler's notion of the spatially oriented body is part of his particular approach to psychology called *Erlebnispsychologie* (insufficiently translated as 'psychology of experience'; cf. Bühler 1927). As a countermovement to behaviorism and the psychology of association, *Erlebnispsychologie* aimed to gain access to subjective experiences of sensual input (i. e., to the phenomenological consciousness) through

introspective methods. In this sense, it was closely related to contemporary and earlier approaches such as *Gestaltpsychologie* (cf., for instance, Köhler's notion of the *phänomenaler Sehraum*, 'phenomenal vision space', [1929]1933) or *Lebensphilosophie*, but also resonates with the approach to corporeality developed in phenomenology, as it later became known internationally in its French version through the work of Merleau-Ponty (cf. Meyer, Streeck and Jordan 2017).

As an example of the theorizing of space in early twentieth-century phenomenology, we present the work of Günter Stern, which can be considered typical for the kind of approach to space that developed under the influence of Edmund Husserl's late and Martin Heidegger's early teachings and writings.[3] In his little known monograph *Über das Haben* (1928),[4] Stern sketches a philosophical theory of indexicality which is essentially centered in the body (*Leib*) of the phenomenological subject.[5]

What Stern has in common with other philosophical and psychological currents in pre-war Germany and Austria is the opposition against a Euclidean theory of space and the conviction that the "lived space" is not defined by the objects within it, but rather construed from body-centered spatial (or rather directional) "indices" (*Raumindices*). These indices are established by the fact that I have a body and that this body is the "zero point of reference" (*Bezugsnullpunkt*) of my spatial orientation, the "here", which defines its own surrounding space (*Umraum*, Stern 1928: 132). The spatial indices such as outside/inside, right/left, above/below, before/behind are grounded in this zero point of reference.

The zero reference point is my "here", but this "here" has a special status. On the one hand, I can use it to refer to a "there". But when I say "here", I do not always mean the zero point of reference; I may also want to refer to something in the "here-area" (*Umraum*). I can talk about "the book here" and mean an object which is not in the space that contains the zero point of reference, but is only close

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3 Another contemporary and much better-known example of this phenomenological approach to space is included in Schütz' work on the *Structures of the Lifeworld* (see Schütz and Luckmann [1971] 1973: 36–45).

4 Particularly in chapters 7 (*Über die Raum-Indices*) and 8 (*Satz und Situation*). Günter Stern was the son of William Stern. He completed his PhD in Freiburg with Husserl (Stern 1924) on *Die Rolle der Situationskategorie bei den "Logischen Sätzen"* ('The role of the category of situation in the "Logical sentences"'). Parts of the thesis were included as chapter 8 in *Sein und Haben*. Stern later became a well-known political philosopher in post-war Germany under his new name Günter Anders (*anders* = lit. 'different'). With his name, he also changed his phenomenological orientation, which included a wholesale rejection of Heidegger and his philosophy, to which *Sein und Haben* is still very much indebted.

5 The similarities with Bühler are obvious, even though Bühler does not explicitly refer to Stern's book.

to it. Even the body itself is sometimes a "field" in which I can point to something ("it hurts here", etc.; Stukenbrock 2008). From this (and other arguments) it follows that "here" is not identical with the extension of my body (1928: 139); rather, "here" is everything that can be manipulated directly ("unmittelbarer Greifnähe"), that can be taken without effort ("was ohne Umstände genommen werden kann"), or that is close to/with me ("was bei mir ist", Stern 1928: 139).

Stern argues that the meaning of the spatial indices should not be based on anatomical explanations alone (such as: "front is, where my mouth or my eyes are", or "to where my limbs are oriented", "behind is where my back is", etc.); for him, there is no point in separating these concrete from the more abstract meanings of spatial indices. For instance, "front" is not only established by the anatomy of my body, but linked to spatial forward movement, and even to abstract intentions (cf. the German verb for 'to intend to do something': *etwas vor-haben*, lit. 'have-in-front'). In the same vein, "back" is what I literally turn away from, but it is also what I have "left behind" in an abstract sense, and more generally the past (1928: 142). Spatial indices are the correlates of "possibilities of motion and systems of needs" (1928: 143, *Bewegungsmöglichkeiten und Bedürfnissysteme*). The primary and most fundamental spatial index is the inside → outside motion (cf. the German word *äußern* 'to utter' < *außen* 'outside', engl. *to utter* < *out*) on which all other indices (apart from left/right) depend (the target of an utterance is "front"). The inside → outside motion (German *hin*, English *hence* in its etymological meaning) construes the "here" and (relative to it) the "there".

As the examples show, Stern makes a distinction between what linguistics would call deictics in the strict sense ("here" and "there") and the deictic usage of adverbials which depend on the intrinsic perspective of spatially oriented objects (above/below, left/right, etc.). For him, the non-deictic usage of these terms is derived from deictic usage. It objectivizes the subjectively experienced, body-oriented space. Once an object is recognized by me as having an intrinsic orientation, it has its own spatial zero reference point and its own "above", "below", "right", "left", etc. Just like I experience what is in front of me because my body is oriented, it can also be said that objects are oriented because they are perceived to have a front (for instance, the keyboard of the piano orients this object in space and defines what is in front of it, etc.; Stern 1928: 149). These secondary, object-centered indices differ from those of my body in that they are passive (*Passionsindices*), while the indices of my body are active (*Aktionsindices*); they are most properly conceived as movements, or movement potentials.

It is not hard to see that Stern's zero point of reference equals Bühler's origo, and that his spatial indices correspond with Bühler's deictic and gestural pointing. Of course, Stern develops a philosophical, not a linguistic theory of space. But while Stern's phenomenology of spatial indices disregards the co-participant, Bühler makes it clear that the act of deictic referring – and even more so, the displacement of the origo into an imagined space – requires the participation

of an addressee. Both Bühler's interest in the gestural component and his insistence on the joint achievement of spatial reference go beyond phenomenological approaches.

2.3. Potential criticisms

We have focused on Bühler's approach to deixis and on contemporary and prior phenomenological approaches to "lived space" in some detail in order to counter two types of criticism against Bühler's approach (and similar theories of deixis in the Anglo-American tradition, cf. Fillmore 1997 [1971]; Lyons 1975, 1977a, as well as the long tradition of research following Bühler's lead). One potential criticism is that this approach is "egocentric" (in the sense of not taking into account the co-participant), and the other is that, what linguists (and Bühler) call *spatial deictic terms,* are not really spatial. Both criticisms are unjustified. (A third criticism which concerns the distinction between proximal and distal demonstratives will be discussed below, Section 4.)

Some researchers (perhaps most prominently Peeters and Özyürek 2016) misunderstand Bühler's foundation of deixis in the origo as "egocentric" in the sense of "deeply individual" (Peeters and Özyürek 2016: 1), "addressee-blind" (Peeters and Özyürek 2016: 3) and therefore at odds with "the deeply social and communicative" (Peeters and Özyürek 2016: 3) character of pointing and joint attention. Here, the term "egocentric" is understood differently than in Bühler, i. e. as a lack of taking the addressee's perspective into consideration. This misconstruction of "egocentric" as "solipsistic" is a gross misinterpretation of the entire theory. According to Bühler, spatial deixis is grounded in the relation between the participants in the speech situation. As Hanks (1990: 7) puts it: "When speakers say 'Here it is', he or she unavoidably conveys somethings like 'Hey, you and I stand in a certain relationship to each other and to this object and this place, right now'." But from the fact "that acts of reference are interactively accomplished", it does not follow, as Hanks claims (1992: 53), that "a sociocentric approach is certain to be more productive than an egocentric one". In the next section, we will show in a detailed multimodal analysis of an example that establishing reference via spatial deixis and relative to the origo of the speaker is based on the participants' mutual understanding that the addressees' and the speaker's perspectives are not the same, but that they can adopt the other's perspective (Clark 1996; Tomasello 2008).

The second criticism was already raised in 1992 by Fuchs and later also by other authors. Fuchs criticizes "concretistic conceptualizations" of spatial deixis and the distinction between deixis *ad oculos et ad aures* and "deictic projection" (deixis in imagination, see below) (1992: 4). She correctly points out that the interpretation of the spatial deictic *here*, even where it denotes a space in which the speaker is located, depends to a large degree on situational and background knowledge and is deeply inferential. Unless the "intended relevance" of an utter-

ance such as "Chilly here, eh?" is considered (Fuchs 1992: 6), the extension of the space denoted by "here" cannot be identified; it can be the river bank on which the speaker and her addressee are walking, but just as well "winterly Northern Europe" (1992: 7), which the addressee, due to coming from India, might contrast with his home country. This flexibility of spatial deictics is well known (cf. Klein 1978) but does not contradict their dependency on the origo as given by the location of the speaker.

In fact, the entity which the speaker intends to refer to with "here" need not even be a geographical or physical space, but can be social, cultural or interactional. Particularly "here"-deictics (in their origo-including use, see below) can stand for the social event or activity going on at the moment of its production. As Sacks ([1967] 1989: 519]) pointed out, deictic practices have the specific interactional and social advantage of establishing reference without "formulating" a particular social activity or event. His example is from a group therapy session with adolescent participants, who talk about an absent member of the group (capital letters on deictics in the original):

(1) (from Sacks [1967] 1989: I, 519])
Louise: Oh, he could be HERE just to spend his father's money.
Roger: Maybe that's it.
Ken: I don't think his father's paying for THIS is he Al?
Al: No, not THIS PLACE.

The spatial deictics *here, this* and *this place* can be understood to refer to the place in which the therapy group is meeting, but more plausibly, they refer to the social situation of a group therapy – without describing and naming the situation as such. As Sacks argues, the speakers are "invoking the sheer fact of the setting without the specification of the setting", i. e., they refer to an "unformulated setting" ([1967] 1989: 520).[6] All formulations of the setting would be socially consequential and categorize the participants in ways they may want to avoid at this stage in the interaction, and to which they may not want to commit themselves. Talking about the "here"-space without saying what it is, avoids such a commitment. Hence, the interpretation of the deictics depends to a large degree on non-visible, non-spatial, but social, interaction-historic knowledge, and the "space" they invoke is social-interactional much more than physical. But this does not mean that they are not spatial. Rather, SPACE stands for SOCIAL ACTIVITY or SOCIAL SITUATION, just

[6] This specific advantage of deixis is particularly obvious in linguistic cultures with a naming taboo that extends to place names (see Blythe et al. 2016 for the way in which directions are given in Murrinhpatha, where even invisible places need to be indicated by pointing in combination with deictics).

like SPACE, in other cases, can stand for TIME. The interpretation of the originally spatial meaning of the demonstratives needs (perhaps conventionalized) inferences which lead the recipients from the strictly spatial interpretation to one in which this space is understood as standing for a social activity one of the features of which it is to take place in this event. Yet it remains necessary for the addressee to know the speaker's location in order to understand the deictic reference. Or, in Sidnell and Enfield's (2017: 218) words: the elements of the originally spatial deictic system can be "enriched" "through their mapping onto the local socioculturally constituted worlds of their users".

3. Spatial deixis as a multimodal, interactive practice

Bühler's theory laid the grounds for multimodal studies on deixis as an embodied phenomenon. In this section, we sketch some of this research and proceed to show how deictic reference is accomplished in face-to-face interaction – the primordial site for deixis where the use of deictics is intricately connected to visible acts of demonstration (prototypically pointing) for establishing joint attention (Diessel 2006; Diessel and Coventry 2020).

Humans are "visual animals" (Bühler [1934] 1990: 144); visible cues are therefore of primary importance in social interaction. Requesting the gaze of the speaker is the core function of spatial deictics (Bühler 1990: 110; Stukenbrock 2020). In the absence of speech, participants may also point with their eyes by fixing them "on something in the field of vision" (Bühler [1934] 1990: 112). In sum, "[o]ptical contact and optical noticing are among the presuppositions of all communication with gestures" ([1934] 1990: 112). According to Bühler, phonoreception is analogous to visual perception; he therefore integrates acoustic cues, or guides, alongside optical cues, or postures (Bühler [1934] 1990: 113 f.), into his theory. The term for the first and primordial mode of pointing, *demonstratio ad oculos et ad aures*, captures this claim.

To guide addressees' (visual) perception, speakers use embodied resources such as gestures (pointing, touching, tapping, reaching, etc.), body posture, directional movement as well as gaze pointing. Gesture studies have systematically described different forms and functions of pointing and related gestures (Fricke 2007; Kendon 2004; Kendon and Versante 2003; Kita 2003; McNeill 1992, 2000; Müller 1998) and analyzed intercultural variations including the use of different body parts such as lips (Enfield 2001; Sherzer 1973), nose (Cooperrider and Núñez 2012), as well as head and/or eye gaze (Kendon 1967; Streeck 1988, 1993, 2002; Stukenbrock 2015). As an example, Figure 2.1 in Ex. (2) shows a cook (C) who is holding cooking utensils in her hand and therefore uses eye gaze (fig. 2.1b) to point to a visible object that she deictically refers to with a demonstrative (*DIE* 'these').

(2) "DIE"/"these" (PK02)

fig 2.1 a) b) c)

C: (-) °hh DIE kannst du auch [hier mit in den topf geben,
these you can also here add to the pot
A: [da REINwerfen?
throw in there

Conversation analytic studies on a wide range of languages and settings have provided detailed descriptions of deictic reference as an embodied, situated accomplishment that requires coordination of the use of multiple resources (De Stefani 2010, 2018; Eriksson 2009; Goodwin 2000, 2003; Hausendorf 1995, 2003; Hindmarsh and Heath 2000; Mondada 2012; Streeck 1988, 1993, 2002; Stukenbrock 2008, 2009, 2015, 2018a, 2018b, 2020). It has been shown that deictics and pointing gestures form multimodal packages (Mondada 2014; Stukenbrock 2009, 2015) that are recipient-designed (Hindmarsh and Heath 2000), assembled for, and coupled with the local environment in which they occur (Goodwin 2003, 2007).

While conversation analytic work has revealed the embodied complexity of deixis (Hausendorf 2003; Hindmarsh and Heath 2000; Goodwin 2003; Eriksson 2009; Streeck 1993, 2002; Stukenbrock 2009, 2015), an integrated account of demonstrative reference to visible entities in shared space must also include a systematic study of how participants' gaze behavior enters the picture (Stukenbrock, 2020).

The following extract (3) is an instance of the *demonstratio ad oculos et ad aures*. We analyze this case of demonstrative reference by elaborating (some of) the components of the model of deictic reference explained in detail in Stukenbrock (2015, 2020).

The data were recorded with an external camera and mobile eye tracking glasses worn by the participants while they visited the Swiss museum of games. The figures in the transcript were extracted from the split screen video in which Thorsten's perspective is displayed on the left and Carola's on the right. The participants' visual attention, more precisely, their foveal vision, is marked by a cursor in their respective video. The bottom picture shows the recording of the external camera. The participants are good friends. We join them as they move from one show room

to the next. They are in an open state of talk. We first present the transcript[7] and subsequently proceed with the analysis of this extract (sections 3.1. to 3.3 below).

(3) "HIER"/"here" (SM01_00:13:10)[8]

fig. 3.1

```
01       (3.3)   (0.2)      (1.0)    (0.5)   (0.2)
   C-mv |goes to next room|halts--------------->>
   C-gz                   |to scr |.....|to T--->
   T-gz         |to C|-away-------------|to C-|
   T-mv              |-moves towards next room--->
02 C-vb GUCK_ma;
        look PTLC
   C-gz -to T------>
   T-mv -twds room->
03 C-vb =HIER muss ich Immer |LAChen;
        here I always have to laugh
   C-gz to T|                |to sign|
   T-mv -twrds room----------------->
```

7 The following abbreviations are used: vb = verbal, gz = gaze, mv = movement, ge = gesture.

8 The participants provided written informed consent to participate in this study and to use the data included in this article for publication.

fig. 3.2


```
04      (0.4) (0.7) (0.3) (0.3)   (0.7)  (0.5) (0.5) (1.0)
   C-gz             |to T-------|to scr.------|.....|to T>
   C-ge                    |point to scr.|
   T-mv  -twds room--------|through door------|stops----->
   T-gz                                       |to scr.--->
05 C-vb <<pp>he_h°;>
06      (1.09)
07 T-vb wieSO?
        why
08      (0.12)
09 C-vb <<:-)>das is hans MÜLler;>
        that's Hans Müller
10      (0.08)
11 T-vb ja_[KLAR;
        yes right
12 C-vb    [der ein SPIEL erklärt;
           who is explaining a game
13      (1.38)
14 C-vb <<p>he_h° he_h°;
15      (6.5)
```

3.1. (Re-)Establishing focused interaction and summoning the addressee's attention

Carola enters a new show room first while Thorsten is lagging behind in the previous room (line 1). She stops and turns to Thorsten, who also looks at her (mutual gaze at the end of line 1, see figure 3.1) and goes to the doorframe. Subsequent to this moment of mutual gaze, Carola summons Thorsten's attention with a perceptual directive (Goodwin and Goodwin 2012) in line 2 (*GUCK ma* 'look PTCL'). Latched to it, she announces an object which "always makes her laugh" (line 3) but which Thorsten cannot yet see. The utterance makes an aligning response conditionally relevant; it invites Thorsten to identify the object which Carola finds funny and, in the preferred case, to find it funny as well. The utterance contains the proximal demonstrative *hier* 'here', which refers to a location, or phenomenon, close to the speaker's origo.

We make two observations: First, the addressee is not yet in the spatial position to perceive the object to which the speaker wants to draw his attention, nor to identify the referent of the speaker's utterance. Although he can see Carola, he cannot yet see what is in the room. The deictic adverb projects rather than establishes a domain of scrutiny (Goodwin 2003; Stukenbrock 2015, 2020). Together with the perceptual directive, the proximal deictic makes it sequentially necessary for the addressee to move closer to the speaker in order to identify the object in question in her proximity. Second, this use confirms an egocentric view of the deictic origo. Spatial reference is formulated from the speaker's embodied location in perceptual space, and it is the addressee's understanding of the egocentric grounding of the speaker's deictic choice and his visual perception of her body that tell him to move towards her.

3.2. Finding the target in the domain of scrutiny

In the literature, it is assumed that deictics and gestures are delivered more or less simultaneously, with gesture strokes slightly preceding their verbal correlates. In the present case, however, this is not the case. Rather, the speaker times the pointing gesture with respect to the perceptual availability of the addressee: she observes his walking through the door and delays the gesture until he turns round the corner and is able to see the target of the pointing (Fig. 3.1). The target is a video screen with a person explaining a game. While Carola points at it, she also gazes at it, and then shifts her gaze back to Thorsten (Fig. 3.2) to monitor his visual attention ("perceived perception", cf. Hausendorf 2003; Stukenbrock 2015, 2020). By seeing that Thorsten is looking at the intended object, she can infer that joint attention is established. Note that her sustained gaze at Thorsten also has a response-mobilizing function in this extract (Stivers and Rossano 2010); it invites alignment with the stance formulated in the utterance in line 3 and audibly displayed by laughter and a smile voice.

3.3. Establishing the referent

Thorsten does not respond for almost five seconds, even though Carola's gaze displays her insistence on a response. The lack of response foreshadows "trouble". "Trouble" may arise from problems of finding the target, identifying the referent of the pointing or understanding the meaning of the referential action. Participants orient to this difference by initiating task-specific repair.

In the present case, addressee Thorsten initiates repair with a *why*-interrogative (l. 7), which locates the problem on the level of understanding the referential action. He is not able to identify a referent which could, to him, justify Carola's claim that there is something funny. Carola deals with this referential problem by naming the person displayed on the screen (l. 9), and then continues by categorizing his action (l. 12). While Thorsten confirms person reference and, moreover, claims independent recognition (l. 11), he does not align with Carola's stance even after she reiterates her laughter (l. 14). Apart from a smile on his face, he does not take a strong affective stance towards the discovery of a shared acquaintance on the museum screen.

4. Proximity, distance and other cues for locating a referent

So far, we have discussed the interactional foundations of spatial demonstratives in general, without considering the different resources offered by languages. But even if we restrict our attention to the most basic (non-composed, i. e. monomorphemic) spatial deictic elements and the least complex spatial deictic systems, such as in present-day English, it is obvious that two distinctions need to be made. Spatial deictics, on the one hand, must be distinguished according to the ontological categories of the referents (entity, place, direction/motion) and, on the other hand, the semantic features they additionally encode. Among the latter, the most important one is the distal/proximal distinction. According to such a simple classification, English has two demonstratives referring to entities distant from (*that/those*) or proximal to the origo (*this/these*), and two demonstratives referring to places distant (*there*) from or proximal to the origo (*here*). Demonstratives referring to direction/motion have disappeared in this language or are no longer used with an exophoric spatial meaning (*hence/hither; thence/thither*). German uses the demonstrative *her* for a motion toward the origo and *hin* for a motion away from the origo. In their spatial use, they almost never occur as adverbials, but as verbal particles (*hin+gehen* lit. 'to go hence', 'to go there'), in combination with spatial prepositions (e. g. *hin+unter* lit. 'hence-under', 'down'), or in combination with the deictic place adverbs *da, hier, dort* (e. g. *da+hin,* lit. 'there-hence', 'there') (see König forthc., for details). In the latter case, the deictic place adverb indicates the goal or source of the motion, while the directional element (*hin, her*) loses its deictic status.

The proximal/distal distinction in particular has been the object of a vivid discussion in linguistics over the last decades. Before going into details, a fundamental difference between proximal and distal demonstratives needs to be spelled out. It is prefigured in Fillmore's distinction between the deictic and symbolic use of demonstratives (Fillmore [1971] 1997: 62), a terminology we consider somewhat unfortunate, however, as both usages are origo-dependent and therefore "deictic". The difference is better described as origo-excluding and origo-including (or autodeictic vs. heterodeictic[9]). The important insight is that only proximal demonstratives are ambiguous between these two interpretations.

The ambiguity becomes clear in the following two sets of examples (all taken from spontaneous German interactional data, but presented here with an abridged contextual description and without a detailed sequential and multimodal analysis for reasons of space):

(4) (a) (the speaker summons another person (Bianca) in the same room who is hoovering it)
Bianca? Wenn du HIER fertig bist, saugst du dann mal im SPRECHzimmer? (BB16 753)
'Bianca? When you are finished here, can you hoover the consultation room?'

(b) (The addressee, whose family comes from former Yugoslavia, has just mentioned his affiliation with Germany, which made him apply for a German passport; one of the reasons was, according to him, that his father was buried in Germany. His friend asks:)
is der hIer beGRAben? (BB26 703)
'so he is buried here?'

(c) (the speaker and a group of friends are making a toast for a newly arrived person)
und HIER kuckt man sich in die AUgen wenn man Anstößt. (BB47 1348)
'and here people look into each other's eyes when they toast'

(5) (a) (the speaker holds a package with a facial mask in her hands and looks at it)
und DIEse hier (-) die fand ich am BESten
(BB80)
'and this one here I liked most'

(b) (the speaker approaches a trunk lying on the table and touches it; the addressee is in the same room; both have agreed to leave their signatures on this piece of luggage) (BB82, 590)

[9] See the discussion in Klein (1978), Sennholz (1985) as well as Fricke (2007: 274–277 and passim).

hast du hIer schon unterSCHRIEben?
'have you already signed here?'

(c) (speaker takes a sheet of paper and holds it to his forehead. On the paper, a text is printed, which he is supposed to learn by heart) (BB86)
geht EInfach nisch hier REIN.
'absolutely nothing finds its way in here'

In the first set of examples (4), the speakers refer to a space which includes the origo, i. e. their own spatial position. These spaces can be of very different sizes. In (a), it is the room in which the two participants find themselves, it is the whole of Germany in (b), and maybe the geographical location (perhaps the city of Cologne) in which the interaction takes place in (c), but perhaps also the groups of friends in which the toast is being made. The space can be purely physical and well-delimited (as in (a)), abstract but well-defined (the nation space in (b)) or vaguely defined and delimited as in (c). It is the advantage of the deictic instead of a descriptive reference that a certain amount of vagueness is acceptable, as the referent is not "formulated".

Importantly, none of the deictics needs to be accompanied by a gesture. To understand the meaning of *hier* in this set of examples, the recipient has to be able to identify their origo, i. e., the body of the speaker. But the referent of the *hier* is not a location which is identified by relating it to the origo via gesture (origo-excluding); rather, it includes the origo (origo-including) – and it is impossible to point to the origo of one's utterance. Instead of a gesture, the bodily correlate of the deictic term is the voice of the speaker which indicates the origo (*ad aures*). Note also that in most cases of this origo-including use, the spatial deictic does not establish joint attention to the entity referred to, but the availability of this entity is presupposed, as the origos of the participants in an interaction are usually known to the co-participants. The exceptional cases in which the origo is established by the utterance itself are utterances of the type *I am HERE,* in a situation in which co-participants cannot see each other, in which the spatial deictic is rhematic (cf. the stress). This origo-presupposing (thematic) usage of the "here"-deictic resembles the way in which the first-person personal pronoun is used to refer to the speaker. In this case, too, there is usually no need to establish joint attention, as the speaker and hence the origo of the utterance is known and therefore presupposed. And again, personal reference to the speaker is achieved, not visually, but as a *demonstratio ad aures*. The exception here is the rhematic usage of the first-person singular pronoun in utterances of the type *This is ME*, for instance uttered on the telephone when coparticipants are not able to see each other. (English uses a different form of the pronoun for this function, which indicates its rhematic status.)

As the distal demonstratives are always origo-excluding, the distinction between *hier* 'here' in the first set of examples and *da/dort* 'there' is properly

speaking not one of distance (proximal vs. distal), but one between origo-including and origo-excluding uses of the deictic adverb.

In the second set of examples in (5), *hier* is used to locate a referent relative to the speaker's origo (proximal) and it depends on an index (a gesture) providing the direction in which the referent must be searched. In this case, it contrasts with *da* and *dort*, the two distal demonstratives of German: *hier* locates the referent in the proximity of the speaker – very often, as in all three cases in (5), in their manipulative reach (Stern's "Greifnähe", Schütz' "Wirkzone", cf. Schütz and Luckmann [1971] 1973, Vol. I: ch. II.B, 2, 3). The space referred to (or the space in which the object referred to is located) does not include the origo but is external to it.

The typological study of spatial deictic systems to which we now turn is somewhat hampered by the fact that interactionally oriented studies based on a sufficient amount of spontaneous data from face-to-face interaction are still rare.[10] Hence, the grammar-book descriptions, often based on questionnaires or direct work with speakers of the language, do not always do justice to the actual developments and patterns. Even well-investigated languages such as German are not easy to categorize typologically. First of all, German is not consistent in its spatial deictic make-up across grammatical categories. In the adverbial system, it has a three-way distinction (*hier – da – dort*), while the deictic pronouns and determiners seem to be restricted to two elements, i. e. *dér* (N) and *dieser* (N) with inflectional variants. A third pronoun/determiner exists (*jener* (N)) but is used exclusively in the written language today and only textually as a distal demonstrative. A second difficulty arises from the fact that the system is not stable, but undergoing change, as are many deictic systems. Among the three adverbials, *dort* is rather rare, while *hier* and *da* are highly frequent, but have developed non-deictic uses (for instance, *hier* can be used as a discourse particle). Among the nominal deictics, *diese/r* is rarely used as a spatial demonstrative in interactional language, but highly frequent in its recognitional function (Auer 1981). *Dér* is very frequent, but often part of bimorphemic (compound) spatial demonstratives, following the pattern *dér da/hier/dort* or *der* N *da/hier/dort* 'the one here/there':

[10] See Bohnemeyer (2012) for a discussion of methodological issues in the investigation of demonstratives.

Table 1: Demonstratives in present-day spoken German

	PROXIMAL	**MEDIAL/ NEUTRAL**	**DISTAL**
Adverbial demonstratives	***hier***	***da***	***dort***
Pronominal demonstratives	*dér hier (dieser)*	*díe da*	*dás dort*
Demonstrative determiners	*der* N *hier (dieser N)*	*die* N *da*	*das* N *dort*

Finally, the pragmatics and semantics of the three deictics are far from fully understood. While it is relatively undisputed that (origo-excluding) *hier* is proximal and *dort* distal, the status of *da* is much less obvious (see Ehrich 1992: Ch. 2 for a discussion). As it is often used in opposition to *hier*, it might be classified as a middle-distance demonstrative. But it is also used in contexts where spatial distance from the origo appears to be irrelevant for locating the referent. This might justify classifying *da* as a distance-neutral, origo-excluding demonstrative.

Even though typological quantifications are not unproblematic, a number of typological studies on deictic spatial systems exist (such as Diessel 2005 with an impressive sample of 234 languages from the *World Atlas of Language Structures* (WALS); Diessel 1999; Dixon 2003; Himmelmann 1996; Anderson and Keenan 1985) and show a number of patterns which are very likely to hold, the above-mentioned restrictions notwithstanding. These are the following:

– In all languages, deictic systems are enriched by a semantic component which introduces some notion of distance from the origo.
– Most languages only distinguish between proximal and distal; what appears to be a proximal demonstrative may in some cases be better described as the "unmarked" demonstrative, which only receives the "here"-meaning when a contrast needs to be set up with the distal demonstrative (see Enfield 2003 for a detailed analysis along these lines for Lao *nii*^{4} vs. *nan*^{4}).
– If there is a third demonstrative, it is most often (a) used for indicating a middle distance or (b) it enables the speaker to distinguish proximity to the speaker from proximity to the addressee. Systems with addressee-proximate demonstratives are sometimes considered to establish a second origo in the addressee. It must be added here, however, that allegedly addressee-proximate spatial demonstratives are often postulated without available empirical evidence on their pragmatic function. Once their use is investigated in interaction, the ways in which they are used often turn out to be considerably more complex and less clearly related to an addressee origo than previously thought (cf. Jungbluth 2005 for a critical study on the Spanish *este – ele – aquel* distinction, and Özyürek 1998 for a critique of the Turkish *bu – şu – o* distinction, both of which are often believed to be of this type).

– The third demonstrative can also be neutral with respect to distance. Rarely, the third demonstrative is also distal and introduces a further distinction between distal and very distal (or distal-visible and distal-invisible).
– More complex systems are rare but exist. They may introduce further differentiations of the distance dimension or combine various degrees of distance from the speaker and the addressee, or they may bring topographic cues such as height/elevation or directionality into play (cf. Aikhenvald 2014). In European languages, these topographic distinctions are often expressed by compound demonstratives; cf. German *da unten* 'there below', *hier drüben* 'here across', *dort hinten* 'there behind', etc.
– Deictics may also encode non-spatial features such as visibility, familiarity, animacy, humanness, number, etc. (see Diessel 1999; Dixon 2003).

The proximity distinction as well as other spatial parameters encoded in the spatial deictic system should be understood as additional cues given to the addressee which can help to identify the target of the pointing and hence the referent. They enable the speaker to structure the space. From a phenomenological perspective, it therefore makes no sense to measure the objective distances between the speaker and the object referred to and to expect some kind of correlation with the use of the proximal or distal form. Depending on the spatial oppositions that are relevant, the distal element can be (objectively) quite far away from the speaker when a proximal deictic is used, and vice versa (cf. Enfield 2003: 88–89). More interesting than such an inappropriate transformation of the lived space into a Euclidean space are attempts to link the proximal space around the speaker with the world in "manipulative reach/operational zone" (*Wirkzone*), i. e. in the space in which objects can be manipulated, and the distal space, to the world in "actual reach" (*aktuelle Reichweite*, see Schütz and Luckmann [1971] 1973, Vol. I, ch. II.B, 1: 36); this world that can only be manipulated by dislocating oneself. Kemmerer (1999) discusses neurological evidence for a distinction between these two phenomenological layers of the lifeworld but dismisses its relevance for the deictic systems of languages on the basis of the fact that distal demonstratives are often used for referents outside the sphere of manipulation. The issue has recently been taken up again and there is some experimental research that supports a correlation between distal/proximal deictics on the one hand, and a "peri-personal" and "extra-personal" space on the other (see Coventry et al. 2008; see the discussion in Diessel and Coventry 2020: 7–8)

Spatial deictics are not only the basis of grammaticalization processes of numerous kinds (for instance, the emergence of definite determiners out of demonstrative determiners), they also tend to develop additional, non-spatial functions in almost all languages. The two processes are related of course, the extension to non-spatial functions laying the ground for possible grammaticalizations – in the case of the determiner via the feature of accessibility. Among the well-attested additional

functions of spatial deictics are their use for temporal deictic reference (cf. the German middle distance/unspecified spatial adverbial *da*, which in addition expresses temporal deictic reference), or for back- and sometimes forward-references within a text (anaphora, text deixis) or in a discourse world. Many other extensions are possible. For instance, Aikenvald (2015) shows how the addressee-proximal spatial demonstrative *wa-* in Manambu is used to refer in a pejorative way to persons or things associated with the addressee or to attract the addressee's attention. Küntay and Özyürek (2006) argue that Turkish *şu* (otherwise the hearer-proximal or medial-distance demonstrative) can encode the recipient's non-attention to the entity referred to, and according to Lyons (1977b: 677), proximal deictics in English can display the speaker's involvement, or that he is "identifying himself with the attitude or viewpoint of the addressee", i. e. they can be used "empathetically". Oh (2010) shows how the Korean deictic distal forms can be extended to refer to incumbents of a different membership category in interaction. Hanks (2005) in his work on Yucatec Maya even replaces the proximal/distal distinction by one between "immediate" vs. "non-immediate access to the referent". He argues that the spatial meaning is only derived from this general meaning by inference. However, it is difficult to see how such a radically de-spatialized approach would be able to account for the interactional coupling of deictics with the pointing gestures described above.

5. Beyond embodiment

In this section, we examine instances in which the embodied, situationally embedded and "environmentally coupled" (Goodwin 2007) nature of spatial deictic reference is reshaped in favor of spatial layerings (Stukenbrock 2014a) of physically present and absent phenomena in deixis in the imagination (Section 5.1. and Section 5.2), and in response to the challenges of co-orienting in virtual reality (Section 5.3.).

5.1. Bringing imagined entities into shared space

In Bühler's first type of deixis in the imagination, participants refer to and locate absent entities in shared perceptual space. Our example closely resembles Bühler's own example of situating a "piece of furniture somewhere in an empty perceived space" (Bühler [1934] 1990: 151). In extract (6), Carola and Thorsten are planning a social event at the premises of the Swiss museum of games. In the extract, they are inspecting an empty hall for the event together with the museum administrator (Marlène). In the split screen video, Thorsten's perspective is seen on the left and Carola's on the right. The deictic reference occurs in line 2–4. Fig. 6.1 shows Carola and Thorsten standing in the middle of the hall while Marlène (on whom Thorsten's gaze is focused) is standing closer to the door. (The person standing in the entrance is not part of the subsequent interaction.)

(6) "empty hall" (SM01)[11]

fig. 6.1/left: T-gaze at M/right: C-gaze at new domain


```
01    C-vb                  [voi]LÀ; °hh (.)
                             right
      C-gz    ..............|-new domain--->
      C-ge                            .....>
```

[11] The participants provided written informed consent to participate in this study and to use the data included in this article for publication.

fig. 6.2 left; T-gaze to new domain/right: C-gaze and pointing to new domain

02 C-vb und **HIER,**
and here
C-gz -domain--|
C-ge ...|-PG->

fig. 6.3/left: T-gaze to new domain/right: C-gaze to primary addressee M, addressee-monitoring

03 C-vb HIER können **sie** dAnn:- (.)
here could you then

```
          C-gz   ......|--M-----|.........>
          C-ge   --------|,,,,,,,.|-OHPA-->
04 C-vb   die‘ [die  ] SPIELtische auf[bauen;]
          the   the    gaming tables set um
05 M-vb         [(ab‘)]                [ABso]lut;
                  ab                    absolutely
          C-gz   ...........|--M----------------------->
          C-ge   -freezes OHPA-------------------------->
06 M-vb   =un_wie sIe [SEhen-]
           and as you can see
07 C-vb               [oKAY; ]
                       okay
   C-gz   --M----------------->
08 M-vb   =da können wir auch die tÜren ZUmachen?
           there we can also close the doors
```

Carola and Thorsten are in a side-by-side configuration facing the museum administrator. While Carola closes the previous topic with a final closing device (line 1: *voilà* ‘right’), she shifts gaze from her co-participants to a distant location in space (fig. 6.1/right: black cursor). Together with her body torque (fig. 6.1/bottom), her gaze shift projects the relevance of a new space.

She continues gazing at this space as she delivers the proximal deictic adverbial *hier* ‘here’ (line 2) and points to the gazed-at location with her outstretched arm, thus establishing a domain of scrutiny for her co-participants to attend to. Thorsten follows the pointing and shifts gaze to the domain of scrutiny (fig. 6.2/left), and so does Marlène. While repeating the deictic *hier* (line 3), Carola shifts gaze to Marlène (fig. 6.3/right). Together with the VOS pronoun *Sie* ‘youPL’ (line 3), her gaze selects Marlène as the addressee of the emergent request (lines 3–4) ‘here you could then set up the gambling tables’.[12] This gaze at the addressee enables her to check the addressee’s visual attention and assess whether reference has been established successfully (Stukenbrock 2015, 2020). Marlène grants Carola’s request (l. 5: *ABsolut* ‘absolutely’), which documents successful reference.

In both instances (l. 2, 3), the adverbial *hier* bears the focal accent: it is used in an origo-excluding way (gesturally), i. e. it needs a pointing to guide the addressee’s attention to the domain of scrutiny. All three components, demonstrative, gesture and gaze, are constitutive in establishing joint attention (Clark 1996; Stukenbrock 2020).

[12] Concurrently, Carola transforms her pointing gesture into an open hand, palm up shape (OHPU) (Kendon 2004). A discussion of different gesture shapes and their function for deictic referencing is beyond the scope of this paper (see, however, Stukenbrock 2015: 97–230).

This example nicely shows that the features *proximal* and *distal* are not objective, measurable values in physical space, but constitute relative differences with respect to the deictic center; they are contingent on the local context and socially constructed in interaction. Note that, while the speaker's outstretched gesture and cocked head embody spatial/physical distance and difficult accessibility, the choice of the demonstrative (*hier* instead of *da* or *dort*) indexes proximity. This seems paradoxical. Consider, however, that this is an instance of deixis in the imagination. The origo is the here-and-now of the referring speaker, but the entity to which the speaker points is not perceptually accessible for the participants. Only in imagination are the gambling tables brought into their perceived space and jointly imagined to take the specific place indicated by the pointing gesture. It is this imagined placement of an absent object into the here-and-now of the participants' present order of perception that is accomplished by *hier* 'here'. The spatial demonstrative invites its joint imagining.

The first type of deixis in the imagination is very similar to *demonstratio ad oculos et ad aures*, the sole difference being that in the latter case, the target within the domain of scrutiny is visible whereas it is not in the former (Stukenbrock 2014a). In the first type of deixis in the imagination, only the domain of scrutiny is visible (Stukenbrock 2015). It is interactionally constructed with the same verbal and embodied means that are used in pointing to visible entities.

5.2. Bringing speaker and addressee into an imagined space

The second type of deixis in the imagination, which requires a shift of the origo, is perhaps the most important. Note that for Bühler, deictic displacements are not purely mental or cognitive operations. On the contrary, displacements maintain and, moreover, construe an embodied relation to absent, imagined phenomena because they connect the speakers' (and addressees') tactile body image(s) (*Körpertastbild*) with the imagined scene. This enables interlocutors to effortlessly use spatial deictics and directional items such as "here", "there", "towards" etc. on the imagined scene, just as they are used in the primary situation of sensory perception. In Bühler's words, the speaker "takes it [his tactile body image] along in the second type (displacement); he retains his present tactile body image together with his optical orientation within actual perception from the very beginning in the first type and integrates what he imagines into it" (Bühler [1934] 1990: 154).

The following extract illustrates the second type of deixis in the imagination. The participants, a TV moderator (M) and his guests, an actor (A) and his wife (W), were telling a story about the wife wanting to buy an expensive chainsaw. The transcript starts with the actor's final comment in the course of which a deictic displacement to an imagined space occurs (lines 6–12).

(7) “chainsaw”

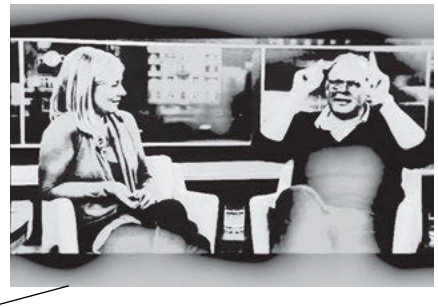
01 A: [(ich) man] kÖnnt_ja dann auch SAgen;
(I) one could just as well say
02 für zwEihundertneunundfünfzig EUro- °h
for two hundred and fifty-nine euros
03 kEin SONderange[bot-]
no special offer
04 M: [hm_hm,]
hm hm

fig. 7.1

05 A: kann man sich ja auch mal eine (.) LEI**hen;**
one can just as well borrow one

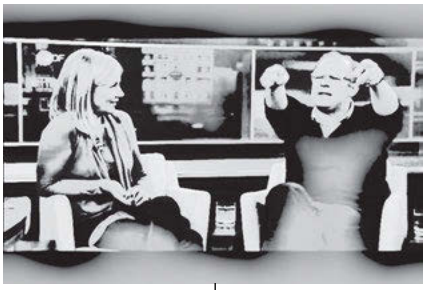
fig. 7.2

fig. 7.3



06 es **gibt** da HINt**en;**
there is back there

fig. 7.4 fig. 7.5




```
07          ↑!GANZ! am Ende;
            all the way back
08          TÜCkischer wEise verSTECKT,
            maliciously hidden
09          °h im hAlbdunkel des uohm_m_[MARKtes,]
            in the semi-darkness of the ehm store
10    W:                                [BAUmarktes,]
                                        DIY store
11    A:    dessen nAme mir gerade nicht EINfällt,
            whose name I can't recall just now
12          einen wUnderbaren geRÄteverleih;
            a wonderful equipment rental
```

The speaker (A) jokingly comments on his wife's craft ambitions by proposing the rental of a chainsaw in order to save money (lines 1–5). Subsequently, he shifts frame from generic talk about what "one" (*man*) could do to the concrete imagination of an equipment rental located at a specific place in the DIY store.

The transition from the here-and-now to the imagined space is projected by gaze. The speaker shifts gaze from his interlocutors (fig. 7.1) to a distant location in front of him (fig. 7.2), keeps this gaze orientation (fig. 7.3–7.4) while referring and pointing to the imagined equipment rental, and only looks back at his wife at the end of line 7 (fig. 7.5). He refers to the location of the equipment rental with the compound deictic adverb *da HINten* 'back there' (literally: 'there back') (line 6) and concurrently points with outstretched arms to a distant location (fig. 7.3–7.4). He thus constructs an imagined domain of scrutiny with the equipment rental as the imagined target. The pointing gesture is repeated several times (only the first repetition is shown in the transcript: fig. 7.5).

The speaker's origo is not grounded in the here-and-now of shared perceptual space. Instead, he displaces himself (i. e., his origo) to the imagined space of the DIY store and elaborates this space by verbal and embodied means. The use of a distal spatial adverb is underlined by the spatial trajectory of the pointing gestures, which, apart from indexing distance, iconically evoke the long rows of shelves in the superstore.

Note that, while the speaker gazes and points to the deictically constructed location in imagined space just as he would in *demonstratio ad oculos* (Example 3) or in the first type of deixis in the imagination (Example 6), his wife does not shift gaze to the – imagined – domain of scrutiny: there is nothing to be seen there. Instead, she is oriented at him during his entire turn (fig. 7.1–7.5). Not only is the domain of scrutiny "empty", because the target is not present, as in the first type of deixis in the imagination. Moreover, and in contrast to the first type, the domain of scrutiny itself is not present: it is not grounded in shared perceptual space either. Both domain of scrutiny and target need to be imagined.

5.3. Deixis in Virtual Reality

To conclude, we briefly illustrate how participants who interact through virtual bodies (avatars) in immersive Virtual Reality (VR) deictically refer to entities in virtual space and manage problems of not sharing embodied perceptual space (cf. also Jucker at al. 2018; Meyer and Jucker, this volume).

Graphic, three-dimensional virtual environments (VEs) are systems that offer remote participants platforms to engage in technically mediated interaction with others through the virtual body of an avatar. Depending on the system, participants can talk via an audio connection, move around in virtual space with their avatar, teleport from one place to another, engage with the virtual environment, handle objects, etc. In non-immersive virtual worlds (VWs), participants interact through a computer by using a mouse or joystick to operate their avatar. They thus remain at a distance from the virtual environment. Immersive virtual realities (VRs), in contrast, use technical devices attached to the participants' physical bodies that capture their motion online in real space and translate them to the avatar. In the VR, participants are invited to have an embodied, immersive experience by assuming an egocentric perspective that is grounded on the virtual body of their avatar, and by receiving real-time visual feedback for movements.

While technologies are constantly being developed to further enhance "the sense of 'presence'" (Hindmarsh et al. 2006: 797), virtual spaces may render multimodal practices difficult to deliver and to understand (Keating 2015; Luff et al. 2003; Hindmarsh et al. 2006). The absence of direct access to co-participants' bodies and the limited possibilities of interaction among the avatars pose problems for the use of spatial demonstratives. In real life, the deictic frame of reference is egocentric and grounded in the speaker's physical body; it presupposes participants' acknowledgement of the reciprocity and interchangeability of perspectives. For demonstrative reference to work, recipients need to perceive speakers' embodied location, movements and activities, just as speakers need to perceive their recipients. We can expect that lack of mutual perception invites a preference for non-deictic means of reference.

Psycholinguistic experiments (Garciá et al. 2017) have shown that spatial demonstratives are avoided when eye gaze is not available. Similar results were

found for the use of demonstratives when gesture was not available (Bangerter 2004). This confirms the expectation that participants prefer demonstratives when gaze and gesture are available, while they avoid deictics when this is not the case. What does this mean for naturally occurring interaction between participants in VR?

Although gaze and gesture are not available or limited, the VR experience nonetheless aims to simulate embodied experience. Do participants who are highly "immersed" in their VR activities spontaneously fall back on taken-for-granted practices of everyday life? Given that in collaborative VR gaming participants are often under time pressure, we may assume that they prefer, or automatically use, deeply entrenched embodied practices with demonstratives to refer to sudden phenomena in the VR space even though they are not functional.

The following example of a noticing delivered in collaborative VR gaming illustrates such a case. The data come from the corpus of Liliana Lovallo.[13] Lovallo recorded naturally occurring gaming interactions at different VR videogame arcades in Germany. Participants had access to the VR through head-mounted displays, while sensors tracked the movement of their head and hands. They could hear each other from their respective gaming stations. Their first-person VR perspectives were recorded with screen capture software. Participants' bodily behavior in real space was filmed with two external cameras. The videos were synchronized and exported as split screen videos.

In our example, Jacob and Adrian are playing the game "Cowbots and Aliens".[14] The aim is to shoot down the blue-colored aliens that suddenly appear in the shared VR space. In the split screen video, Adrian's VR perspective is displayed on the right and Jacob's on the left; the bottom shows the participants as recorded by two external cameras.

The participants' avatars (henceforth Adrian-Av and Jacob-Av) are at a railway station. They are in face-to-back orientation, with Adrian-Av taking the lead: figure 8.1/top/left displays Adrian-Av as seen from the perspective of Jacob-Av, while figure 8.1/top/right shows that Adrian-Av is orienting towards the door and about to move outside (their trajectories are recognizable in fig. 8.1/top/left as white contrail; in fig. 8.1/top/right as green bars on the floor). The spatial demonstrative *da drüben* lit. 'there across' occurs at line 6.

(8) AK-JK_05:31-05:57: "ah da DRÜben ist einer"

```
01        (7.23)
02  A:    °hhh (.) ja aber es gibt ne KARte,
                   yeah but there is a map
```

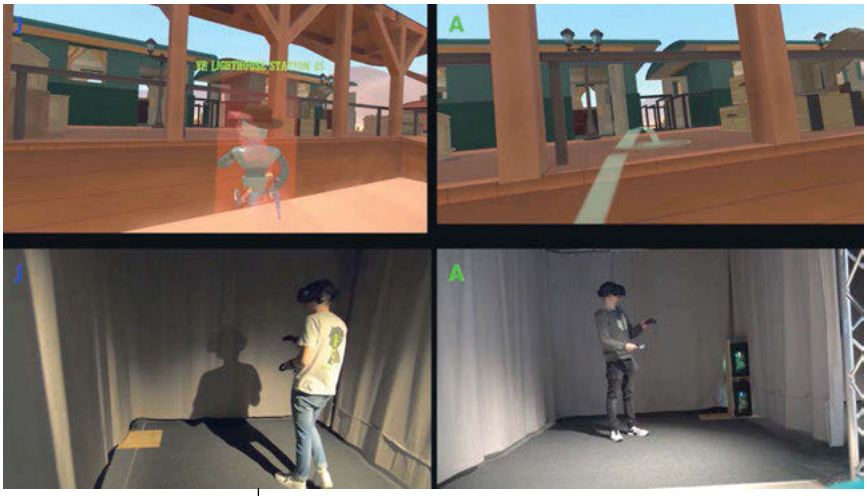
[13] We thank Liliana Lovallo for allowing us to show the data. Participants gave their written informed consent to participate in the data recording.

[14] © Wizard Games Inc.

fig. 8.1

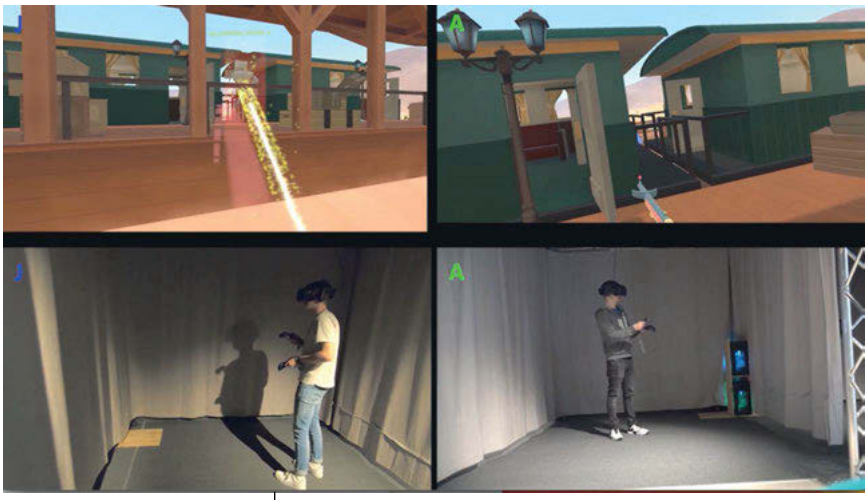
03 =wo du äh ir**gend**wie in (.) in so_ner knEIpe quasi
where you can ehm somehow in a kind of bar kind of
noch Oben und UNten,
still up and down
04 (1.0)
05 A: ä:::hm: (-) auch lang KANNST,
ehm also move along

fig. 8.2



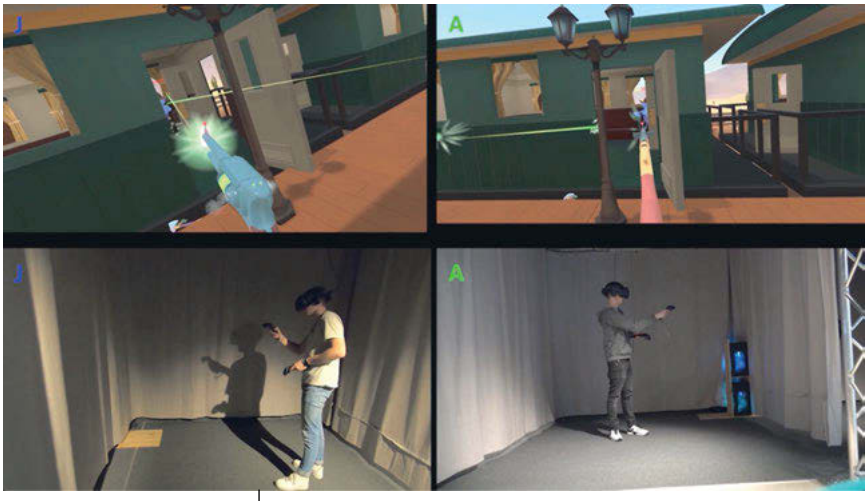
06 ah da **DRÜ**ben ist einer-
oh over there is one

fig. 8.3



07 auf der **An**deren seite von_den_ZÜgen;
on the other side of the trains
08 (2.65)

fig. 8.4



09 A: jetzt **ist** er Im waggOn DRIN;
now he is in the coach inside
10 (1.03)
11 hä_der schIEßt uns doch gar net AB;
huh he does not even shoot at us
12 (0.83)
13 (gut).
(good)

In the course of his utterance, Adrian leaves the building by teleporting his avatar outside; Jacob follows him. Adrian is talking about a map in the game when he discovers an alien. He utters a noticing (Schegloff 2007; Goodwin and Goodwin 2012) which interrupts his talk about the map (line 6: ah da DRÜben ist einer 'ah there is one over there'). The noticing contains a compound spatial deictic composed of two adverbs *da* ('there') and *drüben* ('hither'/'yonder'/'across'); these locate the target at a distance and index an obstruction that needs to be overcome.

The external camera shows that Adrian, the speaker, performs a pointing gesture with his right arm (fig. 8.2/bottom/right). This resembles *demonstratio ad oculos et ad aures* in co-present interaction. In contrast, addressee gaze monitoring does not occur. Note that the gesture is hardly visible to the addressee: Jacob can only perceive, via his avatar, the embodied orientation of Adrian-Av towards the platform (fig. 8.2/top/left), and a slight raise of a weapon held by Adrian-Av. Likewise, participants have no access to each other's gaze direction. In sum, in the VR, the embodied resources preferred in co-present *demostratio ad oculos* do not deliver reliable directional cues towards the target. This resonates with previous research (Hindmarsh et al. 2006).

Adrian expands the deictic reference with a non-deictic spatial description of the alien's location (l. 7: auf der Anderen seite von den ZÜgen 'on the other side of the trains'). The obstruction implied in the directional deictic "drüben" is now denominated by a noun phrase ("trains"). Adrian teleports his avatar closer to the target. This movement is visible in Jacob's perspective (fig. 8.3/top/left), who follows Adrian-Av. Although the participants' avatars are now in a side-by-side configuration, their avatars' fields of vision, being smaller than the human field of vision, do not allow for mutual perception through peripheral vision. Only when they start shooting can they see the fire streaks of the other's avatar (fig. 8.4/top/left and right). When Adrian sees, through the first-person perspective of his avatar, the shots of Jacob-Av, he can infer that Jacob has identified the target and referent. The referential action was successful and joint attention on the alien has been achieved.

Previous research on VEs underlines that pointing and looking, instead of being resources to establish reference and joint attention, often become the topic of talk (Hindmarsh et al. 2006) or lead to extended sequences (Luff et al. 2003) to resolve problems of co-orientation, location, and reference. In contrast, our extract shows that instead of engaging in extended sequences, participants have found solutions to practical problems of spatial deictic reference in the VR. While spontaneously noticing and locating objects with taken-for-granted deictic means, participants increment their utterances by non-deictic means. These establish reference independent of the participants' virtual, avatar-mediated origo in the VR.

In contrast to *demonstratio ad oculos et ad aures* (Bühler [1934] 1990), spatial location through directional hearing of participants' voices is impossible in VR, the transmission and visibility of participants' gestures is problematic, and gaze as

an interactional resource is not available. Participants orient to this by expanding spatial deictic utterances with non-deictic spatial or directional descriptions which enable, or facilitate, the location of objects in the VR space. Online incremental practices of complementing multimodal deictic resources by non-deictic means reflect participants' sensitivity to the problem of limited visibility and the challenges of spatial deictic reference in VR. Propositions to change this (see list in Luff et al. 2003: 79) by refining existing technologies based on empirical VE research, testify, once more, to the ultimately egocentric, embodied nature of deixis.

6. Conclusion

Deictics are of special interest to an interactional-linguistic approach to the context-dependence and context-sensitivity of language as they encode the relationship between body and grammar. Their analysis makes a multimodal approach indispensable; the body is "part of" grammar (Stukenbrock 2021). In the case of spatial deixis, such an approach also provides the foundations for the analysis of what phenomenologists termed the "lived space", i. e., of the ways in which humans unavoidably live in and construe their being in the world spatially through language use (see Heidegger 1927: §§ 22–24).

We have argued that Bühler's theory of deixis as grounded in the speaker's body (i. e., a strictly ego-centric approach) is an appropriate starting point for an interactional account of the working of deictic practices. His approach has sometimes been criticized as being "deeply individual" as well as "addressee-blind" (Peeters and Özyürek 2016; cf. Section 4). However, Bühler's insights into deictic displacement counter criticism against his theory as static, and fixed in the egocentric materiality of the speaker's body. Bühler's theory of deixis is neither static nor does it exclude the co-participants.[15] On the contrary, his concept of *Deixis am Phantasma* integrates non-egocentric reference to phenomena from (perceptual as well as imagined) vantage points other than the speaker's body in the here-and-now. In addition, it explains how this is interactively achieved, namely, by displacing the speaker-origo and by inviting addressees to displace themselves along with the speaker to jointly attend to the referent from the imagined vantage point.

The analysis of spatial deictic reference in Virtual Reality provides additional evidence for an egocentric, embodied view of deixis. Participants have to suspend, or complement, their incarnated multimodal practices when their physical

[15] Bühler asks ([1934] 1990: 141): "And the person being guided or the hearer? […] he, too, must also contribute a good portion of his own activity and a certain degree of orientation within the order of what is to be pointed out."

body – the origo's "natural" home –, mutuality of perception and the (perceivable) interchangeability of perspectives are not available. *Ex negativo*, these findings underline the relevance of the speaker's body as the origin (origo) of spatial deixis.

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3. The conceptualization of space in signed languages: Placing the signer in narratives

Sherman Wilcox, Rocío Martínez and Diego Morales

Abstract: In this chapter we discuss how reported communication in narrative interactions is expressed in Argentine Sign Language (LSA). We analyze data from three different types of reported communicative interactions. Working within the theory of cognitive grammar, we have proposed the concepts of Place as a symbolic structure, which is a meaningful spatial location, and placing, in which a sign is located at a position in space to create a new Place or recruit an existing Place (Martínez and Wilcox 2019). Here we expand the concept of placing to include the signer as a linguistic entity and identify a new construction we call "placing the signer", which functions to establish referential identity between the signer and another discourse participant. We offer analyses of placing the signer constructions in LSA narratives, and we show how it also applies to fictive interactions in discourse which serve grammatical functions. Finally, we suggest that these placing constructions are manifestations of the conceptual metaphor SIMILARITY IS PROXIMITY.

Keywords: sign language, narrative, space, cognitive grammar

1. Introduction

Signed languages are natural human languages that arise through normal historical processes in deaf communities around the world. They are unrelated to the spoken languages used in the surrounding speech community, having their own historical relationships. American Sign Language (ASL), for example, is historically related to French Sign Language (LSF), while British Sign Language and ASL are distinct, historically unrelated languages. Although deaf people in America and Britain may share English as a common written language, their signed languages are mutually unintelligible.

For centuries, signed languages were not considered to be language. Rather, they were regarded as depictive gestures lacking features of language such as phonology, word formation, and syntax. The view that signed languages lacked linguistic structure was most powerfully manifest in the claim that they lack duality of patterning, that the meaningful elements of these languages are not formed from a finite set of meaningless elements − that is, that signed languages lack a phonology (Pulleyblank 1987; but cf. Armstrong 1983). Stokoe (1960) dispelled this miscon-

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ception with his pioneering description of the phonology of ASL. Stokoe demonstrated that signs consist of analyzable units of sublexical structure and coined the term "chereme" for these units, the structural equivalent of the phonemes of spoken languages.

Stokoe analyzed the phonology of signs into three major classes: handshape (the configuration that the hand makes when producing the sign), location (the place where the sign is produced, for example on the head, or in the neutral space in front of the signer's body), and movement (the motion made by the signer in producing the sign, for example upward or towards the signer's body). Battison (1978) added a fourth phonological class, orientation (the direction the hand faces when producing the sign). Since Stokoe's discovery, a multitude of phonological studies of signed languages have been conducted (e. g., Boyes-Braem 1981; Brentari 1992, 2019; Crasborn and van der Kooij 1997, 2013; Liddell 1984; Padden and Perlmutter 1987; Sandler 1999; van der Hulst and Mills 1996).

Stokoe's demonstration that signed languages exhibit a level of sublexical structure equivalent to phonology was necessary to align signed languages with mainstream structuralist theory and bring the study of these languages into the modern era of linguistic analysis. However, the cleavage of signed languages (and indeed all language) into the meaningful and the meaningless required by structuralist assumptions hides the deep conceptual connection between semantics and phonology. As we will discuss in Section 3, severing this connection between conceptualization and expression has significant consequences for our understanding of signed languages and their use of space.

Signed languages are produced in visible space. Not only do the utterances made by a signer occur in space, the signer also moves about in a spatial environment. Space and spatial locations have lexical, grammatical, and discourse significance in signed languages. The use of space to refer to entities that are either physically present or that are created within discourse is a well-documented topic of research within signed language linguistics. Locations in space may be used to establish discourse referents. For example, in a narrative a signer can establish Spain at an upward-right spatial location in front of the signer, and Argentina at a location downward and to the left. In subsequent discourse the signer can anaphorically refer to these entities with a pointing construction; verb agreement constructions may also use spatial locations as nominal arguments (Wilcox and Martínez 2020). Other functions of space and spatial locations in signed language include the expression of lexical time (shown as points along a deictic spatial time line from behind a signer's dominant hand shoulder and forward, e. g. YESTERDAY, NOW, PAST, TOMORROW in American Sign Language); discourse time (e. g., presenting moments before or after referential points in time as locations on a sequence time line parallel with the signer's torso surface plane from left to right); in pointing signs (e. g., pronouns, body part signs); verb agreement; marking point of view (whether real or fictive point of view, as in indicat-

ing stance); relations among participants in events, and more (Engberg-Pedersen 1993).

A number of approaches to the analysis of space in morphosyntax and discourse have been proposed. The locus with semantic-pragmatic conventions view (Engberg-Pedersen 1993) defines locus as an abstract category whose members are specific spatial loci in paradigmatic contrast. Engberg-Pedersen (1993) asserts that conventions influence the signer's choice of loci. The space around the signer is semantically "loaded": the choice of a locus for a given referent is not arbitrary but influenced by semantic and pragmatic conventions. For instance, the convention of semantic affinity states that referents with semantic affinity to each other (for example, a person and the place where she works, or a person and his possessions) are usually represented by the same locus, unless they need to be distinguished for discourse reasons. The convention of comparison occurs when a signer chooses the locus forward-sideward-left for one referent and the locus forward-sideward-right for another referent when she wants to compare or contrast the two referents. These conventions are neither exhaustive nor do they have the character of obligatory rules.

Another approach to the use of spatial locations is the mental spaces view, based on mental space theory (Fauconnier 1985, 1997). As applied to signed languages, its main proponent is Liddell (1995). In his first approach, Liddell proposed that three mental spaces are recruited for creating and maintaining reference in ASL discourse: real space, surrogate space, and token space. Real space is a person's current conceptualization of the immediate environment based on sensory input. Real space is used when the signer refers to entities that are conceptualized as being physically present, such as directing a pronoun toward the addressee or toward objects that are present in the physical situation. Surrogate space describes a type of full-sized, invisible entity. Pronouns and indicating (agreement) verbs make reference to a surrogate by being directed toward it. Tokens are entities that, like surrogates, are given manifestation in physical space. The difference is that unlike surrogates, tokens use a limited size of the signing space in front of the signer and only assume third person roles in discourse. Liddell (2003) later revised this theory, following blending theory (Fauconnier and Turner 1996), showing how real, surrogate, and token space become part of different blended mental spaces.

Many sign linguists who adopt the mental spaces view claim that the number of locations in space is unlistable, and therefore cannot be an element of the grammar. According to this claim, for example, any specific instance of a pronoun directed toward an entity will be a combination of lexically fixed features encoding the symbolic pronoun, and a non-symbolic pointing direction selected for the specific context in which it is being used (Liddell 2003). In addition to pronouns, other structures receive similar treatment. For instance, it is claimed that indicating or agreement verbs are composed of both lexically fixed features and gestural elements. The actual placement of the hand during the initial or final hold is said

to be "gradient" because it depends on the locations of the entities toward which it is directed. Comparable analyses can also be found in research discussing language-gesture fusions (Fenlon, Schembri and Cormier 2018).

This claim that spatial locations are uncountable is also espoused by researchers working within a formalist theory. These linguists often adopt a referential locus (R-locus) view, claiming that spatial locations are used for identifying referents previously associated with that location. These are called R-loci. R-loci are distinguished from referential indexes (R-indexes): the former are the physical spatial locations toward which a signer points, whereas the latter are abstract formal devices indicating reference within and across sentences (Lillo-Martin and Klima 1990). Similar to the fusion model, the claim here is that whereas abstract indices are part of the grammar, loci are determined outside of grammar. This leads some proponents of this view to conclude: "On our view, the grammar doesn't care which point in space is used for a particular referent. Abstract indices are part of the grammar, but loci are determined outside of grammar. Therefore, the connection between referents and loci requires language to interface with gesture" (Lillo-Martin and Meier 2011: 121).[1]

We adopt a symbolic Places view (Wilcox and Occhino 2016; Martínez and Wilcox 2019; Wilcox and Martínez 2020), a usage-based approach developed within the theory of Cognitive Grammar (CG) (Langacker 1987, 1991b, 2008). Our view is grounded in sensory and physical experience, and thus is an approach in which embodied cognition and experiential conceptual archetypes are fundamental (Barsalou 2008; Langacker 2006). The locations that signers use meaningfully within signing space, as well as any other unit, cannot be conceptualized a priori as discrete and categorical, but as elements that arise from the bottom-up. In previous studies, we have called these meaningful locations in signed languages Places[2] — the symbolic pairing of a meaning and a location in space. Places are thus semantically and phonologically substantive, grounded in embodied experience and abstracted from actual usage events. Places are components of more complex symbolic structures, such as pointing and placing constructions. Within this approach, the unlistability of locations in signing space is unproblematic, given that we assume a non-structuralist conception of language and its units (Wilcox 2014). We describe the Places view more extensively in Section 5.

Our aim in this chapter is to explore the way in which communicative interactions between signers are reported in narrative, specifically by introducing a new grammatical construction we call "placing the signer". In this construction,

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1 We should point out that not all linguists working within the formalist tradition agree with this claim. Two prominent opponents are Quer (2011) and Wilbur (2013).

2 We capitalize Place to indicate that it is the name of the entire symbolic structure. We use location to label the phonological pole of a Place symbolic structure.

the signer positions herself at a specific meaningful location (a Place) and orients her torso, head, and/or eyes towards other Place(s). We examine the use of space in Argentine Sign Language (Lengua de Señas Argentina, or LSA). LSA is unrelated to the grammar of Spanish or American Sign Language (ASL). This visual language is an important part of the Argentine deaf culture, which relies mostly (although not only) on visual perception (Massone, Simón and Druetta 2003). Our data come primarily from two stories translated and narrated by two well-known deaf Argentine artists.

In Section 2 we review literature describing the way in which dialogue and events are reported in signed languages, including quotative and non-quotative functions in a conversation or a narrative. Section 3 discusses relevant concepts from Cognitive Grammar, including construal, viewing arrangement, conceptual archetypes, and the stage model. Since our chapter focuses on signed languages, which exhibit similarities and differences with spoken languages, we also comment on certain adaptations of the theory, such as the channels in which signed languages are expressed.

Section 4 introduces the Canonical Interactional Configuration (CIC) applied to signed interactions, and what we call the Phonological Stage. These concepts play an important role in signed language discourse because conceptual archetypes, viewing arrangement, and the stage model retain their physical, experiential, and perceptual grounding. In presenting narrative, signers literally occupy spatial locations on a phonological stage that is visually perceived by their audience.

Section 5 describes in more detail the concepts of Place as a symbolic structure and placing constructions. Places, which are meaningful locations in signing space, have been shown to play a role in tracking referents in signed discourse. In placing, signs are produced at spatial locations, either creating a new Place or recruiting an existing Place. In the case study we describe in this chapter, we extend these concepts and show how in certain narrative constructions the signer occupies and moves between meaningful locations; thus, the notion of placing includes not only signs but also the signer as a linguistic object.

Section 6 offers a brief summary of the two narrative data sources that we examine as our case study: *Continuity of Parks* (in Spanish, *Continuidad de los parques*), and *Golden Hand* (*Mano de oro*). Fuller descriptions of the narratives are provided in the appendices. Section 7 analyses several examples of the narrative strategies used to report interactions among signers in these narratives.

In Section 8 we point out important similarities between the way in which actual communicative interactions are reported in narrative and how fictive interactions are expressed. Finally, in Section 9 we offer conclusions and implications for how space is conceptualized and is also an aspect of the expression of signed language narrative and everyday discourse.

2. Narrative reporting of dialogue and events

Dialogue in narrative can be presented either as a third-person report (indirect quotation) or as first-person ("direct quotation") (Chafe 1982). Tannen (1986) points out that what is referred to as reported speech or direct quotation is actually constructed dialogue. Speakers mark these constructed dialogues with certain conventional grammatical constructions, or by taking on the voices of characters by changes in pitch, voice quality, and prosody (Schiffrin 1981; Tannen 1986). In this way, Tannen (1986: 312) argues that constructed dialogue, either in conversation or in narrative fiction "is a means by which experience surpasses story to become drama".

Just as speakers have ways of presenting a point of view by taking on the vocal and behavioral qualities of characters, signers have grammatical strategies for conveying character viewpoint. Signers make use of their whole bodies and the space surrounding them as they report dialogues in narratives. They are able to construct not only complex sequences of events from different points of view, but they can also include quotations of the characters involved in a conversation or a narrative. Padden (1986) offers an example, depicted in Figure 1. The signer says, "The husband goes, 'Really, I didn't mean it.'" In the first frame the signer faces her actual interlocutor and signs HUSBAND, identifying who will be speaking in the next sequence. The next four frames present the constructed dialogue REALLY ME NOT MEAN as signed by the husband. To mark the constructed interaction, the signer shifts her body to the left and directs her eye gaze at the virtual interlocutor.

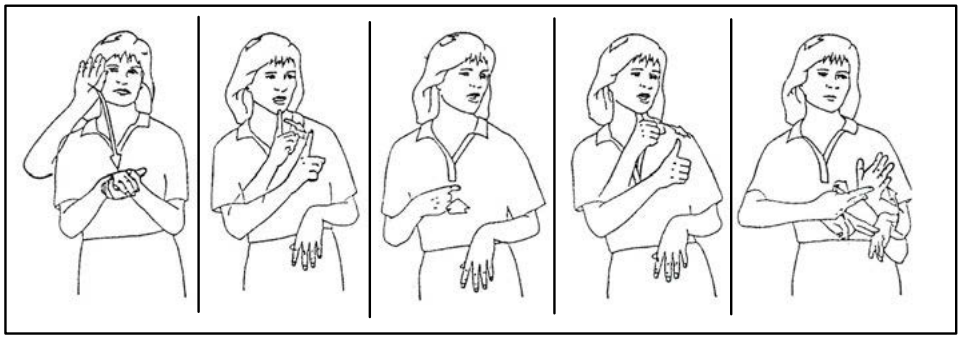

Figure 1: Role Shift (from Padden 1986)

Constructions such as this are used for conveying quotations from a character viewpoint. They have received different names in the sign linguistic literature, such as role shift (Padden 1986; Quer 2016), shifted reference (Engberg-Pedersen 1993), and constructed action (Ferrara and Johnston 2014; Metzger 1995; Cormier, Smith and Zwets 2013). Descriptions of these constructions in signed languages

tend to include one or more of these features: a change in body orientation (the signer changes orientation, for instance, from front position to a sideways position), a change in eye gaze direction (the signer tends to break eye contact with the actual addressee to look in another direction, such as the location of another character or referent within discourse), and a change in deixis (the deictic center, the body of the signer, is rearranged to take somebody else's point of view).

These constructions have several complexities. As Engberg-Pedersen (1993) points out, one of the difficulties of analyzing these constructions is that they involve at least three different phenomena that may or may not co-occur: (i) shifted reference: the use of pronouns to refer to somebody other than the sender/narrator; (ii) shifted attribution of expressive elements: the use of the signer's face and/or body posture to express emotions or attitudes of somebody other than the sender/narrator in the context of utterance; (iii) shifted locus: the use of the sender/narrator locus for somebody other than the sender/narrator.

Another complexity of these constructions arises from the fact that they serve a wide variety of functions within narratives. For example, role shifting has been described as part of constructed action, which is a strategy in which the signer uses the face, body, hands and/or other non-manual articulators to represent a referent's actions, utterances, thoughts, feelings, and/or attitudes (Jarque 2016; Jarque and Pascual 2016). Thus, the constructions tend to involve a variety of quotative and non-quotative uses. Metzger (1995) distinguishes between constructed action (the signer's representation of a referent's actions) and constructed dialogue (the signer's representation of a referent's discourse). Many researchers consider constructed dialogue to be a subtype of constructed action (Cormier, Smith and Zwets 2013; Jarque and Pascual 2016).

Finally, the strategy has also been analyzed as part of grammaticalized constructions, from expressing non-quotational direct discourse (Jarque and Pascual 2016), to marking evidentiality and stance (Shaffer 2012; Wilcox and Shaffer 2017; Jarque and Pascual 2015, 2016). Studies show that these constructions also mark a conceptual phenomenon called "*fictive interaction"*. According to Pascual (2014), fictive interaction is the use of conversational structure to model cognition, discourse, and language. For instance, Jarque (2016) and Jarque and Pascual (2021) claim that the question-answer sequence in Catalan Sign Language (as well as other signed languages) has been grammaticalized as a fictive interaction, and constitutes the unmarked option to encode linguistic functions such as topicality, conditionality, focus, connection, and relativization.

3. Cognitive Grammar

Cognitive Grammar (Langacker 1987, 2008) is a comprehensive linguistic theory that has been extended to discourse (Langacker 2001), multimodal communication

(Ruth-Hirrel and Wilcox 2018) and signed languages (Ferrara and Johnston 2014; Liddell 2003; Wilcox and Martínez 2020; Martínez and Wilcox 2019; Wilcox and Occhino 2016). A foundational claim of Cognitive Grammar is that grammar is symbolic. Within Cognitive Grammar, a symbol is the pairing of a semantic structure and a phonological structure, the symbolic structure's two poles. Symbolic structures vary along three dimensions: symbolic complexity, degree of specificity or schematicity, and the extent to which they are conventional within a linguistic community. Lexicon and grammar form a gradation of assemblies of symbolic structures. Lexical items tend to be phonologically and semantically less complex and more specific. Grammatical structures tend to be symbolically more complex and more schematic. Constructions are complex symbolic assemblies.

Grammar imposes a construal on conceptual content; that is, an expression imposes a particular image, reflecting just one of the many ways in which a speaker or signer may conceptualize and portray a situation. For this reason, grammar as meaning has been described as imagistic (Langacker 1979), and thus grammatical constructions depend critically on imaginative abilities.

One important aspect of construal is **viewing arrangement**, defined as the overall relationship between the "viewers" and the situation "viewed" (Langacker 2008). Within Cognitive Grammar, the term "viewers" refers to conceptualizers who apprehend the meanings of linguistic expressions. In a communicative event, the viewers are the speaker/signer and interlocutor. These participants, their interaction, and the time and place of the communicative event constitute the **ground**.

In conversational interactions, a default viewing arrangement has the participants together in a fixed location; from this location they observe and describe actual events in the world. One component of viewing arrangement is an assumed **vantage point**. In the default arrangement, the vantage point is the actual location of the signer/speaker and the interlocutor. The signer/speaker may also adopt a **fictive vantage point** (Langacker 2008). If uttered while in Japan explaining the mountains around New Mexico, the following would assume a fictive vantage point: "*If you were standing on top of Sandia Mountain facing west you could see Mount Taylor in the distance*." By employing imaginative abilities, the speaker/signer "moves" to and occupies this fictive location.

Another aspect of vantage point is the degree of objective or subjective construal, referring to the asymmetry between what is viewed, the *object of conceptualization*, and the viewer, the *subject of conceptualization* (Langacker 1991a). When this asymmetry is fully polarized, the subject of conception is construed with maximal subjectivity, as the viewer fully attending to the object of perception in the objective scene; the viewer is not a part of that scene and has no awareness of self as viewer. This is called the **default viewing arrangement**.

This configuration of viewing arrangement and participants is called the **stage model**, evoking the visual experience of watching a play take place on a stage.

While the maximal scope of our visual attention includes the entire stage and even the auditorium and audience, we focus our limited visual attention on the actors who occupy locations on stage and interact. Figure 2 depicts the default viewing arrangement with viewer (V) off-stage and the focused object of perception (P) onstage (OS) within the overall perceptual field (PF).

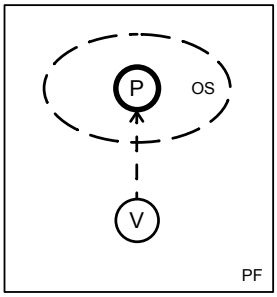

Figure 2: Default Viewing Arrangement

In an alternative construal, the viewer moves onstage and may even become the focused object of conceptualization. Expressions which explicitly reference the speaker or the interlocutor, such as *I, me, you,* manifest this viewing arrangement (Figure 3). Other aspects of the ground which are normally off-stage can be moved onstage with words such as *now* or *here*.

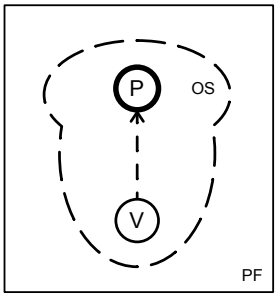

Figure 3: Egocentric Viewing Arrangement

It is important to note that while viewing arrangement is experientially grounded in the link between ***per***ception and ***con***ception, these construals pertain to conceptualizations: they characterize the meanings of linguistic expressions, the semantic pole of symbolic structures. This is a critical point to which we will continue to return, because for visual languages that are expressed by entities moving in space, these visual perceptual construals, while they characterize conceptualization as they do for spoken languages, are aspects of form and thus also have *phonological* significance.

Cognitive Grammar also posits several cognitive models and conceptual archetypes. Conceptual archetypes are experientially grounded concepts that are fundamental to everyday life. Examples include: the conception of a physical object, the conception of a physical object occupying a location in space, the conception of an object moving through space, the human face, and the human body (Langacker 2000, 2008). A more complex conceptual archetype encompassing the stage model consists of a scene or setting with mobile participants. The participants occupy a location and may participate in actions and interactions. While preparing to sit in front of a computer to write, for example, a clumsy linguist may knock over a cup of coffee, burning his hand in the process. Archetypal semantic roles such as agent, patient, and experiencer are elements of this complex conceptual archetype. These conceptual archetypes and their components form the **canonical event model** (Figure 4), an elaboration of the stage model.

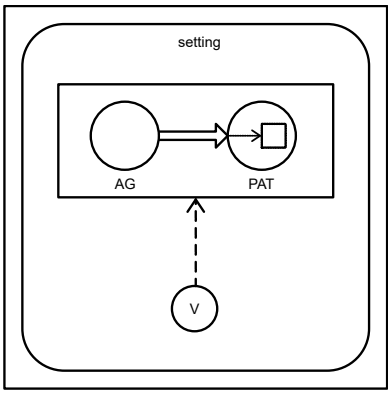

Figure 4: Canonical Event Model

Cognitive Grammar is a usage-based approach, making the basic claim that all linguistic units are abstracted from usage events — actual instances of language use. Usage events are bipolar, consisting of conceptualization and expression, which are manifest as the two poles (i. e., semantic and phonological) of symbolic structures. Conceptualization and expression consist of multiple channels (Figure 5).[3]

[3] Langacker (2001) refers to vocalization channels. We will use the term "expressive" channel.

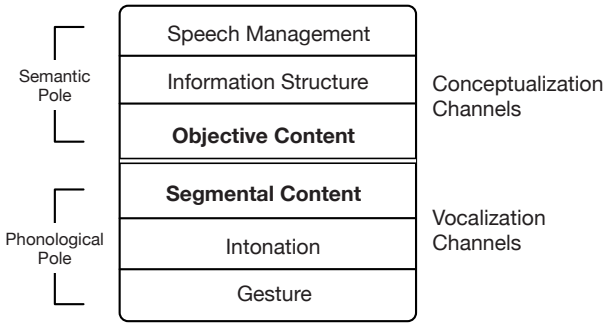

Figure 5: Spoken Language Channels

The speech management conceptualization channel includes turn-taking and strategies to retain or give up one's communicative turn. Information structure includes emphasis, focus, discourse topic, and the status of information as given or new. Objective content refers to the objective situation or scene viewed, which is the focus of attention (Langacker 2001).

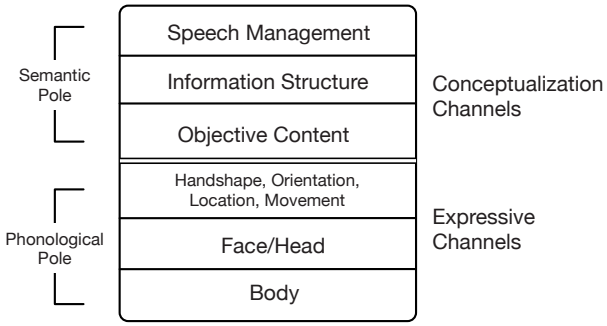

Figure 6: Signed Language Channels

The conceptualization channels are assumed to be the same for signed and spoken languages. Signed languages, however, clearly have different expressive channels: a core manual channel; a face/head channel which includes the head, eyes, mouth, etc.; and a body channel, including the spatial location occupied by the signer and the signer's body orientation (Figure 6). These channels typically act in conceptual unison, but they can also act independently in what has been described as body partitioning (Dudis 2004).

We have noted that fundamental concepts within Cognitive Grammar, such as viewing arrangement and the stage model, are employed to characterize conceptualization, the semantic pole of symbolic structures that make up lexicon and grammar. We have also suggested that these cognitive principles and models have

phonological significance for signed languages. As we noted in the Introduction, form and meaning have always been considered distinct domains of language structure under structuralist theory. Signed language linguists adopted this assumption, breaking the connection between conceptualization and expression. Cognitive Grammar recaptures this connection with the claim that semantic and phonological space are not disjoint fields of cognitive potential; rather, phonological space is a subregion of semantic space. The linguistic symbol is thus more accurately seen as a correspondence between two structures in a broadly conceived semantic space, where one of the two structures occupies the phonological subregion (Langacker 1987).

This view of the conceptual connection between semantic and phonological space is especially important for signed languages. Consider once again conceptual archetypes. Basic conceptual archetypes include a physical object, an object occupying a location, an object moving through space, the human face and body. The first three represent the core expressive manual channel and the three phonological primes: handshape, location, movement; conceptual archetypes also correspond to the facial channel and the body channel. This is not surprising, since the perception and use of our hands, faces, and bodies are experientially grounded and a source for these conceptual archetypes. Thus, while conceptual archetypes are the experiential grounding of conceptualization, for signed languages they also underlie the means of expression, that is, phonology.

4. Canonical interactional configuration and the phonological stage

Signed languages are, quite literally, face-to-face visual languages. In signed interaction, the canonical configuration is for one signer to face another signer at some culturally determined default distance. Between the two is a line of sight. We call this the **canonical interactional configuration** (CIC). The well-known Gricean cooperative principle and maxims of conversation describe how people achieve effective conversational communication (Grice 1989). Gricean maxims are focused on the content of the communicators' contributions to conversational interaction. For signed communication among deaf language users, we offer two maxims for the production of effective visual communication: (1) reduce excessive moving around on the phonological stage, and (2) make your signs as visible as possible. We choose the term phonological stage intentionally. We have described the experiential and perceptual grounding of conceptual archetypes, perspective, vantage point, and the stage model, and their role in conceptualization. In signed language discourse these conceptual notions retain their physical, experiential, and perceptual grounding: in presenting narrative, signers literally occupy locations on a stage that is visually perceived by their audience. These locations are in many instances meaningful, and thus in these cases they are the phonological pole of a

symbolic structure. In the default narrative arrangement, the signer and any interactional partners virtually represented through reported speech are on-stage participants, while the audience remains off-stage as viewers. In presenting narratives, the phonological stage becomes the setting in which the signer as narrator occupies a location; the narrator then assumes character roles in the narrative, interacting with other (virtual) participants.

The observation that participants occupy meaningful locations in space is not new. In studying the spatial organization of participants in social encounters, Kendon (1976: 291) observed that "Activity is always *located*. A person doing something always does it *somewhere* and his doing always entails a relationship to the space which has in it the objects or people within which the doing is concerned." As we will show, the placing of participants in space serves not only a social but also a grammatical function in communicative interactions.

We will continue to reiterate throughout our discussion that the phonological stage is analogous to and complementary with the conceptual stage model and viewing arrangements. The two are not, however, the same. The phonological stage does not replace the conceptual stage model. Rather, the phonological stage is used in certain situations in which the signer is a linguistic entity occupying locations, changing locations, and interacting with virtual linguistic entities. The phonological stage, as we will show, is used in placing the signer constructions in narratives, as well as non-narrative discourse settings. In all these situations, the conceptual stage model still pertains to the conceptualizations of the signer's utterances.

5. Place and placing

In the following analyses we will focus on the conceptualization of locations in space and the act of locating linguistic entities – either signs or the signer – at locations in space. Our approach to signed language narrative and the reporting of discourse interactions relies on the notions of **Place** and **placing** (Wilcox and Occhino 2016; Martínez and Wilcox 2019). Place is defined as a symbolic structure consisting of a phonological location and a semantic pole characterized schematically as "thing". Place is a component in pointing constructions, where it combines with another component structure, the pointing device (Figure 7). In these constructions, the phonological pole of the pointing device is some articulator, such as an index finger, eye gaze, or even body orientation, and the semantic pole *directs attention*. The pointing device directs attention to the Place.

Clark (2003) described pointing and placing as indicative acts in spoken language and gesture. In pointing, speakers direct attention *to* an object, while in placing, speakers place the object they are indicating so that it falls within the addressees' focus of attention. We have extended Clark's notion of placing to include signs

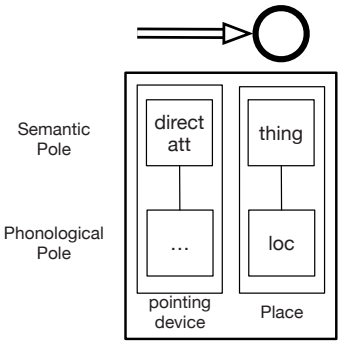

Figure 7: Pointing Construction

as linguistic objects (Martínez and Wilcox 2019). In signed language discourse, Placing can either create a Place or recruit an existing Place. When placing recruits a Place already in the discourse, it functions to create an association: by putting the phonological pole of the placed sign in congruence with the phonological pole of an existing Place, an association is thereby created between the semantic poles of the Place and the placed sign. For example, in Figure 8 the signer introduces the biography of José de San Martín, a hero of the independence of Argentina, Chile and Perú. At the beginning of the discourse, the narrator signs PERSON RENOWNED POINT "This person is renowned". A noun, PERSON, is placed at the right side of the signer, creating a new Place (a). The schematic semantic pole of the Place is elaborated by the semantic pole of the type PERSON, and the schematic phonological pole of the Place is elaborated by the location in which the hand is placed on the right of the signer. Once this person Place is created, the signer is able to refer to it in subsequent constructions.

(a) (b) (c)

Figure 8: San Martin Placing (from Martínez and Wilcox 2019)

For instance, the sign RENOWNED (b) incorporates the nominal referent "person" as a participant of an adjectival relation by directing the sign toward the Place already associated with San Martín. RENOWNED is one of a group of adjectives closely related in LSA to verbs (Martínez 2016); it profiles one focal participant, in this case, San Martín. Later in the discourse, the signer refers anaphorically to San Martín with a pointing construction directed to the San Martín Place (c).

In another example from a narrative for children presented at a zoo, a signer has already created a Place: the phonological pole is on the signer's right, and the schematic semantic pole has been elaborated by "tigers". The signer then places the sign ALONE at the phonological location of tigers. The congruence of phonological poles creates a semantic association: tigers are associated with the characteristic of living alone. The signer then performs the same placing construction on her left, the Place that refers to lions, and signs "strong family group," associating this characteristic with lions (Martínez and Wilcox 2019).

In the following sections we focus our attention on positioning the signer to present conversational interaction in narrative. We show that in certain constructions the signer is a symbolic structure which can be placed, either to create a new Place or to recruit an existing Place. Thus, the notion of placing includes not only signs but also the signer as a linguistic object. We call this construction **"placing the signer"**.

6. Summary of the Narratives

The two stories in LSA that we analyze are *Continuity of Parks* (in Spanish, *Continuidad de los parques*), and *Golden Hand* (in Spanish, *Mano de oro*).

Continuity of Parks is a short story by Julio Cortázar first published in 1956 (Cortázar 2016). Cortázar, as well as other Latin American writers of his time, created many stories that break the linear time-space stability of traditional narration. Cortázar's stories tend to move back and forth through time and space, constantly juxtaposing and superimposing different realms of experience. *Continuidad de los parques* incorporates two fictional worlds that seem to be clearly distinguished (one within the other, as a framed story), but end up being intertwined as part of the same realm of experience. The frame story presents a man who is eager to finish his duties in order to start reading a novel. He wants to escape from his responsibilities by taking refuge in his study to read. Once he achieves this goal, the second (supposedly embedded) story is presented: the story that the man is reading. This story narrates the meeting of two lovers in a cabin in the woods. The lovers carefully plan the destruction of "the figure of that other body," and then part ways to carry out this plan. The male lover goes through the woods (the parks) and ends up in the same reality of the man who is reading the novel. The shift of space from the lovers' story to the reader-character's story is subtle, and the actual reader is unable to perceive

the "continuity" of the two worlds. The reader-character becomes the victim of the lovers' plan. We examine a translation of this story into LSA by Diego Morales.[4]

Golden Hand is part of a collection of Argentine folk stories documented and registered by the Argentine linguist and writer Berta Vidal de Battini (2020). This is the story of three sisters who face several challenges posed by a dangerous man. The most difficult one arises when he arrives at their home while their father was away and asks them for a place to stay during the night. The younger sister allows him to stay in the barn, although her sisters did not have a good feeling about it. That night, the younger sister prevents the man from sneaking into their house by cutting one of his hands off while he was trying to unlock the door. The man swears to revenge this action and leaves. After this situation, he devises a plan to punish them. He appears at their place wearing a golden hand and convinces the father that he should marry the older sister and take her away. Then he invites the second sister to visit them at their home, and finally the younger sister is invited. The man kidnaps them, as well as a young prince who he also kidnapped, and forces them to stay as prisoners until the younger sister is able to rescue her sisters and the prince. The younger sister defeats golden hand and marries the prince. We examine a translation of this story into LSA by Yesica Barrios.[5]

It is important to note that while *Continuity of Parks* is an original literary work written by Cortázar, *Golden Hand* comes from an oral tradition, transmitted by word of mouth through successive generations. Full summaries of the two stories are given in Appendix 1 and Appendix 2.

7. Placing the signer in narratives

In the following sections we examine various strategies used to report interactions among signers in narratives.

7.1. Placing the signer in two-participant interactions

Our first example of placing the signer comes from the Golden Hand narrative. Prior dialogue has established a second sister Place on the left (as viewed in the figure), and the Golden Hand man is on the right. The narrator begins this portion of the narrative by explaining that the Golden Hand man and the second sister

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[4] All figures from "Continuity of Parks" (in Spanish, "Continuidad de los parques"), depicting the Argentine deaf narrator Diego Morales are from: https://youtu.be/nxR93u-21glU

[5] All figures from "Golden Hand" (in Spanish, "Mano de oro"), depicting the Argentine deaf narrator Yesica Barrios are from: https://drive.google.com/file/d/1yIDKMhg-109wli2mKBmS52_mE8wVDldhP/view?usp=sharing

are riding together in a horse-drawn carriage. The signer's body is in the narrator Place in the center of the phonological stage; her eye gaze and signing are oriented toward the viewing audience (Figure 9).

Figure 9: Signer as Narrator

In Figure 10, the narrator has been placed in the Golden Hand man Place. With his left hand the Golden Hand man keeps holding the reins of his horse; he signs with the right hand. The Golden Hand man asks: "Do you remember me? Some time ago I went to your place. There was a storm. Something happened and I lost my hand." The narrator's body moves to occupy a spatial position slightly on the right; eye gaze and signing are oriented toward the interlocutor, the second sister Place, thus maintaining the canonical interactional configuration.

Figure 10: Golden Hand Place

In Figure 11, the narrator has been placed to occupy a spatial location on the left, the second sister Place; eye gaze and signing are oriented toward the Golden Hand man Place on the right. The second sister then replies: "Hmm, you? Oh, yes, I remember you came here when there was a storm. Yes, I remember your face. You cut off your hand? I don't know anything about that, sorry."

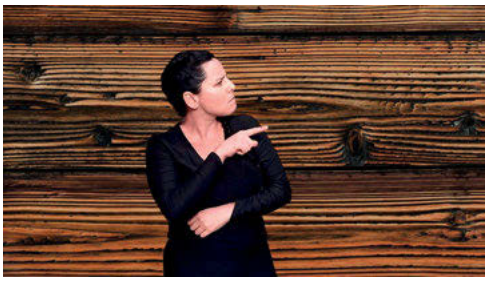

Figure 11: Sister Place

An instructional video designed to teach students of Brazilian Sign Language (Libras) how a single signer reports a two-person interactional dialogue helps to illustrate how placing the signer works. In this video the instructor, Eduardo, and his colleague, Leonardo, first present an actual signed dialogue. Although this is an instructional video and therefore is viewed by an audience of students, they demonstrate the interaction as it would actually take place with only the two interlocutors present, maintaining the face-to-face canonical interactional configuration (Figure 12).

Figure 12: Original Interaction

Eduardo then shows how the same interaction would be presented by a single narrator (Figure 13). The simplest and most realistic way for a narrator to present a two-person reported interaction to an audience would be to "act it out" by taking both "roles" on the phonological stage. This would, however, violate the visual communication maxims: it would require Eduardo to move between two locations on the phonological stage, his own and Leonardo's. Instead, Eduardo as the narrator remains in one location on the phonological stage. By changing the orientation of his body, the narrator alternately assumes the role of Eduardo or Leonardo.

Figure 13: Narrated Interaction

A diagrammatic representation of the real two-person interaction and the strategy in which the signer is placed is depicted in Figure 14. The top portion (A) shows the original interaction with Eduardo (E) on the right and Leonardo (L) on the left. The construction in which the signer is placed to express the reported interaction is depicted in the lower portion (B). When Eduardo as narrator presents Eduardo's utterances in interaction with Leonardo, he rotates his orientation slightly to his right, indicating that he has assumed Eduardo's Place. Virtually-present Leonardo assumes a position directly in front of Eduardo to maintain the canonical interactional configuration. When presenting Leonardo's utterances directed to Eduardo, Eduardo as narrator changes orientation in the opposite direction, thus indicating that the narrator has occupied the Leonardo Place; in doing so, he takes the role of Leonardo. Eduardo, as a virtual addressee, now assumes a position in front of Leonardo to maintain the canonical interactional configuration. Thus, the overall scene is presented with Eduardo "playing" himself and Leonardo, who are both alternatively presented as virtual versions of themselves (represented by the dashed circles).

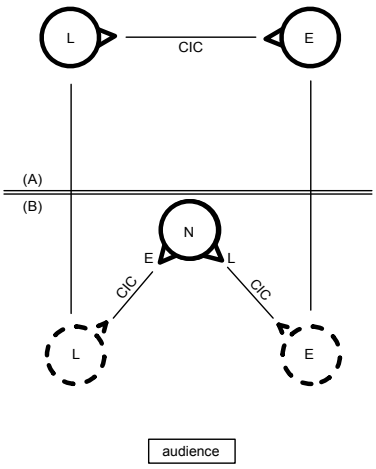

Figure 14: Placing the Signer Construction

At first glance, the scene as we depict it in Figure 14 seems odd. Although there are only two people involved, the configuration in the bottom portion of the figure depicts three spatial locations: one in the middle (representing alternatively both Eduardo and Leonardo) and the two locations hosting virtual addressees. A symbolic analysis using Place and placing-the-signer resolves this apparent puzzle. There are, of course, only two people involved in the original interaction. There is also, in the narrative retelling of the interaction, a narrator. In this case, the narrator is Eduardo, but in an actual narrative the narrator could well be some other person, neither Eduardo nor Leonardo. These two actual interlocutors are Place symbolic structures — Eduardo on the right of the figure and Leonardo on the left. The narrator is also a symbolic Place structure; in narratives the narrator Place has a conventional phonological location. When the interaction is reported, the narrator alternately assumes two Places. That is, in this placing construction the phonological pole of the narrator Place is placed in congruence with the phonological pole of the Eduardo Place. In so doing, the placing construction creates an association between the semantic pole of the narrator and the semantic pole of the Eduardo Place. In non-technical terms we would say that the narrator "becomes" Eduardo. Of course, in this case the narrator is Eduardo, and so what does it mean to say "Eduardo becomes Eduardo"? For one thing, Eduardo as narrator is physically and temporally present. Eduardo in the narrated interaction was not physically located in the current spatial location, and the interaction took place at a temporally prior time. The narrator then places his body in congruence with the phonological pole of Leonardo. The change in orientation of the body signals the change to the Leonardo Place. As before, in placing the narrator at the phonological pole of the Leonardo Place, a conceptual correspondence between the narrator Place and the Leonardo Place is created: in non-technical terms, the narrator now conceptually "becomes" Leonardo.

Thus, in this instructional video we see the relation between a real two-person interaction and how a single narrator reports the interaction, maintaining the canonical interactional configuration while also abiding by the visual communication maxims. As it appears in the Golden Hand narrative, the placing construction closely aligns the phonological pole of the narrator with the phonological pole of the Golden Hand man. This conceptually maps the semantic pole of the narrator onto the semantic pole of the Golden Hand man. The narrator then uses the same placing construction to map the Place of the narrator onto the Place of the second sister.

Because the Golden Hand narrative has a more dramatic style, the placing in one phonological location is less pronounced than the Libras instructional video. In Section 7.2, from *Continuidad de los parques*, the three-person narrative more closely uses the canonical placing construction.

7.2. Two-participant interaction with three people

The previous examples show how the placing the signer construction is used to present two-participant interactions in reported narrative. Here we show the use of this construction when one main character interacts with two different participants. The data come from *Continuidad de los parques*.

Prior to this example, the signer as narrator has introduced the main character of the story, a man who is going by train back to his house, eager to finish his duties in order to continue reading a novel he has already started. The man arrives home and has interactions with two of his employees: his lawyer and the majordomo or main house worker. The narrator explains that the man writes a letter for the lawyer. Then, in example 3, the man directly addresses the lawyer on the signer's right (Figure 15). He says, "Take this. I'm giving you this letter. You are in charge of this."

A placing construction first is used to conceptually map the signer to the main character in interaction with the lawyer. As we have seen, this construction is expressed by orienting his body, in this case towards the right, and directing his eye gaze towards that same location. This also creates a lawyer-Place on the right.

Figure 15: Interaction with Lawyer

The signer then changes orientation, directs his eye gaze towards a location on his left, and addresses the worker, thus creating a worker Place (Figure 16), saying, "Come here. Is the fieldwork over there finished or not?"

Figure 16: Interaction with Worker

As in previous examples, the signer alternately occupies two Places symbolizing the man's interaction with the lawyer and the worker. Once again, the spatial location of the man's Places, their phonological poles, are the same — it is the change in orientation that signals the narrator occupies two distinct Places. It is important to note that the change in orientation does not mean that the man is physically orienting to two interlocutors who are both present at the same place and time. Although three people are involved, the interactions only take place between two participants at a time. In the narrated story, the man interacts with the lawyer and the worker in two different physical locations and at two different times. By placing the narrator in two different Places (signaled by orientation), the construction maps the narrator onto two distinct instances of the man. In one instance, the man interacts with the lawyer. In the other instance, which occurs in a different location and at a different time, the man interacts with the worker. As we have seen, discourse is composed of bipolar usage events consisting of conceptualization and expression. A usage event evokes the full context of the utterance, including the pragmatic circumstances of the ground such as place and time the event occurred. These pragmatic circumstances are elements of the semantic pole of the Places created and recruited by placing the signer constructions.

These Place structures can be subsequently recruited in other constructions, such as pointing constructions (Wilcox and Occhino 2016) or agreement verb constructions. For example, in interaction with the lawyer (Figure 15), the signer recruits the man and the lawyer Place structures in an agreement verb construction GIVE-TO. We adopt a cognitive-functional analysis of agreement verbs (Wilcox and Martínez 2020). Specifically, we treat agreement as multiple symbolization, a special case of conceptual overlap characteristic of all grammatical constructions

(Langacker 2009). GIVE-TO incorporates two Place structures. Each is comprised of schematic semantic elements: the agent of the giving action, and the recipient. Each structure also has a schematic phonological pole: the agent structure is the initial Place, and the recipient structure is the final Place. These two components are mapped onto and elaborated by two specific Place structures. The agent role conceptually overlaps with the man, phonologically represented by the signer's body.[6] The recipient role conceptually overlaps with the lawyer as elaborated by the previously created lawyer Place. The same agreement construction is seen in Figure 8(b); the only difference is that in this construction the multiple symbolization involves an adjective. Here, the final position of the sign RENOWNED is a schematic Place, which is elaborated by and thus conceptually overlaps with the previously specified San Martín Place.

7.3. Two-participant interactions: Moving the audience onstage

In terms of the phonological stage, previous examples have adopted a default viewing arrangement. The signer occupies a location on the phonological stage. The signer places her body phonologically to map conceptually onto the narrator and character roles — that is, the signer assumes the perspective of these other conceptualizers. The audience has remained offstage as non-participant observers of the onstage narrated scene.

The last strategy we present is a two-participant interaction from *Continuidad de los parques*. This scene depicts an interaction between the two lovers in the story that the man is reading. Prior to this excerpt, the narrator has said that the male lover was running through the woods, and the limb of a bush scratched his cheek. The female lover was already waiting for him. Looking straight ahead into the camera (i. e., the audience) the narrator signs WOMAN LOOK-AT. Then, in Figure 17, the woman signs "Why do you have a scratch on your cheek?" In this portion of the scene, the narrator has taken the perspective of the woman; because the narrator-as-woman directs the question towards the audience, we know that the audience has assumed the role of her lover. In Figure 18, the alternation occurs: the narrator takes the perspective of the man, and the audience takes the perspective of the woman. The man pushes the woman back, looks at the audience-as-woman and says: "Stop kissing me on the cheek."

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[6] A related observation has been made that in iconic signs "the signer's body consistently represents one argument of the verb, the subject" (Meir et al. 2007: 531). Our placing construction approach offers a more general account of the grammatical and discourse functions of the signer's body.

Figure 17: Lovers Interaction (woman)

Figure 18: Lovers Interaction (man)

Unlike the previous examples, in this case the narrator's body is oriented straight ahead, and his eye gaze is directed at the camera, thus at the viewing audience. Although this scene depicts two people in interaction, there is no body orientational change indicating the placing of the interlocutors. We know who is who in the interaction because of what they say. In using the placing construction, the narrator recruits the two basic Places of a narrative, the narrator Place and the audience Place. The narrator and the audience have conventional, specific phonological poles (the former is the location of the actual signer; the latter, the location of the camera). These two Places are then mapped onto the two lover's Places, each assuming the canonical interaction configuration with their interlocutor. Just as in the other strategies, the narrator must assume both roles. As he does this, alternating between the man and the woman, the audience also alternates between the two interlocutors — that is, the narrator and then audience Places are alternately conceptually mapped onto the man and the woman. In doing so, the placing construction moves the audience onto the phonological stage as a participant in the interaction. This is further evidenced by the fact that there is explicit reference to the participants of the interaction with pronouns and verbs that recruit these Places. For instance, in Figure 17 the narrator-as-woman recruits the interlocutor's Place

(the audience-as-man) for the second person pronoun 'you'. In Figure 18 the narrator-as-man pushes outward and signs STOP directed at the interlocutor, recruiting the audience-as-woman Place as an argument.

This strategy of placing the audience onstage has a dramatic effect, since the audience "becomes" the characters within the interaction.[7] The audience "sees through the eyes" of one of the characters and thus feels included in the dialogue. This is an especially appropriate literary choice made by the translator, since Cortázar's story aims at blurring the supposedly clear-cut boundaries among different realms of experiences. Just as the different realities in the story have a continuity and intertwine, the translator of the LSA version blurs the discontinuity between the viewing audience and the onstage action.

8. Fictive interactions

We have shown that placing the signer constructions are used in narratives to indicate changes in character perspective. By placing the signer in the Place conventionally associated with the narrator, for example, the signer is conceptually mapped to the narrator. The same process occurs for mapping the narrator to character roles, and even for mapping the viewing audience to a character role, as we saw in the lovers excerpt. In translating *Continuidad de los parques* Morales used placing constructions as a literary strategy to enact interactions between characters. However, these reported communicative interactions do not appear in the original Spanish story: while we know that the characters in the story had communicative interactions, no reported speech occurs in the original text. Just as Tannen observed that "reported speech" is in fact constructed, here the words and expressions used in the LSA translation are entirely constructed by the translator. In this case, constructed dialogue begins to merge with fictive interaction.

As we discussed in the Introduction, *fictive interaction* is commonly used by speakers and signers to express discourse or grammatical functions, including marking evidentiality, relative clauses, topicality, conditionals, focus, and connectivity. We note that these fictive interactional strategies rely on the same formal properties we have discussed, including changes in body orientation, body leaning, and eye gaze change towards the addressee Place. Fictive interaction in signed discourse is thus a type of placing the signer construction.

[7] The effect is thus akin to "breaking the fourth wall" which occurs when the convention that the actors on stage remain separated from the audience is violated, such as by directly referring to the audience.

9. Conclusion: The conceptualization of space in narrative and discourse

In this chapter, we have examined how communicative interactions between multiple participants are presented in narrative. The formal expression of these narrative and discourse strategies in terms of change in body orientation and eye gaze, commonly known as role shift (Padden 1986), has been described in the sign linguistics literature. However, little has been said about how space is used semantically to conceptually map one discourse participant onto another, virtually present participant. As well, no account unifying the reporting of actual dialogue, fictional dialogue, and fictive interactive dialogue has been offered.

Previous research (Martínez and Wilcox 2019; Wilcox and Martínez 2020) has examined the function of placing constructions in which signs are located in space. In this chapter we have shown that the signer may also be placed in narrative reporting of communicative interactions. In this case, the placing construction evokes a phonological stage on which the signer and interlocutors occupy locations — the phonological poles of these actors as linguistic entities. Placing brings into congruence the phonological pole of a signer with the phonological poles of other participants, virtually present as Place symbolic structures, thereby putting the semantic poles of the Place structures into correspondence: the signer is conceptually mapped to another participant in the reported interaction, establishing referential identity between the two. In common parlance, the signer "becomes" another person for the purpose of "speaking as the other person." We have also seen that these same placing constructions are used to express fictive interactions which serve a variety of semantic, grammatical, and discourse functions.

The spatial environment in which signed discourse is expressed is, in a real sense, the stage on which placing constructions play out. Placing is a manifestation in actual space of the conceptual metaphors SIMILARITY IS PROXIMITY and RELATEDNESS IS PROXIMITY. In spoken language such metaphors are entirely conceptual, as in the expression "*Her hair is very near to his in color"*: the color of her hair is close to the color of his hair in some conceptual color space, but not in phonological expression. While conceptual proximity certainly pertains to signed languages, proximity is also a property of the expressive channel of signed languages. Proximity is phonological. Signs are placed in spatial proximity with other signs, and in reported interactions signers are placed in spatial locations to establish referential identity between participants. Placing constructions are yet one more way in which the grammars of signed language incorporate space and spatial locations in both their form and their meaning.

Appendix 1: *Continuidad de los parques*

The story presents a man who, after completing some "urgent business," is eager to go back to his home to continue reading a novel. He had already started reading it, and he was growingly attracted to its plot. Once he arrives in his house, he talks to two employees about their duties and then he goes to the studio, a quiet place where he felt comfortable. He sits in a green velvet armchair, where he is finally able to continue reading the novel. We are then introduced to the content of the novel the man is reading: a story of two lovers, a man and a woman, who meet in a cabin in the middle of the woods. The man goes through the woods, where he scratches his cheek, and goes into the house, where he meets the woman. These lovers are not there to "repeat the ceremonies of a secret passion", but to plan the destruction of what the man calls "the other body". The man has a dagger in his coat. After devising a meticulously arranged plan, the lovers go on separate ways. The plan is perfectly carried out: the dogs were not supposed to bark, and they don't; the main servant was not supposed to be there at that time, and he wasn't. The man reaches the first floor and enters a room. He pulls the dagger out and approaches a green velvet armchair, where a man is reading a novel.

Appendix 2: *Mano de Oro*

Golden Hand is a folktale about three sisters who live with their father. The father had to go on a trip and left them alone for some days. While their father was away, a handsome man appeared at their home and asked them whether they could give him a place to stay. While the older sisters said no, the younger allowed him to stay at the barn. That night there was a storm. Unable to sleep, the younger sister got up and started sewing. In the middle of the night, she saw a hand trying to open the lock of one door. Very frightened, she took a knife and cut off the hand. She heard a loud scream and a voice swearing to revenge this action. The next day, they realized that the man was no longer there.

Their father returned home some days later, and soon after that they received a man with a golden hand who asked for a place to stay. During dinner, the man said he was looking for a wife, and he asked the father whether he could marry one of his daughters. Since the man with the golden hand was well dressed and seemed wealthy, the father accepted, thinking it was a good opportunity for the family. The man with the golden hand ended up marrying the older sister. Some days later, the second sister was invited to stay at the newlywed couple's home. During the ride to this place, the man with the golden hand asked the second sister whether she remembered him, and whether she knew what had happened with his hand. The second sister said that while she did remember him, she knew nothing about the problem he had. Once she arrived at the place, she found out that the older sister as well as a young man were kept as prisoners in a locked room.

Some days later, the man with the golden hand invited the younger sister to stay at their home. During the ride to this place, he asked the same questions to the younger sister. She recognized she was the one who cut his hand off. When they arrived at the place, she discovered that her sisters and a young man were held prisoners. The young man said he was a prince and promised to marry her if she were to rescue him. The younger sister was able not only to rescue the prince, but also her sisters, and they all arrived at the palace. Even though the palace was heavily guarded, the younger sister suspected that the man with the golden hand still wanted to avenge her, so that night she put tinkle bells around her bed. Previously that day, she had seen that one of the palace dogs was strangely big. That happened because the man with the golden hand was hidden inside the dog. During the night, the man got out of the dog and approached the bed where the younger sister was sleeping, but the noise of the bells awakened her, and also let the guards know that there was something wrong inside the bedroom. The guards entered the bedroom and killed the man.

Finally, the prince and the younger sister got married. Everybody in town loved their new princess, who saved the lives of the prince and her sisters.

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4. Spatiality in written texts

Christoph Schubert

Abstract: In the textual description of locative configurations, the three spatial dimensions are projected onto the one-dimensional linear sequence of linguistic signs. Two principal linearization strategies are the driving tour in which the reader is dynamically guided through the locations and the gaze tour during which the reader's vantage point remains static. In cognitive semantic approaches to spatial representation, locative expressions are analyzed by means of abstract image schemas relying on configurations of landmark and trajector. The continuity of locative expressions in descriptive texts results in a densely knit spatial texture based on grammatical and lexical cohesive ties, which fulfill specific discursive functions in the constitution of space. On the basis of these premises, this chapter presents a qualitative case study of spatial descriptions in a selection of English-language travel guidebooks and websites on the urban space of London. The travel genre is highly salient to spatiality in written texts since it offers detailed accounts of the most important sights as well as directions on how to locate them in real-life contexts. As is demonstrated, locative image schemas in travel guides sequentially constitute a spatial network characterized by increasing specificity. While the driving tour is the default strategy in travel guides, a gaze tour occurs whenever travelers cannot physically move through the scene. As regards genre-dependent texture, lexical cohesive ties serve the characteristic discursive functions of spatial specification, expansion and juxtaposition.

Keywords: linearization, locative image schema, descriptive text type, gaze tour, driving tour, spatial texture, cohesion, travel guide

1. Introduction

In contrast to three-dimensional space, the chain of verbal signs represents a one-dimensional line on the two-dimensional layout of a written page of text. Consequently, whenever locative configurations are verbally described, the three spatial dimensions need to be projected onto the linear sequence of words and sentences (Levelt 1989: 138). Spatiality in texts thus depends on specific "linearization strategies" (Levelt 1996: 101), which are governed by various factors, such as the shape of the object under description or desired pragmatic functions of the respective discourse genre. While spatial arrangements in real-life contexts can be immediately perceived in their entirety by viewers, the words in a written text

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are necessarily decoded consecutively by readers. This means that space is verbally represented by a sequence of small cognitive "windows" (Levinson 2003: 32) which are metaphorically opened for readers to imaginarily look at the described spatial scene during text processing and comprehension.

In contrast to spoken discourse on spatial configurations (see Heller this volume and Filipi this volume), the written medium is subject to specific characteristics (Biber and Conrad 2019: 300–304; Biber et al. 2021: 1035–1046) which in turn have an impact on spatial description. Regarding the processes of production and comprehension, written communication does not take place in real time, so that both writers and readers have sufficient time at their disposal to encode and decode more intricate spatial scenes on the basis of more complex syntactic constructions. In contrast to spoken interaction, writers and readers do not share the same situational context, so that references to a common spatial environment are usually rare. Hence, more explicit descriptions can be expected, which is also supported by the fact that in monological written discourse no inquiries or other forms of interaction are possible. The written medium lacks the acoustic possibilities of spoken communication but offers other multimodal options of spatial representation (Bateman 2014: 5–28), such as illustrations in the form of images and pictures.

Research on the verbal representation of spatial configurations greatly gained momentum in the 1990s, as prominently underlined by the essay collections edited by Bloom et al. (1996), Pütz and Dirven (1996) and Olivier and Gapp (1998), all of which are located at the interface of linguistics and spatial cognition. Apart from English, which is under investigation in the present chapter, these volumes cover a wide range of additional languages, such as Japanese, German, Afrikaans, and Polish. After the turn of the millennium, the cognitive-linguistic line of research was continued by major collections edited by van der Zee and Slack (2003), Hickmann and Robert (2006), Evans and Chilton (2010) and Paradis, Hudson and Magnusson (2013). These volumes mainly deal with issues of typology, universals, and the general relationship between language and spatial cognition from a cross-lingual perspective, including English, Finnish, French, Chinese, Japanese, German, and Danish, to name but a few. In addition to these collections, there are also authored monographs, such as Levinson (2003), juxtaposing repertoires of spatial representation in diverse languages such as Tzeltal in Mexico, and Schubert (2009), combining spatial description with the discourse-analytical concept of cohesion in English. The cognitive and contrastive perspectives are continued by more recent publications, such as Tenbrink et al. (2013) on empirical and computational approaches to spatial cognition and their practical applications, Thiering (2015) on spatial mental models in selected endangered languages like Dene in Western Canada, and Tutton (2016) on the multimodal interplay of locative expressions and gesture in French and English. It will be further underlined by the present chapter that an integrative approach drawing from discourse pragmatics and cognitive lin-

guistics is highly appropriate for the study of spatial representation with a focus on English texts.

From the perspective of cognitive semantics, the representation and comprehension of space strongly relies on so-called "image schemas", which are defined as "*structures for organizing* our experience and comprehension" (Johnson 1987: 29, original emphasis). They are derived from human interaction with the physical environment and are conceptualized as configurations of landmark (LM) and trajector (TR), as exemplified by the container schema in the sentence *Fred* (TR) *went out of the room* (LM) (Evans 2010: 43–44). Texts representing a spatial scene can thus be analyzed as a succession of locative image schemas which are in turn textually linked by means of grammatical and lexical cohesive ties (Halliday and Hasan 1976: 3; Halliday 2014: 603). On the basis of these premises, this chapter investigates strategies of spatial description and linearization in written English with regard to their communicative functions.

The first part of this chapter provides an overview of pivotal theoretical approaches to the representation of space in discourse, focusing on strategies of linearization, cognitive-semantic image schemas, and spatial cohesion from a discourse-analytical vantage point. In order to illustrate and exemplify these concepts, the second part presents a qualitative case study of spatial description in three printed travel guides and two travel websites on the urban space of London. The travel genre is particularly relevant to spatiality in written texts since it offers directions to readers by pointing out and describing sights and places of interest. The study concentrates on the verbal sections of the multimodal travel guides and refers to images only in case they are necessary for contextual comprehension.

2. Approaches to spatial description in written texts

The three subchapters in this section review relevant literature to provide an outline of decisive strands in the study of the discursive description of space: linearization strategies (Section 2.1), locative image schemas (Section 2.2), and spatial texture and cohesion (Section 2.3). The integrative discussion of these three approaches forms the theoretical foundation for the subsequent study of spatial description in travel guides.

2.1. Spatial linearization

Whenever spatial phenomena are verbally described, the "*linearization* problem" (Levelt 1989: 138; original emphasis) implies that relevant pieces of locative information need to be arranged in a consecutive order. In the case of written texts, the reader's eye follows the lines on the paper, gradually constituting a spatial scene in the recipient's mind based on the process of "visual imaging" (Esrock 1994: 16).

The specific linearization strategy chosen by the text producer can depend on a number of different parameters: the verbal representation is "iconic" (Wenz 1996: 273) if the order of description reflects the locative configuration or shape of the object(s) that are linguistically portrayed. Linearization here relies on the *ordo naturalis* principle, which can be paraphrased as "[a]rrange information for expression according to the natural order of its content" (Levelt 1989: 138). While in the case of temporal succession this can easily be achieved by adhering to chronological order, iconicity in spatial representation implies that the words follow, for instance, the architectural structure of a selected building or square in a city.

Alternatively, linearization may not simply mirror the natural outline but may be guided by more specific pragmatic functions and discursive effects, in accordance with the genre in which the spatial description occurs. For instance, in geographical texts the selection of linearization is distinctly purpose-based, since "for a road map, different items will be selected than for a meteorological map" (Ullmer-Ehrich 1982: 218). In detective fiction or the crime genre in general, spatial description may raise an expectation of an impending event but may at the same time hold back the required locative information, so that thrilling suspense can be triggered (Schubert 2009: 427). Furthermore, linearization may be influenced by cognitive factors during the production and reception of spatial representation. Since the working memory of recipients is limited (Levelt 1989: 159), descriptions can be simplified, for example, by repeatedly returning to pivotal points in the scene. Linearization may also rely on acquired cognitive schemata that are typically used in specific tasks of spatial representation, such as describing the lay-out of an apartment (Linde and Labov 1975: 924). In some cases, depictions of space may be influenced by the ways in which the text producer originally acquired knowledge about the spatial scene, for instance, during a hiking trip that is afterwards outlined (Herrmann and Schweizer 1998: 176–177).

While these are the main factors influencing linearization, the spatial perspective taken by the text producer during the descriptive process can result in two fundamental linearization strategies. On the one hand, the viewer's perspective may be static, so that the spatial configurations are described from a fixed vantage point. This equals a "**gaze tour**" (Levinson 2003: 32, original emphasis) in which the viewer's gaze moves over the scene during the description. Research on descriptions of living space has shown that if a single room is portrayed by informants, "[o]nce reference place and reference orientation have been specified, the furniture arrangement in a room is described as an imaginary *gaze tour* along its walls" (Ullmer-Ehrich 1982: 231, original emphasis). On the other hand, the adopted perspective may be dynamic, which means that the viewer imaginarily moves through the spatial situation in a "**'driving' tour**" (Levinson 2003: 32, original emphasis), also called a "body tour" (Levelt 1989: 154) or "walking tour" (Ullmer-Ehrich 1982: 234). Along these lines, readers of travel guides can be dynamically led through locations such as museums or inner cities and are thus projected into the spatial scene.

Accordingly, a seminal study on the description of the lay-out of entire apartments by New York City residents demonstrated that text producers take recipients on an "imaginary tour" (Linde and Labov 1975: 929), giving information on paths by which the individual rooms can be reached and entered. Similarly, a study on German route descriptions in urban spaces showed that they also usually manifest themselves in the form of "an imaginary wandering, or tour along the route" (Wunderlich and Reinelt 1982: 185), connecting the point of departure with the final destination. One major advantage of the driving tour is that it "seems intuitive because it reflects our direct experiences navigating through the world" (Taylor and Brunyé 2013: 13). In terms of lexical semantics, gaze tours commonly rely on verbs and adverbials expressing static locative meaning, whereas driving tours typically make use of motion verbs and directional adverbials (cf. Ullmer-Ehrich 1982: 234). These relatively general lexical semantic tendencies, which are based on German data in this study, can be transferred to English living space descriptions as well. This assessment is supported by the cognitive psychologists Herrmann and Schweizer (1998: 16), who claim that the basic structures of spatial representation, which they also illustrate with German examples, are valid to a large extent across languages.

As far as the medium of transmission is concerned, early research on spatial representation was commonly based on spoken descriptions of living environments or route directions in the form of interviews (Linde and Labov 1975; Ullmer-Ehrich 1982; Wunderlich and Reinelt 1982; Levelt 1989). However, subsequent studies have shown that the distinction of driving and gaze tour can be fruitfully applied to written texts as well (Schubert 2009: 128–132) and that these linearization strategies occur in genre-dependent manifestations. For instance, English travel guides show characteristic techniques of linearization (Enkvist 1991; Wenz 1996, 1997; Ramm 2000), which will be discussed in more detail below (see Section 3.1).

The two basic possibilities of linearization are closely related to the three fundamental frames of spatial reference, which can be deictic (also called "relative"), intrinsic, or absolute (Levinson 2003: 35; Levelt 1996: 82). The deictic frame uses the viewer's location as the origin of all localization, based on the three orthogonal coordinates defined as the vertical, frontal and lateral axes (Tutton 2016: 18) (see Auer and Stukenbrock this volume on deictic reference in space). In the intrinsic frame, spatial expressions rely on the internal orientation of another object in the same scene, such as a bus or a church, as in *The dog is in front of the bus*. Finally, the absolute frame is founded on superordinate and fixed orientation provided by gravity or geographical compass directions. In a gaze tour, the viewer is immobile and located outside the scene under description, so that the deictic center is static. In contrast, a driving tour includes a dynamic viewer travelling through space, so that the deictic center is shifted accordingly, with corresponding effects on space adverbials. Locative expressions referring to the absolute frame (e. g. *north* or *east*) are independent of the choice of gaze or driving tour, while

place relators based on the intrinsic frame of reference may be affected by linearization, since relevant objects with an intrinsic orientation may enter or leave the viewer's perceptual space during a driving tour. As demonstrated by Levinson (2003: 314–316), the three basic frames of reference are used to varying degrees by languages across the world, which indicates culture-related diversity in spatial cognition. The case study in the present chapter, however, restricts itself to spatial representation based on written texts in English.

2.2. Locative image schemas

After early generative semantic approaches to locative adverbials (e. g. Daswani 1969), cognitive linguistics became the key discipline for the examination of language and space. Accordingly, "space grammar" (Lindner 1983: 77; Langacker 1987b: 55) was established as the foundation for the study of verb-particle constructions with a locative meaning and was subsequently used for the analysis of locative and directional prepositions in English (Herskovits 1986). Cognitive linguistics additionally drew from Gestalt Theory within the psychology of visual perception, which established the fundamental figure-ground distinction (Eysenck and Keane 2015: 86). This dichotomy can be fruitfully employed for the description of spatial prepositions in sentences such as *The book* (figure) *is on* (locative expression) *the table* (ground).

> Prototypically, the speaker intends to inform the addressee of the location of the **located object** (or "**Figure**;" referred to in the subject position of the locative expression); and the addressee either knows the location of the **reference object** (or "**Ground**;" referred to in the object position of the locative expression) or could easily discover it. (Herskovits 1988: 274, original emphasis).

While the ground is usually fixed, comparatively larger and more complex in its shape, the figure is a visual stimulus that is movable, smaller, and formally simpler (Thiering 2015: 29). In cognitive semantics, such configurations form the basis of image schemas, seminally established as "gestalt structures, consisting of parts standing in relations and organized into unified wholes, by means of which our experience manifests discernible order" (Johnson 1987: xix). As such, they are pre-linguistic "construals of experience" (Croft and Cruse 2004: 45), which support the processes of producing and comprehending spatial configurations. The term "schema" here implies that they are very basic and abstract and thus neglect all information that is not absolutely essential (Hampe 2005: 1). Image schemas are understood as general cognitive strategies of spatial cognition so that they are principally independent of the medium, shaping the representation of space in both spoken and written discourse. Since prepositions in collocation with verbs often convey movement in space, the terms "figure" and "ground" were replaced in cognitive semantic approaches with the terms "trajectory" (TR) and "landmark" (LM),

while the route of a mobile TR in relation to the LM is called its "trajectory" or "path" (Langacker 1987a: 217, 2013: 70; Evans 2010: 31–32). This was famously exemplified by George Lakoff (1987: 419–425) with regard to the 'above-across' sense of the preposition *over* in sentences such as *The bird* (TR) *flew over* (PATH) *the wall* (LM), here graphically displayed in Figure 1.

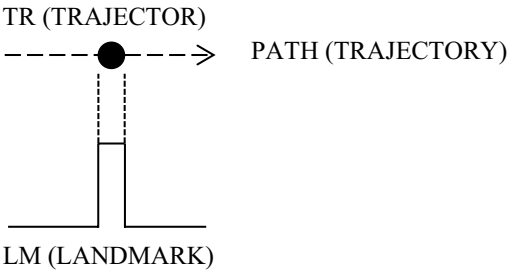

Figure 1: The image schema OVER in *The bird flew over the wall* (Lakoff 1987: 421)

While the stable LM acting as a reference point is marked by a solid line, the path of the mobile TR, here realized as a black dot, is indicated by a broken arrow. The dotted line above the LM visualizes its vertical extension and thereby underscores that the TR is not in direct contact with the LM but only stands in a specific spatial relationship with it (Tyler and Evans 2003: 9–10). As far as the use of image schemas in discourse is concerned, LMs play a decisive role in route descriptions, since they can be processed more easily by recipients than details about distances or directions (Tversky 2003: 132–143).

In order to combine image schemas with the perspectives of viewers and the two linearization strategies, the graphic display can be elaborated with the help of additional features (Schubert 2006: 49–65, 2009: 123–126), as shown in Figures 2 and 3. The horizontal and the vertical axes clearly indicate the position of the schema in three-dimensional space. The implied viewer is schematically displayed in the form of a camera icon, in line with Daniel Arijon's *Grammar of the Film Language* (1991: 34–35). The location that serves as the spatial scene is marked by a dotted circle, indicating whether the viewer is inside or outside the depicted scene. Thus, in the case of a gaze tour, the static viewer is located outside the scene, while the viewer's mobile gaze is symbolized by the path of the TR, for instance, if the viewer watches the bird flying over a wall (Figure 2). On the other hand, if a driving tour is performed, for example, by the viewer jumping over a wall, the dynamic viewer is located inside the scene and thus plays the role of the TR, here indicated by the black dot inside the camera icon (Figure 3).

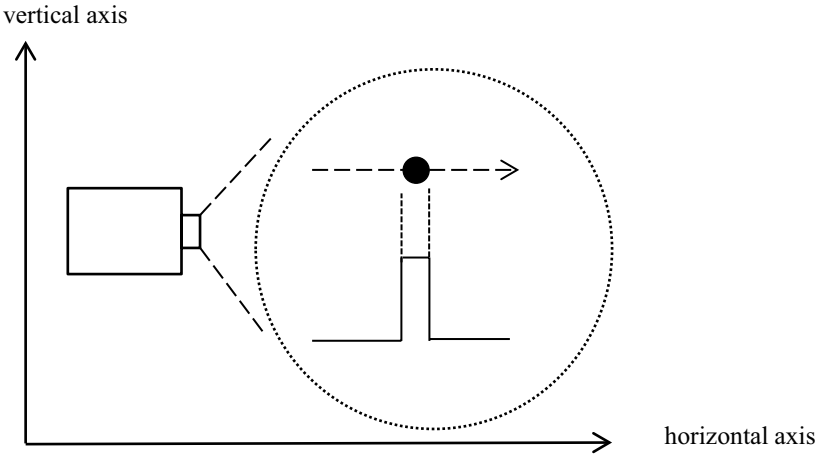

Figure 2: The elaborated image schema OVER with gaze tour

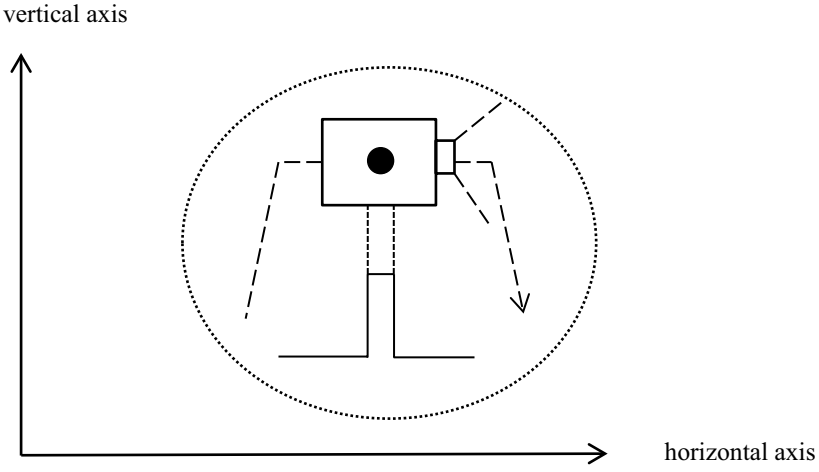

Figure 3: The elaborated image schema OVER with driving tour

From a cognitive-linguistic perspective, three-dimensional space constitutes a basic "domain" (Langacker 1987a: 150) in the sense of general background information and thus acts as a base against which specific items can be verbally profiled. Based on the assumption that grammatical categories such as word classes reflect conceptualizations (Tenbrink 2020: 64–65), LM and TR form "regions" or "things" in the spatial domain and are profiled by nouns and pronouns. While "things" are defined as concrete physical entities, a "region" denotes "a set of interconnected entities" (Langacker 1987b: 62), such as several works of art on display in a museum. In contrast, the PATH indicates a spatial relation between

TR and LM and is therefore profiled by prepositions, full verbs, adverbs, and adjectives (Langacker 2013: 104–112; Taylor 2002: 221; Ungerer and Schmid 2006: 195). For example, the preposition *up* expresses a spatial relation on the vertical axis based on a specific configuration of TR and LM, which can likewise be profiled by vector verbs such as *ascend* and *rise*, by dimensional adjectives such as *tall* or *high*, and by the adverb *up*. Analogously, the opposite vertical direction can be profiled by diverse word classes as well, such as *down* as adverb or preposition, adjectives such as *low*, and verbs like *drop* and *descend* (Schubert 2006: 51–52).

Although different word classes may basically profile the same spatial configuration, they differ in their specificity. For instance, the prepositions *above* and *below* convey quite general spatial relations, while motion verbs such as *soar*, *climb*, *dive* or *plunge* additionally express details of the manner or speed of the movement (Talmy 2000b: 28). Moreover, in contrast to general prepositions such as *behind* or unidirectional verbs like *fall*, "[p]repositions such as *around* and *along* and verbs such as *circle*, *oscillate*, *weave*, and *zigzag* encode what may be called **path shapes**" (Bohnemeyer 2003: 108, original emphasis). Different word classes are furthermore related to the ways in which the human mind processes spatial information. On the one hand, there is the possibility of "summary scanning", which means that the spatial scene is represented in the recipient's mind as a whole, while "sequential scanning" implies that the consecutive steps of a spatial event are individually conceptualized without a representation of the scene in its entirety (Langacker 1987a: 145, 2013: 111). Thus, summary scanning is typically connected with nouns such as *collapse* in *The collapse of Boston Bridge* and can be compared to a look at a photo, while sequential scanning is realized by the verb *collapse* in *Boston Bridge collapsed* and can be compared to watching a film (Croft and Cruse 2004: 53–54).

As regards texts offering spatial description, it has been shown that "the most efficient route directions are those which closely connect actions to landmarks" (Denis and Fernandez 2013: 47), which is achieved by combining nouns with motion verbs. Throughout a descriptive text, cognitive regions and relations consecutively add up to a mental network (Ungerer and Schmid 2006: 198–199), in which the individual items closely interact and thus constitute a complex spatial arrangement. The micro-paths conveyed by the individual image schemas in single sentences all contribute to a coherent spatial macro-path at the textual level, such as a circular or a top-down route.

Image schemas play an important part in the description of motion events in space. As far as the PATH is concerned, specific positions of the TR may be either explicitly profiled or backgrounded (Tenbrink 2020: 96–97), which results in cognitive windows of attention.

> Linguistic forms can direct the distribution of one's attention over a referent scene in a certain type of pattern, the placement of one or more ***windows*** of greatest attention over the scene, in a process that can be termed the ***windowing*** of attention. In this process, one or more portions of a referent scene […] will be placed in the foreground of attention while the remainder of the scene is backgrounded. (Talmy 2000a: 258)

In a "***path event-frame***" (Talmy 1996: 244; original emphasis), which construes the movement of a TR in space, locative expressions may fulfill the functions of opening or closing attentional windows on the scene. Depending on the position of the TR within the PATH, space adverbials may realize different forms of "***path windowing***" (Talmy 1996: 244; original emphasis), as exemplified by the following descriptive sentence: *The crate that was in the aircraft's cargo bay fell* (1) *out of the plane* (= initial windowing) (2) *through the air* (= medial windowing) (3) *into the ocean* (= final windowing) (Talmy 1996: 245). In case one of these slots is unfilled, the respective window is backgrounded by means of so-called "path-gapping". This model, which is here introduced on the basis of a single sentence, may also be projected onto the textual level of written discourse: during the linear progression of the text (see Section 2.1), the viewer's imaginary mobile gaze is directed through the given scene by image schemas that open windows of attention. Thus, by foregrounding selected spatial items, an empty scene is gradually filled with items and locative relations between them. Usually, it is not necessary for a text to specify all details of a spatial scene, since most recipients are able to cognitively fill in empty slots with the help of frames and scripts stored as configurations of knowledge in their long-term memory (Ungerer and Schmid 2006: 207–218). For instance, the frame related to the concept *church* includes characteristic slots such as an altar, benches, a center aisle, and a spire, which may or may not be filled in an architectural description provided by a travel guide. The cognitive insertion of missing links between foregrounded elements in a depicted scene can also be compared to the "law of closure" (Eysenck and Keane 2015: 86) in Gestalt psychology, pointing out that missing elements of a configuration are mentally added to make a form complete.

2.3. Spatial texture and cohesion

From a discourse-analytical perspective, the notion of cohesion refers to specific grammatical and lexical means that create semantic ties within a text (Halliday and Hasan 1976: 4–6) and shape a particular genre-related texture. While lexical cohesion relies on content words, grammatical cohesion can be subdivided into the categories of reference, substitution, ellipsis, and conjunction. As cohesive ties gradually establish meaning in texts, they realize "**logogenetic chains**" (Halliday 2014: 607, original emphasis) and thus strongly contribute to the description of spatial configurations. Although cohesion is chiefly concerned with lexico-grammatical expressions, it is an important concept in pragmatics as well, for it is

relevant to "the complex interrelationship between form, meaning and use of linguistic expressions in specific (social) contexts" (Bublitz 2011: 37). Accordingly, the present study intends to demonstrate that spatial cohesive ties are responsible for the constitution of a rich and dense texture in travel guides offering readers spatial orientation.

In contrast to other text types such as instruction or narration, the texture of "descriptive" discourse relies on "spatial sequence forms" (Werlich 1983: 167), which are realized, in particular, by place adverbials and place names (see also Section 3.1 below). As far as connective devices within texts are concerned, "place relators" (Quirk et al. 1985: 1448) form a subtype of grammatical devices, with locative prepositions and adverbs playing a central role. However, since space is mainly encoded in the form of content words and place names, it can be stated that "although physical location is essential for orientation in discourse, grammatical correlates to physical location are relatively meagre" (Quirk et al. 1985: 1448).

Lexical cohesion is based on various types of reiteration, including literal repetition, synonymy (e. g. *villa – mansion*), and hyponymy (e. g. *building – museum*), as well as on collocation, which is "achieved through the association of lexical items that regularly co-occur" (Halliday and Hasan 1976: 284). Collocation in this wide sense is a very open notion that comprises lexical fields, antonymy (e. g. *wide – narrow*), meronymy (e. g. *hotel – room*), and general lexical sets in a given semantic domain (e. g. *cemetery – grave – dead – urn*, etc.). Hence, since semantic fields feature prominently in the creation of lexical cohesion, it is helpful to consult the semantic category "space" in *Roget's Thesaurus* (Kirkpatrick 1987: 89–318), which is divided into the four main sections "space in general", "dimensions", "form", and "motion". The mere fact that "space" is one of the six major semantic classes in this onomasiological dictionary underlines the tremendous wealth of locative expressions available for spatial description. With respect to the representation of urban space, it is also worthwhile to take into account Kevin Lynch's classic monograph *The Image of the City* (1960: 46–90). Lynch establishes a set of five locative elements typically used by informants describing the layout of their city: (i) districts: larger sections of a city such as downtown or the West Side; (ii) nodes: central places in a city for travelling, such as squares or transportation stops; (iii) landmarks: recognizable reference points such as buildings or trees; (iv) paths: routes along which travelers move, such as streets and rivers; and (v) edges: linear boundaries such as walls or shores. The pervasive use of these lexical fields in the description of cities results in a densely knit texture enabling readers to construct cognitive maps. Of course, the occurrence and use of such elements is clearly genre-dependent, which means that, for instance, fictional narratives, geographical textbooks or travel guides (see Section 3) may rely on diverging descriptive features for the representation of urban spaces.

In contrast to lexical cohesion, grammatical cohesion offers only a limited set of items that specifically refer to spatiality (Halliday 2014: 609–634). Demonstra-

tive reference verbally points at objects in space and indicates whether they are distant or close to the location of the speaker. This is achieved by the proximal pronouns *this/these* and the adverb *here* as well as by their distal counterparts *that/those* and *there*, which can refer endophorically to the surrounding text, as in *John attended Pete's party, and Jill was there, too*. If the demonstratives are used as determiners in noun phrases, as in *this/that painting*, the head of the phrase fulfills a descriptive function, whereas the determiner has the function of localization. While the demonstrative pronouns refer to "participants" in space, the local adverbs express spatial "circumstance" (Halliday and Hasan 1976: 57), so that the former are typically associated with the TR, while the latter may rather instantiate the LM, for instance, in a noun phrase like *that bird* (TR) *up there* (LM).

Substitution, which can be divided into the nominal (*one/s* and *same*), verbal (*do*) and clausal types (*so* and *not*), is associated with spatiality to a lesser extent, but lexemes denoting objects or actions in space can obviously be replaced by these substitutes, as in *I saw a seagull on the roof, and my wife spotted another one*. Analogously, the cohesive tie of ellipsis, which is defined as "substitution by zero" (Halliday and Hasan 1976: 142), may contribute to spatial description if a locative expression is omitted, as in *John walked to the north of the island, while Jill went to the south [of the island]*. The cohesive tie of conjunction establishes logical relations between propositions, which can support spatial description in the additive subcategory, listing elements in space, or in the adversative subtype, highlighting contrasts between objects (Halliday and Hasan 1976: 244–256).

Owing to their logogenetic potential, both lexical and grammatical cohesive devices gradually and sequentially constitute a spatial scene in a descriptive text. In doing so, the cohesive chains fulfill diverse discursive functions, which can be subsumed under five central headings (Schubert 2009: 263–264) (see Table 1). Some of these verbal strategies of consecutive spatial description show specific manifestations in the genre of travel guides, as the following analyses will demonstrate.

3. A case study of selected travel guides

Based on the theoretical approaches outlined above, the second part of this chapter offers a qualitative case study of a selection of printed and online travel guides on the British capital. After a discussion of the genre of travel guides, the specific strategies of spatial description in these English texts will be outlined with the help of characteristic extracts. As regards methodology, the three books and the two websites were analyzed in a top-down procedure, identifying descriptive passages with the help of chapter headings and online navigation bars. After careful inspection of the spatial representations in their discursive contexts, typical linearization strategies, locative image schemas, and spatial cohesive ties were examined. Finally, representative examples were selected to illustrate typical techniques of

Table 1: Discursive functions of cohesive ties in the representation of space (Schubert 2009: 165–264)

Discursive function	**Explanation**	**Example (italics added for emphasis)**
(a) Continuity or resumption of objects in space	Locative items in a scene may be profiled several times through anaphoric pronouns referring back to a previously established object. Spatial continuity or stagnation is likewise established by anaphoric ellipsis as well as by literal repetition (e. g. "Durango" or "canyon"), synonymy, and hyponymy, provided there is referential identity between the cohesively linked expressions.	"We stay overnight in *Durango*, a place tucked in a valley (or '*canyon*', as they say here, the same way they say 'creek', or 'crick', instead of stream). Tucked in its *canyon*, *Durango* is famous as a destination [...]" (2009: 224).
(b) Selection of new objects	Alternative locative items can be introduced with the help of place deictic pronouns and adverbs. Similarly, locative prepositional phrases (e. g. "at the opposite end") may guide the viewer's attention towards novel things to be detected in space.	"[T]he traveller obtains a glimpse of grass terraces and stone steps, set *in overgrown thickets of lilac, hawthorn and acacia*, and surmounted by the long tranquil front of the château (1). *On each side, beyond the stretch of hedge*, the wall begins again; terminating, *at one corner of the property*, in a massive old cow-stable with a round pepper-pot tower; *at the opposite end* is a charming conical-roofed garden-pavilion, [...]" (2009: 219).
(c) Creation of a spatial void	A blind spot is temporarily caused by cataphoric function words, such as anticipatory *it* as well as by interrogative adverbs (e. g. "where") and pronouns.	"'*Where* do you come from?' he said. 'I come *from Mortlake*,' I said." (2009: 175)
(d) Spatial expansion or specification	The semantic relation of meronymy may result in two forms of spatial progression. A succession of meronym and holonym may result in spatial expansion, widening the perspective. If the holonym precedes the meronym (e. g. "trees" – "twig"), this leads to spatial specification.	"One morning the few lonely *trees* and the thorns of the hedgerows appeared as if they had put off a vegetable for an animal integument. Every *twig* was covered with a white nap as of fur grown from the rind during the night, giving it four times its usual stoutness; [...]" (2009: 231)

Discursive function	Explanation	Example (italics added for emphasis)
(e) Spatial juxtaposition	An opposition between locations can be triggered by comparative reference with dimensional adjectives or by the sense relation of directional antonymy (e. g. "rises" – "plunges down"; "Hills" – "lowlands").	"Yet the road does not remain on *flat clay lands* for long. Instead it *rises* gradually, this time on the back of the same band of limestone that forms the *Cotswold Hills*. At Sparkford, the *top* of the limestone is reached and the road again *plunges down* to clay *lowlands*, meadows and a dense network of streams [...]" (2009: 232).

displaying spatial configurations and to analyze the ways in which these techniques contribute to the central pragmatic functions of informing and advising travelers.

3.1. Genre and material

The present study is based on the three printed travel guides *London* by the publisher Lonely Planet (Harper et al. 2018), *The Rough Guide to London* (Cook et al. 2018), and *Inspire, Plan, Discover, Experience London* by the publisher Dorling Kindersley (Aves et al. 2019). These particular manuals were chosen because of their great popularity among travelers, as documented by the frequently updated editions. Since they are widely used, they can be expected to have a significant impact on the way tourist destinations are perceived by the public. Since online travel guides are a free and highly accessible alternative to these paperbacks, the study also includes the two travel websites <www.visitlondon.com> and <www.londonnet.co.uk>.

The macrostructure of the printed tourist guidebooks principally comprises four thematic sections: (i) Practical travel information (airports, hotels, transportation, etc.) including a city plan; (ii) descriptions of individual neighborhoods in the city, with a focus on specific sights (museums, churches, squares, etc.); (iii) events and activities in London (opera, theatre, shopping etc.); and (iv) general background knowledge (history of London, literary London, etc.). The main hyperlinks in the top navigation bar of <www.visitlondon.com> are "Tickets & Offers", "Things to do", "accommodation", and "traveller information", showing the more commercial conceptualization of the website. Similarly, <londonnet.co.uk> offers booking opportunities based on the central links "hotels", "attractions", "cinema", "theatre", "museums", and "London for you". In consequence, the spatial descriptions are much less detailed than in the voluminous printed books, whereas more emphasis is placed on practical information such as opening hours, admission fees,

and reservations. In-depth spatial orientation is offered on the computer or smartphone by freely downloadable travel maps, the "visit London app", and other navigation devices.

By definition, a "genre" is considered a "class of communicative events" (Swales 1990: 45) that serve particular discursive functions, which in turn have an effect on the linguistic choices made in the respective texts. For a genre approach to travel guides, it is adequate to employ the framework of seven situational parameters established by Biber and Conrad (2019: 39–48): (i) participants: in this written form of communication, there is usually a collective of authors collaborating in the composition of the text, while the addressees belong to the wide public interested in travel guidance; (ii) relations among participants: there is no personal relationship between the authors, acting as experts in their domains, and the readers, looking for information about tourist destinations. The printed books hardly allow for interactiveness, while the websites offer diverse possibilities of contact, for instance, via social media or keyword search; (iii) channel: the written medium is realized in either the printed or the digital form. Correspondingly, the websites are less permanent than the books and can be updated more easily; (iv) processing circumstances: as regards production, the travel guides are carefully planned and regularly revised, whereas the reception is usually highly selective, depending on the readers' current interest; (v) setting: although time and place are not immediately shared by the participants, readers may visit the same sites during the reception process as previously inspected by the authors during the preparation of the texts; (vi) communicative purposes: travel guides have the function of providing readers with a coherent outline of tourist destinations and are thus intended for prospective travel activities in real-life contexts. However, despite the overtly objective and informational appearance of the guides, they also reflect subjective preferences, evaluations, and attitudes of their authors (Neumann 2003: 90; Nilsson 2000: 268); (vii) topic: apart from general topographical and architectural information, guidebooks apprise readers of noteworthy individual sights and leisure activities and give practical advice on accommodation, restaurants, and further travel-related matters.

Because of the quite heterogeneous and composite character of travel guides, Francesconi classifies them as a "macro-genre", characterized by a "common communication purpose and medium, channel and sender" (2014: 15). In turn, macro-genres comprise a number of genres, such as itineraries, descriptions of sights, and practical advice. Such genres are defined by more specific pragmatic functions as well as by distinctive linguistic and formal features. Finally, within genres it is possible to identify sub-genres on a thematic level, such as individual sections in travel guides covering topics like art, entertainment, sport, or food and drink (Francesconi 2014: 15–16).

From a multimodal perspective, travel guides form a non-fictional amalgam of diverse texts, images, maps, tables, and plans (Wenz 1997: 67–68), united in their

common purpose of providing informative advice. As a result, travel guides, both printed and digital, principally have a hypertextual conceptualization (Jucker 2002: 29), since the individual sections serve as nodes that are linked by cross-references, in accordance with the fact that travel guides are usually read not sequentially but selectively. The present study mainly concentrates on intranodal spatial cohesion, since only individual nodes contain linear descriptions. In some cases, internodal cohesion is taken into account as well (Eisenlauer 2013: 71), as it enables users to determine the position of individual descriptions within the hypertextual websites with the help of contextualizing navigation bars.

Travel guides are among the texts that focus on the "cognitive process of *perception in space*" (Werlich 1983: 39, original emphasis), as they provide spatial orientation for tourists in new local environments, so that they can principally be subsumed under the text type of *description* (Ramm 2000: 157; Neumann 2003: 90). Owing to their chiefly descriptive character, travel guides are marked by a nominal style and "comparatively heavy postmodification structures" (Nilsson 2000: 272), which contribute to the nominal profiling of LMs. However, due to the heterogeneity of the macro-genre, the texts are also marked by some degree of hybridity, since some passages, such as historical background sections on the city, may be chiefly narrative, while other chapters, giving advice on where to eat or where to stay, have an instructive character (Ramm 2000: 156–158). Despite the multifaceted design of the macro-genre, the purpose of offering orientation is chiefly fulfilled by spatial descriptions of particular sights, as the following analyses will show.

3.2. Locative image schemas in travel guides

For the verbal linearization of spatial scenes, travel guides use a wide range of linguistic techniques. Toponyms unequivocally refer to individual locations such as streets (e. g. *Oxford Street*), squares (e. g. *Leicester Square*), and buildings (e. g. *The British Museum*). Compass directions relying on an absolute geographical frame of reference may support spatial description in the case of larger locative configurations, such as the buildings surrounding Trafalgar Square (Cook et al. 2018: 35–38). Numericals also contribute to spatial orientation, for instance, if they indicate distances between places in miles or if they give consecutive room numbers in a museum like the National Gallery (Cook et al. 2018: 38–44). In many cases, the verbal descriptions are multimodally accompanied by visual material in the form of appealing photographs, topographical maps, and occasionally architectural displays of buildings such as the Tower of London (Harper et al. 2018: 140–141). However, the most pervasive and basic strategy underlying techniques of spatial description is the use of locative image schemas.

A travel guide of London fundamentally offers a complex arrangement of figure-ground relations presented from a spatial top-down perspective by means of

consecutive locative embedding. The macrostructure of the printed travel guides, as displayed in the tables of contents, lists the neighborhoods, such as the South Bank or the West End. In the respective chapters, the districts are then portrayed with a map functioning as the ground against which tourist attractions are highlighted as figures. For instance, in a map of the West End, the "Neighbourhood Top Five" are located and identified with numbers and dots: (1) Westminster Abbey, (2) Soho, (3) St James's Park, (4) British Museum, and (5) Covent Garden (Harper et al. 2018: 74). In the detailed descriptions of these sights, selected parts in turn serve as smaller grounds for even more detailed figures. Despite their more commercial objectives, the websites similarly offer hyperlinks proceeding from the general to the specific, such as "explore London" > "areas" > "Greenwich" > "Greenwich attractions" (www.visitlondon.com). In the terminology of cognitive semantics, LMs form the reference points for static or dynamic TRs, which may in turn serve as LMs with increasing specificity of description. Thus, during the spatial process of zooming in and narrowing the perspective, a complex spatial network with several consecutive layers is created.

Travel guides show genre-specific strategies of representing LM and TR, which can be exemplified by the characteristic imaginary guided tour through a museum. This tour typically follows a "stop-look-see strategy" (Enkvist 1991: 9), since such descriptions often begin with locative adverbials that introduce spatial surroundings functioning as the LM. The adverbials are commonly followed by instructions on where to look and information about noteworthy objects serving as static TRs in the indicated direction. Conclusively, the description of tourist attractions is usually marked by "spatial circumstances in sentence theme position" (Ramm 2000: 157). Hence, the location is the starting point on the basis of which further details are provided, which not only applies to museum tours but to other sights as well. A representative description appears in Example (1), which is one paragraph outlining details of the interior of Westminster Abbey under the section heading of "North Transept, Sanctuary & Quire".

(1) At the heart of the Abbey is the beautifully tiled **sanctuary** (or sacrarium), a stage for coronations, royal weddings and funerals. George Gilbert Scott designed the ornate **high altar** in 1873. In front of the altar is the marble **Cosmati pavement** dating back to 1268. It has intricate designs of small pieces of marble inlaid into plain marble, which predicts the end of the world in AD 19,693! (Harper et al. 2018: 77, original emphasis)

This image-schematic description starts with the prepositional phrase "at the heart (of)", which profiles a locative relation between the LM "the Abbey" and the corresponding static TR "sanctuary". The sanctuary is then portrayed as "a stage" for ceremonial events and accordingly serves as the spatial background against which the nominal profile "high altar" is foregrounded. Next, the preposition "in

front (of)" in sentence-initial position establishes "the altar" as the new LM, on the basis of which the TR of the marble pavement is located. Finally, "small pieces of marble" are profiled against the background of "plain marble" with the locative preposition "into", concluding the progression from wide to very narrow windows of attention. Hence, this extract not only confirms the typical technique of sentence-initial locative expressions but also illustrates the procedure of consecutive spatial embedding. In addition, the text underlines the commonly hybrid character of travel guides since the description is interspersed with historical dates and events that have a narrative quality.

Two analogous examples of the descriptive strategy of consecutive embedding are the following: after the main heading "Buckingham Palace", the sub-headings refer to locations within the palace, such as "state rooms" or "picture gallery", while the subsequent paragraphs give details of the interior of the rooms (Harper et al. 2018: 83–84). Similarly, the description of the Houses of Parliament proceeds from the main architectural components (e. g. "Westminster Hall") to noteworthy details within the halls (Cook et al. 2018: 50–53).

3.3. Linearization strategies in travel guides

A gaze tour is the appropriate linearization strategy if a spatial configuration cannot be described by an imaginary route leading through the scene. A typical case in point is the verbal account of Nelson's Column in Trafalgar Square, which is verbally described in a vertical succession from top to bottom (Example 2), since a driving tour is not physically possible for tourists. In an iconic description, the gaze of the static viewer closely follows the architectural shape of the column, which is supported by the fact that this monument is a singular and clearly discernible object situated within a wide square.

(2) The sandstone statue which surmounts a 151-foot granite column is more than triple life-size but still manages to appear minuscule. The acanthus leaves of the capital are cast from British cannons, while bas-reliefs around the base – depicting three of Nelson's earlier victories as well as his death aboard HMS *Victory* – are from captured French armaments. Edwin Landseer's four gargantuan **bronze lions** guard the column and provide a climbing frame for kids (and demonstrators). (Cook et al. 2018: 35–37, original emphasis).

Although the viewer's vantage point is not explicated, it can be inferred that the column is scanned from the default position of a tourist standing on the ground, since the statue at the top "appear[s] minuscule". The quasi-modal verb *appear* here underlines the surprising contrast between the objective measures of the statue and the subjective impression it gives to the observer, thus arousing the prospective tourist's interest and curiosity. The monument serves as the stable LM, while

the viewer's gaze represents the mobile TR performing a vertical downward path (Figure 4). The description mainly relies on nominal profiles such as "statue", "column", "capital" ('topmost section of a column'), and "base", which consecutively constitute the vertical LM. The path of the TR is constructed without local adverbs or prepositions (Schubert 2009: 333), which are dispensable in this case because the cognitive frame of a column suggests a typical shape. Moreover, the tourist has the possibility of either looking at the photograph in the travel guide or viewing the monument on site.

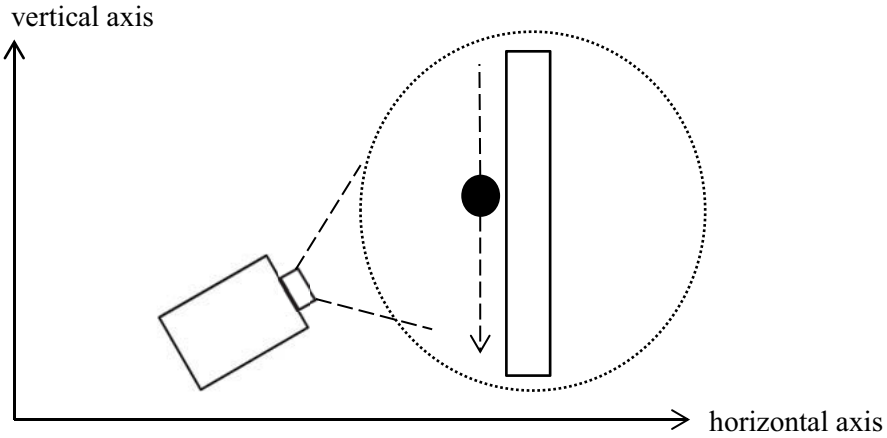

Figure 4: Image-schematic representation of Example (2)

This gaze tour is not only iconic but also gives the impression of a linguistically economic as well as systematic and rational representation. Since the description from top to bottom is quite frequent in the portrayal of monuments in general (Wenz 1996: 280), the linearization may also be said to follow a common descriptive schema. Another representative example of a gaze tour occurs in the description of "The View from the Shard", where the static observer can enjoy a "360 degree view [that] stretches out 40 miles across north, west, east and south London" (https://www.londonnet.co.uk/attractions/the-view-from-the-shard-tickets-and-info/). As this depiction shows, a gaze tour may manifest itself not only in a straight line but can appear in various shapes, such as a circular route around the viewer in this particular case.

In a driving tour, the reader is guided through a local scene in an "imaginary tour" (Wenz 1996: 272) with the purpose of efficient sightseeing. Since this route follows actual buildings and places serving as LMs, it is likewise a type of iconic linearization, although a greater extent of selection on the text producer's side is involved. In both printed and online travel guides, such recommended tours are commonly described under the heading of "itineraries", which give advice on how

the most illustrious sights can be visited in relatively little time. For instance, the River Thames may be suggested as a point of reference for a walking tour with several consecutive stops along the way (Example 3).

(3) By following the river you can fit an awful lot into one day without having to travel too far or rely on public transport. Begin at Butler's Wharf; located close to Tower Bridge *(p186)* and lined with decent river-facing restaurants, it's a great spot for breakfast. From there, walk across the world-famous bridge to the Tower of London *(p178)* and immerse yourself for a few hours in a thousand years of royal history and scandal. Ready for lunch? Follow the river to London Bridge and cross back over to the south side where you can pick up tasty street food or a gourmet picnic from Borough Market *(p211)*. (Aves et al. 2019: 27)

In contrast to the gaze tour (Example 2), the dynamic viewer is here positioned inside the spatial scene and serves as the TR whose orientation depends on the pivotal LM of the river, which can be graphically displayed on the basis of two horizontal axes viewed from an aerial perspective (Figure 5). The LM is nominally profiled twice with the noun "river" and appears as a constituent of the compound adjective "river-facing". While the beginning of the entire path of the itinerary is foregrounded by the proper noun "Butler's Wharf", the end is profiled by the toponym "Borough Market", so that closure is created by initial and final windowing. The spatial relationship between the viewer-TR and the LM is highlighted twice by the motion verb "follow". The two bridges serve as subordinate LMs enabling the viewer to imaginarily cross the main LM during medial windowing. This movement is spatially profiled by the directional preposition "across" in collocation with the motion verb "walk". The motion verb "cross back" additionally presupposes a prior movement and indicates that the deictic center of the mobile TR has shifted during the tour. The prepositional phrase "[f]rom there" also underlines the walking tour, since the locative adverb "there" anaphorically refers to "it" and "Butler's Wharf", while the directional preposition "from" indicates that this is the point of departure for movements to follow. In combination with the enclosed city plan, readers are thus enabled to conceptualize a cognitive map prior to their journey, which may later be translated into action in a real-world environment.

In general, the driving tour is the preferred linearization strategy in tourist guides, since they commonly describe sightseeing tours during which travelers physically traverse a spatial scene. Other characteristic cases of driving tours are, for instance, a neighborhood walk from Camden Town to Primrose Hill (Harper et al. 2018: 260) or a guided tour through the State Rooms of Buckingham Palace (Cook et al. 2018: 70). Obviously, these are quite complex macro-paths that cannot be graphically represented in a single image schema but require a series of schemas, as they constitute a sequence of several image-schematic micro-paths.

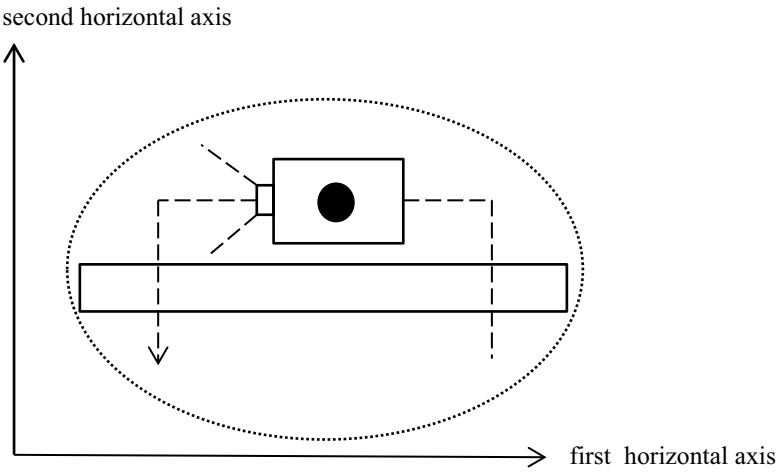

Figure 5: Image-schematic representation of Example (3)

3.4 Spatial texture and cohesion in travel guides

The pragmatic function of a particular genre has a strong impact on its texture, which manifests itself in the choice and arrangement of cohesive ties. Travel guides make recommendations on orientation in new spatial environments and are likely to be used in real-life contexts on site (see Kesselheim and Hottiger this volume on the pragmatics of written texts in space), either in the form of a book or on the smartphone (see Meyer and Jucker this volume on spatial configurations of communication in virtual environments). This contextual use requires a tight texture based on consecutive locative expressions, resulting in spatial cohesion triggered by "logogenetic patterns" (Halliday 2014: 603). Although travel guides in general are conceptualized as hypertextual, the websites are additionally marked by a "digital textuality" (Trimarco 2015: 1), combining the affordances of written communication with possibilities of interaction. In the online environment, a large network of the urban space of London is created through "*hypercohesion*" (Schubert 2017: 321, original emphasis), linking the micro-descriptions offered by the individual nodes in order to establish a hypertextual macro-description.

The depiction of outstanding sights typically proceeds from a general introduction of the location to a focus on selected details, which results in a consecutive narrowing of the perspective and a spatial specification. This can be achieved by the lexical cohesive tie between holonym and meronym, progressing from the whole object to one or more of its parts. Accordingly, Example (4) first mentions the holonym "Kensington Palace", while the subsequent meronyms "King's and Queen's State Apartments" highlight selected rooms. In a further step of spatial

specification, the previously introduced "apartments" function as the holonym with regard to the meronym "paintings".

(4) Kensington Palace, a palace of secret stories and public lives, has been influenced by generations of royal women. Experience life as an 18th-century royal courtier whilst making your way through the magnificent King's and Queen's State Apartments adorned with remarkable paintings from the Royal Collection. (www.visitlondon.com/things-to-do/place/428001-kensington-palace)

As the top navigation bar informs the user in Example (4), "You are here: Home > Things to Do > Sightseeing > London Attraction > Historic Site & House > Kensington Palace". This sequence of steps informing users about their current position in the hypertext is a "contextualisation device" (Jucker 2002: 44) that likewise underlines the top-down structure of the travel website. Generally, if an architectural design is very complex, such as the British Museum (Cook et al. 2018: 119–125) or the Tower of London (Harper et al. 2018: 137–142), the meronymical progression from the entirety to particular details may extend over several pages in the travel guide.

Whenever itineraries through neighborhoods are suggested, the cohesive chains fulfill the discursive function of spatial expansion along a preconceived linear route. As the description of an imaginary walk through the West End demonstrates (Example 5), it is mainly lexical fields that form intersecting cohesive chains of locative expressions, culminating in a densely knit spatial texture.

(5) First, head south to busy **(1) Covent Garden Piazza** (p102) and enjoy the street performers along James St and opposite St Paul's Church. Follow King and Garrick streets west; turn left into Cranbourn St and you'll arrive at **(2) Leicester Square** (p103), where many international blockbuster films premiere. At the western end of the square turn right into Wardour St; you'll soon come to the Oriental gates of **(3) Chinatown** (p100) on your right. (Harper et al. 2018: 111, original emphasis)

The lexical fields refer to absolute compass directions ("south", "west", "western"), deictic orientation ("left", "right"), street names ("James St", "King and Garrick streets", "Cranbourn St", "Wardour St"), names of squares ("Covent Garden Piazza", "Leicester Square"), and verbs of movement ("head", "follow", "turn", "arrive", "come"). While the page references in the route description underline the hypertextual conceptualization of the guide, the three numbers signifying the main LMs correspond to its multimodal character, since they refer to numbers in an accompanying map, in which the route is highlighted by a red line. Thus, in the macro-genre of travel guides, this is a common type of description serving as an explanatory legend for recipients who simultaneously view the map of the neigh-

borhood. Similar cohesive ties referring to streets, squares, and buildings feature prominently in a "short walk" through Bloomsbury (Aves et al. 2019: 158–159).

Since the urban space of London is a complex architectural arrangement of exterior and interior locations, another discursive function of cohesive ties is spatial juxtaposition. This occurs, for instance, in the description of St Paul's Cathedral, which is recommended as a must-see regarding both its outer appearance and its decorations inside (Example 6). In this case, the spatial opposition is cohesively featured by locative antonymy between the noun "façade" on the one hand and the noun "interior" on the other. This is further supported by comparative reference in the form of the discontinuous construction "more … than", indicating already in the first sentence that a list of notable objects is about to follow.

(6) St Paul's with its world-famous dome is an iconic feature of the London skyline, but there is so much more to Sir Christopher Wren's masterpiece than its impressive façade. The interior of the soaring dome, the glittering mosaics, the intricate stone carving and the breathtaking view down the nave towards the quire are just a few of the reasons why a visit to St Paul's is a must. (www.londonnet.co.uk/attractions/st-pauls-cathedral-city-of-london/)

As illustrated by Examples (4) to (6), three genre-related discursive functions of spatial cohesion in travel guides are spatial specification, expansion, and juxtaposition. Spatial resumption or stagnation on the basis of pro-forms or ellipses only plays a minor role in the travel guides, since their purpose is to mention numerous points of interest in a given area and to suggest diverse itineraries along selected landmarks.

4. Summary and conclusions

The analyses have pointed out typical strategies of spatial description in the written macro-genre of English travel guides and websites, which have proved to be highly salient for the study of locative configurations in discourse. They serve their central pragmatic function of providing informative advice on spatial orientation not only in an on-site context but also support readers planning a trip in an off-site situation at home. The three voluminous printed guidebooks comprise in-depth spatial information on all districts of London, covering a wide range of world-famous as well as lesser-known sights and thus address readers interested in detailed directions. In comparison, the two travel websites show a much more commercial focus on tickets, offers, and reservations and mainly concentrate on the top attractions, which are described with interactive maps, video clips, and comparatively brief texts.

In all the travel guides, individual locative image schemas typically add up to a spatial network consisting of layers with increasing specificity of LM and TR.

By verbally zooming in on specific sights with the help of spatial embedding, the windows of attention are continually narrowed down. As regards linearization strategies, gaze tours with a static viewer outside the scene and a moving gaze-TR occur if it is not possible for travelers to physically move through the scene on site. By contrast, the intuitive driving tour is the appropriate strategy whenever the route of the mobile viewer through indoor or outdoor spaces is successively portrayed, which is the default technique in the travel guides. Both linearization strategies are iconic since they reflect architectural and topographical features of London.

The texture of the travel guides is chiefly based on lexical cohesive chains whose content unambiguously constitutes spatial scenes and contributes to genre-specific discursive functions. In particular, spatial specification is achieved by the cohesive tie of meronymy, proceeding from the entirety of a spatial phenomenon to its individual parts. By contrast, spatial expansion is triggered whenever itineraries are described with the help of space-related lexical fields and toponyms, and spatial juxtaposition typically relies on comparative reference and antonymous locative expressions.

Needless to say, there are several promising avenues for future research on spatial representation in the travel genre. For instance, different travel guides, also including more compact and concise editions, could be compared with respect to the description of one particular tourist attraction, in order to determine which spatial information is considered quintessential by a majority of the manuals. It would also be worthwhile to contrastively examine the portrayal of London sights in literary texts, since fictional discourse fulfills additional aesthetic functions that may result in deviant linearization strategies geared towards narrative effects such as suspense or surprise. Moreover, since both printed and online travel guides make frequent use of photographs, maps, and other illustrations, a multimodal approach would be able to highlight the contribution of text-image relations and intermodal cohesion to spatial representation. However, despite its limitations, the present chapter hopes to have given some thought-provoking insights into the descriptive strategies of a popular macro-genre with a global reach.

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5. Interactional onomastics: Place names as malleable resources

Thomas Debois and Elwys De Stefani

Abstract: This chapter offers an introduction into the emerging field of interactional onomastics, which uses conversation analytic research methods to examine the usage of place names (or toponyms) in naturally occurring talk. Interactional onomastics provides a unique insight into how individuals use place names in social encounters, and what interactional goals they achieve by doing so. Place names are used recurrently for referential practices, but speakers may also mobilize them for the purpose of (spatial or social) categorization or to organize their topical talk. Place names occur in different (phonetic) forms and are sometimes associated with stigma. The chapter also provides an overview of previous approaches that have analyzed how place names relate to the social organization of communities. After initially being studied by philologists and geographers in the second half of the nineteenth century, place names became a topic of investigation for anthropologists, discourse analysts, sociologists, and sociolinguists in the twentieth century. In these disciplines, place names have been examined as cultural artifacts, expressions of ideology, and as a way to access the social organization of communities (historically or contemporarily), respectively. Finally, the chapter presents a case study that illustrates the methodological procedure of interactional onomastics. It shows that place names are malleable interactional resources that are sensitive to the membership categories interactants invoke. Their usage relies on the interactants' knowledge *of* the place name as a linguistic unit and *about* the place it refers to.

Keywords: toponomastics, conversation analysis, socio-onomastics, human geography, sociality, name variation

1. Introduction

Within current research on place names (or toponyms), a number of approaches offer a contextualized analysis of their occurrence and use, especially with regard to their social relevance to people's everyday lives. The most prominent fields of investigation that contemplate these questions include anthropology, discourse analysis, and socio-onomastics, which operate with more or less interpretive methods. These methods of investigation will be described below. The larger part of this chapter, however, is dedicated to the detailed presentation of the emerging field

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of interactional onomastics, which applies conversation analytic methods to the analysis of proper names. Whereas a systematic pragmatic account of place name usage is lacking – with the exception of the well-known language philosophical considerations, which are mainly based on the researcher's introspection and often focus on personal names (e. g. Mill 1843; Frege 1892; Russell 1905; Searle 1958; Kripke 1972; Coates 2006) – the way in which speakers use place names in naturally occurring talk-in-interaction has been addressed by conversation analytic scholars, who examine place names mainly as one option that speakers can choose to refer to place (another option being, e. g., deictics; see Auer and Stukenbrock this volume). Complementing this line of research, interactional onomastics takes a more comprehensive approach to (place) name usage, whereby the establishment of spatial reference is only one among other accomplishments interactants pursue by using place names. Research has indeed shown that place names are malleable resources, in that they may occur in a variety of forms (i. e., pronunciations that may be heard as pertaining to specific dialects, languages, etc.) and also because they may serve a plethora of interactional goals.

2. The harbingers of place name studies

Researchers working in different disciplines established scholarly interest in place names in the second half of the nineteenth century. Philologists developed the etymological approach to toponyms (Förstemann 1856–1859; Flechia 1871), thereby fostering the scientific study of proper names, known as onomastics, on the basis of documentary evidence. At the same time, geographers also advanced etymological explanations of place names in their cartographic works (Hughes 1867) or dedicated entire monographs to the topic (Egli 1872), an endeavor that culminated in Egli's (1886) publication of the *Geschichte der geographischen Namenkunde* [History of geographical name studies]. A few decades later, a keen interest in place names became evident in a third discipline: Boas's (1934) study of the *Geographical Names of the Kwakiutl Indians* opened up the field for anthropologists.

These studies were motivated by dissimilar, yet complementary interests. Philologists felt the urge to track down the etymological origins and motivations of place names, in line with post-romantic and nationalistic ideals of revealing the cultural heritage of a people. Geographers were stimulated by the idea that the etymological analysis of place names would enable them to uncover earlier conformations of a location and to describe the transformations places underwent over the course of time. Anthropologists identified place names – which in many communities were used only in spoken language – as objects of investigation giving them access to the social life of communities and to their beliefs and values in relation to space and place. These research traditions developed largely independently from

each other,[1] and current studies tend to remain confined to their respective fields. Moreover, recent assessments of the research on place names share a disheartening opinion on its vitality. Within linguistics, Levinson (2003: 69) observed that "little of theoretical interest has emerged" from the "study of placenames […] [as] one of the older branches of linguistic enquiry". Commenting that "[s]ynchronic research […] has never been taken seriously", Van Langendonck (2007: 204) instead deplored the lack of interest for onomastic studies that do not have an etymological concern. Similarly, geographers complained about the scarce progress in the study of place names, such as Zelinsky (2002: 244), who found that "the theoretical cupboard is bare, and progress during the past fifty years or so has been virtually nil". This chapter clarifies that recent research, in fact, has brought to the fore several approaches that examine place names beyond their purely referential and etymological dimensions and taxonomic classification.

3. Place names and sociality

Philological, geographic, and anthropological research on place names is motivated by the urge to unravel the relationship that ties them to the social life of the communities in which they are used. While there seems to be a general consensus that names are bestowed on locations that are socially meaningful, the methods of investigation and the objectives of the different (sub-)disciplines show considerable diversity. The strong historical perspective that dominated research in these fields at least until the 1970s has progressively paved the way for studies that focus on how individuals use and are confronted with place names in their everyday lives. Significant contributions come from anthropology, where a wealth of particularized studies on distinct communities or peoples have shifted the perspective away from the often uncritical and ethnocentric understanding of the concept of "place name". Within the realm of linguistics, place names have interested discourse analysts, who highlight the ideological dimension of their usage. The aim of socio-onomasticians is instead to describe and account for place name variations, mainly with methods inherited by (variationist) sociolinguistics. The following sections provide an overview of established approaches addressing the social dimension of place name usage.

[1] Note however that Boas (1934: 10) refers to Egli's (1872) study in the introduction to his monograph.

3.1. Anthropology

Boas's (1934) analysis of the place names of the Kwakiutl (today named Kwakwaka'wakw), an indigenous people living in northern Vancouver Island, is a milestone in anthropological research on place names. For Boas, place names were part of anthropological investigation because their analysis enabled him to show how the communities related to their environment. Hence, he described the practical and mythological uses of these names and their relevance for the social life of these communities. This study – as well as his earlier work on place names in Baffin Land and Hudson Bay (Boas 1901–1907) – influenced numerous anthropologists, such as Harrington (1916), who analyzed Tewa place names, Lounsbury (1960) on Iroquois place names, de Laguna (1972) on Tlingit place names, and many others (see Thornton 1997 and Senft 2008 for an overview). Clearly, one motivation of anthropologists is to examine place names as cultural artifacts, and to provide ethnographically documented analyses on place name usage in specific communities. This particularistic concern coexists with a more comprehensive interest in understanding how language relates to the physical and social environment in which it occurs, as addressed by Boas's student, Sapir, in his (1912) paper on "Language and environment". In that contribution, Sapir showed, among other things, that the existence of "topographical terms" as used by the Southern Paiute people, such as "divide, ledge, sand flat, semicircular valley" (1912: 228–229) testifies that the locations referred to are historically and socially relevant for the communities. While these expressions are not categorizable as place names from the point of view of traditional Western grammar theories, they exemplify Sapir's point that "social factors" (1912: 227) are paramount in the emergence of linguistic labels that speakers use to refer to the physical environment. Many anthropological studies indeed examine how place names are socially and locally meaningful, as illustrated, for instance, by Senft's (2008) analysis of place names used in Kilivila, the language of the Trobriand Islanders, or Tamisari's (2009) study of place names used by the Yolngu, an Australian people of north-eastern Arnhem Land. One influential study was Basso's (1988) investigation on how place names are used in the speech of the Western Apache residents of Cibecue (Arizona). His study was motivated by the observation that "the common activity of placenaming – the actual use of toponyms in concrete instances of everyday speech – has attracted little attention from linguists or ethnographers" (1988: 102). He explained this lack of interest by pointing out that in many languages, (place) names are not considered part of the lexicon of a language, since they are believed to only have referential capacity. Hence, they are often also excluded from dictionaries. Basso's analysis showed that in the communities studied, place names are resources that speakers mobilize not only for referential purposes. For instance, in storytelling interactants may "exploit the evocative power of placenames to comment on the moral conduct of persons who are absent from the scene" (1988: 106), a practice that the commu-

nities call *yałti' bee' ízhi* ('speaking with names'). The author also demonstrated that Western Apache place names are not just offering a description of the named area, but that they also provide "positions for viewing these locations" (1988: 111). They are perspectival, in accordance with the putative viewpoint the ancestors had when they bestowed those names. In addition, Basso's analysis also addressed the formal variation of place names, showing that speakers preferentially use extended formats in narratives, whereas shortened toponymic versions tend to be used for purely referential reasons. Similarly, examining the place names used by speakers of Bininj Gunwok dialects (Western Arnhem Land, Australia), Garde (2014: 101) described their "encoded cultural significance", and observed how the communities use place names for a variety of purposes, among which was included joking, but also to refer to recently deceased individuals, for whom the use of personal names was taboo (see also Blythe et al. 2016).

Although motivated by research questions that are very different from those of linguists, many anthropologists assembled taxonomies of place names based on the features of their referents (Waterman 1922; Basso 1984). This development is strikingly similar to the philological and onomastic interest in taxonomic classification based on the etymological roots of place names.

3.2. Discourse Analysis

Discourse analytic approaches to place names examine the values (positive or negative) transmitted by their use. Galasiński and Skowronek (2001) showed, for instance, how (place) names can be charged with ideological values in political addresses, whereas in his analysis of the names *Oświęcim* and *Auschwitz*, Van de Putte (2021) illustrated how the inhabitants of the Polish town tend to establish a referential difference between the former name variant, referring to the town, and the latter, used to indicate the former concentration camp and the current museum. Methodologically, these studies consider a variety of material (broadcast talks, interviews, written texts, posts on social media, etc.) and apply an interpretive procedure that can be traced back to critical discourse analysis (Van Dijk 1992). In its more radical form, proponents of onomastic discourse analysis (Rutkowski and Skowronek 2019) believe that the critical analysis of (place) names enables us to gain insight into the social organization and values of a community. In doing so, the approach has a common interest with critical place name studies, as developed by human geographers (Rose-Redwood et al. 2010), who try to identify the ideological underpinnings of place names. In particular, the geopolitical dimension of place naming (Giraut and Houssay-Holzschuch 2016) is analyzed against the background of current shibboleths (*neoliberalism*, *commodification*, *cleansing*, etc.) that the authors see at work in the toponymic transformation of the landscape. As a consequence, these studies often result in the particularized description of the onomastic landscape (Ainiala and Vuolteenaho 2006) of a given area. This approach

was stimulated by research on the linguistic landscape (Landry and Bourhis 1997) of urban areas, but focuses exclusively on place names, thereby renewing scholarly interest in onomastics. Toponyms found on road signs, especially in officially plurilingual areas, are indeed a popular object of investigation in this line of research. The following example, taken from Finco (2014: 174), provides a case in point. It shows bilingual road signs in the Italian region of Friuli-Venezia Giulia, where the place names are written in Italian on top and in Friulian below.

Figure 1: Bilingual road signs in Friuli-Venezia Giulia (Italy)

Such road signs are sometimes used as a platform for identity debates, as shown by numerous cases of spray-painted signs. In Figure 1, an anonymous citizen has covered the standardized Friulian place name *Vierse*, which, as Finco (2014: 174–175) explains, was perceived as not corresponding to the locally used Friulian variant (*Viarsa*). Hence, place names on road signs provide a locus of contestation of language policies, identity, and cultural allegiance.[2]

3.3. Socio-onomastics and the sociology of names

Within linguistics, the study of the social dimensions of names was promoted in the 1960s and 1970s by East and West German researchers. Debus's (1968) con-

[2] The political dimension of places names is also of central importance for the activities of the *United Nations Group of Experts on Geographical Names (UNGEGN)*, which was founded in 1959. It defines the official toponymic repertoire of the member states and ensures their standardization as well as the protection of place names in minority languages.

ception of a *Soziologische Namengeographie* ('Sociological Name Geography') was inspired by the idea that the analysis of proper names allows linguists not only to reconstruct their etymological origin and motivation, but also to gain access to the social organization of (European) communities in earlier times. The early studies in the field predominantly addressed personal names (e. g. Kohlheim 1977) and laid out the social background against which naming practices and traditions were established, adopting a decidedly diachronic approach. Although the term "socio-onomastics" is sometimes employed in these studies, the notion is nowadays more commonly used to indicate approaches that apply sociolinguistic methods to the study of names. As such, Walther (1971) coined the term *Sozioonomastik*, which was readily adopted by onomasticians studying name usage and practices of name-giving in contemporary societies. Indeed, in their programmatic contribution, Walther and Schultheis (1974: 188) explained that "socio-onomastics fits in organically with the concerns of the more general sociolinguistics".[3] More than 20 years later, Debus (1995a: 345) observed, however, that "socio-onomastics has not (yet) developed an independent theory",[4] thereby reifying the idea of a theoretical deficiency with which onomasticians are often confronted. In more recent research, the objectives of socio-onomastics are in accordance with Walther and Schultheis's (1974) original description:

> Socio-onomastics stresses the importance of looking at the use of names in every-day interaction: variation in name usage, why some names are avoided, why some names are coupled with particular pejorative attitudes, and how name users themselves perceive the very names they use. Socio-onomastics takes into account the social, cultural, and situational domains in which names are used, and this applies to all kinds of names […]. Notably, social variation and situational variation are studied, and the reasons why people know certain names (but not others) are examined. The study of attitudes and stance towards names and name usage are also part of socio-onomastic research. (Ainiala and Östmann 2017: 2)

The focus is on variation, which is studied on the basis of pre-defined social categories (age, gender, nativeness, etc.), and the studies often propose quantitative findings. Pablé's (2000, 2009) investigation on place names used by the inhabitants of Bellinzona (Switzerland) is a skillful illustration of the method. Although Aniala and Östmann (2017) claim that "the use of names in every-day interaction" is the main motivation for their investigation, many studies are in fact based on data collected via interviews or focus group discussions, an approach that Debus (1995b) described as the most important method of data collection in socio-onomastics.

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[3] "Die Sozioonomastik fügt sich demnach in das Anliegen der allgemeineren Soziolinguistik organisch ein."

[4] "Die Sozioonomastik hat freilich (noch) keine eigenständige Theorie entwickelt […]."

Some authors also refer to the approach as the sociology of names (*Namensoziologie*; Debus and Kremer 1999), while others draw a distinction between the two (e. g. De Stefani 2016) and reserve the latter for studies that address larger societal questions, often related to identity issues that are associated with place or personal names (on the latter, see, e. g. Pilcher 2016). Typically, the approach analyzes the ideological and cultural underpinnings of (re)naming policies of countries, cities, streets, and so on – see for instance the renaming of Санкт-Петербург/St. Petersburg (1793), Petrograd (1914), Leningrad (1924), Санкт-Петербург/St. Petersburg (1991) – whereby each name can be associated with different narratives that may serve political purposes. This narrower definition of the sociology of names, especially when applied to place names, brings the approach in close proximity to critical place name studies.

4. Interactional onomastics

The analysis of language as observable in the natural habitat of its occurrence is a distinctive feature of conversation analysis (Sacks 1992; Sacks et al. 1974) and interactional linguistics (Couper-Kuhlen and Selting 2018), which offers a welcome application of the conversation analytic method to linguistic objects of investigation. It allows not only for a contextualized analysis of linguistic resources based on naturalistic evidence, it also enables researchers to show that speakers demonstrably orient to specific resources as the interaction unfolds. Considering the ongoing debates within different branches of linguistics about the defining features of proper names or proper nouns (Coates 2006), interactional approaches allow for an analysis of (place) names that is grounded in the observable ways in which speakers use them, and orient to them as "particular" language units in their everyday interactions. The term *onomastique interactionnelle* 'interactional onomastics' was first proposed by De Stefani and Pepin (2006) and discussed in a series of contributions by De Stefani (2009a, 2012, 2016), both with respect to place names and personal names (see Droste 2020 and Günthner 2020 on the latter). The fundamental difference between socio-onomastic approaches and interactional onomastics concerns the way in which proper names are conceived of. The socio-onomastic perspective regards names as intrinsically referential but formally variable, and establishes correlations between name variation and pre-established social categories. Rather than assuming the intrinsic functions of proper names, interactional onomastics examines the actions participants accomplish by using proper names. While place names are indeed available to speakers for establishing spatial reference (Schegloff 1972), they may serve a plethora of other purposes as well. Incidentally, interactional onomastics also allows for an emic perspective on the notion of proper name (or, more relevantly for this chapter, place name). What speakers treat as a place name may be categorized differently from the etic

viewpoint of theoretical linguistics and onomastics. For instance, De Stefani and Pepin (2006) have shown that in rural communities of north-eastern Italy, place names are commonly used as family bynames, and that they may serve as resources of personal reference. Comparably, anthropological research has shown that in Aboriginal communities of Australia, place names can be used to refer to persons when the place name is "linked to them in some way, either through clan identity or via primary residence" (Garde 2014: 110). Similar observations have been put forward by Levinson (2007) on the inhabitants of Rossel Island, a Pacific island located at the eastern tip of Papua New Guinea. In a different, yet comparable way, in his analysis of the Scarman Tribunal hearings (on civil disorder in Northern Ireland in 1969), Drew (1978: 9) observed that place names were used for "categorizing a collectivity", with respect to the ascribed religious identity of the respective crowds (Protestant vs. Catholic) in this particular case. As these examples show, what linguists call place names may in fact be used to refer to individuals or groups of persons. The other interactional purposes that place names serve will be explained in the following sections.

4.1. Place names as resources for action

One of the aims of interactionally oriented research consists in examining how interactants use linguistic and embodied resources to accomplish socially relevant action. Just like other linguistic resources, place names can be examined with regard to their pragmatic import. Accordingly, the following sections provide an overview of the research on place names as carried out by conversation analysts and continued under the heading of interactional linguistics.

4.1.1. Referring to place

Conversation analysis developed an early interest in place names, which have mainly been analyzed as one among other resources available to speakers for establishing spatial reference. Schegloff's (1972) study on what the author called "place formulations" provided a first systematic discussion of space-referential options of American English speakers (see Auer 1979 for an application of the model to German data). It is important to stress that Schegloff's primary interest was not on place names per se, but on the practices by which speakers refer to locations, in accordance with the focal interest of the approach in social actions (rather than in linguistic forms). The author described five recurrently observed "place formulations" speakers use. They encompass (a) "geographical formulations" (addresses, longitudinal and latitudinal coordinates, etc.), (b) "relation to members formulations" (by which a location is identified with reference to an individual, e. g. *Jack's place*), (c) "relation to landmarks formulations" (where an area is referred to with respect to a specific landmark, e. g. *next to the school building*), (d) "course of

action places" (places referred to by virtue of an activity that takes place there, e. g. *where they leave the garbage*), and (e) "place names".[5] Remarkably, what can be regarded as a further option, namely deictics such as *here* and *there*, are only cursorily referred to as "locational pro-terms" (Schegloff 1972: 87). Clearly, in Schegloff's reference-based model, place names are distinct from the other referential options. Speakers use them, according to the author, "only when expectably recognizable" (Schegloff 1972: 92). By that the author means not only that recipients can identify the succession of sounds forming the place name. They must also be able to categorize a place on the basis of the name used to refer to it. They must know, for instance, that *Harrods* refers to a London department store and "bring knowledge to bear on it, detect which of its attributes are relevant in context, etc." (1972: 91). By using a place name, a speaker then displays that they are assuming that the recipient possesses that knowledge. Similarly, von Polenz (1985: 122–123) explained that proper names can be used effectively only among members of specific groups, which he called *Namenkenner-Gruppen* 'groups of individuals who know a specific name'. Because they presuppose shared knowledge of the name, place names are not the preferred option for establishing reference. Indeed, according to Schegloff's analysis, relation to members formulations are the more commonly used place formulations. The five kinds of "place formulations" identified by Schegloff imply that whenever a speaker refers to a place, they have to select one between the different available resources. They do so, according to the author, by an analysis of (a) location, (b) membership, and (c) topic or activity. In other words, the selection of the adequate place formulation hinges on the speaker's analysis of their own location, as well as of their co-participants' location. Similarly, in one of his lectures held in 1969, Sacks (1992, II: 147) noted that the selection of a place name for referential purposes "turns on where they [the parties in the interaction] are, where they're from, and what they know about each other". The analysis of membership enables speakers to select an appropriate place formulation based on invoked or tacit membership categories that participants orient to. A speaker may see in their conversational partner a "local", a "stranger", a "tourist", and so forth and select the adequate place formulation based on the relevant category and the putative knowledge they associate with that category. Finally, the topic or activity analysis enables speakers to select a place formulation that is in accordance with the topic of the conversation or the activity in which the parties are engaged. Importantly, the three levels of analysis are tacit achievements of the speakers and their selection of the adequate place formulation is contingent on all "orders of considerations" (Schegloff 1972: 83). Hence, what Schegloff (1972) shows is that parties in interaction choose place formulations that are appropriate for the practical purposes at hand, but not necessarily factually "correct", with

[5] All examples are taken from Schegloff (1972).

regard to their referential import. Schegloff's (1972) model has been reviewed by Enfield and San Roque (2017), who essentially confirmed Schegloff's study but extended it by adding further options of "place formulations", that include topological specifications (*left*, *north of*, etc.) and (pointing) gestures among others.

For person-referential practices (to absent third parties) Sacks and Schegloff (1979) showed that speakers orient to a principle of minimization (whereby a single reference form is used to refer to the "same" person), and to a principle for recipient design (whereby speakers use "recognitionals", i. e., reference forms that are readily recognizable by the recipient, such as first names). For place reference, however, such principles have not been identified and the applicability of the principles relevant for personal reference is open to question (Williams 2017: 555). However, Dingemanse et al. (2017) described place names as "recognitionals", because, just as personal names, they presuppose knowledge of the name by the recipient.

4.1.2. Describing and categorizing space

While onomastic research has focused on name-formats, and conversation analytic studies on place reference and on the contingencies under which different place formulations are selected, the way in which place names relate to the area they refer to has been less investigated. This also holds for Levinson's (2003) extensive study on how language relates to space, which mentioned place names only cursorily (2003: 69). Drawing on Schegloff's (1972) study, Mondada (2000) examined how speakers use place names and other place formulations in their descriptions of place. Her analysis showed, among other things, that the referential scope of place formulations – namely which area a place name or description refers to – was not given, but interactionally negotiated. Hence, the ways in which speakers name and categorize space provide the parties in interaction (but also the analysts) with insight into how they structure space (Mondada 2000: 155; see also De Stefani 2009b).

4.1.3. Topical talk

According to Sacks (1992, I: 753) "[o]ne extremely lovely sort of area for topical use is the naming of places". The spring lecture held in 1968 from which this quote is taken was dedicated entirely to "topic". In particular, Sacks pointed out that the selection of a place name is sensitive to the topic of the conversation (as developed later by Schegloff 1972). He observed that speakers often announce actions by mentioning a "place name" (his wording), rather than by formulating the activity that is going to take place in that location. He exemplified this with the words "I'm going to the bathroom" (Sacks 1992, I: 759), which, of course, imply that some (physiological) activity will be carried out there. The example also shows Sacks's

non-specific use of the term "place name", which is incongruous with onomastic terminology and, possibly, also questionable from the speakers' emic perspective. Aside from the topic-sensitivity of place names, Sacks also explained that the "mention of a place can evoke […] memories tied to that place" (Sacks 1992, I: 760). Therefore, using a place name may be an efficient way of developing a topic in an ongoing conversation, or it can serve the purposes of "namedropping" (Schegloff 1972: 91), an activity that can of course also be topically consequential. Analyzing presentation rounds in focus groups, Myers (2006) showed that individuals were often asked to say where they were from, to which they would reply systematically by using place names – an option that in this setting is clearly preferred over "relation to members formulations" (Schegloff 1972: 109). Myers described place names not only as resources available to construct one's identity relevant to the interaction at hand, but also showed how speakers choose place names that topically fit the previous talk, while at the same time offering possible topical developments for subsequent talk. Using a place name referring to "where they are from" provides individuals with entitlement to an opinion about that place, or to disaffiliate from a possibly stigmatized place, for instance. Hence, place names are fundamental resources for narratives.

4.1.4. Storytelling

The use of place names in narratives is a further topic of investigation on which several studies have been published recently. For instance, Dingemanse et al. (2017) have homed in on reference to place (as well as to person and time) occurring at beginnings of narratives and described them as contributing to setting the stage of the story. According to their analysis, which is strongly inspired by Schegloff's (1972) study, place names are one of many other resources by which speakers establish reference in narratives.

4.1.5. Stereotyping and stigmatizing

Discourse analytic and socio-onomastic research has shown that speakers often associate identities and ideologies with place names. Hence, it is not surprising that place names and derived adjectives can also be used in stigmatizing ways. The names that have been used in the recent coronavirus pandemic for referring to the pathogen and the ensuing disease illustrate this phenomenon. Names containing a reference to the area in which a first major outbreak was observed (*Wuhan virus*) or to the country from which it originated (*China/Chinese virus*) were branded as "inappropriate" (Prieto-Ramos et al. 2020), derogatory, or racist and related to the numerous incidents of xenophobia observed during the pandemic. In fact, many names of infectious diseases are formed with place names (*Crimean-Congo hemorrhagic fever, Lassa fever*, *Lyme disease*, *Marburg disease*, etc.), although

the WHO (2015) guidelines explicitly advise against such naming patterns. Notably, not all of these names are felt as stigmatizing. By analyzing how the names *Wuhan virus*, *China virus*, etc. were used in political rallies and how the audience responded to these labels, De Stefani (2021) showed that they are a readily available resource enabling politicians, journalists, and speakers in general to create, sustain, denounce, and stigmatize. Hence, the "inappropriateness" of such names is not inherent, rather, one can observe how interactants use them in ways that go beyond their merely referential purpose, eventually making them a locus of political debate. Place names then can become recognitionals for non-geographical entities, such as in the case of *Chernobyl*, which may readily be heard as referring to the nuclear accident that occurred in 1986. This may eventually lead to metonymical usages, for instance when the toponym *Brussels* is used in newspaper articles to refer to the European Commission (e. g. *Brussels decides against fining Portugal, Spain*; Politico, 27 July 2016).

4.2. The formal variability of place names

In ordinary conversation, place names occur in a variety of formats. While speakers may have different resources at their disposal to refer to the "same" area (*the US, the United States*, *America*; *the Netherlands*, *Holland*), the use of such alternative names may be relevant to the interactional contingencies at hand, or they may use referentially differing names. In a surprisingly introspective passage, Schegloff (1972) illustrated this aspect as follows:

> For [North] Americans, it appears, one goes "to South America" not "Peru," just as one goes to "Europe" not "France." If one says one went to France, one is asked "where else?", rather than "where in France did you visit?" Persons who went "just to France" may have to account for it (e. g. via what they had to do, better and worse ways of travelling, etc.). And the same seems to hold for South America and countries in it; not "where in Peru" but "where else in South America." For [North] Americans, the units parallel to the United States seem to be not France or Peru, but Europe and South America. (Schegloff 1972: 86)

Moreover, on occasion speakers may choose to produce a place name in a different language than their own. To refer to the Italian city of Milan, an English-speaker may for instance choose the Italian form *Milano*, which can be articulated with a more or less Italian-sounding pronunciation. Divergent phonetic production of place names is in fact commonly observed and unproblematically handled by speakers, such as in the following excerpt taken from De Stefani and Ticca (2011: 486), which illustrates different articulations of the place name *Mauritius* by two speakers of Italian. CAR (Carolina), a travel agent, is talking with a customer (GIN, Gino) about the presence of diamond deposits in Mauritius.

Ex. 1 (9212av1A31a, 121:54–122:00)[6]

```
01 GIN    ma non hanno giacimenti alle mauri{tsi}us.=
          but they don't have deposits at the Mauritius
          (islands)
02 CAR    =hanno giaci↑menti di: diamanti.
          they do have diamond deposits
03        (0.2)
04 GIN    alle mauri{tsi}us?=
          at the Mauritius (islands)
05 CAR    =alle mauri{ʃ}us:.
          at the Mauritius (islands)
```

Whereas Gino pronounces the name with the voiceless alveolar affricate [ts], Carolina pronounces it with the voiceless postalveolar fricative [ʃ]. While in this case the interactants do not make relevant the different pronunciation of the name, on other occasions different pronunciations may be used to invoke specific membership categories, as the following case study shows.

5. A case study

This section presents a case study that illustrates the methodological procedure of interactional onomastics. The excerpt has been collected in a tourism information office in Ypres (Belgium) and documents the initial encounter between a group of tourists from Hong Kong interacting in English with two tourism officers, BAR (Bart) and ANN (Anne). The tourists engaging in interaction with the officers are WAN (Wang), (LIN) Ling, and MIN (Ming).[7]

[6] The transcripts presented in this chapter follow Jefferson's (2004) conventions for talk and Mondada's (2018) norms for embodied behavior. Place names are highlighted in grey.

[7] All individuals have authorized us to use and publish the data and images for scientific purposes. Personal names have been pseudonymized in accordance with requirements established in the written consent form signed by all the participants.

Ex. 2a (BE_YPRES_TOUROFF_20191112, 140:20–140:40)

```
01 WAN   hello.
02       (0.3)
03 ANN   hello.
04 BAR   hello.#
   Fig         #Fig.2
05       (0.4)
06 BAR   hi.
07 WAN   +we: want# to (get/pay) a +ta#xi fo- (.) *to go to (.) here.*#
   WAN   +.....................+points on map-->
   WAN                                  *turns map slightly*
   Fig           #Fig.3            #Fig.4                  Fig.5#
08 BAR   diksmuide?
09       (0.5)
10 BAR   yes. (.) %okay,=%+
   WAN                -->+
   WAN           %nods--%
11 WAN   =fi- °we° we are- we are five.
12       (0.2)
13 BAR   you are five okay.
14       (0.3)
15 BAR   and would- you would like to go right now?
16       (0.2)
17 WAN   yes:=
18 LIN   =yes:,
19 WAN   [°yes.°
20 ANN   [and whady- (.) what (.) would you like to
21       visit in diksmuide?
22       (1.3)
23 ANN   just the town or,
24       (0.2)
25 WAN   uh: (.) the trench and the tower.
```

The excerpt starts with the greeting sequence initiated by Wang (line 01) and is completed by the two officers (lines 03–06).[8] Figure 2 shows that Wang is presenting himself at the counter with a map that is visible in the open guide that he is holding in his hands.

Figure 2: Wang with the unfolded map in his hands

Figure 3: Wang and Bart orient themselves to the map

[8] For a description of the moments preceding greeting sequences in unplanned encounters see D'Antoni et al. in this volume.

This conduct is accountable. Indeed, while Wang starts articulating the reason why he is calling at the tourism office (line 07), he and Bart display visual orientation towards the map that is visible to both (Figure 3). Both participants treat the map as a focal object for the interaction in which they are engaged. The central role of the map is further evidenced by Wang's pointing gesture, which he is preparing from the very beginning of his turn (line 07) and which reaches its maximal extension when he pronounces the word "taxi" (Figure 4).

Figure 4: Wang pointing at a location on map

Figure 5: Bart's orientation to the map

Wang's pointing is instrumental in orienting Bart's visual attention to the area indicated, and it is also projecting that the indicated spot will be relevant for what Wang is saying. Both interactants do indeed intensify their orientation to the map, Bart by leaning forward and closer to the map, and Wang by slightly turning the map and moving it closer to Bart (Figure 5). It is only at the very end of his turn that Wang produces the deictic "here" (line 07). This "locational pro-term" (Schegloff 1972: 87) serves as the linguistic counterpart of the pointing gesture, as is amply demonstrated in the literature (Bühler 1934). It is also a resource that enables Wang to refer to the place he wishes to visit without having to use a proper name, which is readable on the map as *Diksmuide*. That this place name is a viable alternative referential option is shown by Bart, who immediately produces the city name "diksmuide?" (line 08), pronounced as [dɪksˈmœːdə]. While persons familiar with Dutch would likely hear this as a Flemish pronunciation of the name, the excerpt does not provide any evidence about how Wang "hears" this. Indeed, whereas Bart produces the place name with a "try-marking" intonation (Sacks and Schegloff 1979), thereby projecting confirmation as an appropriate response, Wang's confirmation is produced late, and only in an embodied fashion, by slightly nodding (line 10). Bart treats this display as confirming that indeed the group wishes to visit Diksmuide, and the interactants orient to the practical organization of the trip (lines 11–19). However, at line 20 the other officer, Anne, addresses Wang and asks him what he would "like to visit in diksmuide?" While her pronunciation of the name is slightly different ([dɪksˈmœydə]), it is still clearly recognizable as a native speaker's pronunciation that is closer to a normative Dutch pronunciation of the place

name.[9] At this moment, Anne treats the name as established and shared between all the participants. However, while Anne has formatted her turn (lines 20–21) as a question directed to Wang, the latter does not provide an answer as the pause at line 22 shows. Anne orients to the notable absence of the response, and extends her turn (line 23) with a turn-constructional unit (Sacks et al. 1974) ending with a "trail-off conjunction" (Walker 2012). It is only after this that Wang provides an answer (line 25).

The analysis so far confirms that the usage of place names can only be effective if speaker and recipient share some knowledge related to that name. In particular, this example shows that the recipient does not recognize any of the two slightly different occurrences of "diksmuide" as a "sequence of morphemes that have been heard before" (Schegloff 1972: 91), even in the presence of the visually accessible written form of the place name on the map. It is also questionable as to whether he treats what he is hearing as "one unit" and whether he categorizes it as a "place name" at all. Conversely, the interactants establish a common understanding of where the group of tourists wants to "go to", with Wang combining gestural, material and vocal resources (pointing, map, "here"), whereas the officers use the place name "diksmuide".

That place names are problematic for speakers not familiar with them is further visible in the continuation of this interaction. Anne has just explained to the tourists that the tower and the trench they want to visit are located at a distance of about 5 kilometers from each other (not transcribed). She then suggests visiting another trench.

[9] Whereas as Bart's pronunciation of [dɪksˈmœːdə] (line 08) can be heard as markedly Flemish (especially because of the articulation of *-ui-* as a monophthong), Anne's pronunciation [dɪksˈmœydə] (line 21) is closer to the normatively expected Dutch pronunciation.

Ex. 2b (BE_YPRES_TOUROFF_20191112, 141:21–141:41)

```
01 ANN   maybe you can visit this# trench? that's in zonnebeke.
   Fig                           #Fig.6
02       (1.0)
03 WAN   where is it.
04       (0.5)
05 ANN   in zonnebeke.
06       (1.8)
07 ANN   +here.# (.) this is closer by.
   ANN   +points in map with thumb-->
   Fig         #Fig.7
08       (0.3)
09 WAN   uhu, OH: o:kay,=
10 ANN   =an+ you also can take a bus, because |
   ANN   -->+
11       .hhh (.) +taxi to dix+mu::de,+# (.) [will be,+ (0.7)
   ANN           +..........+points-+,,,,,,,,,,,,,,,+
   Fig                                #Fig.8
12 WAN                                        [hmm,
13 ANN   eighty[:, (.) one hundred [euro?
14 MIN         [eighty.            [eighty.
15 WAN   [wo::w.
16 MIN   [eighty. (.) I think eighty.
```

At line 01 Anne suggests visiting "this trench", while simultaneously displaying a brochure (Figure 6) and ending her turn with the words "that's in zonnebeke". By constructing her turn in this way, Anne orients towards the possibly asymmetrical knowledge in a skillful way. She first displays a photographic representation of the object of her suggestion concomitantly with the words "this trench?" (line 01), hence offering Wang the opportunity to display recognition. She then adds "that's in zonnebeke", thereby introducing a place name identifying the area in which the trench is located.

Figure 6: Anne holding up a brochure

The place name "zonnebeke" had not been mentioned in the previous interaction and it is evidently unknown to Wang. Indeed, after a one second pause (line 02), he asks "where is it". (line 03), thereby showing that he has not heard "that's in

zonnebeke" (line 02) as referring to a specific location. Anne repeats the "place formulation" (Schegloff 1972: 99) at line 05 with an emphasis on the first syllable of the name, but again a long pause occurs at the sequential slot in which Wang could display a response (line 06). Anne then uses the same set of resources previously observed (Extract 2a, line 07), namely a pointing gesture – executed with her right thumb – directed to the map and the deictic "here" (line 07; Figure 7). It is only at this point that Wang produces a response (line 09) that displays a "change of state" (Heritage 1984).

Figure 7: Anne pointing with thumb

Figure 8: Anne pointing with index

Anne accounts for her suggestion by mentioning that the municipality of Zonnebeke is located "closer by" (line 07) and that the tourists can go there by "bus" (line 10). This information serves as a background against which she describes a trip to Diksmuide as the more expensive option (lines 11–16). However, she now uses a different name form for Diksmuide, now pronounced [dɪksˈmy::t], which has been rendered in the transcription with the French name of the town, Dixmude (line 11). It is a matter for conjecture as to why she chooses a different pronunciation at this point, since none of the participants treats it as a noticeable phenomenon. However, what is clear is that this time Anne orients to, and circumvents, possible problems of understanding by pointing with her extended index finger on the map (where the city is indicated with the name *Diksmuide*), as she utters "dixmude" (line 11; Figure 8). She thus takes into account the lack of knowledge that Wang has displayed so far with respect to the place names that have been used.

Anne's use of different forms for referring to the "same" place poses a challenging problem of transcription and categorization. Indeed, readers of the transcript may interpret the decision to transcribe the place names Anne produces as "diksmuide" or "dixmude" as reflecting a Dutch versus French pronunciation. As such, one might be tempted to describe *Diksmuide* as an "endonym", that is as a name used by the linguistic community inhabiting the area to which Diksmuide belongs, whereas *Dixmude* could be categorized as an "exonym", in other words as a name variant used in a non-local language, in this case French (Raukko 2007). However, the spelling *Dixmude* has in fact been used locally since the nineteenth century, and it is also frequently seen in tourist information brochures and websites

in English, which are oriented to an international public. Hence, Anne's change in pronunciation from [dɪksˈmœydə] to [dɪksˈmyːt] could more likely be treated as evidence of her treating Wang as a "non-Flemish, foreign tourist", rather than the change being a simple switch from a supposedly "Dutch" to a supposedly "French" name form, for which there is no evidence. In either case, it may have created an additional problem for Wang, who has to understand that two different successions of sounds actually refer to the "same" referent.

This illustrative case study has documented some practical problems that the use of place names may entail and how these may relate to an asymmetry of knowledge. Contrasting with previous research – which focused on place name usage by members of particularized communities – this case study has examined the occurrence of toponyms in an encounter between unacquainted individuals who possess unequal "onomastic" knowledge. Whereas the tourism officers also indicate their expert knowledge of the area by using place names, these do not occur in the tourists' talk that is examined. The map provides a unique material support for establishing place reference, by combining manual resources (pointing gestures) oriented to areas on the map (where written representations of place names are available) with deictic terms (*here*). That this is a successfully employed practice is shown in the initial phase of the encounter (Ex. 2a), where Wang's multimodally deployed practice is immediately understood by the tourism officers as referring to "Diksmuide". Conversely, the continuation of the encounter (Ex. 2b) has shown that the same practice may be employed by the expert tourism officers after an unsuccessful use of a place name. By doing so, they orient to the place name, knowledge of which Wang is noticeably lacking. In this interaction, one apparent problem is Wang's inability to vocally articulate the place names, which is a fundamental dimension of onomastic competence, and which confirms, *e contrario*, Schegloff's (1972) observation that place names are effectively used – namely in an interactionally unproblematic way – only in cases in which the participants share knowledge about the location thus referred to. For tourism officers, this entails the delicate problem of having to decide whether using a place name is appropriate for "this" specific interactional partner, and they do so on the basis of their displays of (non-)understanding in the unfolding interaction. Incidentally, this interaction has also documented pronunciation variants in Anne's use of the "same" place name ([dɪksˈmœydə]/[dɪksˈmyːt]). While the first variant aligns with the format previously used by her colleague (Ex. 2a), the latter possibly orients to Wang as being a "non-local", a "foreigner", who has displayed difficulties in understanding the local versions of the place names used.

6. Conclusion

Place names have been described for a wide range of languages and can be considered as (quasi-)universal – depending on how the notion of "place name" is defined, especially with respect to the dimension of "properhood" (Coates 2006).[10] This chapter has provided an overview of approaches that have examined how place names relate to the social organization of communities. It has described the epistemological background and the methodological framework of place name studies carried out in anthropology, discourse analysis, and socio-onomastics, which all primarily concentrate on stable linguistic communities. It has proposed interactional onomastics as an approach that homes in on actual usage of place names in naturally occurring interaction – also including one-time encounters between individuals with diverse linguistic and cultural backgrounds. Conversation analysis offers the methodological backbone of the approach, but while studies in conversation analysis encountered place names as one option available to speakers for accomplishing place reference, interactional onomastics inverts the analytical procedure. It identifies (place) names in spontaneous interaction and examines which actions participants accomplish by using them. Place reference is only one action among others that speakers may accomplish. Place names can indeed be used for describing or categorizing space, they may be sensitive to the topical development of talk, in particular in narratives, and they can also be used with stigmatizing or stereotyping intents. While this is not an exhaustive list of actions participants may accomplish by means of place names, it offers some insight into the malleable and fertile resource place names are for interactants. Although not specifically focusing on place names, Schegloff's (1972) study remains a pillar for interactional approaches to place names. It has shown, in particular, that place name usage is sensitive to the membership categories interactants invoke and to the claimed, presupposed, and so on, knowledge that place name usage entails. By taking into consideration the linguistic and morpho-phonetic variation of place names, this approach widens the scope of previous research on place names and offers an evidence-based method for examining the actual use of place names in the natural habitat of their occurrence. It proposes a methodological alternative to the linguistic analysis of place names that contrasts with the dominant interpretive and interview-based approaches and contributes to a renewal of onomastics by focusing on the synchronic use and pragmatic dimension of place names. Toponymy certainly constitutes a fruitful object of investigation for interactional approaches, because of its cross-linguistic pervasiveness, and because of the distinctive opportunity it

[10] According to Levinson (2007: 37, n. 9) "[t]he only language reported not to have place names is Kata Kalok, a sign language used in a region of Bali (because this is a society of Absolute spatial thinkers, pointing will be sufficient […])."

offers to examine how proper names relate to issues of identity and knowledge. And interactional onomastics offers a method capable of reconciling linguists, anthropologists, and geographers.

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6. Describing motion events

Johannes Gerwien and Christiane von Stutterheim

Abstract: The expression of motion events cuts across all components of linguistic competence. This subdomain of spatial cognition is defined on the basis of a conceptual category: motion events do not exist, they are the result of conceptual construal. This means that besides knowledge of the expressive devices such as motion verbs, spatial prepositions and particles, speakers have knowledge of the specific principles that underlie the construal of meaning in relation to the outer world. As numerous studies have shown, speakers of different languages select different information and different perspectives on a systematic basis in representing motion events. This points to the fact that in order to talk about a figure in motion speakers draw on cognitive-pragmatic principles which determine how meaning is construed for being encoded in a specific language. Moreover, experiments on language specific effects in non-verbal cognitive domains such as unconscious visual attention and memory performance show how deeply these principles are entrenched, affecting communication in general. The article provides an overview of the field of motion event research, the partly inconsistent empirical results, and the theoretical controversy related to them. Then, a research project will be presented and discussed looking into crosslinguistic and cross-developmental effects of the cognitive pragmatic underpinnings on the expression of motion events.

Keywords: motion events, language typology, encoding, event schema, cognitive pragmatics

1. Introduction

Orientation in space is central for navigating in the world, communication about space is central for participation in a social community. Every language in the world allows for expressing motion in its different conceptual building blocks such as path, ground properties, orientation, manner of motion, force and cause. Talking about motion is a capacity which humans acquire early in life, but which takes many years to develop in its full range (Bowerman and Choi 2001). One of the central challenges in talking about motion lies in the fact that speakers have to control for the relation between the features of the external situation, including the properties of the addressee, and the adequate linguistic description. This conceptualisation process requires the choice of a perspective, and the selection and weighting of what are relevant features of the situation for event construal in

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a given language. If we take the definition of pragmatics "as a general functional (i. e. cognitive, social, and cultural) perspective on linguistic phenomena in relation to their usage in forms of behaviour" (Verschueren 1999: 7), we can say that spatial language is inherently pragmatic. This view, however, is commonly not taken by exponents in the wide spectrum of motion event research. The theoretical framing so far focuses on issues of representation, relating to the levels *cognition* and *language*. In this chapter, we want to take the discussion a step further by reviewing and discussing relevant research on motion events in the perspective of language use. This position asks for a differentiation between linguistic components of knowledge and knowledge of pragmatic principles involved in motion event description in relation to context. In describing motion events context plays a role at different levels:

a) A sentence such as "there is a car coming" refers to a situation in the outer world mediated by an internal mental representation. The communicative success of the message depends on the link between the meaning of the sentence and the external situation, in this case the semantics of the verb *to come* in relation to the position of the speaker and her relation to the moving object "the car". As in the given example, reference to deictic categories is an evident example for the pragmatic component of spatial language. In order to use verbs such as *come* and *go,* or *chodit* and *itsi* in Russian, particles such as *hin* or *her* in German adequately, speakers have to map their conceptual representation of the external situation onto the linguistic material available in the language. The hearer on the other side has to establish a conceptual representation based on the linguistic code, which refers to some external situation that is characterised by specific spatial features, or in the case of secondary or metaphoric deixis to a representation not linked to actual perceptual space. There are further aspects of the communicative situation that require pragmatic competence for adequate language use in the case of describing motion events. These are related to the specific parameters of the situation such as the properties of the hearer (e. g. age, social status, health condition, common knowledge), or the medium used (oral, written).
b) A different pragmatic component relevant for communication about a figure in motion can be located in the knowledge base of the individual. Specifically, linguistic experience shapes certain canonical ways of referring to types of motion events, as reflected in frequency of use in a language community. As studies on early language acquisition show, children's early spatial concepts are shaped by their native language. The parallel development of language and cognitive abilities in early childhood leads to a structured knowledge base, derived from mapping the representation of concrete experience and linguistic categories, stored in long-term memory (overview in Özçalışkan and Emerson 2016). This knowledge is pragmatic in nature in that it encompasses the principles according to which meaning construal is adjusted to properties of the

> context. Speakers do not construe event representations in a compositional way every time from scratch. Rather they draw on event frames and object schemata which ensure fast and automatic cognitive processing in potentially infinite, but categorizable, new situations, such as for motion towards a goal, or motion on the vertical axis. This can be illustrated by looking at different languages. A given situation in which a man is walking along a path will be described differently by speakers of German and speakers of French: *ein Mann geht einen Weg entlang* 'a man is walking along a path' versus *un homme marche sur la route* 'a man walks on the road'. For French speakers it is part of their language competence to select an event frame in which the description of manner of motion goes along with locational reference to the ground whereas for German speakers directed motion triggers an event frame in which the description of manner of motion is combined with directional reference to the ground. In both cases, certain components of the situation are left implicit, partly presupposed, to be integrated by the addressee through inferencing (Cappelle and Declerck 2005).

Extensive research has been carried out on the first mentioned component of pragmatic knowledge starting with Bühler's seminal work on Deixis (1934) competence (Barlew 2017; Fillmore 1997; Lenz 2003; Nakazawa 2007; Weissenborn and Klein 1982 to give but a few examples). There is hardly any research in the framework of pragmatics dedicated to the component referred to under b). However, questions to be addressed in this context fall exactly in what Schmid (2012: 4) defines as the field of cognitive pragmatics: "the general cognitive-pragmatic principles and processes that underlie and determine the construal of meaning-in-context". We will therefore put a focus on this domain in our survey article. The article will be organised as follows:

We will start with describing the theoretical framework that lies at the roots of most studies on motion events.

Research on motion events started in the field of spatial typology and semantics. The field moved ahead by submitting theoretical claims to experimental validation. We will review and summarise a large body of empirical research on the expression of motion events with a specific focus on typological variation on the one hand and cognitive implications on the other. In this context, studies on bilingual speakers have provided valuable insights. The last part will be devoted to the presentation of an individual research project on the construal of meaning in context under a cross linguistic perspective, leading to general conclusions and future directions for this domain of research.

2. Basic descriptive notions

Systematic research on language and space is insolubly connected to the name of Leonard Talmy. In his work on the semantics of space, he developed a theoretical approach decomposing the complexity of spatial cognition into a number of basic notions (Talmy 1975, 1983, 2000). Motion is taken to be the central concept with location as a special case. Talmy distinguishes between a core event frame and a co-event. The core event is formed by reference to figure, motion, ground, and path. Information on manner and cause are taken to constitute co-events. Path is a complex concept in itself, which comprises of information on the ground traversed by the figure (source, route, goal), the trajectory, and the orientation of the figure. These categories are taken to constitute the conceptual repertoire from which languages select specific elements for the encoding of motion events. Language specificity depends on the syntactic properties of the expressive devices, such as verbs vs. prepositions vs. particles as well as the degree to which a language differentiates concepts in the lexicon (e. g. types and number of manner or path verbs).

According to Talmy path is the central conceptual component of a motion event. Therefore, the distinction between different types of languages is grounded in the structural properties of path encoding. Languages which predominantly encode path in the verb are verb-framed, (see *entrer* in 1)) languages which predominantly encode path in a satellite are satellite-framed languages (see 2)) in Talmy's terminology. Satellites are syntactic constituents which are closely linked to the verb such as particles or prepositional phrases (see *into a store* in 2). Slobin (2004) suggested a third type, equipollently-framed languages (see *zou jin* in 3)), in which manner and path are expressed in serial verb constructions such as in Chinese, Korean, or Khmer (see also Bohnemeyer et al. 2007; Chen and Guo 2009; Zlatev and Yangklang 2004).

1) French: Il'ya une femme, qui entre dans un magasin. (verb-framed)
There is a woman, who enters in a shop

2) English: A woman is walking into a store. (satellite-framed)

3) Mandarin: Yi ge nv ren zou jin yijia shangdian (equipollently-framed)
$\text{One}_{\text{CLASS}}$ woman walk enter $\text{one}_{\text{CLASS}}$ shop

Numerous studies have since shown how languages differ in encoding motion events, looking at a whole range of different languages across language families and types (Croft et al. 2010; for an overview Levin and Rappaport Hovav 2019; Levinson 1996; Matsumoto 2003; Pederson 2016; Slobin 2004). However, as a result it has become evident that the two or three types are not as clear-cut in language reality. There is a high level of variation within one type and across types.

Some languages might even allow for patterns of different types. Further empirical studies have proposed that more criteria have to be taken into account in order to describe the patterns selected by speakers on a systematic basis: the manner of motion (Feist 2016; Pourcel 2004; Slobin 2006), the orientation and intentionality of the figure (Carroll et al. 2012; Flecken, von Stutterheim and Carroll 2014), animacy (Pourcel and Kopecka 2005), goal-orientedness and boundedness (von Stutterheim et al. 2012; Zlatev, David and Blomberg 2010), the perspective selected/the interaction with time-aspectual categories (Carroll 2012; von Stutterheim, Bouhaous and Carroll 2017), the level of granularity which is related to criteria of event unit formation and segmentation (Bohnemeyer et al. 2007; Filipović and Ibarretxe-Antuñano 2015; Gerwien and von Stutterheim 2018; Vulchanova and van der Zee 2013). Figure 1 gives an illustration of the basic concepts involved in motion event encoding, including the relation to the temporal domain.

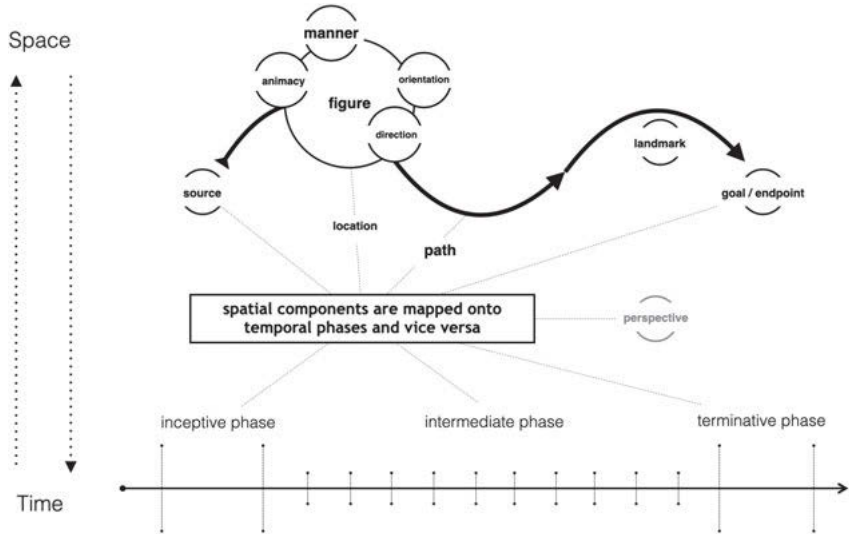

Figure 1: Basic motion event concepts in relation to the temporal dimension

3. Studies on the expression of motion events

3.1. Typological work: Methodology and theoretical approaches

The main body of research on motion events has been devoted to typological differences, as suggested by Talmy. Typically, studies look at two or three languages representing typologically different languages, in many cases Romance versus Germanic (Athanasopoulos et al. 2015; Berthele 2013; Cadierno 2008; Carroll et al. 2012; Durst-Andersen, Smith and Thomsen 2013; Gennari et al. 2002; Hickmann,

Taranne and Bonnet 2009; Naigles et al. 1998); other researchers have looked at English and Greek (Papafragou, Massey and Gleitman 2002; Soroli and Verkerk 2017) and also at larger numbers of languages (Fagard et al. 2013; Filipović 2007; Slobin 1996). Important insights were gained by Levinson and his research group. In the context of large-scale cross-linguistic studies on spatial cognition, they elicited data on motion event descriptions from typologically highly diverse languages (Levinson 1996, 2003).

The method most frequently applied in this research is controlled but unscripted language production, in which experience of an external displacement situation is provided either by static pictures or video clips (cartoon-like or real-world situations) or real-world experience such as in route directions. Participants typically describe the visual stimuli spontaneously. Researchers sometimes choose their stimuli, so that particular features of a situation can be made observable in their relevance for encoding e. g. scenes with endpoint vs. no endpoint, scenes with a change in direction/orientation of the figure, scenes with or without landmarks, etc. After transcription, participants' responses are coded for specific semantic categories (von Stutterheim 2021). Finally, frequency of occurrence of the selected semantic categories is compared between languages and/or stimulus categories.

Insights are also derived from comprehension tasks in which grammatical judgments, picture-sentence-matching tasks, similarity judgments, the visual world paradigm or reaction time measures are used to uncover unconscious conceptual processing. Mention should also be made of corpus-based explorations (Abdulrahim 2013; Filipović 2007; Meier and Thiering 2017), studies which integrate the medium of gestures (e. g. Özçalışkan and Emerson 2016), and work in the context of formal modelling of motion event descriptions (Freska et al. 2014; Mani and Pustejovsky 2012; Tenbrink 2008).

The theoretical approaches taken differ in what Casasanto (2007) calls "a shallow versus a deep view" on the implications of linguistic differences on cognition. While some authors look for explanations for crosslinguistic differences at the level of form (overview in Levin and Rappaport Hovav 2019), others take the data to point to differences at a more general cognitive level of event construal beyond differences at the structural and semantic level. The reasoning behind the latter position takes cognitive behaviour, resulting from the interaction with the external world as well as from communication, as the place where specific conceptual categories are shaped. This gives particular relevance to the specific language acquired and used for solving cognitive tasks. In this perspective it is by acquisition of a specific language and by daily use of that language, that conceptual categories are shaped and shared by all categories of cognitive processing. Drawing on theoretical constructs of cognitive linguistics, notions such as event frames or schemata were used to describe processing and representations of motion events leading to or interpreting the linguistic format: This shift in focus from the level of verbalisation to the processes which underlie language use led to a controversial debate. The

dispute centres around the relation between linguistic form – in our case typological differences in space-semantics – and spatial cognition. Two positions form the heart of the debate: The universalist position and the relativist position.

We will next survey the studies which have addressed these questions looking into the processes which underlie the construal of meaning in context, a genuine question of cognitive pragmatics.

3.2. Motion events and the language-and-thought debate: A question of cognitive pragmatics

While it was undisputed that languages differ with respect to the categories expressed overtly in encoding motion events and therewith the framing of motion events, a debate opened on how deeply the observed contrasts extend into non-verbal cognition. The universalist position assumes that cognitive processes are based on universal categories (Jackendoff 1990). Empirical studies in this vein tested the expression of motion events across space-typologically different languages in verbalisation and non-verbal behaviour such as visual attention (Papafragou, Hulbert and Trueswell 2008), or categorisation using the dual task methodology (Athanasopoulos et al. 2015; Cardini 2010; Feinmann 2020; Gennari et al. 2002; Montero-Melis et al. 2017). The conclusions from these studies converged in the claim that spatial cognition follows universal principles. Structural specificities of individual languages come into play when overt linguistic representation is being prepared in a specific verbalisation task as a transient phenomenon or when language remains covert but is used strategically to solve a given task.

A different line of argumentation is followed by studies which are subsumed under the label relativist position. Empirical studies on the implications of space typological differences have led other researchers to postulate long-term effects on conceptualisation. Numerous studies on the description of motion events by speakers of verb-framed and satellite-framed languages show language specificity effects on information selection, visual attention and memory performance (Feist 2016; Filipović 2011; Filipović and Geva 2012; Flecken, Carroll et al. 2015; Gerwien and von Stutterheim 2018; Lai, Rodriguez and Narasimhan 2014; Levinson 2003; von Stutterheim and Nüse 2003). According to this view the specific semantic and syntactic properties of a language which stand in a reciprocal relationship with cognitive structures in the course of early development in childhood lead to deeply entrenched mindsets.

The studies mentioned above have basically focussed on one component of motion event construal: the concept expressed in the verb, either manner or path. This reduces the actual cognitive task involved in motion event construal unduly. Filipović points at “the difficulty one encounters in drawing conclusions about how similar the languages are based on a limited criterion of where they lexicalize components of events” (2007: 160).

Approaches which look at the overall process of event construal go beyond the analyses of motion verb selection and visual correlates thereof. In this perspective, the whole process is taken into account, starting from perception to the generation of a conceptual representation which functions then as the basis for linguistic encoding. Studies following this theoretical line focus on language production and rely on experimental methodology. The questions addressed relate to processes of conceptualisation in relation to the specific means available in a language. Most studies use video clips as input and eye tracking methods to measure possible language related effects. In some studies, this step was followed by verbalisation, other studies looked at patterns of visual attention in non-verbal tasks (Flecken, Athanasopoulos et al. 2015; Flecken, Carroll et al. 2015). The results showed differences in patterns of visual attention across languages. However, there was no clear correspondence to space typological features. It became evident that other parameters are relevant in conceptualising motion events, notably temporal features of the situation and the linguistic systems. The perspective on motion events was extended to include typological features in the temporal domain, particularly grammaticalised aspectual systems in their impact on motion event construal (Athanasopoulos and Bylund 2013; Bylund, Athanasopoulos and Oostendorp 2013; Cappelle and Declerck 2005; von Stutterheim et al. 2012, 2017). The findings supported a view under which the domain of analysis is shifted from the level of lexicalised categories to the level of event construal.

A study on aspectual marking in Arabic varieties (Modern Standard and Tunisian Arabic) is taken to illustrate the interaction of time and space typological properties (von Stutterheim, Bouhaous and Carroll 2017). Both varieties under investigation are characterised as verb-framed. Tunisian Arabic has developed a rich aspectual system, with a perfective, a participle as a proper progressive, a periphrastic form with the aspectual verb *qa3da* 'to sit' as ongoingness marker and an imperfective. The use of these forms is highly constrained in the context of motion events. The perfective can be used for boundary crossing events, referring to the position at goal. The progressive can only be used for spatial progression from source/to goal in a directional context, never with reference to a location. The periphrastic construction is used with a locational adjunct. It is incompatible with reference to a boundary. The imperfective selects a subinterval of a motion event, incompatible with reference to boundary crossing. In contrast to Tunisian Arabic, Modern Standard Arabic has two grammaticalised aspectual categories perfective and imperfective with other aspectual expressions being optional. In the context of motion events, the imperfective is not constrained with respect to the predicate type used. In this study, speakers of both varieties were asked to verbalise three different types of motion events (with potential goal, with no evident goal and with boundary crossing). The results showed significant differences with respect to the conceptual components expressed in encoding the same scenes. In Tunisian Arabic directed motion events were frequently expressed by a motion verb in the progressive only,

with no further information on spatial features of the situation. The temporal progressive was taken to imply spatial progression. In the Modern Standard Arabic data, the same events were represented by path verbs and adjuncts referring to a potential goal. This means that on the basis of the different grammaticalised categories in the two varieties, speakers construe different event representations. These imply a different balance between explicitly given information and parts of information which are left to inference and parts which are left completely unspecified.

The lesson we learn from such comparative studies taking a comprehensive view on the overall event pertains to the levels of linguistic competence involved in motion event construal. Above knowledge of the lexical and grammatical components of a language, speakers draw on pragmatic knowledge which includes the "cognitive principles and processes involved in the construal of meaning-in-context" (Bara 2010). In the case of motion event construal this includes the principles according to which visual attention is distributed across the different components of a situation as well as knowledge about the adequate event frames to be activated, which form the basis for the relation between explicit and implicit parts of information. Evidence for an isomorphic relation between event construal in visual processing and linguistic processing also comes from recent neuro-physiological studies on event cognition (Cohn and Paczynski 2019; Flecken, Athanasopoulos et al. 2015; Thierry 2016).

What do these studies tell us about the relation between language and cognition? Analysing event construal in the context of linguistic encoding does not allow for conclusions on non-verbal cognition. Whether there is a level at which universal conceptual primitives are represented cannot be decided on the basis of the studies reported. What these studies show, however, is that speakers of different languages communicate differently in terms of informational content as well as perspective. This implies that in order to be a competent user of a particular language you have to master the pragmatic principles according to which reportable events are construed in a given language community (Carroll and von Stutterheim 2011; von Stutterheim et al. 2020). This includes the allocation of attention to certain components, the selection of those components which are taken to be pertinent for communicating motion events and thereby the control over those parts which are left for inferencing. These language specific patterns are deeply entrenched (Cappelle and Declerck 2005), guiding speakers in what they take to be salient for communication. Studies on multilingual speakers and learner languages are an excellent test case for this claim.

3.3. Multilingual speakers and L2 use

Spatial categories and in particular the description of motion events have been studied more than any other domain in the field of multilingualism and second language acquisition over the last years. The questions addressed in this context cover

a large field. Based on the fact that languages differ with respect to patterns of event construal, studies on early bilinguals are interesting in relation to the controversy on language-on-cognition effects. Do early bilinguals develop two separate systems which – besides the formal language systems – include pragmatic patterns of event construal or do they develop a merged system in which they use the different linguistic forms on the basis of one system of underlying event frames?

Engemann (2012) investigated the language development of English/French bilinguals between the age of 4 and 10 years. She found that in referring to self-propelled and caused motion events bilingual children develop a bilingual specific system which merges patterns of French with patterns of English. Even at the age of 10, children do not conform with monolingual children in the two languages. While the bulk of studies in this context looks at combinations of Romance and Germanic languages, there are also studies which investigate early bilinguals with typologically unrelated languages. Wörfel (2018) analyses a database from German/French-Turkish bilinguals, Wang and Wei (2019) have studied English-Cantonese early bilinguals, to give but two recent examples. These studies confirm the hypothesis that early bilinguals develop patterns of event construal and linguistic expressions which are deviant from the corresponding monolingual patterns. In the context of the discussion of language specificity at the level of conceptualisation these authors argue against the position that the multilingual acquisition means acquiring different coding systems for what can be taken as one universal conceptual non-verbal system of spatial categories.

Studies on second language learners in the field of motion event description are particularly interesting with respect to the question in how far the acquisition of linguistic means of a new language implies the acquisition of relevant pragmatic knowledge, critical for native like language use in context (Majid et al. 2004; von Stutterheim et al. 2020). In the course of L1 acquisition children develop and store the language specific object schemata and event frames for cognitively structuring their experience of the outer world (cf. Filipi this volume). These components of pragmatic knowledge are activated when perceived information is conceptually processed for forming a reportable event. This knowledge has become deeply entrenched, its activation is unconscious and highly automatic.

Research on second language speakers, in particular very advanced learners, reveals in how far knowledge at this level can be restructured and under which conditions it can be activated in real-time language processing. Let us illustrate this by an example: If a German learner of French describes a motion event by the sentence *une femme court à travers la rue au magazine* 'a woman runs across the street to the shop', she selects an event frame which is the preferred choice for speakers of German. The event type is determined by a manner of motion verb, path segment(s) have to be added in order to form a reportable event. This pattern is deviant in French. Clearly, this can only be interpreted as an effect of L1 structures shaping the use of L2 forms (von Stutterheim et al. 2020). However, it remains

an open question, whether this is a phenomenon which occurs at the level of conceptualising content for speaking (Slobin 1996) with some universal, language independent level of cognitive construal forming the basis for encoding in any language. This is what has been termed the "shallow view" on the language-thought relation. An alternative interpretation is given by the "deep view" which claims that linguistic categories shape cognitive representations (see Casasanto 2007 for a comprehensive discussion) already at the level of non-verbal cognitive processing.

Numerous studies have been carried out to tackle this question. Results are highly diverse, interpretations conflicting in their conclusions. We will give an insight into the debate without claiming comprehensiveness. The methods used are empirical, mainly experimental, following what has been developed for the typological studies referred to above. Verbal tasks are complemented by non-verbal tasks, such as picture matching, categorisation (e. g. in a forced choice triad test), eye tracking in the visual-world format, similarity judgments, and memory tests. Evidence for the shallow view is presented in studies which use language production tasks, and the method of verbal interference. The results showed no effect of the L1 patterns on motion event description in the L2 (e. g. Cadierno and Ruiz 2006; Stringer 2012). Authors argue that there is no fundamental hurdle for acquiring new event framing for L2 use, given that speakers are equipped with principles of universal syntax and a language independent cognitive level of event representation. In order to rule out effects of covert activation of the L1, the method of verbal interference is used in a number of studies (Athanasopoulos et al. 2015; Feinmann 2020; Montero-Melis 2017). The rationale behind this method is the following. If speakers have to activate a language, for instance for counting or producing syllable sequences, then this language cannot be accessed covertly for a simultaneously ongoing non-verbal task such as categorisation. The results showed that language specificity effects which are present in non-verbal tasks without verbal interference disappear under verbal interference. This is taken as evidence for the shallow view on language on cognition and for the thinking-for-speaking hypothesis. In this view, the interference experiment shows that there is a language independent cognitive level at which motion events are represented in the format of abstract universal conceptual categories. However, there is a problem with this line of argumentation. It lies in the fact that the brain is not restricted to processing one stream of linguistic material at a time. We know from bilinguals, that elements of both languages can be activated at the same time, and we know from psycholinguistic research (Levelt 1989) that language production proceeds incrementally. This means that the brain is able to run language processing simultaneously at different levels. It is therefore questionable whether a dual task design actually excludes covert language activation as assumed in the respective studies.

We turn now to the numerous studies on motion events which take a different stance. Looking at advanced learners of a second language across typologically different languages evidence is presented for L1 effects on motion event construal

(Athanasopoulos et al. 2015; Bylund and Jarvis 2011; Flecken, Athanasopoulos et al. 2015; Flecken, Carroll et al. 2015; Pavlenko and Volynsky 2015; Treffers-Daller and Tidball 2015). Again, methods used include verbal and non-verbal tasks. In the given context, the results for very advanced L2 speakers are of particular relevance. They show that speakers who manage the formal system of the L2 more or less without deviations use the forms according to principles rooted in their L1. This points to the fact that the cognitive pragmatic principles which determine the construal of meaning-in-context in a language are not automatically learned through the acquisition of the formal devices. The findings obtained in non-verbal tasks, and the analyses of visual attention patterns across language pairs support this assumption. L2 speakers visually attend to scenarios showing motion events according to the patterns observed for the corresponding mother tongue. Results in memory tests show that they extract information from the percept corresponding to their L1 (Pavlenko 2003; Pederson et al. 1998; von Stutterheim et al. 2012). These findings strongly suggest that there is a level of cognitive representation at which language specific principles of event construal are stored (Levinson 1997). As the field has grown, studies have diversified looking at variables such as age of onset, proficiency and frequency of use over time, which potentially influence the acquisition of patterns of event construal. Factors, identified as being influential in this context, are the level of language competence and frequency of use of the target language. As discussed in Park and Ziegler (2014) highly proficient speakers of an L2 show patterns of motion event construal which do no longer conform with their mother tongue but have to be taken as a result of a merging process of the two systems, yielding a similar picture as the early bilinguals. Thereby new principles of event construal are established, a fact which the author interpret as cognitive restructuring on the basis of language.

These principles are pragmatic in nature in that they operate at the interface between perception, conception, mental representation on the one hand and a specific task on the other. While children acquire these principles along and through the acquisition of linguistic forms, this gateway seems to be no longer automatically open. A reason for this difference can be found in pertinent studies on L1 acquisition (Allen et al. 2007; Choi and Bowerman 1991; Harr 2012; Hickmann, Hendriks and Champaud 2010; Hickmann, Taranne and Bonnet 2009).

3.4. Describing motion events in L1 language acquisition

Starting as early as in 1991, Choi and Bowerman investigated English and Korean children acquiring the competence for expressing motion events. Children aged between 14 and 24 months were studied in their use of lexical items referring to spontaneous and caused motion. The authors concluded that given the fact that children's early spatial words have language specific meanings, "language learners do not map spatial words directly onto nonlinguistic spatial concepts … but

instead are sensitive to the semantic structure of the input language virtually from the beginning" (Choi and Bowerman 1991).

Hickmann and colleagues conducted relevant L1 acquisition research taking the description of motion events as touchstone (Harr 2012; Hickmann et al. 2010, 2009). Following a crosslinguistic approach, the data elicited and analysed come from French and German speaking monolingual children of 3 years of age and older. The guiding research question addresses again the interrelation between general cognitive factors and typological factors which constrain the schematisation of motion events from early on. Empirical results prove this early effect of specific language structures on event schematisation. This points to the fact that – contrary to the assumptions of the universalist view – language specific patterns of event construal are not transient in the process of language production but form a permanent part of linguistic knowledge. "Since each language filters the flow of information differently children construct their spatial categories in accordance with the categories provided by their language" (Harr 2012: 3). While the term "pragmatic" is not used in this context, the component identified as language specific representations in the form of event schemata and differently weighted elements of real-world motion events is pragmatic knowledge, procedural in nature, in that it provides the basis for selecting adequate expressive devices in a given context. This knowledge becomes deeply entrenched in the course of L1 acquisition.

3.5. Interim summary

A large body of research on the description of motion events across numerous different languages, using Talmy's (1975, 1983, 2000) categories as common framework for spatial analyses, has clearly shown differing encoding patterns. These patterns stand in correlation with the specific structures of the respective language. Most contemporary research acknowledges that it is the interplay of multiple factors that contributes to how speakers of different languages talk about and represent motion events. These include factors anchored in how spatial concepts are expressed on the linguistic surface, e. g., the verb-framed/satellite-framed/equipollently-framed distinction, as well as factors regarding the conceptual representation underlying the linguistic surface. Regarding the latter it has been shown that speakers may draw on different types of information during event construal such as information on the figure in motion (e. g., orientation and intentionality), information on ground features (e. g., importance of goal information), information on the temporal unfolding of a scene (phasal decomposition). Results also pertain to differences in perspective (deictic, intrinsic), and in event unit formation (level of granularity). In short, we find distinctive patterns of information selection, structuring, and mapping conceptual structures onto language in speakers of different languages. Evidence comes from studies on typologically different languages, first and second language acquisition and on bilingualism. Furthermore, the crosslinguistic

study of motion event description has been exploited as a test case in the language and thought debate. While studies in this context have focused on the correlation between linguistic expression and processes of conceptualisation, the question why speakers use the linguistic means available in their language in the way they most frequently do – although every language offers a whole range of different expressive formats – is not satisfactorily answered. For instance, there is nothing in the verb *rouler* which would block the combination with *le longue de*. It is part of the knowledge of a native French speaker that an event type construed around "manner of motion" does not include information on directionality expressed by reference to ground features. This type of knowledge is relevant for language use. Studies on second language acquisition show that even advanced L2 speakers do not perform native like at this level. Surprisingly, the use of language in relation to a particular motion event in the external world is not framed in pragmatic theory, although notions such as "event construal", "event framing" or "mapping language onto experiential input" point to genuinely pragmatic components of language competence. In order to explain the differences found at the level of event construal the principles have to be formulated that underlie the construal of meaning in context (Schmid 2012). In the remainder of the article, we will report on a research project which has looked into the different steps of motion event construal, starting with event unit formation through processes of conceptualisation to verbal encoding. In conclusion, we advocate new lines of research, framing motion event construal in cognitive pragmatic categories.

4. Motion event construal: Results from a crosslinguistic research project

4.1. Overview

In this section, we will illustrate the theoretical concepts introduced above by reporting on several studies of a crosslinguistic project which compares speakers of German and French along different dimensions of analysis. At the end of the section, we will suggest a coherent model for integrating all aspects of motion event encoding. The empirical data were collected across several empirical studies, each of which focused on different aspects of motion event representation and encoding (Flecken, Carroll et al. 2015; Gerwien and von Stutterheim 2018; von Stutterheim et al. 2020; von Stutterheim and Gerwien 2021). The methodological approach in all these studies was basically as described in section 2: Participants of the two languages are exposed to identical stimuli (manipulated with respect to different features) and were asked to solve identical tasks. French and German were chosen because the languages belong to different typological categories: French, a typical verb-framed language, German, a member of the satellite-framed category.

4.2. Event unit formation

Gerwien and von Stutterheim (2018) investigated whether speakers of the two languages represent and verbalise motion events, in which the moving entity changes direction/orientation as consisting of one or more event units. The rationale behind this is two-fold: (1) expressing path in the verb (French) requires the selection of a new verb whenever the spatial parameters of the path taken by the figure changes, e. g. by changing direction or orientation; (2) expressing manner in the verb and path information in satellites (German) allows for the inclusion of several path segments into one unit (*Ein Mann läuft* [*aus einem Gebäude*], [*über einen Hof*], [*in ein anderes Gebäude hinein*], [*die Treppen hinauf*], [*in das Büro seines Chefs*]. 'A man is walking [out of a building], [across the yard], [into another building], [up the stairs], [into his boss' office]'). In experiment 1, participants were instructed to simply describe the visual stimuli presented to them (videos of real-life events). In experiment 2, different groups of participants were asked to indicate by a button press whether they subjectively perceived "a change in the situation" shown in the video ("Newtson-task" Newtson 1973). Critical stimuli showed the moving entity changing direction. Control stimuli did not. Filler stimuli showed rather complex scenes, in which an actor performed several actions, e. g., accidently dropping a wallet, noticing the loss, picking up the wallet, and continuing to walk.

The data were analysed with respect to the proportion of trials in which participants used more than one assertion (a linguistic unit constituted by one finite verb) and with respect to the proportion of trials in which participants pressed the button to indicate a change in situation. While no differences were found in the control condition, language groups differed in the critical conditions. French speakers were more likely to refer to the critical stimuli with more than one assertion in the verbal task. In the non-verbal segmentation task, they were more likely to indicate "a new situation" at points where the figure changed direction compared to German participants. The parallelism observed between the verbal and non-verbal tasks evidences that there is indeed a strong link between conceptual preparation for speaking and conceptual processing for solving a task that does not require an overt linguistic response. Based on how researchers in cognitive psychology have previously interpreted event segmentation measured by use of the Newtson-task, we argue that both representations are in fact isomorphic (Radvansky and Zacks 2014).

With respect to unit formation, the results show that experience with using a specific language with its entirety of combinatory rules (grammar) and lexical elements (words) has an impact on how information from the continuous perceptual stream is extracted and organised for further cognitive processing. Furthermore, the results support previous observations that speakers of French extract and process features from visual scenes which are essentially figure-based, i. e., the features of the moving entity (its orientation with reference to a landmark, goal, or source) drive motion event construal as opposed to features of the ground (Carroll et al. 2012).

4.3. The different role of manner verbs across French and German

A closer look at the verbs that French and German speakers use in the online descriptions shows that manner verbs represent different types of motion events. If no information from the visual scene is available that allows to determine the direction/orientation of the figure, French speakers resort to using manner verbs (Carroll et al. 2012; Flecken, Carroll et al. 2015) while the use of manner verbs in German is not constrained in this way. Thus, in comparison to speakers of Germanic languages like English and German, speakers of French select manner verbs for different reasons. This stands in sharp contrast to most of the previous research on motion events in which the use of manner (or path) verbs is assumed to correlate with the same event frame. Speakers of German construe motion event representations based on the manner of motion the figure exhibits and then "attach" information on the path, while French speakers by default construe motion events based on path information, and resort to manner verbs only as a secondary strategy (von Stutterheim et al. 2020; von Stutterheim and Gerwien 2021). Given that path and manner information are objectively always present in motion scenes – they make up different "layers" of the same event (Bennett 2002) –, one may summarise these observations by stating that speakers of French and German show different preferences in the selection of the event layer they choose for motion event construal. Speakers of French choose the path layer by default, speakers of German choose the manner layer by default. Insufficient information on path, however, lets speakers of French opt for a different, non-default strategy. Interestingly, if French speakers choose the manner layer for event construal, they typically do not provide information on the direction/orientation of the figure in an adjunct either (even though prepositions like *vers*, *le long de*, etc. exist) – a striking difference compared to speakers of German. In French, manner verbs are most frequently combined with adjuncts expressing location (*sur*, *dans*), or with no adjunct at all ("zero adjuncts"). Therefore, if a manner verb occurs in French, what is expressed is not an event unit that can be characterised as directed motion, rather the event unit is construed as a figure moving in one location, i. e., as a freeze image of the scene from which the event unit is formed. From a more traditional linguistic perspective, these observations have consequences on the syntactic status of the adjuncts combined with manner of motion verbs ("argumenthood"). While in German, an adjunct specifying path information is obligatory in the context of motion event descriptions, it is not obligatory in French. If no adjunct is provided in German to co-occur with a manner of motion verb, such as in *Das Kind rennt* 'The child is running', the resulting construction is not suitable to be used when referring to a directed motion event, instead an activity reading is triggered. This is not the case in French (Carroll et al. 2012; von Stutterheim et al. 2020; von Stutterheim and Gerwien 2021).

4.4. Visual information uptake during scene perception

The entire process of motion event construal, i. e., from visual information uptake, over information categorisation and conceptual preparation, to linguistic expression, has also been studied using eye tracking in speakers of French and German. In Flecken, Carroll et al. (2015), again, scenes of different qualities – in this case, with and without an evident goal/endpoint of motion – were presented to speakers of the respective languages and visual attention allocation to the moving entity and to potential endpoints was recorded for the duration of a complete experimental trial. Results show that speakers of French attended more to the moving entity in the earliest phases of the unfolding scene than speakers of German, which supports the view that motion event construal is guided by figure-based conceptual features in French. In addition, the eye movement data revealed that there is significantly less visual attention to less evident endpoints in French speakers compared to speakers of German. Findings like these illustrate that the way in which speakers use their linguistics means in specific situations even impacts fundamental cognitive functioning such as attention allocation during visual information uptake.

5. Modelling motion event construal and the localisation of pragmatics

As illustrated in the last section, crosslinguistic studies provide a window on the multi-factorial nature of event construal. They highlight that the linguistic forms that are eventually uttered to refer to motion event scenes in a specific language can be traced back to cognitive representation and functioning that lies way beyond what is traditionally considered as core linguistic knowledge (mental lexicon/grammar) and the psycholinguistic encoding processes (e. g. syntactic encoding). Rather the studies reviewed above show how intimately pragmatic principles and the language system in the narrow sense are interdependent at different levels. As soon as we look at language in use, i. e. when studying spontaneous motion event descriptions in experimental environments with different groups of speakers, we gain insights into the principles which guide speakers in construing meaning in context.

Drawing on the standard model of language production (Levelt 1989) we propose an extension of the model by pragmatic principles. We will take the psycholinguistic processes of motion event conceptualisation and encoding for illustrating our view. To these ends we first resume how and where pragmatics affects the encoding process: (1) Pragmatic principles influence the formation of the set of event frames most frequently used in one language through language experience, i. e., during language acquisition and daily language use; (2) pragmatic principles drive the selection of a specific event frame in a given situation; (3) pragmatic principles shape the way in which one specific (selected) event frame is fleshed out during the actual encoding process.

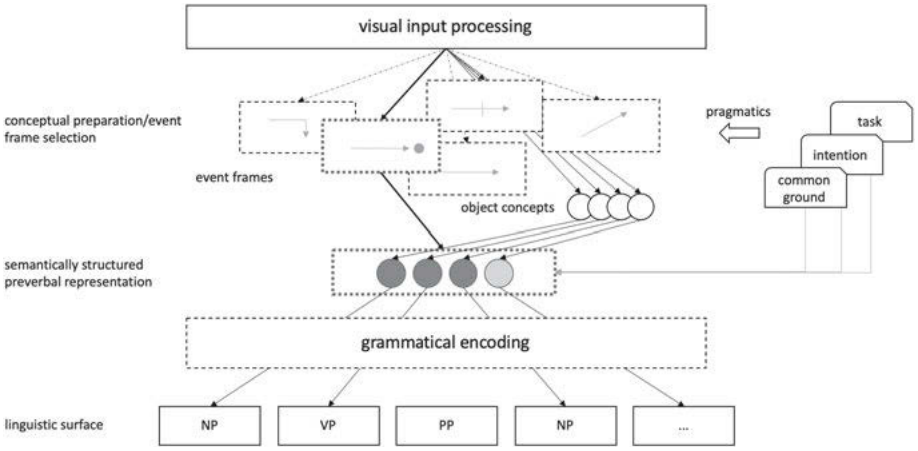

Figure 2: Motion event encoding – the standard model of language production amended with event frames and event frame selection

The motion event encoding process can be summarised as follows: The encoding process begins with the activation of a suitable event frame. If pragmatic factors take on a default value, the most common frame, or "default" frame will be activated; default frame selection is based on the default visual information extraction strategy, e. g., attentional bias towards figure-based or ground-based features is in full effect. In parallel, visual information is used to identify objects in a scene that serve specific functions within the selected event frame, e. g., the concept category of the figure, the ground, landmarks, start or end points. Next, the conceptual representation, i. e. the selected event frame including all specific concepts that fill the positions made available in the selected event frame, is mapped onto a semantic representation, which specifies the frame-inherent relations between figure and ground and which obeys further pragmatic specifications, if necessary; e. g. discourse status of the referent(s) (common ground; given-new), etc. Next, lemmas are activated and selected from the mental lexicon, which are suitable for encoding the activated lexical concepts corresponding to the specified referents and the specific combination of spatial relations, e. g. the selection of a lemma corresponding to the figure, the selection of a manner verb lemma (plus particle) and a lemma for the encoding of a ground object. In parallel, the syntax of the to-be-produced utterance is assembled, either compositionally by aligning phrase structures, or based on the meaning-form relation. Next, form information is retrieved from the mental lexicon, and phonological and phonetic encoding takes place. Finally, the speaker begins articulation.

In our view, speakers of all languages are able to perceive and verbally communicate about the same facets of the world, in our case figures in motion relative to a ground. However, we hold that experience as a speaker in a given language

community leads to the formation of specific cognitive processing routines or specific conceptual representations that allow effortless, fast, and automatic information retrieval, organisation, and encoding. A major factor in the formation of these experiences is in fact pragmatics, that is the acknowledgement or understanding of how frequently speakers of one's own language community profile specific aspects of motion events by using certain linguistic structures under specific conditions. For example, as illustrated above, speakers of French have been shown to place focus on figure-based spatial concepts, even though other concepts involved in motion event representations are objectively available. This may be understood as a convention among speakers of the same language community that has developed on the basis of what can be expressed relatively effortlessly given the linguistic repertoire available. A speaker of a given language is thus over and over exposed to how other speakers of the language single out specific conceptual features of scenes by using certain linguistic structures. In this way, "pragmatic experience" is formed and stored as pragmatic principles in long-term memory.

6. Conclusion

In this chapter we have given an overview of current research on the description of motion events. After a first research phase in which focus was placed on the linguistic format across different languages, the field moved on to studying cognitive processes which characterise the construal of motion events and subsequent encoding. This theoretical shift implied a shift at the empirical level, from the analyses of a linguistic product to the analyses of the external and internal contextual conditions which lead to a specific framing of a motion event. The crosslinguistic studies on motion events reveal what it implies to be a native speaker of a language. Attention allocation, information selection, perspective taking, event framing – all these sub-processes between perception and verbalisation of a motion event – are found to be systematically related to the respective speech community. Going back to our claim at the beginning, we can now say, that these processes are driven and shaped by language specific, pragmatic knowledge. Event framing is a genuinely pragmatic concept in that it refers to the level at which contextual information and the specific task to be solved are mediated. Relating back to the language and thought debate, the pragmatic dimension adds an interesting avenue for the study of motion event encoding. Typical fields of pragmatics such as politeness rules or taboos are specific to different speech communities. How to address a person, how to talk about disease and death follows principles which are part of the knowledge of every speaker of a speech community. Yet, nobody would claim that there is a universal set of cognitive primitives represented in everybody's mind, and the specific formation of polite language is just a transient phenomenon. There are parts of our cognitive ability which are not universal. In conclusion we suggest taking

the domain of motion events research to pave the way for modelling entrenched cognitive routines in a comprehensive theory of linguistic competence.

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7. Discourses of place: The formation of space and place through discourse

Félix Danos

Abstract: This chapter addresses the discursive production of space and place, by drawing on a methodological and theoretical framework of ethnographically informed linguistic and semiotic anthropology. Here discourse will be understood as language in use and hence in context, which necessarily relates to language in space. The aim of this chapter is to address the formation of contrasting modes of discursive production (discourses) in space for the production of place. In other words, whilst other pragmatic approaches to space look at the ways language categorizes spatial distinction (for example using words such as "up" / "down", "east" / "west", "before" / "after", Levinson 2004; Keating 2015) and how speakers interact with reference to space (notably through occupying interactional space, Mondada 2018), this contribution will look at how speakers build on these pragmatic and interactional spatial resources in order to produce a "sense of place" (Tuan 1977; Feld and Basso 1996) through discursive (oral or written) text, which can in turn be socially, culturally, but also geographically located. In the second part of the chapter, I offer an analysis of discourses about a place located in rural Central France (Allier département) to show how socially and materially situated and contrastive chronotopic formulations, i. e. modalities of discourse production with relations to space, time and person (Agha 2015), afford for the (re)production of ideological distinctions between a relatively urban center and a rural periphery.

Keywords: discourse, space and place, chronotopic formulations, linguistic and semiotic ideologies, metapragmatics, urban and rural

1. Introduction

Studying the pragmatics of space implies accounting for the way human speakers living in society place themselves within a preexisting or presupposed spatial framework, and act upon it through a range of discursive/semiotic modalities. In one of these modalities the speaker is portrayed as simply describing spatial configurations around herself, or relaying preexisting information. However, even the driest and least passionate description of a landscape or of spatial arrangements consists in a pragmatic act of configuring space into place, through the spatial positioning of the speaker with regards to her environment, through the selection of relevant non-linguistic elements and their association to particular linguistic ones.

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Discourse, understood as language in use, and hence in context, plays a central part in relations of place construction, understood as subjective and situated modes of interacting with space. Here I will explore in detail the relations between language in context and space in general, with a particular focus on the discursive production of place. The first part of the chapter offers a theoretical outline of the relations between discourse, space and place. To begin, I shall present the importance of space at various scales in discourse analysis, then I go on to presenting the importance of language ideologies with relations to space. I then address the articulations between space and place, as developed in the fields of Marxist-inspired or phenomenologically oriented human geography, and the importance, in these approaches, of language in context. This section ends with a presentation of works in ethnographic sociolinguistics and linguistic and semiotic anthropology addressing issues linked to the discursive production of space, and it argues for the relevance of Agha's concept of "chronotopic formulations" (Agha 2015) calling for the analysis of spatial, temporal and subjective aspects of discourse and semiotic production as inherently linked.

Having set this theoretical framework, I look at a case study stemming from my own field research in Central France, in the mainly rural district of Allier, and the Bourbon Mountains (Montagne bourbonnaise) area South-East of this district. Starting out with the analysis of spatial relations as depicted on the welcome page of the website of a rural community in the area (Ferrières-sur-Sichon), I will show how territory is mapped-out discursively according to a town/country opposition. I then go on to presenting transcripts of a conversation I had with two elderly ladies in the center of town, when they themselves presented the communal territory through their accounting for walks taken around the countryside surrounding the town. In contrast with the tourist-oriented discourse from the website, I show that the two ladies more or less implicitly present the countryside as a place where people live, as a place of interaction, and not merely as empty space, or as a "setting" for a relatively urban settlement. In conclusion, I argue that no description is merely descriptive, as it entails the social, spatial, temporal and subjective positioning of speakers with regards to enunciative context, and, conversely, the discursive production of place.

2. Discourse analysis, space and place

2.1. Spatial aspects of discourse analysis

There are a great diversity of definitions of discourse both inside and outside the fields of (socio)linguistics (Jaworski and Coupland 2006). Schneider and Barron (2014) present various definitions of discourse ranging from a very restrictive one where it is understood strictly as oral speech as opposed to written text (examples

of this use include Titscher et al. 2000 and Cicourel 1985), to a very general one where it includes all aspects of a social interaction, as opposed to the strictly linguistic elements, defined as text (as in Fairclough 2003: 3–4). These definitions can all be understood as presupposing spatial distinctions: oral speech occurs through the placement of bodily organs (mouth, tongue, teeth, throat, lips, nose, etc.) in specific – and spatial – relations to one another as opposed to written text produced through drawing shapes on a surface, which is itself situated and potentially relocated. Likewise, social interaction is conditioned by participation frameworks (Goffman 1981; Hanks 1996) in which spatial relations hold a fundamental role. Questions ranging from "where does the interaction take place?" to for example "who is sitting at the end of the table, and therefore *chairing* the encounter?" are central to the accurate understanding of language as it takes place in social context.

For Tannen, Schiffrin and Hamilton (2015) definitions of discourse boil down to three non-mutually exclusive categories: the level of analysis of language above the sentence (as Benveniste 1971: 110 once wrote: "the sentence is the unit of discourse"), the study of language in practice or of language use (Fasold 1990), and the analysis of the social formation and distribution of linguistic and non-linguistic meaningful practices (Blommaert 2005: 2).

Benveniste's definition of discourse sets the framework for a study of language in use rather than of language structure, or what Saussure (2011) called "parole": the individual and haphazard realizations of language in social life, as opposed to "langue", which refers to a socially instituted system of rules of combination and distribution. In other words, language structure can be understood as a theoretical construct that does not occur anywhere per se but explains the occurrences of inherently spatialized instances of language use.

Nevertheless, discourse as language in use is considered as more than the simple realization of a set of linguistic rules, it is also the understanding of language as social practice, one fundamental aspect of which being that it occurs in space and consists of both the physical and social placement of social actors within it.

Furthermore, language is not only used to describe features of a pre-existing world, it also singles out specific (and notably spatial) elements of context and foregrounds them, organizes them, and therefore has an effect on peoples' understanding of the world and its affordance on their linguistic and non-linguistic practice (Duranti and Goodwin 1992). This phenomenologically informed view of discourse is therefore of great importance in the study of discourse and space, as it accounts for the relationships of contextual presupposition and entailment (Silverstein 2003a), and the sociolinguistic production of space and place. It also calls for careful study of the situations of language use, speech situations (Hymes 1974), which are themselves situated within a broader contextual framework, which includes the conditions – constraints and possibilities – for the use of language, and more specifically, as this chapter explores, the (re)production of these conditions in terms of space and place. This definition is also linked to extralinguistic

practices and ideologies which constrain discourse production. In this sense, the study of language in use calls for an understanding of non-linguistic elements, which notably include territorial features and geographical arrangements (Duranti 1997; Agha 2007).

All the contributions in this handbook could be understood as addressing discourse since the pragmatic approach affords for a contextualized analysis of language. This chapter will however focus on the broadest definition of discourse, which considers the link between language in use and contextually meaningful features and texts, framed through what are known as linguistic (and semiotic) ideologies. The next section presents the relevance of studying linguistic ideologies in accounting for the relations between discourse and space.

2.2. Linguistic ideologies and/in space

While the study of discourse focuses on language form, and hence to what actually takes place in interaction with relations to context, it also entails focusing on what is not there, i. e. sets of presuppositions, common knowledge and all that is taken for granted and need not or even cannot easily be made explicit by speakers (Blommaert 2005). These ensembles are usually termed ideologies. In this section, I will present two broadly identified approaches to ideology which are developed in different academic traditions. On the one hand, I present a Marxist-inspired definition of ideology (usually singular) as conceptualized in Critical Discourse Analysis (Fairclough 1989, 2003). On the other I will outline a definition of ideologies stemming from the field of American linguistic anthropology, and the study of linguistic or semiotic ideologies.

Critical Discourse Analysis, a broad ranging field of study based on Halliday and Functional Systemic Linguistics (Halliday and Matthiessen 2004, Halliday and Webster 2009; Halliday and Hasan 1976) offer to show how discourses, as a plural count-noun rather than as a mass noun (see Johnstone 2017), are brought together within ideological frameworks which account for their reproduction and upkeep, and hinder speakers in their capacity for emancipation. For example, this understanding of ideology will explain the replication through discursive practice of spatial relations such as those of center versus periphery or, from a different standpoint, colonizer versus colonized for instance. The purpose of the critical discourse analyst is to produce a critical point of view questioning the underpinnings of these relations – be they spatial or other (Wodak et al. 2009; Wodak and Meyer 2001; Van Leeuwen 2008).

One relevant critique of CDA approaches, is aptly formulated by Heller and McElhinny, when they underline the fact that they often lack a certain degree of reflexivity, when they position the researcher's analyses as relevant without considering the reflexive (explicit or implicit) positioning of social actors in play (2017: 236). By contrast, the study of linguistic or language ideologies, which

emerged in the late 1970s from the fields of American linguistic anthropology, is inherently grounded in the study of reflexivity (see for example Lucy 1993). This field of study developed from an increased interest in methods and practices in the ethnography of communication (Gumperz and Hymes 1975; Bauman and Sherzer 1975), i. e., the anthropological approach to the study of discourse as text in context. It focuses on speaker rationalizations about language structure and usage through analysis of both explicit discourse about beliefs on the one hand and rationalizations that could be inferred from close attention to meaningful practice on the other (Silverstein 1979; Woolard 1998; Jaffe 2020), both aspects being understood as "*site[s] of ideological work*" (Gal and Irvine 2019: 165–241, emphasis in original).

In contrast to a Marxist view of (singular) ideology as "false consciousness" (Woolard 1998: 7; Kroskrity 1998: 17), the plural ideologies are addressed in the field of linguistic anthropology as culturally – that is, socially, geographically and historically – situated modalities of language and sign production and use (Silverstein 1998; Schieffelin et al. 1998). These are never just about language. Instead they are always to be understood as interlinked with more general beliefs on the meanings of social practices not limited to talk or writing, and encompassed in the term "metapragmatics", referring to speakers' reflexive ability to rationalize semiotic practice (see, for example, Silverstein 1993). This also implies that signs are ideologically understood by speakers as occurring in certain places, or as accounting for spatial distribution structures. For example, types of interactions can be reflexively associated to types of places according to ideological categorial oppositions such as town and country, as we will see in the case study below. In turn, contrasting linguistic and semiotic ideologies can also be understood as spatially distributed.

The importance of context calls for a situated analysis of language production. Most specifically, as we will see, the spatial aspects of context and the construction of discourses of space and place call for an ethnographic approach. Before moving on to the presentation of our case study, we will now present different approaches to the analysis of space and place, and review some of the work in the field of the discourse analysis of space and place from a sociolinguistic perspective.

Indeed, the concepts of space and place can have many diverging and distinct definitions coming from various academic traditions and ideologies. In turn, different concepts of space and place will afford for different methods of discourse analysis. Discourse analysis offers a great number of perspectives for studying the linguistic construction of space. Here the perspective will be that of an ethnographically informed study of place production, which calls for a review of the relationships between space and place. Then approaches to place formation in linguistic and semiotic anthropologic discourse analysis will be presented.

2.3. Space and place

At least since Henri Lefebvre (1974), cultural geographers (as well as discourse-oriented linguists) usually agree on the idea that space is a social construct. Indeed, the Marxist sociologist theorized the idea that space is produced through practice, and differently so in different societies or at different stages in history. Diverging from a layperson's conception of space as what there is when there is nothing (more technically known as Euclidian space, Low 2016; Harvey 2006), Lefebvre conceives of three levels on which space is produced, never presupposing emptiness, but rather accounting for the power relationships at stake at each level.[1]

First Lefebvre identifies what he calls practices of space or "perceived space" (1974: 38), referring to the fact that each society is organized spatially in practice, through effectively existing architecture, urbanism, transportation, though these might not be cohesive, or consciously organized by planners, they are coherent and can be deciphered through analysis (see Hausendorf and Schmitt this volume). Out of this space produced in practice, or rather upon it, are the representations of space, or dominant conceptualizations of space, those of architects, urbanists, and planners. This second level of spatial production is referred to as "conceived space". The third and final level of spatial production according to Lefebvre is representational spaces, or "lived space", that of the dominated, of the unofficial, usually that of artists and that of the critical social scientist (1974: 43).

As suggested by Jaworski and Thurlow (2010: 8), each of these levels of spatial production can be a site for discursive production. Indeed perceived or experiential space is produced through spatial practice, and therefore, if we understand discourse as language in practice, it participates in the production of this type of space. For example, certain forms of discursive interaction happen in and afford for certain spatial models dialectically. Thus, certain spaces are defined by the type of linguistic practices (discourse) that can and will happen there, such as informal chit-chat at the local bar, a register which is integral to the perception of this particular space.

At the level of conceived space, that of abstractions, norms and legitimate conceptualizations of space, discourse, in a broad sense, is also central. Indeed laws, norms and abstractions need to be formulated through semiotic, and often linguistic means. For example, the setting up of a sign marking the limits of a municipality is an instance of language in practice, which participates in the constitution of conceived space.

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[1] Interestingly, this shift from the Euclidian paradigm in social sciences is linked to Einstein's theory of relativity, which contends that time and space should not be addressed separately (Harvey 2006), which also spawned the conceptualization of chronotopes in literary analysis by Mikhail Bakhtin (1981), as we will see below (Section 2.4).

Finally, lived space is obviously a site of discursive production at the meeting intersection of perceived and conceived space, as things are said about space and in space. The case study that will follow gives extensive detail about the construction of lived space, through the analysis of the linkages between perceived and conceived space.

Though this shows the relevance of Lefebvre's and his followers' (such as Harvey 2009) theory of the production of space to the analysis of discourse of space, the less directly Marx-influenced field of Humanistic Geography also brings forward important elements for the analysis of discourse in space. Indeed, geographers such as Yu-Fi Tuan ground their analysis on that of the production of place through meaning making by humans (including discourses, Tuan 1977, 1991). This approach is particularly relevant to us because of the phenomenological entry point it offers: instead of departing from space in general, the analysis is grounded on experience.

Based on Heidegger's notion of dwelling, and being in the world (*Dasein*, 1996), this approach stresses the importance of inhabiting and feeling at home. This notion of dwelling is equally important to cultural anthropologists such as Tim Ingold, who includes relations to the non-human in his conceptualization of place and calls for research on the human experience linked to the production of meaningful practice in place (Ingold 2000). Even though Ingold doesn't address specifically the importance of discursive practice in the production of place-meaning, from a linguist's point of view, one could not understand meaning while excluding completely relations to text in context.

Though the point of focus and main theoretical backgrounds to these traditions in geography and anthropology differ, they are by no means incompatible. As Setha Low puts it, "It is the spatial location of subjectivities, intersubjectivities and identities that transform space into places – that is, lived spaces of human and nonhuman importance" (2016: 32). Hence, Lefebvre's three levels of social production of space can be mobilized in the analysis of what we might call discourses of dwelling or, to put it another way, discourses of place.

2.4. Discourses of place and chronotopic formulations

As we have seen, our focus in this chapter will be on how people talk about place and give meaning to space through discursive practice understood as any semiotic meaningful practice. In her study of gentrification processes in the Washington DC neighborhood Mount Pleasant, Gabriella Modan develops a rich and insightful methodology for the analysis of discourses of place. Drawing from the linguistic anthropology, sociolinguistic, and ethnography of communication tradition, she shows how, despite the fact that people don't necessarily talk to each other, their (discursive) recognition of the fact that they live in the same place, creates a sense of community even if the political stakes in a gentrifying neighborhood produce opposition and conflict (Modan 2007: 282–283).

Britt (2018) offers an account of discursive resistance of inhabitants against derogatory media depiction of their place of dwelling or origin in Flint, Michigan. Leeman and Modan (2009) analyze how signage in Chinatown affords for the productions of a sense of place in sociohistorical context. Johnstone (1990) offers an account of storytelling about place in "mainstream" middle-America and contends that narratives have a central function in the production of a sense of place. These are but a few examples of the great diversity of how the relations between discourse and place can be addressed.

Additionally, discourses of place which occur in or about what is understood as being the same place can turn out to be divergent and contrastive, depending on the various groups who inhabit a place and their specific perspectives. Nevertheless, ethnographies addressing the way people talk about where they live and their surroundings have also shown regularities in discursive practices about place. For example, Basso's work on Western Apache place naming and narration shows how, despite the very many different ways of calling places, Apache place names always refer to mythical narration with moral values attached (Basso 1996). Thus, space is made meaningful to a particular group (Feld and Basso 1996). Drawing from this work, Nevins (2008) offers an analysis of Apache place naming in English, as reenactments of traditional practices, which at the same time contrast from them.

Discourses of place cannot be reduced to the referential content of texts about places. Indeed, the sheer fact that places are talked about and the way they are talked about should be understood as a form of practice of space, or an instance of dwelling which should be attended to. As we will see in the following case study, the social situation from which a register for speaking of place comes is itself reflexively qualified by the discursive production of place. All in all, the analyzable linguistic data for understanding processes of entextualization (Bauman and Briggs 1990) are also – somewhat metaphorically – sites of ideological production (Gal and Irvine 2019: 167–172).

Furthermore, as the studies on place names suggest, discourses of place are always also ways of situating these in time and history. Drawing on Mikhail Bakhtin's concept of chronotope (1981), contemporary linguistic anthropologists account for the fact that speakers situate their discourse in place and time, notably through Asif Agha's concept of "chronotopic formulation" (Agha 2015: 404). This refers to the fact that language users draw on ideologies of language in space and time and produce place and history in particular fashions that should not be isolated from one another. In turn, chronotopic formulations afford for the placement of images of personhood in space and time, since, as Bakhtin points out, the image of the human being is "inherently chronotopic" (1981: 85).

One good example of chronotopic formulations as a discourse analytic tool is Harkness's study of the use of kinship terms in a South Korean Christian community. Whilst traditional Korean language use prescribes differentiated kin terms when addressing older or younger siblings, Christian communities only use one

term, thus indexing an egalitarian community, that of the Christian church, which is itself associated to a locale, or place: the church itself. This contrastively informs the analyst of a social/spatial positioning of speakers with regards to the dominant (non-Christian) society (Harkness 2015).

Other examples of this include the chronotopic production of spatialities and temporalities in a rural Amazon town (Browne Ribeiro 2019) or on the Mexican-US border (Yeh 2017), modalities for notation of genealogy in space within semi-nomadic communities (Gal 2010), practices of avoidance of names, places and kin (Ball 2015), or metalinguistic discourses accounting for the transformation of a place in history (Hill 1998). What all these works have in common is their sensitivity for the situatedness in spacetime of personal characterization through discourse, and the discursive production of social stereotypes inherently linked to forms of spatio-temporally and socially situated discourse, termed registers, through a process of enregisterment (Silverstein 2003b: 541; Agha 2005).

This process is carried out through the contrastive production of relatively opposed stereotypes including speech forms, but also other signs such as paraverbal ones, body language, but also clothing, occupation, place of residence, etc. (Agha 2007). Registers are reflexively formed notably, but not only, through discursive practice and the attribution of qualities (*qualia*) to semiotic practices (Gal 2013; Harkness 2015; Ingebretson 2017). In the following section we will look at how two accounts of what can be considered as the same place can be understood as pertaining to diverging registers, linked to different chronotopic formulations and social categories with different modes of dwelling in a rural environment and indexing contrastive semiotic ideologies.

3. Case study: Rural places in discourse, space and time

3.1. Introduction

In this section I present a case study of the discursive construction of place using an ethnographic perspective as a critical standpoint for discourse analysis. The data presented here is drawn from ethnographic work conducted in Ferrières-sur-Sichon, a village with a population of around 600 at the very South of the Bourbon Mountains (Montagne bourbonnaise), a hilly area in the Allier district (*département*) in rural central France, and around 25 kilometers to the South-East from the nearest city of Vichy.

Before looking at transcripts of a conversation I had with Néné and Danielle, two 80-year-old ladies I met in Ferrières and whom I had asked to teach me the local language, known simply as *Patois*, we will look at a presentation of the municipality (*commune*) on its website, as it appeared until January 2020. This text is presented as being addressed to a visitor, and not only a visitor of the website,

but also a visitor of the municipality. The second text is composed of excerpts from a conversation I had with the two ladies, who would often talk about the town and its surroundings, but using a register that contrasts rather starkly with that of the website.

3.2. The welcoming interaction in place

3.2.1. Analyzing a website welcome page: Discourse and the touristic production of a welcoming town

The page in Figure 1 is the first to appear when one arrives on the website, which scrolls down to show following sections on this page. A menu on the left hand shows the titles of other pages on the website. Most of the website is dedicated to matters of concern to the local population, but some pages are also aimed to potential tourists or persons interested in the history of the locality. This page, with its greeting title "Welcome to Ferrières-sur-Sichon", is obviously addressed to a newcomer. Indeed, someone who is welcome necessarily needs to be coming from elsewhere, and the welcomer needs to have been there prior to their arrival. This title thus frames the addressor as a local and the addressee as a newcomer. As we will now see, the place named is further qualified in the following text, most importantly through its parsing along a town/country distinction.

Figure 1: Screenshot of the Ferrières sur Sichon website welcome page, as it appeared in August 2018 (Source: https://web.archive.org/web/20180831235208/http://ferrieres-sur-sichon.fr/index.php)

Bienvenue à Ferrières sur Sichon !
'Welcome to Ferrières sur Sichon!'

A vingt-cinq kilomètres de Vichy et au carrefour des anciennes provinces du Bourbonnais, de l'Auvergne et du Forez, FERRIERES SUR SICHON, dans le cadre verdoyant de sa campagne environnante, le charme d'un petit bourg accueillant et sympathique qui ne manque pas d'attraits.

'At twenty-five kilometers from Vichy and at the crossroads of the former provinces of Bourbonnais, of Auvergne and of Forez, FERRIERES SUR SICHON, in the lush greenery setting of its surrounding countryside, the charms of a welcoming and friendly little town not in want for attractive features.'
[...]

Village à vocation agricole et forestière avec son commerce et son artisanat, FERRIERES se tourne aujourd'hui vers le tourisme vert avec son arboretum, son moulin, ses sentiers de randonnées.

'A village with an agricultural and forestry calling, with its own commerce and its craftsmanship, FERRIERES nowadays turns to green tourism, with its arboretum, its mill, and its hiking paths.'

Original and translated first and final paragraphs of the welcome page

On the website, Ferrières is situated and qualified through the town/country opposition. Most importantly, after having been located in relation to the city from which the newcomers will likely have arrived, and qualified as a historical frontier land, the municipal space is parsed into two units: the countryside in which it is located, and the little town that it is. In the sentence that follows the name of Ferrières, the countryside is presented as a frame ("cadre") and as an environment ("environnante" shares the form and etymology of this English word and has been translated as 'surrounding') only qualified by the abundance of the green color with the word "verdoyant", an adjective I've translated as 'lush greenery' to render the presence of the radical for *green* ("verd-") and the sense of opulent vegetation. The surroundings, which nonetheless are part of the municipal area, are therefore presented simply as a background qualified only as countryside and through the abundance of vegetation. This distinction is relevantly illustrated in the picture beneath the text, where the blue, grey and tile colors of the built area is surrounded by the green and yellowish trees.

In contrast to its surroundings, the town is depicted with human qualities in the following section of this nominal sentence: it is welcoming and friendly. Obviously,

a town couldn't be welcoming or friendly without inhabitants who do the welcoming and are characterized by friendliness, so this qualification, as opposed to that of the countryside, implies that the town is populated. Furthermore, it locates the title greeting in the town rather than in the surrounding countryside. Also, as the screenshot of the webpage shows, the name of the municipality stands out in the middle of the paragraph which details its qualities and attributes, foregrounded by the use of uppercase and blue lettering. This stresses further the association of the municipality name with the main village.

In the final paragraph, which resonates in tone and form with the first one, what constitutes the place is further elicited in the forms of types of activities carried out locally. Interestingly, their enumeration is ordered: first, trades in the primary sector of extraction are cited, (agriculture and forestry), then trades in the secondary one (commerce and craftsmanship), and finally one in the tertiary sector (green tourism).

The primary sector activities are framed as the essence of what the town is, as in the translation the word "calling" intends to render the idea conveyed by the original French "vocation", which usually implies something that someone was meant to be doing by essence, originally a priest considered to be predetermined by God to join this profession.[2] The relation with vegetation covered by the terms "agriculture and forestry" echoes the first paragraph's reference to the surrounding countryside, and therefore associates the municipality's *raison d'être* with the fixed rural background.

Commerce and craftsmanship, the secondary sector activities, are framed as coming in addition to the agricultural and forestry activities through the preposition "avec" 'with'. Along the country / town opposition, these activities can be located in the welcoming and friendly little town rather than in the countryside surroundings. Therefore the relatively more urban setting of the small town is implicitly represented as a development from the fixed lush green background. The fact that this section of text consists of a noun ("village") and its qualifiers with no verb reinforces the semantic effect of presupposed qualities, as opposed to what the village is now turning to.

The expression "green tourism" in this text calls for thorough analysis.[3] Firstly, "tourism" could be understood as an 'industry of welcoming', a framing that points directly to the initial greeting, and indirectly frames the addressee more specifically as a tourist. Secondly, the use of the color term "green" echoes with that of "greenery" which was used in the first paragraph to qualify the outskirts

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2 https://www.cnrtl.fr/etymologie/vocation

3 My analysis here focuses on the discursive form of this expression rather than on the structure and developments of green tourism in France, issues addressed in Rogers (2002) and Beteille (1996).

of the community. Therefore the "turn" that the town is depicted as taking can be understood as double. On the one hand, it turns towards newcomers with a business-oriented interest. On the other, it turns towards its outskirts, as resources in this business relationship.

Indeed the detail of what could be understood both as tokens of the "attractive features" mentioned in the first paragraph, and as parts of what is offered within the framework of green tourism, the "arboretum", the "mill", and the "hiking paths" can also be classified according to the countryside / town opposition. While the "arboretum" can obviously be equated to the lush greenery, and the hiking paths to the surrounding countryside, the mill suggests a built environment, proto-industry, and therefore can be equated to the town rather than the outskirts. It is indeed located in the very center of town. Additionally, the arboretum could be understood as linked to "forestry" and the primary sector, the mill can be classified as indexing a secondary sector activity, while the hiking paths could be categorized as a specifically green tourism resource. Thus, green tourism is also shown as creating a connection between heterogeneous resources, with a view to welcoming foreigners.

One final comment can be made on the markedness of the expression "*green* tourism". Indeed this formulation presupposes the non-qualified, unmarked form of "simple", "ordinary", "non-colored" tourism. In France, this type of unmarked tourism is associated to other types of landscapes: the coast in the summer and mountains in the winter, to which city folk converge massively in holiday periods. However, the facts that Ferrières is nowhere near the sea and not high enough in the mountains to afford profitable ski slopes are not the discriminating criteria for qualifying it as a destination for green tourism. Indeed, another way of understanding this expression is simply as a synonym for rural tourism (see Béteille 1996: 13, 17).

This analysis of territorial parsing through linguistic practice sets the frame for a certain appraisal of the place and its purpose. This is essentialized notably through the use of non-verbal structures and the lexical discursive positioning of the surroundings with relations to the center of the small town. As we will see further on, the dehumanized quality of this text also contributes to constructing the place as a fixed object, rather than the dwelling place of certain people. Before coming back to the analysis of this webpage, let us turn to excerpts from the transcript of a conversation I had with Néné and Danielle.

3.2.2. Welcoming in town and accounting for welcoming in the surroundings

I first arrived in Ferrières with an interest for the local linguistic practices called Patois by inhabitants and was rapidly introduced to these two ladies, who accepted to have me as a guest and student. From 2013 onwards, I spent many afternoons having coffee in Néné's kitchen in their company.

Although my first interest had been to learn Patois, which I did partially rather quickly, the two ladies would always discuss more day-to-day matters, such as

events occurring in the area, news from people, gossip, and especially what they would call in local (nonstandard) French "parler de dans l'temps" 'talking about the olden days'. Having both been brought up in sharecropper families in hamlets to the North of the community, they would remind each other of people who lived and worked with them, of changes in the area since their young days, of the war, among many other topics. It is worth noting that the fact that they were speaking in Patois tended to draw the discussion towards what they would usually speak of, as both of the women would have spontaneously spoken to me in French, had I not asked them to speak Patois. During my talks with Néné and Danielle I experienced first hand the local hospitality, when they offered me coffee and conversation in French or Patois as I stayed with them for afternoons during my time in Ferrières. In their discourse, they also mentioned through reported speech other instances of welcoming that took place within the community limits, usually in one of the hamlets or "villages", as they are called locally, where they would stop when taking several kilometer long walks around the area referred to as the "surroundings" on the website. Let us look more specifically at how this is done in Néné's discourse. Néné usually drew on a very specific discursive pattern to account for her walks: the enumeration of place names, which could be understood as a discursive instance of what Ingold calls *wayfaring*, a form of dwelling along a path, rather than traveling simply from point A to point B (2007: 81, examples of this can also be found in Basso 1996).

Transcript 1[4]

755. NEN kan i marchin anvin ma bélä seu (0.8) alor (.) ne partisan
when I walked with my sister in law so we would leave
d'itcheu (.) va choulé:r (.) chi boudeu va cho rigon (.) ne dwalan
from here to choulér to boudeu's to cho rigon we went down
vè .h ne dwalan vè: ^man vou s'apeul yan^ eu: -h -h -an pm
*to we would go down to ^how's it called down there^*
756.FEL ^lèy mort^

[4] Transcription conventions are adapted from Sidnell (2009: xv–xviii). Sections between < and > signs indicate the segment on which the comments in double parentheses are applicable. Sections between ^ signs indicate an interrogative intonation.
Transcription of Patois is adaptedf from French orthography. Vowels followed by an *n* ("an", "in", "on") are nasal vowels resembling those existing in French. As opposed to French, the letter *s* is always silent, and the letter *g* always occlusive, for a full development on French phonology, see Tranel (1987).

```
757.NEN  n[on non]
         no no
758.DAN    [non  ] v'agiyon
            no    at agiyon
759.NEN  v'agiyon (.) v'agiyon aprè ne r'montan
         at agiyon    at agiyon then we would go back up
760.DAN  va chi [gari  ]
         to gari's
761.NEN         [va chi] gari:::
                 to gari's
762.DAN  <((hardly audible)) chi [janti]>
                                  to janti's
763.NEN                          [chi  ] janti:::(0.5)
                                                  le: chi
                                   to janti's
                                                  the: to
          janti chi pajan
         janti's to pajan's
```

Recounting her travels by foot around the countryside, she cites the names of the places she would walk through, and her occasional difficulty to remember some names is dealt with by her cousin Danielle's interventions. Here the sheer fact of naming places in the surroundings give them form and body, and makes them more than only surroundings: inhabitable places rather than empty space (Schubert this volume, refers to this as "driving tour", a particular type of linearization strategy through which space is construed through the specific viewpoint of someone walking through that space). Moreover, Néné sometimes pauses and juxtaposes the name of one or several people who used to live in those places.

Transcript 2

```
777.NEN ((…)) n'éyan toujor in kafé (.) dé n'andreu (0.8)
             we would always have a coffee (.) in a place
778.DAN [wi::     ]
        ye::s
779.NEN [kan n'pasan] chi janti (.) le luk e l eliz .h
        <((excl.)) a:
        when we passed by janti's (.) luc and elise
        ah
        ba ^vou alé binto pa vouz araytâ non^>
        well ^maybe you won't stop ((here)) no^
780.FEL <((laughing)) mhm>
781.NEN (0.8) alor y fayan in kafé
        so they made a coffee((she goes on to give as
        second example of another person in a place
        towards the other end of the community where they
        would also have coffee))
```

As we are having coffee and a conversation in Néné's kitchen, she qualifies the context in which we are located through a generalization that situates this type of interaction with relations to the town and its outskirts. In Transcript 1, this place is explicitly described as the point of departure, and it is paralleled with the other names. The enumeration of many place names (hamlets) along the path she would take during her walks, combined with the temporal adverb highlights the frequency of occurrence of the type of interaction she then mentions. The metric parallelism between the co-occurring phrases for "a place" and "a coffee" illustrates a necessary link between the two, and "a place" is framed as the ordinary context for "a coffee" (turn 777). The places here should be understood as sites in the outskirts rather than in the town, despite the parallel with the place where we are sitting having coffee, which is in the main village.

Association of a specific place name (Janti's) with a man and a woman's first names (Luc and Elise) specifies what is meant by "having coffee": what is relevant here is having coffee with people who live in these places (turn 779). By breathing in and using an exclamatory intonation, Néné frames her discourse as direct reported speech presented as coming indistinctly from the couple. What's relevant here is not who said this exactly, but what was said and how. Indeed, the formulation of the greeting utterance contributes to the chronotopic framing of the reported interaction.

The greeting utterance represented in turn 779 is formulated both negatively and interrogatively. The interrogative marking occurs on the suprasegmental level of intonation (transcribed as ^text^). As for the negative marking, it occurs through the use of the negative particle *pa* (very similar to the French *pas*, and possibly a loanword), and emphasized through the use of the negative adverb *non* at the end of the utterance. Hedged through the use of the modal adverb *binto* 'maybe', the possibility of the passers-by not stopping is framed as an antiphrasis, which reinforces the obviousness they will stop, through humorously marking the incongruity of the utterance. In turn, this emphasizes the regularity and commonality of these coffee breaks at acquaintances' homes during walks around the countryside, as already made explicit by Néné.

3.3. Places and people

3.3.1. People living in places

As we have seen, Néné describes places in the countryside surrounding Ferrières as locales for discursive interaction around a hot beverage (and most likely, from my experience of conversing with her, gossip, see Besnier 2009). Let us note now that this framing is nevertheless located in the past through the use of the imperfect tense in Transcript 2 *n'èyan* 'we would [usually] have'. By contrast, in Transcript 3 below, which is drawn from an earlier moment in the conversation we had that day,

Néné uses the present tense to talk about the country and people. The following excerpt came just after another instance of Néné reciting place names to form a trail or path through discourse about the countryside.

Transcript 3

221. NEN une mai- na mwézon
<((French))*one hou-> one house*
222. DAN wi
yes
223. NEN na mwézon va l'ni- na mwèzon
one house at le ni- *one house*
224. DAN eulâ ou[i: n'y a] mâ pu la- è[:::]
oh my yes there's only ((her)) left the:
225. NEN [abitè] [la] marcelle
((that's)) inhabited marcelle
226. DAN la marcelle
marcelle
227. NEN la marcelle
marcelle
228. DAN walâ:
oh my:
229. NEN eu: va: eu- eu: va chi va va va ch- va lèy such (.) la georgette
hum at- hum hum at chi[5] *at at at* ch- *at* lèy such *georgette*

Occurring in a context where she was reciting a plurality of names of places, the repetition of the substantive *na mwézon* 'one house' emphasizes the rarity of occurrence of people still living in rural hamlets, but conversely implies the (former) normality of finding people living in these places. The emphasis on the presence of this single inhabited house is further marked by Néné's repair at turn 221. Though she has been speaking in Patois most of the time, she (almost) switches to French, which can be understood as her addressing to me as she would have, had I not asked her to teach me Patois. This switch to an unmarked code can be understood as a mark of her wanting to tell me something aside from the fact that she is showing me Patois, and therefore the importance of the information she wishes to convey, i. e., that there is only one inhabited house left. Here Néné uses the same discursive structure as in Transcript 2 to associate given names with place names through simple juxtaposition or paratax, the absence of predication implying that the people are just there and implicitly formulating the close link between places and people.

[5] See Section 3.3.2. below.

3.3.2. Grammaticalized link between people and places

At the final turn of Transcript 3 (229), Néné's hesitation reveals two contrasting locative prepositions, which appeared extensively in Transcript 1: *chi* and *va*. The analysis of these sheds light on both the town/country opposition seen in section 3.2.1., and the extremely close ties between people and places in discourse in Ferrières. In this utterance, Néné, who is looking for the name of the next hamlet to cite, very distinguishably utters the two forms, which could be translated as 'at'. Examples of these also appear in the two first transcripts: "chi boudeu" (t. 1, turn 755), "chi janti"(t. 2, turn 779) "chi pajan" (t. 1, turn 763) as opposed to "va choulèr" (t.1, turn 755) and "v'agiyon" (t. 1, turn 758). Transcript 3 only features instances of toponyms introduced by the preposition *va*: "va lèy such" (t. 3, turn 229) and "va l'ni" (t. 3, turn 223).

The preposition *va*[6] could be translated literally as 'towards', and includes a sense of directionality as well as that of approximate location, but is also used in the place of *at* in English. It is used either for names of cities, towns as in *va Farrère* ('at Ferrières' or indeed for some hamlet names. It could also be used, somewhat informally to introduce the name of a person whose home one is referring to, "va la Danielle" would mean 'at Danielle's' for example.

As appears in the translation proposed, the preposition *chi*, cognate of the French *chez*[7] , could also, – and somewhat more normatively – be used to indicate the home of a person, as in "chi la Danielle", with the same meaning as above, which justifies why "chi boudeu" was translated 'at Boudeu's' in Transcript 1. Even though it is understood that it is not the name of a person living there but the name of the place, the fact that this name is a patronym is recognized by speakers, as well as the fact that the place is named after someone who might have lived there in the past.

One hamlet is understood by speakers as having only one correct preposition, and some hamlets with a patronym-like name can also be introduced by *va* and not *chi* (for example "va bkouzä" for 'at bkouzä'. However, what is particular to the *chi* preposition is that, apart from introducing specific people's homes (which *va* can do as well), it only ever applies to hamlets, and never to cities or towns, thereby grammatically marking the distinction between the countryside and the relatively more urbanized village center or cities. Furthermore, as seen in the expression "va chi gari" (t.1, turns 760–761), the obligatory use of the preposition *chi* does not exclude that of the preposition *va* just before. Therefore, whilst *va* cannot be associated solely to the non-countryside, *chi* introduces only countryside toponyms.

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6 This is usually translated in local French usage by the preposition *à* 'at', but the translation to French *vers* 'towards' also occurs.

7 This distinction also applies in local French usage, where the preposition *chez* is used with similar distribution as the Patois *chi*.

As seen here, and in stark contrast from the dehumanized empty frame depicted in the website's description, Néné and Danielle's discursive practices account for an extremely close link between rural places outside the village center and the people who live there. To illustrate further the contrasting discourse that appears on the town council's website, let us now turn back to the introductory text of which the first and final paragraphs were analyzed in section 3.2.1. We will now show how inhabitants in Ferrières and their voices are depicted in the two central paragraphs of the presentation webpage.

3.4. Who speaks and who doesn't in a discourse of tourism

Pierre ENCIZE, érudit local, a écrit "l'histoire de FERRIERES se perd dans la nuit des temps…". Ici, gours, grotte, rochers, bois et châteaux dévoilent légendes et mystères. Le village tirerait son nom des ouvriers forgerons qui, en cet endroit, auraient bâti barrage, fonderie et forge pour exploiter le minerai de fer.
'Pierre ENCIZE, a local learned man, once wrote "the history of FERRIERES disappears into the dawn of times…". Here, rimstones, caves, boulders, woods and castles disclose legends and mysteries. The village could draw its name from blacksmith workers who, at this place, are said to have built dam, foundry and forge to exploit iron ore.'

Certains objets du site archéologique du hameau de Glozel, datés par la technique du carbone 14 ou par thermoluminescence, attestent la présence de l'homme aux environs de Ferrières de nombreux siècles avant notre ère.
'Some items from the archeological site of the hamlet of Glozel, dated by carbon 14 or thermoluminescence techniques, confirm the presence of man around Ferrières many centuries before our era.'

Original and translated second and third paragraphs of the welcome page

In Néné and Danielle's discourse, the potential for situated face-to-face interaction was explicitly and implicitly central in the description of rural territory and places. The register mobilized here offers a very different participant structure (Goffman 1981; Hanks 1996: 163–165) and cites other types of discursive interactions than those that appear in the transcripts reproduced above.

3.4.1. A speaking place with speaking features

In the analysis of the other paragraphs of this text, I mentioned the fact that besides the greeting-title of the section, no one was represented as speaking. By contrast, in this section, the presence of direct reported speech is not the only instance of

someone's (or something's) words being referred to. Indeed legends and mysteries are said to be "disclosed", the performative baptismal act of *naming* the place is referred to explicitly, and historical discourse about the presence of human beings in the area is said to have been *confirmed*. The explicit citing of these discursive types calls for analysis of the participant structure in each one.

We have seen above that the village was qualified through personification, here, this trope is mobilized once again, as features of the territory are represented as speakers telling stories (legends) and revealing secrets (mysteries). Likewise, the village is placed in an active position in the naming process referred to, as it is presented as "drawing its name". Notably, the entire sentence reporting this baptismal event is conjugated in French with the conditional mode,[8] which in this case suggests that the speaker cannot vouch for the veracity of what he or she is writing, and therefore that this discourse is itself reported (Brès, Azzopardi and Sarrazin 2012). Lastly, objects from an archaeological site and their interaction with scientific techniques are those who confirm facts about the history of the land. In contrast from all these speaking objects, the only named human speaker in the text stands out.

3.4.2. The human speaker, history, legends and prehistory

Pierre Encize, the local priest from 1886 to 1918, is described as "a local learned man". His written sentence could be interpreted with links to the subsequent reported discourses. Indeed the temporal expression "the dawn of times" literally refers to a legendary event, of the same type as those that the features of the territory might disclose. Furthermore, the "history" of Ferrières can be understood as instantiated through narration of the origins of its name, a narrative framed as unverified knowledge, and therefore also bearing legendary qualities.

In the next sentence/paragraph, the temporal expression "long before our era" can be seen as an alternative chronotopic formulation for "the dawn of times", this time outside the frame of legendary discourse, with reference to the Christian era, an academically legitimate period. Therefore, the confirmation of human presence in very ancient times can be understood as pointing back to Encize's reported writings. This alternation between formulations of prehistoric times shows a paradigm of scientific/historical/prehistorical versus legendary discourses, relative to which Encize's sentence is positioned.

The addressors of the text are themselves located rather near the cited priest, not only in that they use written media to talk about the history of the place, but also simply through the fact of citing, which frame his words at least as being

[8] Rendered in the English translation through the modal verb 'could', and the phrase 'are said to have'.

citation-worthy. Citing "history" explicitly, and referring to legends, is also a commonality between the text produced by the local learned man and the writers of the webpage section. Therefore, through this citation, the website welcomers embrace a position of legitimacy, at the very least comparable to that of the educated priest.

3.4.3. Muted people in discourse and place

One important aspect of the participant structure in reported interactions is the positionality of people who do not talk, or who are not represented as speaking. First, the people who named the village after the blacksmiths are erased through passivation of the sentence. Secondly, the people reporting the baptismal story are only suggested through the use of the conditional mode. Thirdly, the blacksmith workers are only depicted as working – and not speaking – beings: they are not the ones to name their village in this short narrative. Finally the focus on the Glozel hamlet items and the techniques used to date them erases not only the people who found the items and dug them up, but also those who in search for positive evidence, went all the way to using ultra-modern dating techniques.[9]

Analysis of the text therefore shows that it presupposes the existence of speakers on the municipal territory at different times, but that these are quasi-systematically backgrounded, to the advantage of the only one person explicitly cited, and the addressor of the text itself. As an educated priest, Encize holds a legitimate voice emanating from a social category which is not that of the peasant majority in the village at the time. By citing him rather than anyone else, the addressors of the text (the very same ones who welcomed the reader in the title) underline the authoritative quality of Encize's text and of themselves, while at the same time positioning themselves (who are writing, like him) closer to him than to the mute blacksmith workers, prehistoric men, or the talking objects whose discourse is indirectly reported, or even erased.

With the two remaining paragraphs almost entirely erasing personal voices and carrying out a process of commodification of landscape where features are ordered and depicted as inert means of production, this text develops what one might call a *mise en scène* of rurality, where an empty background of greenery is set behind the village foreground. In this text, participant structure is organized so as to foreground legitimate ("learned") speech and to ground mythical elements into inanimate features of the surrounding, whilst representing the speech of a welcoming (knowledgeable) townsperson.

In this chronotopic formulation the past and the present seem homogeneous and continuous, with the notable exception of the mentioning of a "turn" to "green tourism". Set within a historical/mythical space, this account of the place gives

[9] The controversy around this archaeological site is well documented in Grivel (2004).

central importance to what is said, rather than to the fact of saying it (level of the narrated event, rather than the speech event, Jakobson 1984: 44).

Contrastively, the two retired sharecroppers I had ethnographic encounters with accounted for their experience of the rural setting in which they had always lived by populating the outskirts of the main village with names (toponyms and patronyms). Rather than referring to the things that were said in conversation, they focused on the fact that things could be said (in the past), and that each hamlet was a locus for hospitable encounter. Metonymically framed as "having coffee" or "one house [that's] inhabited", these interactional settings are accounted for as parts of a vanishing but not so ancient past.

In this chronotopic rendering of rural place, speakers are foregrounded, as well as interaction per se, regardless of the supposed content of narration. The importance of the voices of peasants, and their conversations is foregrounded rather than the natural surroundings. In the former sharecroppers' formulation, two competing chronotopes overlap. First, that of the past, with its vividly populated countryside, to which the profusion of place names resembling personal names bears witness. Second, that of the present, and of the old women's nostalgic positioning towards the first chronotopic formulation.

4. Conclusion

In this case study, I have shown how a place is constructed discursively at various levels of language in practice. I started out by showing how a territorial opposition between a relatively more urban town center and its rural surroundings was depicted at the level of explicit spatialized formulations in a website discourse. I showed how, more implicitly, this opposition drawn from explicit discourse could be used to explain other textual features at various scales, from arrangements of written words on the webpage all the way down to the use of prepositions by speakers when naming places.

I then showed how, along this ideological distinction between town and country, the distribution of places for discursive interactions within this oppositional space occurred differently in the two sets of data. Analysis of the website text showed that only voices from the town center were foregrounded, while in the interaction transcripts, my interlocutors evoked discursive interactions distributed all over the territory. This stresses the importance of citational processes (Nakassis 2013) in the process of producing place, as the two contrastive discourses about Ferrières draw out very different participation frameworks with one (the website's) being implicitly located closer to the town than the other (the old ladies' discourse), which is obviously oriented much more toward the countryside.

Finally, in order to fully grasp the contrastive nature of diverging discourses about a place, I showed the importance of attention to spatial relations insofar as

they never occur independently from temporal ones. I showed how in the website discourse, a depiction of Ferrières was formulated chronotopically with relations to ancient history and science on the one hand, and to mythical and legendary discourse on the other. By contrast, in Néné and Danielle's discourse, I showed how the focus was put on history having occurred in the past fifty years to ordinary people: the experience of depopulation of the countryside. Again, this distinction in chronotopic formulation can be understood as an example of the ideologically mediated opposition between the quasi-mythical history of great men, located in the (urban) center, and the relentless passing of time and disappearance of ordinary encounters between peasants, situated in the (rural) periphery.

These results show how multimodal and multiscalar discourse analysis offer a highly relevant entry point to the study of "lived space", a phenomenologically, historical and materialist perspective suggesting that no description is only description. This pragmatic approach to discourse about space and place justifies the importance of considering the performative dimension of description. Ultimately, it questions the existence of a neutral, apolitical "voice from nowhere" (Nagel 1986; see also Silverstein 1996) which could describe objective territory and foregrounds the importance of language in the material arrangement of our experience.

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8. Imaginary spaces in storytelling

Vivien Heller

Abstract: The construction of an imaginary space is constitutive for storytelling. This article addresses the question of how this is accomplished in face-to-face interaction. For this purpose, structuralist, interactional, multimodal and architectural conceptualizations are discussed. It is shown that imaginary spaces are interactional and multimodal achievements that involve the use of linguistic, bodily and material resources as well as socio-cultural knowledge. Furthermore, it is argued that architectural spaces play an important role in storytelling. They are associated with expectations about what types of activities can take place in them and they entail specific affordances that can be used to evoke and furnish imaginary spaces. Based on video recordings of a family dinner, a case study compares two interactional architectures, the dining table and the dining room, in terms of their interactional implications. It will be shown and discussed how different interactional spaces are established for joint imagination by the way in which participants of an interaction use the affordances of their material surroundings. While the dinner table is used as a projection surface for evoking an imaginary space and as a reservoir of potential props, the dining room is transformed into a stage; the affordance of acting with the whole body makes complex bodily practices of telling-and-enacting possible: a body torque serves as a narrative resource to simultaneously represent two characters and to further enrich the imaginary space. The narrative uses of the dining table and room are part of the dynamic arrangement of the interactional space that is needed for the story to be told.

Keywords: displacement, layering, architectures-for-interaction, interactional space, gaze, gesture

1. Introduction

Although storytelling in interaction can be considered a well-studied practice, the role of space has remained comparatively underexplored so far. While formally and structurally oriented traditions of narrative research were primarily interested in the narrative text and its semantic patterns (e. g., Labov and Waletzky 1967), conversation analytic research initially focused on the interactive process of storytelling, its sequential organization and embedding in everyday social interaction (for an overview see Mandelbaum 2013). However, recent work in multimodal interaction research suggests that space is constitutive for storytelling in at least

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two ways: First, at the core of storytelling is the shared envisioning of a past or fictional event that takes place in a spatial setting that exists only in the imagination. In the course of a telling, the teller refers to imaginary characters, events, places as if they were present, a process that Bühler ([1934] 1999) refers to as "Deixis am Phantasma". He emphasizes that participants must develop a *shared* vision of an imaginary space. This requires the speaker to reorganize the indexical ground in a recognizable way, i. e., to "instruct" the addressee to relate mentioned referents, deictic actions or enactments not to phenomena in the here-and-now, but in an imagined space. In this sense, "imagination" in storytelling can be understood as a special way of "seeing in common" (Goodwin 2018: 300). For a pragmatics of space this raises the question of how this reorganization of the indexical ground is organized interactively in storytelling and which linguistic, bodily and material resources tellers use to evoke an imaginary space. Furthermore, this article will also address the question of when and how reference shifts occur between the here-and-now of the interactional situation and the imaginary space in the course of telling.

The second way in which spaces are constitutive to storytelling stems from the fact that storytelling is in itself a situated practice: it takes place in physical spaces within which participants establish and dynamically arrange a shared interactional space for their activity. With the recent developments of conversation analysis and related approaches (e. g., Streeck, Goodwin and LeBaron 2011; Mondada 2013), building, among others, on Kendon's (1990) "context analysis", the analytic interest has been extended to the interrelation of interaction, body and space. As a result of this research, the concept of space was further differentiated and conceptualized as both an interactional achievement and as a resource (Hausendorf 2013; Hausendorf and Schmitt 2016). This research has also led to the distinction between different types of spaces – architectural, interactional, imaginary. It is therefore of great interest to a pragmatics of space to explore the question of what role these types of spaces play in storytelling. Closely interwoven with this is the question of how tellers and listeners use, construct and manage these spaces.

In the first part, the article discusses different conceptualizations of imaginary space in research on storytelling. It starts with structural accounts which focus on the story world and treat space as a background of the narrated course of events (Section 2.1). Conversation analytic and multimodal approaches are then presented which take into account how participants interactively create imaginary spaces using linguistic (Section 2.2) as well as bodily and material resources (Section 2.3). Thus, the distinction between the imaginary space of the story, the interactional space and the individual gesture space becomes relevant. Following the turn of interaction research towards architectures-for-interaction, the article highlights and discusses the material and spatial affordances narrators (and listeners) make use of to evoke and furnish the imaginary space of the story world (Section 2.4). The second part of the paper presents a case study (Section 3) that illustrates how

participants use the spatial affordances of their material surroundings for arranging interactional spaces and creating joint imaginary spaces. The analysis compares two different "architectures-for-interaction" (Jucker et al. 2018: 86), the dining table and the dining room, in terms of their affordances for joint imagination.

2. Conceptualizations of space in research on storytelling

2.1. Imaginary space as "background"

Exemplary for structural accounts that focus primarily on the global structure of "narrative texts" is the study by Labov and Waletzky (1967), which examines elicited and audio-recorded stories of personal experience. Storytelling is conceptualized primarily in terms of its temporal dimension, as a "method of recapitulating past experience by matching a verbal *sequence* of clauses to the *sequence* of events which (it is inferred) actually occurred" (Labov and Waletzky 1967: 287, emphasis added). Labov (2013: 20) assumes that the temporal organization is due to the "egocentric principle". According to this principle, the teller presents the sequence of events in the same order "that it was originally presented to the protagonist". With regard to the role of space, the formulation that the events were "presented" to the teller is revealing. It suggests that they were only involved in the event as a spectator and not as a social actor with a body moving. It is therefore not surprising that Labov limits the subjectivity of perception primarily to the temporal dimension. Space – or rather the place of the narrated action – is only relevant in the structural element of the "orientation", which functions as a kind of background information or stage setting for the action and is usually described before the actual story begins.

Baynham (2003) and De Fina (2003) challenge the prioritization of time and the conceptualization of orientation as a structural element that is only relevant at the beginning of the telling. They refer to such approaches as "backdrop accounts" (Baynham 2003: 348) of space in narrative and suggest rethinking space in narrative as a discursive process and to describe "spatialization as an *indexical process through which individuals, groups and institutions invest material space coordinates with social meanings*" (De Fina 2012: 111). Other criticisms raised against Labov's restrictive conceptualization are that, because structural accounts concentrate on the tellers' activities, they cannot account for the fact that the "orientation" – like storytelling in general – is an interactional achievement (Sacks 1972; Jefferson 1978; Gülich and Quasthoff 1986; Hausendorf and Quasthoff 1996; Mandelbaum 2013; Goodwin 2015). Furthermore, the narrow focus on the "narrative text" was accompanied by the fact that only the narrated space of the story came into view. The question of how exactly displacements are achieved and what role physical spaces and bodies have for creating joint imagined spaces has been largely ignored.

2.2. Imaginary space as an interactional achievement

The question of how displacements are actually accomplished is taken up by both rather cognitively oriented and interactional approaches. Chafe (1994) is primarily interested in how perception or consciousness changes in the course of displacements and distinguishes between two modes of consciousness. Whereas the "immediate consciousness" is affected by the here-and-now of the immediate environment, the "displaced consciousness" receives its input "through the process of remembering what was present in a distal extroverted consciousness, or alternatively through the process of imagining what might be present in such a consciousness" (Chafe 1994: 195). Although Chafe's study is concerned with language use in interaction, he focuses primarily on the individual consciousness and on how changes in consciousness on the part of the speaker become linguistically manifest. Unlike Chafe, Auer (1988) distinguishes between two pragmatic modes of language at the level of interaction. While the "situated mode" is characterized, for instance, by empractical speech and frequent reference to entities in the immediate environment, the "displaced mode" is more detached from the interactional situation and is typical of "generic statements […], reports, narratives, descriptions, recipes, fantasies, etc." (Auer 1988: 277). Neither of these authors discusses the interactive achievement of imagined spaces in the strict sense. It is interesting to note, however, that both refer to narrative practices and that they do emphasize the fluid transitions between the different modes.

In the following, the focus will be on approaches that examine displacement as an interactional achievement. Literary studies and micro-sociology use a variety of terms to refer to this phenomenon: "Auskupplung" ('disengaging', Bange 1986), "bracketing" (Goffman 1974, Iser 1993), "keying" (Goffman 1981), or "Verschiebung des Wirklichkeitsakzentes" ('shifting the accent of reality', Bergmann 1998, drawing on Schütz 1971).

From a linguistic perspective, Bühler refers to this process with the notion "Deixis am Phantasma" ('deixis in the imagination', Bühler [1934] 1999). He distinguishes between three subtypes of deixis in the imagination, of which only the first two are relevant here. All three share the commonality of a reorganization of the indexical ground, yet they differ in how this is done. In the first subtype, the teller refers to absent entities as if they were present and integrates them within the immediate perceptual space: "what is absent is summoned into the present space" (Bühler [1934] 2011: 157). While in this case the speaker's origo, i. e., the "here-now-I system of subjective orientation" (Bühler [1934] 2011: 117), does not "wander", in the second subtype the teller shifts their origo into an imagined space. This means that they take their postural-tactile body schema with them and become connected with the imagined scene. Reference to imagined entities is then calibrated relative to this imagined position in the imagined space. Even though Bühler was not yet able to investigate this empirically himself, he assumed that

the listeners also transpose themselves. If displacements are conceptualized as an interactional achievement, as Bühler assumes, the question arises as to which resources are required to achieve this. Bühler assumed that both linguistic and bodily resources, such as pointing, play a role. Before we turn our attention to the linguistic resources, we first will look at the sequential organization of storytelling, as the latter also helps participants coordinate the joint transition from the here and now of the interactional space to the narrated world. According to Hausendorf and Quasthoff (1996: 127 ff.; see also Quasthoff et al. 2017), the organization entails a series of communicative tasks or "jobs". While the introductory jobs help the participants to prepare for the transition from the here and now of the interaction to the narrated world by creating a thematic frame for the storytelling ("establishing topical relevance") and "topicalizing an event" (e. g., through a "story preface", cf. Sacks 1995), the orderly return from the narrated world is accomplished within the tasks of "closing" and "transition". The actual constitution of an imaginary space is achieved through the job "elaborating/dramatizing a course of events", which usually requires the teller (and also the listeners) to produce a "big package" (Sacks 1995: 354) which unfolds the story in a reporting or staged manner.

Schwitalla (2012) proposes a division of linguistic resources into those that mainly serve the construction of an imagined spatial scene and those that are responsible for orientation and locomotion in the already established space. For the construction of an imaginary scene, which at the same time represents the perceptual space of the main character, toponyms, such as country or city names ("es war in RUSSland" – 'it was in Russia', cf. Schwitalla 2012: 165), but also terms for built physical places ("da ließen sie uns an so einen wall stellen" – 'they made us stand against a rampart', cf. Schwitalla 2012: 165) are used, often in combination. Other resources are names for locations that are imbued with socio-symbolic meanings. For instance, Georgakopoulou (2003) shows how a group of young women living in a small town develop a certain system of ways to refer to local "hang-outs", i. e., potential meeting places that are associated with different socio-symbolic meanings (e. g., decent or disreputable). These function as a resource for the development of possible scenarios of dating men and narrative plots, i. e., configurations of characters, events and actions. Spatial reference can also be made with the help of terms that evoke spatial meanings metonymically, for example, terms for social categories ("my math teacher") or social events ("in math class yesterday") that connote a particular place, e. g., a classroom. Likewise, the naming of objects, e. g., "blackboard", can evoke typical rooms.

Once an imaginary space is established, verbs (and, depending on the language, their prefixes) serve the spatial orientation and locomotion within the imaginary space. The perspective usually starts from the main character (Schwitalla 2012: 182). For imaginary movement, e. g., from room to room, locomotion verbs and adverbial complements ("gehen wir in d=sauna" – 'we enter the sauna', cf. Schwitalla 2012: 185), but also verbs of perception and communication, represent

important resources. The examples show that the "orientation" is not only relevant in the "abstract" (Labov and Waletzky 1967), but also in the course of the telling. They also demonstrate that spatial reference generally relies on inferences and the social and cultural knowledge of the recipients. Therefore, the level of detail and explicitness of the spatial orientation always needs to be adapted to the addressee (Schegloff 1972; Schwitalla 2012) and to the point of the story (Schwitalla 2012; Dingemanse et al. 2017). Narratives of escape, border crossing and migration often feature very detailed spatial and route descriptions (e. g., Baynham 2003; De Fina 2003; Schwitalla 2012). However, the establishment of a narrative space can also be very brief if it is not relevant to the story or if the narrator can assume the necessary knowledge on the part of the listener.

A final resource that warrants mentioning is constructed dialogue. Here, the teller acts out one or more figures that belong to the story world (Goffman 1981: "change of footing") which is at the same time evoked or kept present in the participants' imagination. Because both the teller and the enacted figure remain present, Bakthin (1981) uses the term "layering of voices" or "polyphony". Tellers use not only linguistic, prosodic and dialectal (Couper-Kuhlen 1999; Günthner 1999, 2000; Kotthoff 2011) but also bodily resources (Goodwin 2007; Ehmer 2011; Stukenbrock 2014) to stylize story characters and thus position both the enacted figure and themselves as a teller. In this respect, Ehmer distinguishes between different degrees of expressivity: the animation of characters can involve personal and temporal deictics and/or phonetic, syntactic and bodily means.

2.3. Imaginary space as a multimodal achievement

Recent efforts to systematically link multimodal and narrative research (König and Oloff 2018; Heller 2018; Zima and Weiß 2020) describe the interactive organization of displacements with regard to the temporal coordination of physical, material and linguistic resources. Although previous studies in the field of embodied interaction were mostly not interested in the practice of storytelling per se, but rather used it as a field of investigation for multimodal phenomena, previous gesture research revealed that displacements are not restricted to the dimension of voice, but may also involve a layering of corporeal and spatio-temporal frames (Haviland 1993; Liddell and Metzger 1998; Barber 2005; Ehmer 2011; Murphy 2011; Stukenbrock 2012, 2014; Heller 2019). Such layering is created for dramaturgical performances or "replayings" (Goffman 1974), which not only report but reenact an event, thus allowing the listener to "vicariously reexperience what took place" (Goffman 1974: 504). By embodying a fictional or real character with their whole body, tellers simultaneously transform the physical space into a fictional or "surrogate space" (Liddell 1995, 1996 drawing on Fauconnier 1985; Ehmer 2011). In this process, the coordinates of the physical space can be "imported" and used as points of orientation in the narrated world (Haviland 1993; Heller

2019). Alternatively, tellers of a story can create a "token space" (Liddell 1995) by virtually "placing" (Haviland 2000; Clark 2003) or "depositing" (Streeck 2008) tokens, for example a protagonist of a story, in the gesture space. In the course of the telling, the teller can then repeatedly point to these entities and thus establish global coherence (McNeill 1992; Müller 2003). The two types of imaginary spaces are associated with certain perspectives. While token spaces are established from the perspective of the narrator, enactments in a surrogate space reflect the perspective of the character. Note, however, that the perspectival stance can continuously change in the course of the telling (e. g., Quasthoff 2002; Heller 2018).

When telling their stories tellers do not only rely on verbal and gestural-deictic means for contextualizing the displacements involved; they also make active use of gaze. Sidnell (2006) shows that tellers withdraw their gaze from the recipients at the beginning of a reenactment; gaze can then be used as a resource for embodying a protagonist's action. Through reestablishing mutual gaze at the moment of the "point" of the narrative, tellers signal the end of the reenactment. However, origo displacements are not only indicated at the "edges" but also in the course of reenactments, for example, when tellers temporarily recruit a recipient as a co-actor by taking up the gaze in order to perform dialogue sequences in the narrated world (Thompson and Suzuki 2014) or refer to virtual objects or figures in the imaginary space through gaze direction and pointing gestures (Stukenbrock 2012).

2.4. The turn towards architectures-for-interaction

So far, multimodal narrative research has concentrated primarily on the bodily resources that co-participants use to jointly construct an imaginary space. With the turn of interaction research towards architectures-for-interaction (Jucker et al. 2018; Hausendorf and Schmitt this volume), the physical space in which storytelling takes place and the ways in which it is used for storytelling have become an object of research.

Schmitt and Deppermann (2010) present a case study examining a sequence in which a teacher at a film school exemplifies the concept of dramaturgical structure to students in a narrative performance. In order to reconstruct the establishment of a narrative space, the authors, unlike Bühler, do not merely distinguish between perceptual and imaginative space, but rather, similar to Gibson (1979), assume four types of spaces: (i) the physical/architectural space, which exists independently of the participants, (ii) the interactional space, which is arranged by the participants for the purpose of acting together, (iii) the individual behavioral space, which includes the gesture space and can be expanded by standing up and moving around, and (iv) the imaginary space, which is symbolically constructed through verbal and bodily means. These spaces correspond to different participation roles of the teller: With his body he is co-present with other bodies in the physical space; as a teacher he sits with the students in the shared interaction space. Through his kinesic

activity in his individual behavioral space, he enacts the figures on the stage of the imaginary space he has constituted as a narrator within the interaction space. In a similar way, Ladewig and Hotze (2020) demonstrate how narrators use kinesic and verbal resources to partition the gestural space into conceptual spaces (e. g., interactional space, narrated space, metanarrative space) that are used, on the one hand, to shape the narrated world and, on the other, to manage the interaction. While these studies conceptually include physical space in the analysis, they do not yet systematically describe the specific affordances of different interactional architectures for storytelling.

Hausendorf and Schmitt (2016) argue that architectures-for-interaction, even before they are used by the participants, give clues as to what they are made for. In this sense, they represent socially established solutions for recurring interactive problems or tasks (Hausendorf and Schmitt 2016: 16; Linke 2012, 2018). One example of an architecture-for-interaction is the dining table. People gather around it not only to eat but also to converse. Taking a historical perspective, Linke (2018) examines how the spatial configurations around and on the dining table change in parallel with the transformation of sociopolitical orders. The respective configurations entail different "suggestions" for how the dining table can be used as a place for eating and communication. The fact that built spaces not only prefigure and constrain certain types of interaction but also interactional orders and roles, becomes particularly clear in the example of the interrogation room (LeBaron and Streeck 1997). While interactional architectures have the potential to shape interactions, they are also shaped and rearranged by the co-participants. Jucker et al. (2018) point out that interactional architectures differ in how rigidly they suggest a particular use; they distinguish between heavily (ticket office), moderately (living room) and weakly (public town squares) structured settings. With regard to storytelling, this raises a number of questions: (i) In what kind of architectural spaces is this practice typically performed? (ii) Which locations or positions (e. g., sitting or standing) do different architectures-for-interaction provide for the participants and how are they used to fulfil role-specific tasks of tellers and listeners? (iii) What consequences do different spatial arrangements have for the achievement of co-orientation (participants' *here* for sensory perception), co-ordination (participants' *here* for bodily movement) and co-operation (participants' *here* for social action) (cf. Hausendorf 2013; Heller 2016) in establishing imaginary spaces? (iv) Do storytellers (and listeners) use concepts of architecture-for-interaction to establish imaginary spaces? The following case study addresses some of these questions by examining the dining table and dining room as interactional architectures for joint imagination.

3. An exemplary case

3.1. Data and method

The case study is based on video recordings of an extended breakfast of family members who have not seen each other for a long time: the two brothers Marten and Pete, Pete's new partner Julia and his two children, Jacob and Ella (pseudonyms). The recordings were made with a 360-degree camera. To represent relevant bodily actions, stills were extracted from the videos and temporally aligned with the related verbal utterance. The participants have given their written consent for the publication of the stills. For reasons of brevity, mostly only one of the two perspectives is integrated in the transcripts (based on GAT 2, Selting et al. 2011).

For the case study, a narrative sequence was chosen in which the narrator uses different architectural segments to build an imaginary space together with the listeners: the dining table and the dining room. The storytelling is an illustrative narrative (Schwitalla 1991) about a habit of a film character from a crime film by Edgar Wallace, the detective inspector, who often utters a seemingly surprised "hm" when being approached.

I explore the use of different interactional architectures for creating and shaping an imaginary space by taking into account the entire process of storytelling. The storytelling begins at the table (Section 3.2) and is continued in the dining room (Section 3.3). The analysis proceeds in two steps. First, I focus on the respective architecture-for-interaction as such and describe how (much) the furnishing, its placement in the house and its arrangement is purpose-built for certain types of interaction. As a second step, I examine how the affordances of "sitting together at the dining table" or "standing and walking in the dining room" are actually used for the establishment of imaginary spaces. For this purpose, I draw on the basic architectural concepts of "visibility", "grasp-ability" and "walk-on-ability" (Gibson 1979: 119 f.). Hausendorf and Schmitt (2016) use these concepts to analyze how perceptions, movements and actions are made possible and expectable through architectural manifestations. Drawing on Bühler's ([1934] 1999) notion of displacement and multimodal narrative analysis (König and Oloff 2018), I also reconstruct the perspective from which an imaginary space is established and describe which linguistic, bodily, material and spatial resources are used for this purpose.

3.2. Creating an imaginary space at the table

3.2.1. The architectural space I: The dining table

The first part of the storytelling takes place at the dining table. The dining table is a common place for conversations; place and activity are so closely linked that a special name has even been established for it: "table-talk" or "dinner-table conver-

sations" (Keppler 1995; Blum-Kulka 1997). Figures 1 and 2 show the dining table where the storytelling takes place:

Figures 1 and 2: The dining table

The dining table is located in a private residence (an old farmhouse), separated from but close to the kitchen. Both the placement of the table in the dining room of a private home and the things on it – sets of cutlery and plates, dishes, food etc. – as well as their somewhat careless arrangement make it a private dining table and distinguish it from a dining table in a restaurant or a conference or working table (although it can be converted to the latter). The table is surrounded by six chairs of the same type. The sameness of the chairs can be read as a semiotic expression for the expectation that interactions among equals take place here, as they are typical for democratic societies (cf. Linke 2012: 206). The arrangement of the chairs around the table invites the participants to sit, i. e., not to move around, but to remain engaged in the activity and attentive to those involved in it. Linke (2012: 203) refers to this as still-setting ("Still-Setzung") of bodies, which in the nineteenth century became accepted as the normal posture for the purpose of conversation. Furthermore, taking a seat arranges the participants' bodies so that they are in close proximity and turn their "personal fronts" (Goffman 1963: 25) towards each other, with the tabletop concealing the lower and immobile body segments. Visual attention is thus focused on the eating-related and communicative actions performed with the upper body and head.

An essential element of the table is its flat (here: rectangular) surface. First of all, it affords placing things on it – dishes, food, etc. – that can be either used in the intended way (for eating) or functionalized for other activities such as storytelling. It also allows the seated participants to put down their forearms or hands. On the table's surface, a set with plate, cup and cutlery delimits each participant's individual transactional segment, i. e., "the space into which he looks and speaks, into which he reaches to handle objects" (Kendon 1990: 211). At the same time, the participants also share the eating utensils in the middle of the table as an overlapping and "joint transactional segment," which Kendon (1990: 211) refers to as "o-space". The o-space is the "space *between* the interlocutors over which they agree to maintain joint jurisdiction and control" (1990: 211). In interactions that

take place while standing or walking, the o-space must be actively established by the participants turning towards each other and establishing an "F-formation" (Kendon 1990: 211) or, in Goffman's (1963: 95) words, an "eye-to-eye ecologic huddle." The spatial arrangement of seats around the table largely relieves the participants of this work. It is characterized by the fact that "co-orientation" ("perceived perception," cf. Hausendorf 2003: 258, 2013) and "co-ordination" (the movement necessary to stay within each other's range of perception, Hausendorf 2013: 292) can be achieved easily and without much effort, even if participants are not positioned face-to-face but side-by-side.

Overall, this embodied configuration – the immobility of the lower body segments and the bodily-visual orientation of the sitters towards a common center – is designed for a longer-lasting "focused interaction" (Goffman 1963) in which the participants can establish various topics and mobilize, direct and monitor the visual attention of their co-participants.

In this sense, the dining table is essentially a social piece of furniture. By handing each other eating utensils, eating, and talking, the participants in our case study interpret and use the table as a locus of "sociable consumption" (Hausendorf and Schmitt 2013: 41), and the focus of the conversation shifts fluidly between the shared eating activity in the here and now and the talk about spatio-temporally distant events. Therefore, the dining table can be considered a "moderately structured setting" (Jucker et al. 2018: 87). It is a physical arrangement that is not purpose-built for one specific type of interaction, yet communication is frequent and also partly pre-structured by its arrangement. The dining table, then, is not an architecture-for-interaction made specifically for storytelling. It can also be used to plan leisure activities, to negotiate contentious issues, to comment on food, etc. (Keppler 1995; Heller 2012). However, the placement of the dining table in a private sphere, where the interactions that take place between family members and friends cannot be observed by outsiders, makes the dining table an ecological niche for informal and personal communication, in which storytelling fits particularly well.

3.2.2. Establishing a discourse space for storytelling

The story told in this case study recounts how the actor Heinz Drache, in the role of the inspector, enters an English manor, waits in a kind of reception room or house library and is approached by the owner of the house just in the exact moment when he starts to take a sip of coffee. The punch line of the story is the seemingly surprised "hm", which from the narrator's point of view is typical of the actor Heinz Drache. We enter the joint meal at the point where Marten produces a gustatory "hm", which is used by Pete as a starting point for the storytelling. To do this, he must first create a context in which his story thematically ties in with the ongoing conversation.

(1) Establishing “Heinz Drache” as a topic

001 MAR |<<f> HM:::;> |
|((takes a bite of the roll))|
002 (1.0)
003 PET DAS |war, |
that was
|((lifts the knife and looks at JUL))|

004 JUL ((turns gaze to PET))
005 (0.9)
006 MAR <<nasal> ausgeZEICHnet;>
excellent
007 [MH::;]
008 PET [hEInz (.)] heinz DRAche;
((...))
020 PET ((puts bread on plate, rests elbows on table, clasps hands together))

021 |**heinz** | DRACHe, (0.3)
|((raises right index))|

022 PET **SCHAU**spieler,
actor

023 MAR |hm_HM, |
|((nods))|

The telling has a food-related comment as its starting point: Marten bites into his roll and produces a lengthened and appreciative vocalization, a gustatory "<<f> hm:::;>". Pete, who is buttering his bread, picks up this vocalization with a meta-discursive comment: "that was". Simultaneously, he re-functionalizes his knife to produce a variant of an "index up" gesture (Streeck 2011: 65), which mobilizes the visual co-orientation of the co-participants. Simultaneously, he looks at Julia, who turns her gaze to him. Marten collaboratively completes Pete's turn (Lerner 1992), which is ignored by Pete and replaced by an alternative completion: "heinz DRAche". With this name he refers to an actor with whom the two brothers associate this vocalization. Julia receives this informing with a smile in the direction of Pete's daughter Ella, whereupon Marten and Pete engage in imitating the actor and another artist for a few seconds (not shown in the transcript). Thus, a topical relevance (Hausendorf and Quasthoff 1996) has already been established when Pete takes up "Heinz Drache" again. Pete initiates the communicative task "topicalizing" (Hausendorf and Quasthoff 1996) by which the transition of the turn-by-turn talk into the storytelling is achieved with a bodily action: he puts his bread on the plate and rests both elbows on the table with the hands clasped

together. In this way, he reorganizes his transactional segment: arms and hands are no longer bound by operative acts of eating but can be used for communicative purposes. The posture signalizes that the eating activity is temporarily suspended and that talk becomes the main activity. From now on, affordances of the table that are relevant for the storytelling activity come to the fore. The tabletop is no longer treated as a carrier of eating utensils but as a demarcation between narrator and listeners and later also as a projection surface for what is being narrated.

With his next move, Pete verbally states the topic, which is again accompanied by an "index up" gesture that summons the visual co-orientation of the co-participants, who (with the exception of the daughter) establish mutual gaze and smile in response. The following utterance categorizes "Heinz Drache" as an "actor", thereby prompting the listeners to build up more specific expectations about the topic of the conversation. At the same time, the speaker moves both hands briefly away from his upper body into his gesture space in an open, slightly curved and vertical position. His gaze is directed into the interaction space, while the other participants are now all looking at him. One function of this gesture is to emphasize the verbal categorization. At the same time, the pragmatic gesture also serves to hold the visual attention of the audience and direct it to the gesture space, thereby creating a jointly perceived space for what is about to come. Together with the social category "actor", the gesture thus foreshadows that this – still empty – space will be used for a play and thus prepares the audience for the establishment of a fictional scenario.

With the continuer "hm_HM", Marten displays both understanding and alignment with the telling activity (Stivers 2008). Pete is thus assigned the role of the teller who has the right to hold the floor until story completion while the other participants assume the interactive role of the listeners. At this point, the participants have created a discourse space for a telling, whereby "space" is to be understood as a metaphorical notion for the interactively established agreement to invest time and attention for Pete's story.

3.2.3. The transition from here to there: Creating and populating an imaginary space

Next, Pete establishes the imaginary space of the story world by introducing two characters through linguistic and bodily means.

(2) Introducing the characters

```
024   PET   (-) IMmer den inspektor mit_m  |trEnchcoat-  |
                 always the inspector with a trenchcoat
                                          |moves hands
                                  from shoulders to center))|
```


025 in alten äh (.) edgar WALlace filmen.
in old uh edgar wallace films
026 (0.3)
027 JAC hm_hm,
028 PET so eddi Arent |**der BUTler,** |
029 *like eddi arent the butler*
|holds rh palm up beyond table edge |

030 |**ne, [=der** | REINkommt und so;]
you know,=who *walks in and stuff*
|((leans upper body forwards))|

031 MAR [((smiles, rests elbows on the table))]

Within the short pause, Pete produces another pragmatic gesture. While his elbows still rest on the table, he looks at his hands, with the eyes almost closed, and lets the index fingers circle each other twice. With this gesture, the narrator indicates that he is continuing the telling; at the same time, the circling movement can also be seen as an indication of moving forward to the story beginning.

Subsequently, the speaker introduces two characters and relies on a practice which I call "evoking space-through-character". This practice contains four recurring elements:

i. *Embedded enactment of a category-bound activity.* First, the speaker states which character the actor usually impersonates: "always the inspector with a trench coat". "Inspector" is a social category that is "inference-rich" (Sacks 1972). Thus, the noun does not merely denote the character but is metonymically associated with particular spaces (Schwitalla 2012). Embedded in the utterance and temporally coordinated with the noun is a brief enactment of a category-bound activity (Sacks 1972), the putting on or closing of a typical piece of clothing. Since this activity is tied to the social category, its enactment mobilizes further common expectations about attributes associated with the category, such as typical characteristics, actions, habitats of an inspector.
ii. *Evoking an imaginary space through lamination of corporeal frames*. For the enactment, the speaker takes his elbows off the table and physically positions himself so that the hands are free to move while his gaze is directed into the interactional space. The change in posture indicates a "change in footing" (Goffman 1981: 128): the upper body of the speaker becomes the upper body of the actor at the moment of the gesture. The effect is a "lamination of bodies or corporeal frames" (Ehmer 2011: 155; Stukenbrock 2014: 87; Heller 2018, 2019), in which the speaker bodily places himself in the role of the actor. The embodied displacement goes hand in hand with evoking an imaginary space, which is constructed from the character's perspective. By putting himself in the place of a character who acts in space, the speaker instructs the audience to reorganize the indexical ground by fading out the actual configuration of the dining table and to "see" it instead as a stage for fictitious events. Thus, the bodily displacement also contextualizes the fictional frame.
iii. *Multiperspectival setting of the stage*. The displacement into the character is realized solely at the corporeal level; at the verbal level, the speaker remains in the role of the narrator who recounts the event from the observer's perspective. Thus, he acts in two roles simultaneously: verbally as a narrator, and corporeally as a character in the story. Schmitt and Deppermann (2010: 207) describe such a "splitting" of the speaker into two roles with the term "role mix", in which linguistic and bodily resources are used to simultaneously perform different tasks. These brief role mixes bring about a multiperspectival "setting [of] the stage" (Dingemanse et al. 2017: 137) for the story.

iv. *Expansion*. The introduction of the character is expanded by the speaker-as-narrator, with the effect of fleshing out and enriching the imaginary scenario (Kinalzik and Heller 2020) both spatially and socially. Here, the speaker makes reference to a context that is charged with cultural meaning: "in old uh (.) edgar WALlace films". The knowledgeable listener is thereby instructed to call up knowledge about genre-specific places. This is precisely what Jacob indicates in line 27 through a display of understanding.

Another actor-character combination, "eddi arent the butler", is introduced in a very similar way. At first, we only hear and see the narrator who projects an enactment by using the vagueness/focus marker (Ningelgen and Auer 2017) "so" ('like'). Embedded in the verbal utterance is a brief enactment of a category-bound activity of the butler (i) with which the speaker places himself in the role of the character (ii). Temporally coordinated with the noun phrase, he holds the open hand with the palm upwards in front of the slightly bent upper body to enact the carrying of a tray. In addition to verbal and physical resources, the dining table itself is also significant here: by moving towards the edge of the table, the speaker-as-butler implicitly instructs the audience to blend the edge with a threshold. Now the edge becomes a material anchor that entails further spatial implications. The attentive spectator can activate their spatial knowledge and virtually complement the door frame and the spaces on both sides of the door without them actually being explicitly mentioned. Notably, the imaginary space is also characterized by a specific social ecology. Together with the social category of the butler, the enactment evokes a socially structured living space: the room the butler enters is the living space of the house owners (the table surface), the space he comes from is the working space of the servants.

Again, the speaker acts in two roles at the same time (iii): while his voice takes up the role of the narrator, his body impersonates the character. Next, the introduction of the character is expanded (iv). Together with the following turn-constructional unit, which is prefaced with a tag question that marks the knowledge as already shared, the speaker moves his upper body towards the edge of the table. In this way, he enacts a typical activity of the butler and simultaneously enriches the imaginary space. Verbally, he uses the deictic verb of motion "reinkommen" ('to come in'). The verb denotes a bodily movement to a place "where either the speaker or the addressee is located at either the coding time or the reference time" (Fillmore 1997: 77). In the present context, this place is deictically anchored to the here-and-now of the narrator. Thus, the verbally described movement is not a movement towards the speaker's actual origo in the here-and-now but a movement within the narrated space (where the table surface represents the inside of the house). Marten displays his understanding and amusement through a smile. The fact that he rests his elbows on the table demonstrates that he, just like the teller, has suspended the eating activity and is devoting his attention entirely to Pete's telling.

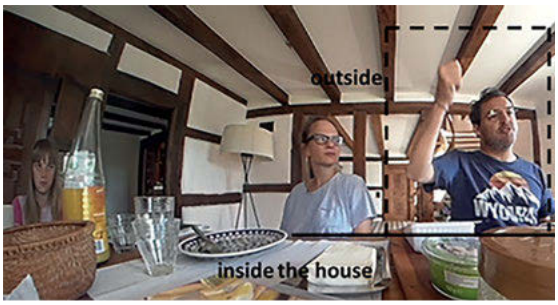
According to Bühler's ([1934] 1999) systematics, Pete's bodily displacements constitute an instance of the second type of deixis in the imagination. While the teller remains seated, his upper body is moving, acting and perceiving from the character's perspective. The character's speech, however, is not yet animated. In this part of the story, then, the displacement is confined to the corporeal and spatial dimension, while the teller's voice is reserved for the narrator. For both teller and audience, this requires a reorganization of the indexical ground, which involves relating what is heard and seen in a specific way. Remarkably, the imaginary space of an English manor is hardly described explicitly but rather evoked – through culturally charged references to film contexts, bodily enactments of category-bound activities that also exploit material resources such as the edge of table. These resources are combined with deictic verbs of motion to invoke both a socially and spatially structured imaginary scene. In their study of place references in story beginnings, Dingemanse et al. (2017) observe that initial verbal place references provide an anchor for other story elements and tend to build up expectations about activities and actors. The present case shows that this also works the other way round: The bodily enactment of actors and their category-bound activities also provides a basis for the listeners' inferences and expectations about space and setting.

3.2.4. Elaborating a course of events in the imaginary space

After characters and place are introduced, the narrator turns to the communicative task of "elaborating and/or dramatizing" (Hausendorf and Quasthoff 1996) a course of events which encompasses (3) the inspector's request for entry and greeting at the front door, (4) offer of coffee inside the house, (5) receipt of coffee and departure of the lady of the house, (6) waiting in the living room with the coffee cup. To make it easier for the reader to understand how different imaginary spaces are established in this segment, each event is presented separately.

(3) Request for entry and greeting at the front door

```
031   PET   ((moves hands from shoulders to center))
032         un_er kam immer REIN,
            and he always came in
033         irgendwie meistens |SO ne klingel      |
            somehow usually a bell like this
                               |((pulls down hand))|
```



034 oder |**klock** klock KLOCK, |
or clock clock clock
|((knocks 3x at empty space beyond table edge)) |

035 (0.7)
036 |und dann die **DA**me | des hauses,
and then the lady of the house
|((places hand in empty space over the table surface)) |

037 oder irgendwer (.) macht AUF,
or somebody opens up
038 und SO-
and like
039 (0.8)

```
040          |<<t> JA; =is mister MH_mh | zuhause,>=
                   well is mister mh_mh    at home
             |((looks to the left))     |
041          =und dann (.) |<<h> ja_ha> kommen sie doch
                                                  REIN.>|
042           and then           yes    do come in
                              |((looks to the right))        |
043          <<t> |HM.>                        |
                  |((looks to the left, nods))|
044          (0.6)
```

By putting the imaginary trench coat back on (line 31), the teller again places himself in the role of the inspector. He then jumps into the role of the narrator (line 32) and verbally introduces two alternative door scenarios (ringing the bell or knocking). The narrator does not need to mention the inspector verbally again when enacting this; the pronoun "he" refers anaphorically to the previously embodied inspector. Short enactments (ringing the bell, knocking) are embedded in the verbal telling, with the modal "so" projecting the bodily action. The enactments are coordinated either with a nominal phrase, which contains a familiar architectural element ("SO ne klingel" – 'such a bell') or the onomatopoeic knocking (line 34). The mentioning of the bell and the enactment of the knocking evoke the image of a front door and a building to which it belongs. Since doors are architectures-for-interaction and associated with particular types of interaction, e. g., greetings and conversational openings, this architectural concept can also be used as a resource by the narrator to activate a certain script knowledge.[1] During the enactment, the gaze is not directed towards the listeners but towards the imaginary door. Again, the speaker simultaneously acts in two roles: verbally, he depicts the action from the perspective of the narrator, while he bodily enacts the inspector. By placing the ringing and knocking just above the edge of the table, the listeners can blend the edge of the table with the doorstep and complete the doorframe in their imagination. This also implies that the surface of the table now becomes the inside of the house. In the role of the narrator, the speaker then refers to the lady of the house (another social category that even entails a place reference) and simultaneously places his right hand in the empty space over the table surface. At this moment the hand becomes a token for the lady, with the effect that the listeners can "see" the lady in the house. For the description of the subsequent event, another deictic verb of motion ("aufmachen" – 'open the door to sb.') is used, which is deictically anchored in the here-and-now of the narrator.

Then, the quotative "and (she) like" projects a constructed dialogue involving the inspector and the lady (lines 40–43). This is the first time that a longer enact-

[1] I would like to thank Heiko Hausendorf for drawing my attention to this aspect.

ment is performed. The enactment of the dialogue involves a change of footing (Goffman 1981: 128): the teller's voice animates the characters' voices, making the teller multivoiced (Volosinov 1986: 120) or polyphonic (Bakhtin 1981). The teller no longer uses the table edge and table surface. Instead, the systematic use of different pitch registers (cf. Tannen 2007; Günthner 1999), postures and head/eye movements (Ehmer 2011) enable the listeners to reorganize the indexical ground and identify who is speaking. While the lady's voice is marked throughout by a high pitch register, an upright posture and a leftward gaze, the inspector's voice is marked by a lower pitch register, slightly bent torso and a rightward gaze. This invites the listeners to imagine two people facing each other.

The subject of the dialogue is the request for admission and thus a change of place. The deictic verb of motion "come in" is deictically anchored in the imaginary space and leads both the inspector and the listeners into a new space: the interior of the house. The pause (line 44) marks the characters' transition.

(4) Offer of coffee inside the house

```
045   PET   |<<h> kafFEE,>        |
             coffee
            |looks to the right))|
046         |<<t> JOA.> |
             yes
            |((looks to the left, raises both hands, palm
             open))     |
```

047 kafFEE bekommen,
got coffee
048 (0.6)
049 MAR ((laughs briefly))
050 PET |IMmer in unter mit **un**tertasse, |
always in sau with saucer
|((takes his cup and holds his other palm under it))|

051 NE,
right?
052 MAR <<:-)> ja STIMMT;>
yes true
053 (0.6)

After the pause, the constructed dialogue continues, with the teller using the same resources to assign his voice to different characters. After the enactment of offering and accepting a cup of coffee, the résumé "got coffee" with a change from present tense to past perfect and a decrease in body tension marks the end of the staged dialogue, which Marten approves with laughter. Parallel to the next utterance (line 50), the speaker picks up his breakfast cup and holds his left hand flat under it. He thus removes a "thing-at-hand" (Streeck 1996), i. e., an object that is available and grasp-able in the setting, from its primary context of use. By holding his palm under the mug, he transforms it into a cup with a saucer. The speaker's gaze at his hands invites the listeners to direct their visual attention towards the object.

A response solicitation marker (Jefferson 1978) secures the participants' shared understanding. Together with the pause, it also marks the end of this segment.

(5) Receipt of coffee and departure of the lady of the house

```
054   PET   ((turns to the left, lh grasps something
            imaginary))
```

```
055           |HIER,                                    |
               here (you are)
              |((brings lh in front of upper body to rh))|
```

```
056           |ich HOle den den herrn schon.=           |
               I'll just go get the man of the house
              |(( leads lh past upper body to the right)) |
```

After the handing over of the coffee has already been described from the narrator's perspective, the speaker jumps back in the story and re-enacts this event. Using his upper body, he displaces himself into the character of the lady and enacts the fetching of the coffee by turning to the left (line 54). At the same time, his right hand continues to hold the breakfast cup, which the audience is expected to ignore at this moment. When his upper body is turned forward again and his left hand crosses his right, he acts out the lady's "here [you are]" (line 55). The local adverb marks the handing over of the coffee; together with the meeting of the hands it instructs the audience to now include the real cup in the enactment as a representative of the coffee just handed over in the story.

The speaker then moves his left hand across his torso. By further animating the lady's speech and having her say "I'll just go get the man of the house" (line 56), he turns his left hand into a token for the lady. The hand thus becomes a symbol for the referent and employs a depictive practice that Streeck (2008) refers to as "modelling". The audience can now see the lady moving out of the room while the inspector, represented by the right hand with the mug, remains standing in the imagined room. To use Bühler's terminology, the teller has created an instance that represents the first type of deixis in the imagination ("The mountain comes to Mohammed"): something absent (the lady) is summoned into the existing perceptual order. In this way he establishes a "token space" (Liddell 1995), i. e., a kind of miniature stage or miniature world (Streeck 2008) in front of his upper body. Compared to the introductory segments, the speaker uses voice and body in the opposite way: While his hands depict the event from the observer's viewpoint, his voice enacts the event from the lady's (i. e., the character's) perspective. We will see in a moment that this reversal in resource use is related to the story approaching its climax.

(6) Waiting with the coffee cup

```
057          =irgendwie dann |STEHt er da immer so,       |
              somehow   then he always stands there like
                                                      this
                             |((brings lh under the mug))|
058          | (-)                    |
             |lets his eyes wander))|
```

The next narrative segment sets up the climax of the story. For this, the teller first switches to the role of the narrator and announces a typical characteristic of the inspector ("and then he always stands there like that"). Projected by the modal deictic "so", the teller puts himself physically in the inspector's place and enacts how he looks around with the coffee in his hand.

3.2.5. How the dining table is used to create an imaginary space

The way the teller (and the listeners) handled things on the table (or stopped doing so by putting down the cutlery) marked a change from talking as an accompanying activity to talking as the main activity. In the course of the telling, the table was treated as a projection surface for evoking an imaginary space. Through enactments of category-bound activities that were accompanied by movements towards the edge of the table, the latter was turned into a material anchor point that had further spatial implications. The teller then relied on the listeners' spatial knowledge and ability to virtually complement a door frame and the spaces on both sides of the door. Likewise, inferentially rich context reference ("old Edgar Wallace films") counted on the listeners' knowledge about typical settings and events.

It also became visible that the table afforded opportunities for different types of displacements. The teller either used his upper body in order to assume the role of a character (character perspective) or he used his hand as a token representing a character (observer perspective). In the former case, the table was also used as a reservoir of potential props from which the narrator could select "things-at-hand", for instance a mug, and incorporate them into his enactment. Enactments of a character did not extend to all origo dimensions at once but were limited to the dimension of the body or the voice. This supports Stukenbrock's (2014: 73) suggestion that the origo should be conceptualized "not as a big, sealed unit where all three dimensions are invariably bound together, but rather as a flexibly constructed, multi-facetted package whose different dimensions can be unpacked independently." Furthermore, it could be observed that the teller switched flexibly between the two types of displacement and perspectivations depending on narrative and interactive requirements (cf. Quasthoff 2002). For instance, longer enactments occurred in those structural elements that prepared the climax of the story.

3.3. Creating an imaginary space in the dining room

3.3.1. The architectural space II: The dining room

For the climax of the story, a part of the dining room was transformed into a stage. Again, we first examine the spatial architecture of the dining room as such. There is a mostly empty area in front of the dining table that is stand-on-able and walk-on-able. This space is actually just a passageway, for example from the kitchen to the

dining table, and is not specifically designed for conversing in. At the same time, the lack of a strongly pre-structured layout means it can be used flexibly. When used accordingly, the room can be perceived as a space of its own: to the front it is demarcated by the rectangular table, to the sides by two walls, to the back it is separated from the room behind it by trusses.

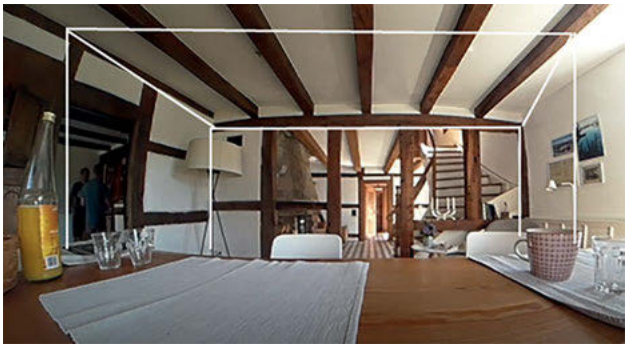


Figure 3: The dining room

For the storytelling activity, the area of the dining room was turned into a stage where the actor could move his whole body in a three-dimensional space. Such greater mobility is associated with a privileged and prominent visibility (Hausendorf and Schmitt 2013: 10). A central difference to the spatial configuration at the table is that the actor on stage is now further apart from the other participants, whose seats are turned into an auditorium. The spatial separation of stage and auditorium, of actors and spectators, is similar to the spatial configuration in the theater (Turner 1982: 112) and associated with an asymmetry of perceptual perspectives: While the actor is acting and perceiving in an imaginary space on stage – i. e., generally not looking at the audience – the latter remains seated, turns around on their chairs if necessary and directs their gaze towards the actor for the duration of the performance. Furthermore, the establishment of a temporary stage generates expectations regarding the nature of the further storytelling activity. Since the place of a "stage" is closely connected with the notion of "drama", the transition to the stage also suggests that the story is approaching its dramatic climax.

3.3.2. Transforming the dining room into a stage

To perform the climax of the story on a virtual stage, the teller must first transform the physical space of the dining room into an imaginary space.

(7) Wandering and looking around

059 PET |geht RUM und guckt sich um,|
walks around and looks around
|((gets up))|

060 PET ((goes to the back))

061 |GUCKT so- |
looks like this
|((looks over the shoulder while walking))|

062 |oh_o BÜcher und so; |
oh_o books and stuff
|((continues walking))|

063 [|setzt AN, |]
starts
|((holds the cup briefly to his mouth, looks to MAR))|
064 MAR [((looks at PET attentively, smiles))]
065 JAC [((looks at PET))]


066 MAR ((leans backwards, smiles))
067 (0.7)

While the teller gets up and slips inside the skin of the inspector, he describes his action from the narrator's perspective (line 59). The simultaneous description and embodiment enable the teller to take the character from the old to the new imaginary space. By tilting his head and looking overtly into what is actually an empty space, he instructs the audience to reorganize the indexical ground and laminate an imaginary reception room onto the architectural space in front of the table. Parallel to his walking as an actor, the teller also describes the action from the narrator's perspective, using deictic verbs of motion and perception (walking around, looking around) that support the construction of an imaginary space.

The subsequent description "looks like this" accompanies another action of the inspector, this way making it noticeable. At the same time, it signals the beginning of the enacted talk. In the next moment the teller transposes himself not only physically but also with his voice into the inspector and acts out his comment "oh_o books". The enacted "noticing" (Schegloff 2007: 219) of the inspector further enriches the imaginary space; the listeners are now encouraged to see the inspector with his coffee cup in a kind of library. The plural "books" and the teller's slightly upward gaze are enough to trigger the idea of a library. Like doors (Section 3.2.4), libraries are an architectural concept that can be used as a resource in storytelling to evoke a certain spatial image and, beyond that, expectations about typical interactions that take place in it. With "and so" the teller's voice returns to the narrator role. In the same way, the narrator employs a description ("starts (to drink)") to enhance the relevance of an action that is actually banal, the bringing of the cup to his mouth. This action is interrupted shortly before its endpoint. Together with the

emphatically clear speaking, this break in expectation results in the building up of suspense. In this moment, the teller looks at Marten and Jacob and checks whether they did in fact register the detail (line 63), which both confirm through smile and gaze (line 64–65).

Once again, the teller acts in two roles at the same time: the action performed is continuously commented on from the narrator's perspective. It is remarkable that this mix of roles, which could already be observed during the telling at the table, is now also continued on stage. This suggests that it has a special function for the illustrative storytelling (Schwitalla 1991). The narrator's commentary on the action serves to instruct the audience where they should focus their gaze. They should not simply receive the enactment in one way or another but direct their attention to certain details that are important for the point the teller is trying to make. By interweaving the narrator's and the actor's roles, the teller accomplishes what Goodwin (1994) refers to as *"instructed vision"*, i. e., the progressive accomplishment of observable and reportable embodied actions.

3.3.3. Enacting the point of the story

Acting with the whole body enables the teller to embody two persons at the same time with different parts of the body and to enact the climax of the story with a multidimensional displacement.

(8) Being surprised by the house owner from behind

068 PET |und genau in DEM moment, |
and that very moment
|((turns his back to the table))|
069 ((moves left arm backwards upwards, then index downwards step by step))


070 JAC [((laughs, smiles))]
071 PET [kommt der HERR die treppe runter] (woher auch immer),
comes the gentleman down the stairs (or from wherever)

072 |<<h> AH inspektor |ja;>
ah inspector *yeah*
|((points backwards with his head))|

073 ((sips his cup))
074 |<<h> HM:;> |
075 |((turns around with the cup at his mouth))|

With a time reference to the central point of the event, the teller foreshadows the decisive event, thereby mobilizing the attention of the audience. At the same time, he puts his body in the required position (line 68) by turning his back to the table. Now a "body torque" (Schegloff 1998) enables the speaker to embody two characters simultaneously, each with a different form of displacement, and to depict an event for which their spatial constellation is essential.

Schegloff (1998: 536) defines body torque as a postural configuration that is characterized by "divergent orientations of body sectors above and below the neck and waist, respectively". In the cases described by Schegloff, these postural configurations enable interlocutors to "display engagement with multiple courses of action and interactional involvements, and different ranking of those courses of action and involvements" (Schegloff 1998: 536). Because lower body segments generally provide the baseline home position for upper segments (Kendon 1990: 248), the co-participants can recognize which of the two simultaneous activities is to be continued. In the present example, the teller uses the body torque as a narrative resource for the simultaneous enactment of two characters. While most parts

of his body embody the main character of the inspector, the forefinger of the arm pointing upwards becomes a token for another character and traces how he comes down an imaginary staircase behind the inspector. Furthermore, the audience not only sees another figure but also adds another floor to the imaginary space.

With the help of body torque, the speaker assigns individual body parts to different personae: his body becomes the inspector's body and acts and perceives from his perspective (character viewpoint). His left finger becomes a token for another figure (observer viewpoint) and depicts how he approaches the inspector from behind. Interestingly, this approach is first depicted gesturally and only then described by the narrator (line 71) by mentioning another architectural concept, "the stairs" (line 71), which, together with the person reference "gentleman" and the deictic verb of motion "coming down" further confirms the impression of a large and stately house already implicitly evoked before. By only revealing afterwards who exactly the index finger represents, the teller manages to increase the suspense even further. At the same time, the description also functions as a prelude to another constructed dialogue, whereby a brief head pointing (Wilkins et al. 2007) in the house owner's direction indexes who is speaking. By bringing the left arm close to the body, the speaker then places himself completely in the role of the inspector, who at first remains in his position and takes a sip of coffee, then – supposedly surprised – turns around and utters a high pitched "hm". This "hm" is the point of the story. It is solely enacted and not verbally commented on. At the moment of the punch line, the teller for the first time produces a multidimensional displacement involving the dimensions of body, voice, space and time, with everyone present looking at him.

3.3.4. Leaving the stage: Closing and transition

The following actions contribute to the communicative task of closing and transition. This involves the participants leaving the world of the story and returning to the here and now.

(9) Appreciation of the performance/story

076 MAR ((lau[ghs))]
077 JAC [((laughs, slams fist on table))]
078 JUL [((smiles))]

080 PET [((shakes head))]
081 [|IMmer. |]
always
|((forms a circle with thumb and index, briefly bends knees))|
082 MAR [ha ha °h]
083 es is Original-=
it is orginal
084 =er MUSste erst Ansetzen [bevor die NÄCHste handlung einse-]
he first had to put on (the cup) before the next action could begin
085 PET [((goes back to his chair))]

The listeners show their appreciation of the punch line of the story through loud laughter, slamming the fist on the table and throwing their upper bodies back and forth (lines 76–78). This release of tension embodies a moment of shared affectivity. Simultaneously, Pete switches back to the role of the commentator, thereby

dissolving the imaginary space. As a commentator, he conveys his affective stance on the inspector's unexpected and incomprehensible quirk by shaking his head. The typicalityof this quirk for the character is further emphasized through a gesture of precision grip (Kendon 2004), which is accompanied by a brief kneeling and an "always". With his return to the table, the teller performs the "transitioning" (Hausendorf and Quasthoff 1996) to the turn-by-turn talk, in which the participants continue to imitate the inspector for a short while before turning to another topic.

3.3.5. How the dining room is used to create an imaginary space

The simultaneous description and embodiment of the inspector in the transition from the table to the dining room enabled the teller to take the character along from the old to the new imaginary space and to establish a conceptual link between the two spaces. By simultaneously walking and looking around and verbally describing the action, the imaginary space of a reception room was laminated onto the three-dimensional space of the dining room. This space was stand-on-able and walk-on-able and thus afforded the speaker greater mobility and a privileged and prominent visibility. The result was a spatial configuration similar to that of a theater, with a separation of stage and auditorium and an asymmetry of perceptual perspectives. While the teller-as-actor acted and perceived in the imaginary space, the audience directed their visual attention to the stage. The affordance of acting with the whole body made complex bodily practices of telling-and-enacting possible: a body torque was used as a narrative resource to simultaneously represent two characters and at the same time to further enrich the imaginary space. Remarkably, the simultaneous telling-and-enacting continued on stage. The accompanying commentary of the narrator served to direct the co-participants' attention to certain details that were important for the point of the story and thus to accomplishing an instructed vision of the climax.

4. Conclusion

The article discussed different conceptions of imaginary space in narrative research. What comes into the focus of investigation in each case is closely related to the technical development and scientific use of recording methods. Studies that rely on audio recordings mainly discuss and elucidate audible phenomena that could be traced in the transcript: the orientation as a structural element of the narrative text as well as linguistic resources for creating an imaginary space and for orientation and locomotion within this space. Video recordings have given research a possibility to also explore bodily and material resources as well as the architectural space in which the storytelling takes place.

Taking Bühler's ([1934] 1999) notion of displacement as a starting point, previous research has generated a fairly detailed knowledge about linguistic resources for establishing imaginary spaces. A range of resources have been described, including those that actually do not refer to places, buildings, furniture and so on, but rather to social categories or events. The spaces associated with these categories or events then need to be inferred by the audience. This shows that creating imaginary spaces in storytelling heavily relies on socio-cultural knowledge. Furthermore, previous research demonstrated that the choice of forms and the level of detail and explicitness with which joint imaginary spaces are established are adapted to the recipients and to the type and point of the story. Multimodal research has conceptualized displacements as layering effects and has shown that such layerings are not restricted to the dimension of space but can also involve voice and body. This research has just begun to describe in detail the narrative use of different bodily resources and their coordination throughout the process of storytelling. Research considering the physical spaces in which storytelling takes place has furthered our knowledge by distinguishing between different conceptual spaces: architectural space, interactional space, individual behavioral space, imaginary space. The notion of architectures-for-interaction has been introduced to point to the fact that architectural spaces provide clues for how they can be used for interaction. The interplay between different architectures-for-interaction and storytelling has not yet been systematically examined.

The case study has made a first attempt to explore storytelling within two everyday interactional architectures, at the dining table and in the dining room. The analysis showed how the dining table is designed for sociable consumption, in which storytelling also has its place. It was also demonstrated how the interlocutors make use of its specific affordances for evoking imaginary worlds in highly flexible ways. The narrative use of the dining table and room is part of the dynamic arrangement of the specific interactional space that is needed for the story to be told. Within the emerging interactional spaces, the respective architecture-for-interaction was used in certain ways, while others were ignored. For the duration of the telling, the dining table was no longer used for eating, but instead treated as a projection surface and material anchor point for the recipients to construct spatial phenomena such as a door. Furthermore, the table provided a reservoir of potential props from which the speaker could select "things at hand", for instance a mug, and incorporate them into his enactment. As a stand-on-able and walk-on-able space, the dining room, or more precisely, the passage area in this room, though not specifically designed for talk, nevertheless allowed for complex practices of telling-and-enacting and for simultaneously representing two characters at the climax of the story. The affordances of the interactional architectures were thus sequentially coordinated with the communicative jobs of storytelling: while the introductory jobs and the preparation of the climax were accomplished at the dining table, the punch line of the story was

produced in the dining room. The transition to the next activity was achieved by returning to the table and resuming eating. Furthermore, telling at the table never involved a displacement in more than one dimension. In contrast, the dining room, which allowed more mobility and visibility for the teller, was used for a multidimensional displacement in the dimensions of body, voice, time and space.

This shows that interactional architectures do indeed play a central role in storytelling. In the course of a storytelling activity, dynamic changes between physical spaces can take place. This requires teller and listeners to adapt their mutual co-orientation and co-ordination and to flexibly reconfigure the indexical ground. Throughout the entire process, linguistic, bodily, material and spatial resources were coordinated to evoke, enrich, expand and finally dissolve an imaginary space.

In addition, interaction architectures played a role in another respect. Teller and listeners drew on concepts of architecture-for-interaction, e. g., door, bell, books, to evoke certain spatial ideas that were relevant to the story. Mentioning individual details is apparently sufficient, as these concepts are part of the participants' social-topographical knowledge (Hausendorf and Schmitt 2016) that is activated to relate these individual elements to typical places such as an entrance or reception room.

An important task for future research is to investigate storytelling in different – private and institutional – architectural spaces in order to better understand if and how architectures-for-interaction invite and shape storytelling. It also needs to be clarified what effect various architectures have on the selection of resources that tellers (and listeners) mobilize for the establishment of imaginary spaces. For the study of these phenomena, it is important not to forget that actors may ignore architectural affordances or use them in different ways than expected.

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9. Developmental perspectives on doing talk about space

Anna Filipi

Abstract: The study of the spatial skills of young children has occupied considerable research interest. Increasingly, the analytical interest in this research has been on children's spatial language ability beyond simply showing understanding and use of a large number of spatial words. Miller et al. (2016), for example, point to the importance of young children's ability to supply information or to describe the spatial placement of objects in an environment which they claim is key to the development of spatial skills linked to future success in science and mathematics. However, while the content of what children say is important, so too are their pragmatic abilities to take into account their co-speakers' spatial perspective, how much information they can assume them to have, and how to assess an overall spatial outcome. This chapter will start with an overview of the research on children's development of skills in spatial interaction more broadly, and then focus more specifically on research concerned with the interactions of children aged 7 and 10–12 using a map task. The aim in doing so is to highlight the ways in which studies of interaction can elucidate what children are able to do when they are obliged to take spatial perspectives into account, use spatial terms in their instructions and talk about the outcome of the spatial task.

Keywords: map-task, children's interaction, multimodality, preference organisation, frames of reference, Conversation Analysis, cognition, sociality

1. Introduction

Talk about space is an important, everyday social activity. People experience the world spatially when they take part in physical activity to drive, walk, play sport; when they shop, cook, eat and use objects; when they follow and give instructions for a range of purposes; and in the case of children, when they play and engage in formal and informal learning activities in the home and at school. As many of these activities involve interaction, space occupies a central place in our interactions, and is reflected in the ways in which we talk about and share our spatial experiences of the world. For this reason, developmental perspectives on spatial skills and cognition, and the ways that we use language to talk about space, have been a preoccupation of researchers in a number of fields including anthropology, psychology, education and linguistics.

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An underlying theoretical interest in this work that has sparked debate has been the question of universality, and the relationship between language development and conceptual learning. Spatial cognition is claimed to have potential for elucidating how the two are connected (Bloom et al. 1996; Dasen and Mishra 2010; Landau et al. 2010; Shusterman and Li 2016). One view, that adopts a neo-Whorfian, linguistic relativity position, holds that language shapes concepts and impacts cognitive development (Levinson 2003). A more cognitive view proposes that concepts exist independently of language and that language is the vehicle to give expression to concepts not essential to their acquisition (Pinker 2002). A third contends that language and conceptual development occur in parallel to each other (Tomasello 1995).

In relating linguistic relativity to spatial interaction, a major issue is whether the same cognitive processes are at play in cultures that, for example, adopt a particular frame of reference in navigating their way through space. Specifically, the issue is whether the frame of reference is geocentric, where the viewpoint is environment-centred, or whether it is egocentric, where the viewpoint is object- or viewer-centred. An underlying motivation is to understand whether these "preferences" can be explained by differences between cultures, resolution of which might provide evidence for or against universality.

Notwithstanding that the above issues remain contested, or at best unanswered, exploring what children do with language provides an opportunity to understand the sets of skills they draw on at different moments in time. Included in such a skill set is how they use interactional resources to solve issues that might arise as they work to restore intersubjectivity; how, when and if they take the perspectives of others or engage in spatial tasks that involve collaboration when talking about space; and how they provide feedback and assess outcomes. Furthermore, acknowledging the indexicality of children's (inter)actions, where space is a matter for perception, understanding and sensemaking, irrespective of whether such interactions are space-sensitive, is important. The above gives rise to the need for close attention to how children use language in situ, which is a major concern of pragmatics. In the process of such close attention, which is the interest of the current chapter, opportunities may also arise to "see" how spatial cognition is actualised or made visible as children work collaboratively to reach understanding in the interests of completing a map task.

This chapter starts by providing a necessarily brief overview of spatial cognition broadly and developmentally, a brief discussion about young children's development of perspective through the lens of Theory of Mind (Baron-Cohen et al. 2000), and displays of cognition through interaction and storytelling. It will then focus primarily on the interactions of older children's (aged 7 and 10–12) pragmatic spatial skills in research that has used map tasks. In this part of the review, the focus will be on how children take each other's perspectives and knowledge states into consideration when providing task instructions and route directions for

path drawing, and what this looks like at the two sets of ages. Next the chapter briefly describes the data and analytic approaches used for the analysis of the six samples presented from the closing phase of a map task where the analytical concerns are with preference organisation and multimodal turn design. The analyses are intended to illustrate and build on the discussion of pragmatic skills focused on in the review. The conclusion will summarise key findings and suggest implications.

2. Previous studies

2.1. Spatial frames of reference and children's spatial cognition

Three components of spatial cognition which have provided a locus for the study of differences between languages are deixis, topology and frames of reference (Bowerman and Choi 2003; Levinson 2003). A speaker's frame of reference is the one selected for direction-giving and navigation through space, and for locating objects in an environment. Investigations of spatial navigation have found important differences between cultures, as there are for social norms more generally (Bruner 1990). As Bruner notes, culture is the locus where meaning through language is shaped and reshaped, internalised and externalised. In western languages such as English, speakers adopt an egocentric frame of reference while in languages such as Arrernte, Guugu Yimithirr and Tzeltal, they adopt a geocentric frame of reference (Brown 2013; Brown and Levinson 1993; Dasen and Mishra 2010; Levinson 2003; Wilkins 2006). In an egocentric frame of reference, the speaker's viewpoint is intrinsic, object- or viewer-centred or deictic (Tversky 1996), also referred to as relative by Levinson (2003). In using an object-centred perspective, the object in an environment is the anchor or origo so that space (or movement through space) is expressed in relation to the object (its left, right, front and back). In taking a viewer-centred perspective, the speaker is the origo so that objects or landmarks are described with reference to the speaker's left, right, front and back. In a geocentric frame of reference, the viewpoint is extrinsic or environment-centred (Taylor and Tversky 1996; Tversky 1996) or absolute (Levinson 2003). Speakers use the fixed coordinates of north, south, east and west or other references to features in the landscape such as uphill and downhill to describe landmarks or to direct each other through an environment.

Turning to children, Acredolo (1977) and Piaget and Inhelder (1967) described children's spatial development as starting with an intrinsic, own viewpoint first, inherent in the sensorimotor stage (Piaget and Inhelder 1967), so that concepts and spatial terms *left*, *right*, and the topographical *in, on, back*, *front, up and down* in relation to their position in a space are in place from the age of five (Johnston 1988). By the age of ten, children show increasing use and experience of the con-

cepts, necessary for more abstract conceptual and spatial development. Developmentally, this can be described as a process of movement through a projective perspective necessary in coordinating different perspectives of an object and the self that will lead to an understanding of Euclidean concepts related to measurement and distance in a landscape (but see Mandler 2007, for an alternative view). However, Dasen et al. (2009) found that in cultures where both egocentric and geocentric frames of reference are available, a geocentric frame is visible as early as the age of four if children's deictic gestures are taken into consideration before the onset of the verbal terms. This finding echoes those in studies concerned with exploring the importance and the need for the study of gesture and embodiment in interaction as a window on how very young children (aged from 9 months, and therefore before lexical onset) can participate in interaction through the highly supportive actions of a carer (e. g. Filipi 2009).

Children's understanding of space becomes more complex in map reading where there is a geometrical correspondence between the environment and its symbolic or graphic representation. This understanding is later acquired (Liben and Downs 1993). Two skills are at play here. The first is mental rotation. Mental rotation, developmental onset of which is contested (Johnson and Moore 2020) but thought to develop from the age of 3 to 5 (Frick et al. 2013), is associated with success in science, technology, engineering and mathematics (STEM) (Laski et al. 2013; Uttal and Cohen 2012). In map reading, mental rotation requires the ability to align a map with an environment with an upright or upward and straight-ahead orientation. This means that what is at the top is what lies ahead (Shepard and Hurwitz 1984). Map reading also requires understanding the conventions of map graphics such as landmarks, symbols involving cardinal terms, and the representation of topographical features. Pragmatically, when communicating to others for navigation or wayfinding purposes, it also requires understanding what, how much, and how to "tell", evident in information structure and in taking a speaker stance. Speakers need to decide what might be accessible as local knowledge only, as well as decide how far speakers need to go. The second skill is perspective-taking. This pertains to how speakers position their viewpoints and that of others by assuming different orientations as they see the imagined environment from an external point of view, important as they imagine themselves moving through the space (Münzer et al. 2018). Perspective-taking, as in understanding the perspective of others from which spatial perspective develops, appears in infancy.

2.2. Development of perspective in infants

Research on the development of perspective has been largely dominated by developmental psychology, a more recent and major thread of which is Theory of Mind (Baron-Cohen et al. 2000). Theory of Mind holds that children are able to take the perspective of others by attributing intentions to them, necessary for a shared

knowledge status. Joint attention through infant gaze and pointing are the actions cited as being crucial to, and providing evidence for, a Theory of Mind (Liszkowski 2013). Tomasello and Carpentar (2007) maintain that 12 month old infants follow the gaze of others for "prosocial" reasons, and, as Tollefson (2005: 92) notes, that they create a "shared perceptual space…(where) cooperative actions can take place". An interactional lens that is focused on the ordered ways in which turns unfold turn-by-turn, fundamental to Conversation Analysis, permits attention to how carers' responses to infants' actions launch a sequence of talk (Filipi 2009; Jones and Zimmerman 2003; Kidwell and Zimmerman 2006). Importantly, it also uncovers how infants can shape how others respond to them through the action of monitoring others (Kidwell and Zimmerman 2006).

Two further points arising from Theory of Mind are the development of memory and the accumulation of experience through language. Equally applicable to the development of spatial cognition (Haun et al. 2011; Levinson 2003), experience includes participation in interactions with others (Wootton 1997) that begins with embodied participation which is antecedent to verbal participation, and increasingly involves multimodal turn designs as words are acquired (Filipi 2009).

Finally, as Lillard and Kavanaugh (2014) and Matthews et al. (1980) contend, Theory of Mind develops from participation in early storytelling such as pretend play because it requires taking the perspective of others that also provides a rich source of perspective-taking necessary for identity construction (Filipi 2022). Both Filipi (2022) and Heller (2019) show how a multimodal analysis that pays attention to the properties of embodiment and prosody, exposes how children are able to participate at very young ages (15 months and 19 months respectively) in storytelling. Filipi's study examines how the child initiates pretend play through embodied resources using toys and objects that are immediately available in the space to become characters and important artefacts in the development of the story. This is achieved through her co-participating mother's facilitating actions that enable the child to take the role of the parent who takes her babies (the toys) for a walk in the pram. She needs to manage obstacles as she moves out of the play space, and she constantly recruits the mother's assistance through "multimodal packaging" (Filipi 2019) where verbal and non-verbal resources (vocalisation, gestures and other embodied actions) are fundamental to turn design. In Heller's (2019) study of a child aged 19 months, the dimensions of displacement of space and person become the focus through a storybook reading activity. The multimodal analysis makes visible how verbal resources are combined with depictive and deictic ones together with the storybook itself as the child engages in "nonverbal discussion" that invokes absent characters and an imagined space not of the here and now. The study provides a powerful example of a very early instance of decontextualised talk.

It is evident from the above review that a range of important aspects of spatial cognition are in place early in a child's life. Importantly, these features emerge, are displayed and are practised through the children's participation in interaction

that also sheds light on their pragmatic skills – displays of their own knowledge states and conjointly those of others with whom they interact. These skills create a foundation for children as they venture forth into the world to interact with a wider range of people which allows them to accumulate different sets of experiences. Interaction thus provides the locus for spatial cognition to emerge as children "do space" (Jucker et al. 2018). This means that the stances they take to the environment and to each other are done with reference to the interactional space in which they occur rather than being isolated or divorced from it (Filipi and Wales 2010). It is with these notions in mind that we turn our attention to how older children (aged 7 and 10–12) make sense of space in a map task, and how they make visible their sense-making through the ways in which they interact with each other to complete the task.

The map task, as the review below will show, is a specific genre. As an activity it requires children to interact to complete a task: the drawing of a path on a map. It therefore provides a window on children's use of spatial language and interactional competence. It also offers displays of how children use gesture to express spatial concepts when terms are absent. The aim here is to provide a snapshot only of a very specific activity type.

2.3. Map task based interactions of children aged 7 and 10–12

As the actions of wayfinding and direction-giving associated with maps involve differentiated and asymmetrical access to information, it becomes important for speakers to establish what knowledge is common or can be assumed to be shared, and what knowledge needs to be established both at task beginning and ongoingly. Speakers also need to manage problems that might arise that threaten understanding or lead to non-understanding. Finally, there is the need for speakers to orient to task closing by providing an assessment of the task outcome.

Managing the first contingency requires speakers to attribute an epistemic state to their coparticipant about what is already known or shared (landmarks that they have in common for example). In interactions involving route directions, and (in map tasks) instructions, this is displayed in recipiently designed turns that are formulated with appropriate (and sufficient) information. In referential tasks, children as young as five have been shown to launch repair when this sufficiency principle is breached (Morisseau et al. 2013).

Investigations of how, and indeed, if children establish shared features, have revealed that children either assume a shared starting point (Filipi 2016), defined by Carletta and Mellish (1996) as a risk-taking approach, or use a try-marking device (Sacks and Schegloff 1979), sequentially located in a pre-sequence (Schegloff 2007) or pre-start (Psathas 1991; Filipi 2016); this is also referred to as the question introduction by Anderson (1995). Anderson et al. (1991) described the tendency in some of the younger children in their study to formulate instructions

as though they alone had responsibility for introducing information, which they labelled as adopting a "separatist" view. This is in contrast to the older children's actions of taking into account their co-participant's perspective and knowledge states, which involve a more interactional, and therefore a jointly achieved and distributed responsibility for information sharing.

With respect to the verbal formulation of instructions using maps, younger children (aged six) have been reported to produce vague instructions that are focused on landmarks rather than the overall direction of the map task environment. This contrasts with older children (aged 12) who use directional terms and environmentally relevant information such as reference to roads (Blades and Medlicott 1992) in their wayfinding. Together with greater redundancy found in the older children's instructions in map tasks, Blades and Medlicott (1992) and Anderson (1995) conclude that the older children's strategies result in greater accuracy and therefore success in instruction-giving.

The above affirms that the work of establishing a shared epistemic status does not belong to one speaker. Coparticipants also contribute by providing feedback, by repairing, by asking questions and by working on problems collaboratively (Anderson et al. 1991, 1994). Repair in particular becomes important for the children who assume shared landmarks. It is well established that through repair, speakers are able to establish and maintain intersubjective understanding when breakdown occurs (Goodwin 1980; Schegloff 1992; Schegloff et al. 1977). While all children display a range of ways of initiating repair (clarification or confirmation checks, for example), older children have been shown to deploy a broader range of resources (Anderson et al. 1991, 1994; Filipi 2016, 2009, 2010). A striking example was analysed by Filipi and Wales (2009) through the use of the deictic verbs *come* and *go*, deployed to establish a common reference point on a map after protracted trouble.

Finally, particularly relevant to map tasks are ways in which children structure phases in a larger sequence of activity, including openings and closings. In Filipi and Wales' (2010) study on comparisons between the adults and children's assessment phase in a map task closing, they found that all groups produced first assessments (pervasively present in interaction) but that only the adults produced immediate second assessments in response to them (see Pomerantz 1984 for a discussion about how first assessments generate second assessments). The adults also held off talking about the completed maps while the children did not, prompting a conclusion that the children were much more intent on the results or the outcome of the task. Fault-finding, associated with "doing disagreement", and therefore relevant to preference organisation (Pomerantz 1984), was also touched on as being done differently with a higher number of bald formulations in the younger children's interactions. As the specific resources used to do fault-finding were not the focus of Filipi and Wales' (2010) study, these will be analysed here in the next section to illustrate some of the key concepts touched on in the review.

3. Analysis of cases

As the above review suggests, previous research has shed light on the differences and similarities between children with respect to speaker stance and to how information is packaged and co-constructed; for example, to show the range of pragmatic resources they use as they work on map tasks and direction-giving. Importantly, because the interactions are indexical (or locally situated), children differ greatly within age groups as well as across them with respect to the resources used. This means that although the task is the same, the outcome will differ based on the (co)actions of the speakers as they manage local contingencies that arise.

In this section I analyse a set of pragmatic skills that emerge through the micro-analyses of the closing stages of a map task in order to illustrate some of the key ideas just discussed. Two points will drive the focus: differences in the preference organisation of fault-finding and differences in multimodal formulations. The samples chosen for the former are of interest because of the importance of preference in pragmatics. They also illustrate important differences between the two age groups. From the point of view of spatial understanding and children's instruction- and direction-giving, the presence of fault finding is (retrospectively) an indication of the difficulties the children faced in being able to take their co-participant's perspective, or in taking a collaborative stance in the task, or in using spatial terms. The latter issue is particularly pertinent to the discussion in the second set of samples (multimodal formulations) that will show the younger children's frequent recourse to and reliance on gesture.

The data for analysis is drawn from the interactions of 16 children working in eight pairs. Some of this data has been previously analysed in Filipi (2016) and Filipi and Wales (2009, 2010). Eight children were aged seven, while the other eight were aged between 10 and 12. In terms of ethical considerations, the project was explained to all participants, and consent for the children's participation was obtained from the parents.

The map task is based on the well-established "information gap" task (Warren 1985 cited in Seedhouse 1999: 151) common in the second language classroom. It has also been used extensively by researchers (for example, Anderson 1995; Anderson et al. 1991, 1994; Filipi and Wales 2009, 2010, 2016) to investigate both adult and children's interactional/pragmatic skills more broadly in an experimental but interactive context, noting that the assessment phase, unlike the task itself, is a naturally occurring event.

The task required the children to work in pairs with maps that were similar. One speaker (the information giver (IG)) was assigned a map with the route drawn on it that led to a finishing place marked by an X for the older children, and either a balloon or a kite on the younger children's maps. The other (the information follower (IF)) was assigned a map without the route, and either with the same landmarks, some of which were differently located, or with landmarks that were

missing from their map. The children were required to work together without looking at each other's maps so that the IF could draw the route onto their map. They did the task twice by swapping roles. Instructions to the children included the need to work together to complete the task and locate the final finishing place. They were told that they could show each other their completed maps at the end but not while they were doing the task. They were also told that there would be some differences between the maps with respect to landmarks so that they needed to find out what those differences were. Additionally, the younger children were given the task instructions in the form of a story, which was to help a character find the route taken by their kite or balloon, and to locate its final resting place. Finally, the younger children were asked to read the names and labels of the landmarks before task commencement to ensure that problems in reading would be avoided.

The analysis of the transcripts was conducted using the methods and findings of Conversation Analysis (Hutchby and Wooffitt 2008). Conversation Analysis is a powerful tool for uncovering systems at play in talk-in-interaction through its focus on interaction as a set of ordered, shared practices and procedures that are used by speakers to accomplish and interpret social actions. Research in Conversation Analysis has uncovered two major systems: 1) turn-taking that includes rules that govern speaker selection and repair, and 2) sequence organisation that describes how turns are ordered into larger units of talk (Schegloff 2007). The features that are pertinent to the analyses below are preference organisation (Pomerantz 1984) (specifically blame-attribution) in the assessment phase and the children's multimodal turn designs.

Preference organisation involves a set of culturally shared principles (Pomerantz and Heritage 2013) to maintain "social solidarity" between speakers (Silverman 1997). In politeness terms, this is akin to maintaining face, which, as Goffman (1967) noted, is both a social and psychological construct that enables speakers to protect each other's public self-esteem. For Conversation Analysts, face emerges and is situated in the actions of speakers as they work to maintain affiliation and achieve agreement by minimising potential disagreement (Pomerantz 1984). Accordingly, in assessment environments, there is a preference organisation for agreement over disagreement, revealed through different turn designs; preferred actions are produced smoothly and immediately while dispreferred ones are delayed or dysfluent.

The closings of one pair of seven-year-olds and one pair of 11-year-olds that could satisfy analysis of both the blame attribution and the multimodal turn design were chosen. Additional examples from other children are included to emphasise key points. Some of the extracts have appeared in past publications (as indicated in the extract headers); however, the analytic focus is new. The notations used are from Jefferson (2004) with the addition of RH and LH to denote right and left hand, the curly bracket { to denote onset of gesture, ---→ to denote gaze , , , , to denote gaze disengagement and P→ to denote pointing to. These are from Filipi (2007).

4. Managing fault-finding in the assessment phase of the closing

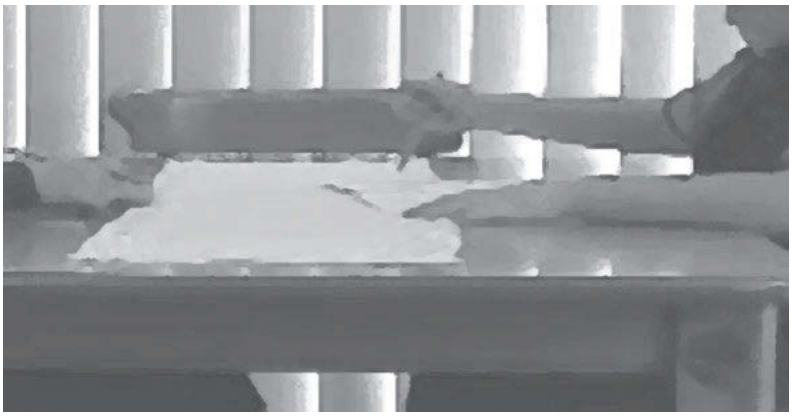
Not all children apportioned blame on task completion; they accepted the outcome even if it was less than accurate. What is interesting in the data-set, however, are the episodes where the children went beyond acknowledging that there were inaccuracies by escalating the action to fault-finding and blame attribution.

The first fragment from the older children in the assessment phase of the task closing is explored in detail. It will be used as the basis for examining how the children in the two age groups design their attribution of blame. The children's ages in the transcript appear in years and months.

In extract 1, Tom, the IF, is offering a display of how he orients to the action of blaming as a delicate matter and as face threatening through the mitigating design features of his turn.

Extract 1: **Chris (IG) 11;0 and Tom (IF) 11;7** (extract adapted from Filipi and Wales 2010: 3124–3125.)

```
1  IG: … and (that'll) be at the finish.
2          (2.2) ((IF looks down at his finished path))
3  IF: u:::m. (0.8) hh::{: (0.3) OKAY hh huh this looks
                         {---→IG, IG ---→IF
4      REAlly weird.=
5  IG: ={let's show each other.
        {,,,
6         (1.1) ((IF,,,IG hands his map to IF who shows him
          his;--- →IG))
7      oh- [(that's not   )
8 IF:      {[no.
           {((shakes his head,,,))
9    → huh huh {that's why:: [I jus]t couldn't-
       [that wa]s REAlly
10 IG:                          [(okay.)
       [(°let's compare
11     it.°)
                {((---→IG and rubs his forehead))
12 IF: REAlly weird.
13        (0.2)
14 IG: {go down up, down up.=
       {((moving his hand across the two maps and
       following the line on the map with his pencil))
```



15 IF: =yes,
16 IG: yes,
17 (0.2)
18 IF:→ it's {just that-
{((moves hand towards IG's map to locate a landmark))
19 IG: °°oh you°°
20 IF:→ [you- you said- said (go)] DOWN-
21 IG: [>°°(went)°° straight DO]WN.<
22 (0.2)
23 IF: coz there was:: (0.2) a wooden pole down there::.
24 °I went straight down to that.°
25 (0.2) ((starts to withdraw his hand))
26 →.hh you should've- (0.3) um:: °oh okay°. awright.
27 (0.3)
28 {↑YE::S I understand what happened.
{((moves forward in his chair towards Chris's map))
29 (0.2)
30 IG: [yep.]
31 IF: [I kn]ow ex↑ACTly what happened.
32 (0.2)
33 IG: so there wasn't ( )
34 IF:→ you shou[ld've done] more:: {ah north and south things.
35 IG: [(two wooden poles)] {((---→IG))
36 yep.
37 (0.2) ((IF ,,,))
38 IF: °°yeah,°° {awright. [we're finished.
39 IG: [(grave[stones)]
40 {((moves back in his chair and looks at camera))

Tom initiates the assessment in line 2, where he is looking at his finished map, and in line 3, where he offers a verbal assessment (*this looks really weird*). Subsequent to the exchange of maps, he repeats the assessment but in an upgraded fashion (Pomerantz 1984) that this time refers to the whole experience – *that was really, really weird* (lines 9 and 12) – which together with the broken formulation – *that's why*, *I just couldn't* – sets up a possible upcoming action of fault-finding to underscore what ought to have been done. In the next turn, instead of deflecting any possible blame, which might be an expected, contingently fitted next response, Chris compares the two maps in greater detail. In line 18, Tom elaborates his fault-finding and apportioning of blame for the outcome through a dispreferred format (Schegloff 2007) – *it's just that- you said* – which is produced in partial overlap but also with dysfluency through halting, hesitant prosody, and the repeated *you said* (noting that the latter could also in part be a result of the overlap). As noted above, in interaction, actions like apportioning blame are dispreferred (Pomerantz 1984) and speakers work to mitigate or soften actions that might threaten face. They do this, for example, by delaying or pushing the disagreeing action into the turn. This is exactly what occurs here. Tom prefaces his turn with the mitigator *it's just*, thereby projecting a defence for his less than accurate rendering of the route, and he also initiates the action of blame attribution in the same turn with raised volume on *DOWN*. We note that Tom uses a direct reported speech device (DRS) (Holt 1996) to accomplish this. This device is often found in disagreeing environments, and, as Wooffitt (1992) maintains, can be used to deflect any accusation or suggestion that the speaker was mistaken. Again, this action makes a denial or deflection a contingently relevant next action. However, Chris merely continues to examine the two maps for differences.

In the next turn (line 23), Tom starts to provide a fuller elaboration of the reasons for the less than accurate rendering of the route which is initiated with *because* (*coz*) and then expanded into the fault-finding *you should've* (line 26). He then reaches an understanding about where the problem was. This is displayed through talk that is self-directed, as evidenced through the softer, decreased volume of °*oh okay*° contrasted with the raised volume and raised pitch in his *yes – YES I understand what happened* – which co-occurs with the embodied action of moving towards Chris. This is subsequently escalated to a more emphatic *I know ex↑ACTly what happened* in his next turn as he proceeds to indicate that the directions were wanting because of the absence of the coordinates (line 34) – *you should've done more:: north and south things*. This formulation leaves little room for Chris to question the veracity of Tom's knowledge claim as he is not casting doubt on Chris's instruction through the DRS but rather finding fault with the way the instructions were shaped. Escalation to a disagreement is thereby diffused.

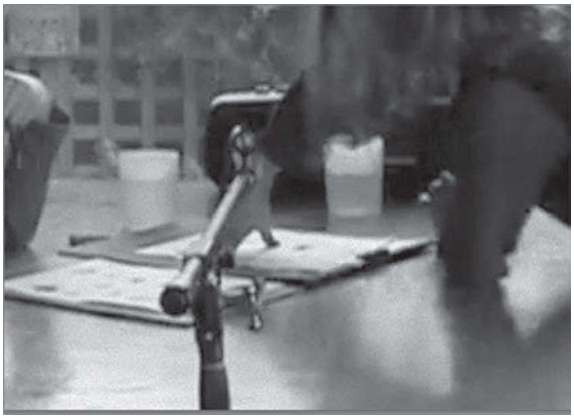
In sum, the above analysis has shown that fault-finding, which implies criticism of the other, is dispreferred; it breaks the principle of the need to avoid disagreements (Pomerantz and Heritage 2013). Dispreferred turns are flagged as such

by the presence of markers of dispreference (Pomerantz 1984) such as delays, the use of mitigation markers and dysfluency, evident in Tom's turn. An additional feature of fault-finding in this episode was the use of the DRS device.

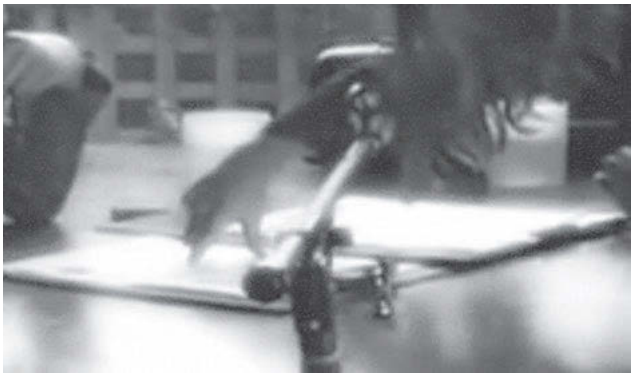
In turning to the pragmatic resources that the younger children use when they apportion blame, there are some interesting differences as well as similarities as illustrated in the following three extracts.

***Extract 2*: Emma (IG) (7;11); Melissa (IF) (7;11)** (extract adapted from Filipi and Wales 2010: 3124)

```
1   IF:   okay.
2   IG:   we're DONE!
3   IF:   DONE!
. . . ((They look at each other's maps and exchange
    comments about the location of landmarks.))
14 IF:→ you said to go under {the ↑BRI::dge.
                             {((indicates a line under the
                              bridge with her pencil))
15 IG:→ yeah:::
16        (0.3)
17      but- (0.3) °oh°.
18        (0.4)
19    → {but I said go ↑THAT way.{
        {((LH fingers splayed across IF's map))
                                 {((hands return to centre
                                  position))
20        (0.6)
21    → {this much {not that little much.
        {((RH over her own map, uses thumb and index
         finger to indicate distance.))
                   {((moves her thumb and finger to IF's
                    map and indicates the smaller dis-
                    tance))
```



22 I said (0.5) {that much,
{((repeats the measuring actions over
her map))



23 IF:→ °oh°,
24 IG: {not this little much.
{((repeats the measurement actions over the IF's
map))

As with extract 1, the IF, Melissa, is the one to initiate the fault-finding. She does so through the DRS device – *you said to go under the ↑BRIdge* – but without any softening of the action and without any markers of dysfluency associated with dispreferred actions that were visible in extract 1. It is accompanied by the multimodal features of raised volume and pitch together with hand movements across the page that leave no doubt about the location of the path in relation to the landmark. The IG, Emma, starts to agree with Melissa before she has properly examined the completed map, and then displays the beginnings of an opposite position through *but* in line 17. This is followed by the change of state token *oh*, which is whispered and, as in extract 1, indicates that it is self-directed as Emma realises where the differences are in the final route depiction. She then goes on to deflect blame attributed to her through format tying – *but I said go THAT way* – with raised volume and in a staccato rhythm. Subsequently she elaborates through a series of the deictic expressions *this* and *that* with accompanying hand gestures across the map. Here she is using the DRS device as a direct self-report of what she claims to have said (lines 19–24).

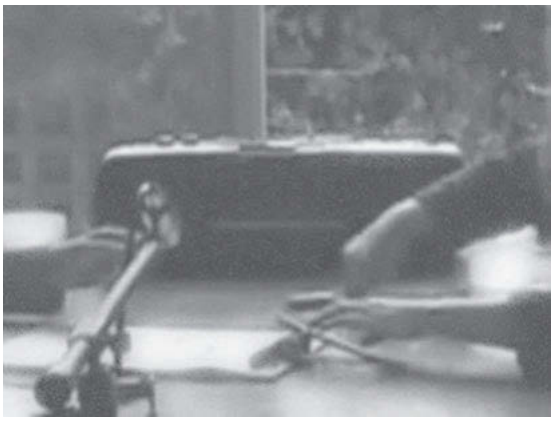
In the above, we can see a paired argument and counter argument through a parallel structure or format tying design (Goodwin 1990a) (*you said/I said*). Through format tying, children can display alignment or disalignment with a prior speaker's stance (Köymen and Kyratzis 2014); the latter is the case here in the fault attribution. Noteworthy here though is that the use of the DRS as a direct *self*-reported speech device diffuses an escalation into an extended dispute. Through these actions the blame is shifted to the IF, who does not reject it or question its

veracity as evidenced through her *sottovoce* change of state token *oh* (line 23). We note further that the blame attribution is delivered multimodally, where gesture and prosody are coordinated to contribute to its shape, and without any mitigation.

In the next extract where the task is repeated with a different map and where the roles are reversed, the same direct and open fault-finding is visible.

***Extract 3*: Melissa (IG) (7;11); Emma (IF) (7;11)**

```
1 IG: it's not supposed {to be pointing down.
                        {((draws the line gesturally))
2        (0.4) ((the IF looks at the map))
3 IF: {you said to go (0.2) {like ↑THAT.
      {((starts to point on her page.))
                           {((draws the shape on the
                            table with her index finger))
```



```
4        (0.8)
5     it's the same idea.
```

Here Emma (in the role of IF) can be seen to be openly resisting ownership for the inaccuracy of the rendered route in reaction to Melissa's implied criticism *it's not supposed to be pointing down.* Again the DRS device through format tying is an important resource to accomplish this work; it creates a paired disagreement sequence. However, Emma's disagreeing stance is subsequently dissipated in her elaboration in line 5 where she suggests that a close, even if not exact rendering of the path is close enough (*the same idea*). Similar actions are visible in the interactions of a second pair, Tim and Conrad.

***Extract 4*: Tim (IG) 7;8; Conrad (IF) 7;6** (extract adapted from Filipi & Wales 2010: 3123.)

```
8  IF: ... you said (0.2) start from the top.
9          (0.4)
10 IG:  no I said start (0.8) {start from the top like
                                 that . . .
                               {((takes the map off IF
                                 and proceeds to show the
                                 direction of the route on
                                 the map with his pencil))
```

Here Tim and Conrad can be seen to be openly disagreeing. The DRS device is used for the blame attribution (including self-reported speech) that results in a *you said/I said* format tying, paired disagreement sequence. The IG's disagreement in line 10 is achieved through his negative construction in turn initial position without delay and without dysfluency.

In all four of the above episodes, the DRS device when used by the IF can be seen to be an important resource for avoiding responsibility for the inaccurate outcome as it deflects blame away from oneself and to the coparticipant. Differences in turn design in the fault-finding environments of the map closings for the young children revealed absence of softening of the disagreeing action in turn initial position, suggesting that there is an important age related pragmatic difference with respect to preference organisation. The finding aligns with studies in Conversation Analysis and ethnomethodology of young children including pre-schoolers' disputes (e. g. Danby and Theobald 2012; Goodwin 1990a, 1990b). The collection in Danby and Theobald (2012), for example, describe how disputes are openly and directly designed in ways similar to the actions in the above fault-finding environments. They also maintain that through such open disputes young children are able to accomplish a range of social functions such that children's disputes constitute a set of important social practices for young children.

5. Multimodal formulations

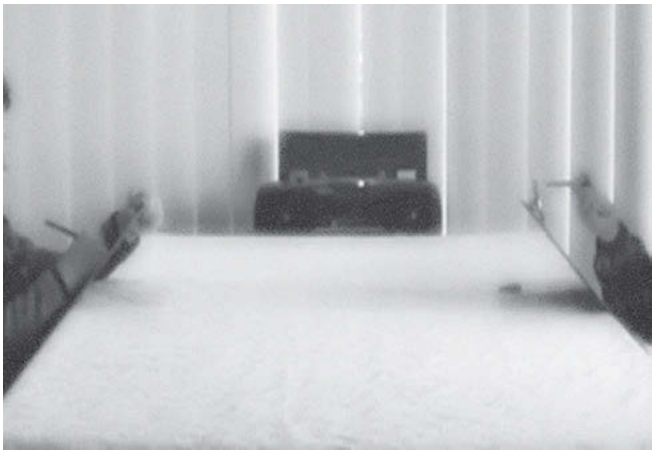
In turning to spatial considerations, paying multimodal attention in the analyses permits the emergence of another important difference, the use of gesture and prosodic emphasis in the formulation of children's spatial instructions and assessments. This is illustrated very nicely in extract 2 where Emma uses a parallel structure extensively (*this much, that much* with her index finger and thumb, lines 21–24). Her verbal deictic formulations co-occur with a range of hand gestures as she moves from her own map to her right to the IF's map to her left as she reports the instructions that she gave by way of accounting for the inaccurately drawn route. The position of her thumb and index finger to indicate measurement in the

representation of distance on the map, co-occurs exactly with her verbal articulation of *this much*, *that little much* and her reformulated repeat *not that much, not this little much*. Also important here are her displays of perspective sensitivity. This is achieved by her use of the deictic and spatially proximal *this* in taking her own perspective on the first round of explanations (line 21), and her subsequent shift to the deictic and spatially distal *that* in taking the IF's perspective (line 22). Notably for the interaction, this action succeeds in eliciting understanding from the IF in line 23, suggesting that the deictic shift may have been launched as a pursuit to elicit the IF's agreed stance that the IG was not to blame.

The use of gestures in the young children's instruction-giving was a pervasive feature in the data-set. In extracts 3 and 4 above the children follow the line of the map with their finger. They also typically draw a line in the air or on the table with their finger or point to their left, right, up and down. This is illustrated in the following example:

Extract 5: **Tim (IG) 7;8; Conrad (IF) 7;6**

```
1 IG: {. . .you turn a bit (0.9) {you turn that way…
      {((following the path with his pencil))
                                  {((P→ to his own right))
```

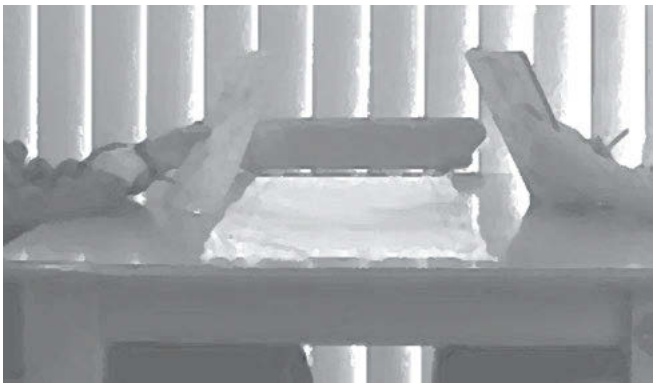


Here, the egocentric term *right* is conveyed gesturally not verbally. Such an action makes it essential for the children to constantly look up from their maps in order to see the gesture. In drawing lines in the air or to indicate measurement as in extract 2 above (*this much* with the accompanying physical demonstration with finger and thumb), the children provide evidence of having sound Euclidean concepts even if they are not expressing them using measurement terms. There appears to be a preference organisation here for gestural depictions that either accompany their verbal instructions or that are used alone without the corresponding lexical terms (as in the above where *that way* (right) is conveyed gesturally).

In contrast, the older children's instructions were much more verbal, and specific verbal measurements were included. The following extract illustrates. It is the second of the tasks for this pair, the first appears in extract 1 above.

***Extract 6*: Tom (IG) (11;7); Chris (IF) (11;0)** (extract adapted from Filipi and Wales 2009: 66; the IG is seated on the left-hand side of the photo.)

```
1  IG: ... then {go:: (1.1) .hh huh (0.3) sou{::th
                ↑{we::{st °or:
                 {((---→IF,,, and draws the direction in
                  the air close to his map))
                                                {((IF ,,,))
                     {((IF---→IG))
   IG:               {((Moves
       RH down then up to the right then down again))
```



```
2      (0.4) left dow::n diagonal° {(0.9) for about 6
                                   {((,,,))
3      ↑centimetres, >you sort ov< come to the:
       (.)°↑si::de.°
4      (1.3) go down a couple ov centimetres from there
5      (0.5) and then go to the ↑right. (.) °and put a
       cross.
6        (0.4)
7      yeah.
8        (0.3)
9      that's the end.°
10       (1.1)
11 IF: {↑okay. (      )
12     {((---→IG,---→IF))
13        (1.8) ((they exchange maps and examine them))
```

As we saw in extract 1, Tom as IF, suggested that the absence of the cardinal terms was the cause of the inaccuracy in his drawing of the path. Here in the role of IG, Tom is designing his instructions to include these terms. However, what is interest-

ing here is that he reformulates his turn as he switches to the terms associated with the egocentric or relative frame of reference. This is evident in line 2 where *south west* is reformulated into *left* (for *west*), *down* (for *south*) and *diagonal.* Co-occurring with these is his hand movement with his pencil as he moves his hand across and down the page to accompany his instructions; these physical actions (behind the page) are not visible to Chris. This suggests that these embodied actions are for himself and not for the benefit of Chris, the IF. Their use contrasts with the ways in which the younger children were using their gestures to help them produce and depict a clearer set of instructions for the IF. Similar deployment of gesture was reported by Klann-Delius (1987) in young children in board game explanations which can be argued to require spatial representation. Also noteworthy in the above extract, is that as Tom gives a further set of instructions he switches to the page as a reference point away from the landmarks which makes measurement in centimetres relevant. This action provides evidence of constant shifts in perspective and referencing in order to progress the task. It also minimises the need for repair and the inevitable disruption to the flow of the instructions that repair causes (also noted by Anderson 1995). The use of gesture in spatial tasks is therefore also differently organised and appears age related.

6. Concluding discussion

To a large extent, the notion of development is loaded and carries a suggestion that with age, skills are acquired that lead to better ways of achieving tasks and social functions. Such a view may tend toward deficit models. It potentially devalues the indexicality of interaction as children deploy pragmatic resources to manage a diversity of local contingencies that are simply different rather than limited or wanting. Children need to be able to participate in, influence, and negotiate their own roles and those of others in play and for a range of other everyday functions. They call on a variety of resources fit for tasks that change over time, and they deploy these resources in highly coordinated ways to accomplish these actions.

Accepting such a view of development brings with it a cautious drawing of conclusions about children's pragmatic competencies at different ages. To some extent, with the exception of the landmarks and the creation of the story context to engage the younger children, this is made possible because the task that the two groups of children were given was the same and the maps similar. Wagner et al. (2018) underscore the need for analytically defensible approaches in drawing conclusions about development or change over time. This could include studying comparable sequential environments, for example, with indexicality or context sensitivtiy as a caveat of course by emphasising that that contexts are not identical. In the data drawn on for this chapter, the children were not investigated over time either. With these limitations and the need for caution in mind, we can nonetheless

point to some striking differences even if the cohort is small which in itself calls for further caution in generalising findings.

First, all the children in the selected data set for this case-study drew on a set of interactional pragmatic resources to not only achieve task outcome but also to talk about the task and assess the outcome, both pragmatically important actions. As described in Filipi and Wales (2010), assessment becomes a relevant action when some kind of outcome is involved. Assessments are pervasive in conversation, and examining how and at what ages children produce them in their interactions with each other, provides an opportunity to understand children's pragmatic skills at different ages.

In choosing to focus on (negative) assessments in this chapter, in the naturally occurring segment of the task, features endogenous to the interaction were sought that related to both the sequence organisation and to turn-taking. Analysis revealed that children in both age groups used the direct reported speech device (DRS) found in disagreeing environments (Holt 1996) to both initiate the fault-finding with an inaccurate map rendering and for deflecting blame. An important difference between the children in the two age groups emerged in preference organisation. The older pair softened or mitigated the criticism or dispreferred action through turns that were marked by dysfluency, delays and the mitigation marker (*just*), while the two younger pairs of children were bald and direct in their fault-finding. These features are associated with preferred turn designs (i. e. without dispreference markers), making disagreement an acceptable rather than a face threatening action. The fault-finding for the younger children was also sequentially organised through format tying (*I said/you said*) found in children's disputes (Goodwin 1990a; Köymen and Kyratzis 2014).

In regard to the DRS, the younger children's use of the direct self-reported speech device when in the role of the IG, diffused escalation into a protracted dispute as it was used to account for and show evidence for the veracity of the instructions. So the younger children simply accepted the IG's account while in the older children's sample the IF pointed to the need for a different set of instructions that could convey information through spatial terms.

The second set of findings related to the multimodal design of children's turns. Here there were also striking differences. In adopting an egocentric perspective, the younger children only used a limited number of topographical terms *top, down, under.* While they did not use verbal *left* and *right*, they did depict these gesturally. References to measurement were also only done through gestures and through the use of the deictic *this/that* with accompanying gestures, prosodic emphases and physical reference to the page. Shifts in perspective were achieved through these deictic terms. The gestures were also pivotal to their explanations in accounting for the path drawn or for describing the path. In contrast, the older child, Tom, clearly oriented to the conventions of map reading by using (and requesting use of) the cardinal terms. Notably, he was also sensitive to his co-participant's need to understand

spatial instructions by shifting to the relative frame and to the topographical features of the map on the page, which could be argued was a feature of redundancy, cited by Blades and Medlicott (1992) as important to task success. Tom also used gestures but only to guide his own instruction formulations as they were not visible to the IG.

These differences suggest that the younger children selected here, together with those from the wider data-set reported in Filipi (2016) and Filipi and Wales (2009, 2010), had a range of pragmatic skills and interactional resources to describe movement through the imagined environment on the map. However, their lexical resources (words for *left* and *right* and measurement) at least in this context, did not emerge. The specific multimodal design of their turns may well suggest that gesture (and indeed gesture together with prosody; Hübscher and Prieto 2019) continue to be antecedents to verbal language when children engage in complex tasks where there is asymmetrical access to information.

In closing, Dorneyei (2005: 125) states that speakers vary in the ways in which they package and convey information demonstrating "an individual's preferred and habitual modes of perceiving, remembering, organising, processing and representing information". However, as both the review and the above analysis show, in doing talk about space, children's cognitive processes emerge as they are brought to bear on shaping, reshaping and adapting their spatial talk to make meaning *conjointly*.

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II. Spatial organization of social interaction

10. Encounters in public places: The establishment of interactional space in face-to-face openings

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Abstract: This chapter illustrates and discusses the practices through which individuals progressively engage in interaction. It begins with a presentation of seminal analyses of openings in phone call conversations, and then focuses on openings of encounters between unacquainted people in public places. In particular, the chapter presents and reviews openings as analyzed from the vantage point of Conversation Analysis (CA). This approach contributes significantly to the systematic analysis of the sequential, moment-by-moment organization of openings, on the basis of telephone conversations. This chapter demonstrates that this approach has been extended to the study of how people manage co-presence, including in unfocused interactions, and eventually engage in face-to-face encounters. Whereas classic conversation analytic studies highlighted the relevance of emergent temporalities in the organization of openings, this chapter insists on the importance of spatiality in their interactional accomplishment. By so doing, it highlights the different ways in which space features and is made relevant in social interaction. The chapter shows that verbal/vocal and embodied resources are fundamentally involved in the constitution of space, as well as the situated spatial arrangements of individuals' bodies in the local environment. These resources enable individuals to build dynamic interactional spaces.

Keywords: openings, social interaction, conversation analysis, interactional space, video-recordings, multimodality

1. Introduction

Openings of social interactions are crucial for individuals engaging in a common activity: they are the *locus* where they organize their joint entry into interaction, and mutually establish and ratify the kind of relationship, the context and the activity they engage in. Openings also go hand in hand with the achievement of a shared interactional space, enabling physical proximity and contact between the prospective participants. This chapter discusses existing scholarly work on openings of social interactions. It focuses on encounters between unacquainted persons

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in institutional and public places, with particular attention to the role of space in the emergence of the openings.

1.1. Openings

Openings of social encounters have been of interest to diverse disciplinary perspectives. They have been analyzed overwhelmingly via the prism of greetings, which have interested anthropologists, sociologists, and linguists alike. The reason for this resides in the common assumption that greetings "mark the boundaries of conversations" (Jucker 2017: 39). Accordingly, greetings have been analyzed as purely formulaic units, as "illocutionary acts" (Searle 1969: 49) serving the purpose of initiating a social encounter. This view was already challenged by Goffman (1971: 79), who described greetings as resources that "mark the *transition* to a condition of increased access", and as "ritual displays that *mark a change in degree of access*". (italics added; see also Schiffrin 1977; Ameka 2009). Goffman treated greetings not as flagging the "boundaries" of an encounter, but as displaying a transition from less to more social engagement. Interactional research of social encounters confirmed that individuals coordinate their entry into interaction with embodied resources (gaze, facial expressions, body postures, movements in space, etc.), which precede the use of greetings or other vocal resources (Kendon and Ferber 1973; Mondada and Schmitt 2010; De Stefani and Mondada 2010, 2018; Auer 2020). Greetings are, in this perspective, "the end phase of incipient interaction" (Schegloff 1979: 34).

This chapter describes the embodied and vocal resources that individuals employ as they engage in face-to-face interaction and which lead up to greetings, highlighting the role of space in the establishment of mutual perception and access in face-to-face encounters. Particularly, it presents the way in which openings were analyzed in Conversation Analysis (CA), an approach that contributed significantly to the systematic analysis of the sequential, moment-by-moment organization of openings of telephone conversations (Section 2) and face-to-face encounters (Section 3). While classic conversation analytic studies highlighted the relevance of emergent temporalities in the organization of openings, this chapter also shows the importance of space in their accomplishment.

1.2. The relevance of space in opening face-to-face encounters

All interaction requires some form of co-presence. This holds true not only for face-to-face encounters (Section 3), but also for telephone conversations (Section 2.1), for videoconferencing and so-called "virtual" communication (Section 2.2). Both face-to-face interaction and technologically mediated encounters rely on the contemporaneous presence and availability of individuals in a particular place. Even in distant conversations, individuals need to be present at a specific location (e. g., when using landline telephones or desktop computers) and socially available

for interaction. Clearly, co-presence is a spatio-temporal phenomenon, and a practical achievement of individuals, who may orient to the presence of other persons in the same place in different ways. Co-present individuals may move into focused interaction, thereby becoming participants. However, in doing so, they have to coordinate their embodied and vocal actions in mutually witnessable and accountable ways, in accordance with local contingencies. In this sense, although individuals rely on their interactional histories and their expertise collected in previous occurrences of "that" kind of openings, every interactional opening is organized from scratch.

Since it relies on co-presence, interaction is always located in space. However, interaction does not just happen in a "given" place; rather, individuals orient to spatial features as they engage in an encounter, which may be fleeting – while individuals maintain their mobility and possibly utter a "passing greeting" (Goffman 1971: 75) – or more sustained, eventually leading to a stationary encounter through the stabilization of a shared "interactional space" (Mondada 2009). Space is of paramount relevance for interactants in different ways. For instance, research in ethnography and anthropology has shown that in certain communities, the territory in which an encounter takes place is associated with different sets of rights and obligations. Youssouf et al. (1976: 800) showed that among the Tuareg encounters between strangers can occur "on our own territory, on the other's territory or on 'neutral' territory" and that "encounters on the desert […] occur in situations where assignment of territorial 'rights' are, at best, ambiguous". This accounts for a certain apprehensiveness and caution on the part of individuals approaching each other. In his analysis of Mapruli greetings, as used by the Mamprusi people (northern Ghana), Naden (1986: 165) noted that "[s]trangers […] must be welcomed if one is on one's home ground, but need not be greeted in neutral space. In the bush […] clear range extends to the limits of perception, and one should greet anyone within hailing distance, and beyond that, wave to anyone in sight". While this line of research produced a range of studies on specific cultures (see also Ameka 2009), it also called attention to the generic fact that the first moments of an emerging encounter happen when two individuals sight each other. In urban settings, this may occur in short time and when individuals are spatially proximate (Kendon and Ferber 1973). In vast spaces, such as the central Sahara Desert, "[t]he preliminary stage of some encounters is a long one. The flat desert landscapes allow participants [sic!] to see each other from a great distance – perhaps as much as several hours travel by camel" (Youssouf et al. 1976: 801). Clearly, co-presence in the same "perceptual field" (Duranti 1997a: 68) makes initiating an encounter possibly relevant, especially in areas where encounters between strangers are potentially dangerous (Youssouf et al. 1976: 810). Mobility is thus a relevant dimension – for individuals as well as for the analysts – in examining how an encounter is jointly achieved, in particular by adopting converging trajectories that lead up to a stationary face-to-face encounter (Scheflen and Scheflen 1972; Kendon and Ferber 1973).

Space might become relevant in other ways too. On the one hand, spatial reference (Schegloff 1972) is sometimes used as a means of self- or other-identification, for instance in institutional phone calls (Section 2.1), but also in face-to-face encounters. On the other hand, the talk produced (language choice, dialect, accent, etc.) is analyzable by co-participants in terms of where one "comes from" (Mondada 2018a), hence enabling them to orient, for all practical purposes, to *ad hoc* categories that relate to the supposed geographic origin of a person.

This chapter examines how individuals who find themselves in situations where they could possibly engage in interaction organize their co-presence and their openings by mutually coordinating their embodied, mobile and vocal actions, thereby actively (re)configuring their spatial environment.

2. Distant openings

Openings from a CA perspective were studied extensively by Schegloff (1967, 1968, 1979, 1986), who on the basis of landline phone call conversations demonstrated and exemplified how a sequential analysis may reveal the intricate details through which people organize the openings of their phone conversations. Virtually all subsequent studies on openings within that approach, including those focusing on face-to-face encounters, took Schegloff's work as a reference point. Schegloff described openings as starting with the ringing of the telephone (the summons) and as collaboratively achieved through a series of sequences of turns-at-talk. The following section (2.1) illustrates Schegloff's analysis. The subsequent paragraphs show how individuals adjust the organization of openings in a reflexive way to a variety of institutional contexts, and how they reshape it in technologically-mediated forms of distant communication (Section 2.2). The final section (Section 3) measures the applicability of Schegloff's model against openings of face-to-face encounters in public places.

2.1. The systematicity of telephone openings

Schegloff's (1967) analysis of more than five-hundred phone call openings enabled him to come up with a set of ordered sequences that speakers go through in the accomplishment of the initial moments of their encounter. These are organized as follows:

1. The summons-answer sequence opens the channel for any talk to follow and addresses the participants' accessibility, "confirming […] the availability of an attentive ear and a mouth ready to speak [...]" (Schegloff 1986: 117) if completed. In telephone conversations, the ringing of the phone constitutes the summons, which projects as an appropriate answer picking up the receiver

and producing a vocal answer. Schegloff (1968) pointed out three features of summons-answer sequences: 1) their nonterminality, i. e., they cannot stand conclusively of a conversation, but are preliminary to further talk; 2) their nonrepeatability, i. e., once completed, the summons-answer sequence cannot be reiterated; and 3) their conditional relevance, which ties the first action (the summons) to the second action (the answer); "given the first, the second is expectable; upon its occurrence it can be seen to be a second item to the first; upon its nonoccurrence it can be seen to be officially absent" (1968: 1083). Moreover, the caller has the obligation to talk upon the completion of the summons-answer sequence and the called person to listen.

2. Identification and recognition may occur in overtly articulated identification sequences, but recognition can also happen without a dedicated sequence being produced. What is at stake is the establishment of the participants' individual or categorial identities. By responding to a summons (e. g., with *hello*) the called person provides a "voice sample" (Schegloff 1986: 126), enabling the caller to recognize their voice. According to Schegloff, a preference for recognition is at work. If recognition does not happen, self-identification (e. g., by name) is warranted.
3. The greeting sequence is reflexively tied to reciprocal identification (and recognition): "[...] it is with a greeting that each party asserts or claims recognition of the other" (Schegloff 1986: 129). In the greeting sequence, a greeting by one participant projects a return greeting by the other participant.
4. The "howareyou" sequence is initiated by one participant's *how are you?*-question, which projects an answer by the recipient. Schegloff identified three organizational sets of answers – positive, negative and neutral, which each lead to different sequential courses (Schegloff 1986: 129). While "neutral" responses orient speakers towards closing down the "howareyou" sequence and progressing to the next sequence, "positive" and "negative" responses make sequence expansion relevant. Since the sequence organization of openings provides callers with the first opportunity to produce a *how are you?*-question, the "howareyou" sequence allows called persons to introduce a topic that thereby gets prioritized with respect to the caller's reason for the call.
5. The sequence organization of openings enables callers to reach the "anchor position" (Schegloff 1986: 116), i. e., the sequential slot at which they can introduce the "first topic" of conversation, thereby providing the "reason for the call" (1986: 116). However, opportunities may also emerge that enable participants to introduce a topic of conversation before the anchor position is reached, e. g., after the *how are you?*-inquiry.

The first four sequences form the "core opening sequences" (Schegloff 1986: 117) through which participants collaboratively work towards reaching the "anchor position". On occasion, participants may establish spatial reference as they go through

the opening sequence, in particular as part of mutual identification or when making relevant contextual features. The following excerpt illustrates a case in point:

Ex. 1 (Schegloff 1979: 57)

```
1  M:    Hello,
2  C:    H'llo Marcia?
3  M:    Yea:h.
4  C:    Oh it's good to heah yur voice- sound
         like yur in a hurry though.
5  M:    'hh Yea:h kind of- hi C- is- you're home!
         Carolyn.
```

In response to the ringing of the phone (not transcribed in the original), Marcia answers with "Hello", thereby displaying her availability (summons-answer sequence). In the following turn ("H'llo Marcia?"), the caller claims recognition of Marcia based on the voice sample the latter has just provided. By answering with just "Yea:h", Marcia does not display recognition of the caller. In the subsequent turn, the caller is again displaying recognition of Marcia's voice, while at the same time making reciprocal recognition relevant. Furthermore, with her expanded turn, the caller offers a larger sample of her voice, giving Marcia again the opportunity to recognize her (instead of opting for a dispreferred self-identification). Indeed, after starting a response "Yea:h kind of-", Marcia produces a greeting followed by what is likely a first identifying token ("hi C-"). The turn continuation ("you're home!") offers an account as to why recognition happened so late and then produces the caller's name "Carolyn". In this case, Marcia displays recognition of the caller by other-identifying her through her name. This identification crucially relies on a "place formulation" (Schegloff 1972), i. e., on "you're home!". Therefore, this excerpt illustrates the asymmetry of information between the caller and answerer about who and where the other is, or is likely to be located. In times in which numbers were not displayed on the phone, the caller knew which person(s) to expect when calling a particular number, the call-taker did not know who was calling.

Schegloff pointed out that openings that *prima facie* seem to deviate from the ones described above are actually "variants engendered by a systematic sequential organization adapted and fitted by the parties to some particular circumstances" (1979: 68). For instance, in phone calls to emergency helplines, the opening sequence is reduced to a "three-part summons/answer/acknowledgement" (Whalen and Zimmerman 1987: 178) by which participants display their orientation to the main business to be accomplished in an emergency call. Although greetings and "howareyou" sequences are absent in these openings, participants do not treat them as missing (Whalen and Zimmerman 1987). Such institutional calls are thus organized differently from ordinary calls. Their institutional nature is not given, but rather results from the participants' practical orientations and their sequential ordering of turns (Drew and Heritage 1992; Schegloff 2004).

In the opening of emergency calls, participants accomplish a number of interactional goals: opening the interaction, identifying (i. e., self-categorizing) themselves, and acknowledging the other's identity, often by referring to the (geographical or institutional) place they are calling from (Mondada 2011). By thus accomplishing the opening sequence, participants pave the way for the actual reason for the call, i. e., the request sequence (Zimmerman 1984; Whalen and Zimmerman 1987). Zimmerman (1984) emphasized that this structure is an interactional achievement by the participants, which shapes the context of the talk. Observing similarities between institutional and ordinary phone calls, Schegloff warned against "cooptation or preemption of a sequential feature of the talk by a social-structural formulation of its context" (1991: 59), formulating a "paradox of proximateness" (1991: 64): the context's relevance must be established on the basis of the details of talk.

The next excerpt shows how the institutional dimension of such service calls is established, and also demonstrates the relevance of spatial references in openings:

Ex. 2 (Zimmerman 1984: 219)

```
1  CT:   Mid-City Emergency.
2  C:    This is thuh Kit-Kat Club on ten one three oh
         Williams?
3  CT:   Mmhm
4  C:    and thuh laundrymat (.) Jim's laundrymat?
5  CT:   Mmhm
6  C:    it's down the street here a bit (.) tst anyway
         it's lef' open. It's wide open.
7  CT:   Mmhm
8  C:    An it's supposed to be locked at nine a clock
         so I don' know if somebody broke in there or
         what's goin' on
9  CT: We'll get somebody there.
```

In this case, the call-taker responds to the summons by self-identifying on the basis of their institutional identity, which is itself related to a particular place (l. 1). In response, the caller self-identifies by mentioning a location ("thuh Kit-Kat Club", l. 2) and an address. The caller's turn is produced with a "try-marked" (Sacks and Schegloff 1979) intonation, hence inviting some form of response, which the call-taker delivers next (l. 3). The caller then mentions a further location ("Jim's laundrymat?", l. 4), again articulated with try-marked intonation and thereby projecting the call-taker's response (l. 5). This second "place formulation" (Schegloff 1972) is to be heard as not only the place where the caller observed "policeable trouble" (Zimmerman 1984: 214), but also as providing for a "police locatable location" (Meehan 1989: 120), that is, a place formulation relevant for the access and intervention of the police. This is confirmed by the caller's subsequent turn-constructional unit (l. 6), where they report the nature of the trouble and articulate yet another place formulation, relative to the caller's location. Hence, self-identification through a

place formulation (l. 2) can be seen to serve the main business of the emergency call, namely reporting policeable trouble in an adequate way, thereby facilitating the delivery of the service (Zimmerman 1984; Whalen and Zimmerman 1987).

Place formulations are frequently also observed in radio phone-ins. They were studied with respect to their sequence organization (Hutchby 1996; Fitzgerald 1999; Fitzgerald and Housley 2002), which intertwines with membership categories participants make relevant (Fitzgerald 1999; Fitzgerald and Housley 2002). Here, callers may self-identify by mentioning where they "come from", or the host may other-identify them by articulating the caller's name and their geographical location. Among the particularities of radio phone-ins participants orient to in the opening of the phone calls, is the fact that, before going on-air, callers talk to a switchboard operator. A further specificity resides in the particular "participation framework" (Goffman 1981) of the broadcasted call, with the invisible presence of the listening audience (Hutchby 1996) that hosts and callers may make relevant.

Subsequent studies on institutional phone calls focused on prosody (Couper-Kuhlen 2001; Szczepek Reed 2009; cf. Schegloff 1998) and embodied behavior in call centers (Mondada 2008). The latter showed that the participants' spatial arrangement and embodied practices are important features of phone calls, especially of their openings, thereby rectifying the disincarnate understanding of phone calls conveyed by previous studies. This is confirmed by video calls, in which the visibility of callers and call-takers is a further organizational layer of openings.

2.2. Mobile phone and video call openings

With technological advancements, mobile phones are increasingly becoming ubiquitous in our social lives. A fundamental question is then, as Schegloff (2002: 297) put it: "How should we understand cell phone use: Is it like any other phone use, or do the technological affordances modify the terms under which such conversations are initiated and conducted?". Schegloff's question addressed the interactional relevance of the features of mobile phones in the organization of conversations. Different from landline telephone calls, the ringing of mobile phones (through a variety of summonses) may convey information about the (identity of the) caller, especially if their number is saved. Therefore, answers to summonses may already display sensitivity to the caller's identity (Arminen and Leinonen 2006). Answerers often tailor their responses to summonses through personalized answers (as opposed to uniform summonses in landline calls). Conversely, the inability to identify the caller may be treated as accountable (Arminen and Leinonen 2006).

The portability of mobile phones, and the mobility of their users, enable the latter to receive and answer calls anytime and anywhere. Callers treat the answerer's location as relevant by asking questions like "where are you?" in the openings (Laurier 2001; Weilenmann 2003). The local contingencies of answerers, their current activity and availability, may present constraints for interaction, to which they

may orient while answering the call. For instance, Arminen and Leinonen (2006) discussed an example in which a person takes a mobile phone call in the toilet of a train, and this constrains their participation and engagement in the interaction.

Further technological developments make it possible for people distributed in different places to connect by video calls. In the openings of such video calls, participants orient to establishing a joint interactional frame (Licoppe 2017), in which the parties involved in the calls are mutually visible and available to each other. This mutual visibility is often achieved through "talking heads" configurations (Licoppe and Morel 2012), in which people gaze at the screen while their faces are appropriately visible to one another. The proper visual appearances of people are essential, and they are treated as noticeable and accountable in the opening phases of the video calls. While appearances establish the relevance of greetings, the latter recognize such appearances and provide a resource for achieving and checking the mutuality of audio-visual telecopresence (Zhao 2003). It is only after mutual visibility has been properly established and acknowledged that people move on with their business. The participants' visibility is treated as an institutional prerequisite, for instance, in the openings of courtroom hearings held via videoconference before proceeding with the procedure (Licoppe and Dumoulin 2010).

The establishment of a joint interactional frame in video calls often involves protracted sequences. In other words, a proper interactional frame emerges in a stepwise fashion through successive forms of appearances, for instance, audio-appearances and video-appearances (Licoppe 2017). These are recognized and treated as distinct, thereby occasioning the production of multiple greetings (De Fornel 1994; Licoppe 2017: 251).

In the light of these observations and findings, co-presence comes out as a practical and materially/technologically-supported multimodal accomplishment that can be achieved in different ways, in distant calls and virtual communication, but also while sharing the same location, as the remainder of this chapter will show.

3. Face-to-face openings

Goffman has repeatedly shown that mere physical proximity is not yet co-presence, and spatial co-location does not yet mean establishing a common interactional space. This section takes up the analytical challenges that face-to-face openings present and describes the initial moments of beginning encounters, with particular attention to how movements and bodily assemblages in space contribute to the emergence of openings.

Whereas the approaches presented earlier (Section 1.1) treated openings as establishing a natural initial demarcation of the encounter to come, Goffman examined different kinds of co-presence in the same place, in particular in terms of "unfocused" and "focused interactions" (Goffman 1963). He defined the "social

situation" as more than just co-location in the same place, "as an environment of mutual monitoring possibilities, anywhere within which an individual will find himself accessible to the naked senses of all the others who are 'present,' and similarly find them accessible to him" (1964: 135). Perception, in line with Simmel (1908), is crucial for establishing different types of social arrangements. Elsewhere, Goffman spoke of "conditions of copresence": "persons must sense that they are close enough to be perceived in whatever they are doing, including their experiencing of others, and close enough to be perceived in this sensing of being perceived" (1963: 17). This defines a "gathering", with "unengaged participants bound by unfocused interaction" (1964: 135). Unfocused interaction concerns not only "the management of sheer and mere copresence", but also "the kind of communication that occurs when one gleans information about another person present by glancing at him, if only momentarily, as he passes into and then out of one's view" (1963: 24). Gatherings thus characterize forms of minimal orientation between individuals who are not yet "participants" to an encounter, but who are sustaining "civil inattention" between them. By contrast, in an "encounter", co-present persons "jointly ratify one another as authorized co-sustainers of a single, albeit moving, focus of visual and cognitive attention" (1964: 135). That is, they engage in a focused interaction, defined in perceptive terms as "mutual eye-to-eye activity" (1963: 92), in which an "ecological huddle tends to be carefully maintained, maximizing the opportunity for participants to monitor one another's mutual perceivings" (1963: 95). These different forms of engagement have been a source of inspiration for reflecting about openings, and in particular about what precedes and leads up to an opening.

In order to characterize the different social arrangements observed, Goffman used a variety of spatial notions: already in 1956, he spoke of "region behavior", distinguishing between a "front region" and a "back region" (1956: 66 ff); later, he talked about "territories" (1971: 29), distinguishing between geographically structured and fixed territories vs. more temporary, situational ones vs. egocentric ones. Space is omnipresent in Goffman's writings, be it in the form of architectural affordances and constraints or in the manifestation of changing body arrangements.

Goffman also referred to sociological, anthropological and ethological approaches to space, as well as to contemporaries such as Birdwhistell, Scheflen and Hall, who were highly interested in movements in space and in spatiality. These authors mutually influenced each other and had some impact on early studies in video-based conversation analysis, as provided by C. Goodwin and M. H. Goodwin (see Mondada 2021). Hall (1966), who coined the term "proxemics" – defined as the study of human perception and use of space –, was influenced by ethology in his discussion of territoriality, as was Goffman. He observed important cultural variation in the management of distance vs. proximity in different forms of communication and co-presence (e. g., in crowded places). While Hall mainly used photography, in his studies of kinesics, Birdwhistell (1952, 1970) used film

for the detailed analysis of body movements in space. He influenced Scheflen (1964), who proposed a hierarchy of units describing different levels of organization in spatial terms (the point, the position and the presentation), inspired by the structural linguistic definition of units (see Scheflen and Scheflen 1972: 46–47, fn.). All these units, at all levels, refer to the territoriality of the body, and are visible, measurable, photographable/filmable, and analyzable (Scheflen 1971). On a macro level, echoing Goffman's (1963) interest in forms of co-presence in space, and in distinct body assemblages characterizing focused vs. unfocused interactions (see Scheflen and Scheflen 1972: 35–36 exemplifying these distinctions), Scheflen considered that the way bodies occupy space provides for a specific characterization of the event. On a more micro level, space intervenes in the orientation of fine embodied details, indexed by head movements, gestures, or even movements of the eyelids, working as "markers", for instance indicating the end of a sentence (Scheflen 1964: 321, fig. 1; Scheflen and Scheflen 1972: 48 ff).

This primacy of spatiality enabled a view of human interaction focused on the body as it is mobilized in – and constrained by – its ecology (from the architecture of streets and households to the minimal space required for a body to gesticulate). These early studies produced further research highlighting the "proxemic shifts" in an interaction (for instance by Erickson 1975, who obtained his PhD under Hall's supervision), the spatial dimension of "distant" vs. "close" greetings (Kendon and Ferber 1973), and more generally the spatial "formations" (Kendon 1977) characterizing the relative positions of the participants engaged in an activity. Several decades later, these discussions would be influential for further work on "interactional space" (Mondada 2009) and mobility in interaction (Haddington, Mondada and Nevile 2013), as well as on architectures for interaction (Hausendorf 2013).

The spatial dimensions of emerging encounters in openings are the focus around which this section is organized, thereby highlighting the specificities of openings in face-to-face encounters, with a special attention to encounters involving mutually unacquainted people. The section first homes in on forms of co-presence describable as "unfocused interactions" (Section 3.1) before turning to the emergence of "focused interactions" (Section 3.2) and the production of greetings (Section 3.3). These distinctions, based on Goffman, shall serve to discuss research on encounters in public spaces, which will be illustrated by video-recorded examples collected and analyzed by the authors within the project *The five first words: Multilingual cities in Switzerland and Belgium and the grammar of language choice in public space* (see Acknowledgments).

3.1. Becoming co-present

Unfocused interaction is characterized by discrete mutual monitoring, which Goffman described in terms of "civil inattention". This notion relates to social situations where "persons are mutually present and not involved together in conversation or other focused interaction" (1963: 83). Civil inattention enables unacquainted individuals to acknowledge each other's presence through sighting, without projecting any involvement in focused interaction. An example of this is the passing-by of pedestrians in the street. Individuals briefly glance at each other from a distance, and withdraw their gaze immediately afterwards, while coordinating their walking trajectories. They mutually display civil inattention and avoidance to engage in closer contact. This enables them to avoid collisions, while maintaining "a scanning or check out area" (Goffman 1971: 11–12) in front of them to be ready to glance at incoming pedestrians as they enter their scanning range.

Civil inattention is thus one important interpersonal way of regulating public life, in which gaze constitutes an embodied resource to manage unfocused interaction. This is illustrated in the following example, extracted from a video-recording in which the cameraperson shadows a guardian (GUA) with his dog (DOG) during their routine promenade, which leads to several encounters with other people (and dogs). The recordings were done with the guardian's agreement, and informed consent was obtained by all pedestrians visible in the data presented. In this case, a prospective passer-by (PAS) can be seen from afar, walking towards them (l. 1). Suddenly the dog turns to the left:

Ex. 3 (corpus first5words—CH_DOGW_1024_0.22.51.0.23.18)[1]

```
1        (11.7)     Φ (0.7) •Δ
    pas  >>walks fwd->>
    dog  >>walks fwdΦturns->
    gua           >>walks fwdΔhalf turn->
    gua          >>gazes fwd•gaze twd dog->
2   GUA  ↑come, Φ * #
    dog      -->Φwalks back->
    pas  >>gazes fwd*lowers gaze->
    fig                 #fig.1
```

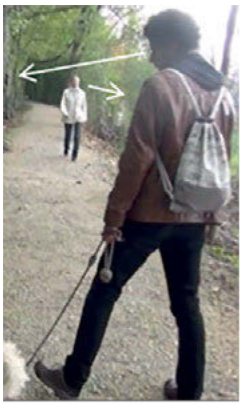
[1] The data excerpts have been transcribed according to Jefferson's (2004) conventions for talk and Mondada's (2018b) norms for embodied conduct.

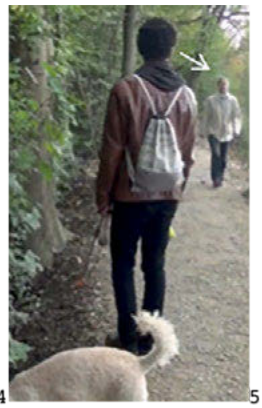
1

```
3          (0.4)        ∞ (0.1) Δ (0.3) * (0.5) ΦΔ
     pas   >>hands down∞hands in pockets->
     gua                      -->Δstops/torqueΔsteps bck->
     pas                              -->*gazes fwd->
     dog                                      -->Φstops->
4    GUA   #°nid°
             not
     fig   #fig.2
```

2

```
5          (0.3) ∞ (1.4) Δ (0.6) # (0.8) #• (1.7) Δ*#
     pas      -->∞hands down->
     gua               -->Δ2steps left-------------Δstps->
     gua                                 -->•gzs twd pas->
     pas                                           ->*gz dwn->
     fig                                #fig.3  #fig.4      #fig.5
```






```
6          (0.6) ∞ (0.7) ∞# (1.2) #∞* (0.6) ∞# (0.2) •*
     pas     -->∞.......∞L hand up∞,,,,,,,,,∞h down->>
     pas                          -->*gz dog--------*gz cam->>
     gua                                            -->•gz L->>
     fig                        #fig.6  #fig.7       #fig.8
```

The dog's turn to the left makes the guardian bend his upper body in the same direction, gazing towards the dog (l. 1) while giving a corrective instruction (l. 2). This is possibly overheard by the approaching passer-by, who directs her gaze downwards, thereby possibly responding to the overheard instruction and interruption of the guardian's trajectory. This can be assumed on the basis of the sequential relationship of "prior" and "next" – the passer-by's gaze withdrawal follows immediately after the guardian's instruction. However, the dog does not comply and instead turns around completely, walks backwards and sniffs at the edge of the path (l. 2). The guardian comes to a stop and takes two steps back, still gazing at the dog, while the passer-by directs her gaze forward again (l. 3; fig. 2). The guardian comments on the dog's non-compliance with his instruction (l. 4), then takes two steps to the left and positions himself at the edge of the path, keeping his

legs together and stable on the ground (l. 5; fig. 3–5). By doing so, he embodies stationariness, while at the same time freeing up even more space for the approaching passer-by. His body is oriented diagonally with respect to the edge of the path, with his head turned to his right, and his gaze possibly directed to the passer-by, displaying social availability. However, shortly thereafter, the passer-by lowers her head, thereby avoiding mutual gaze with the guardian. A moment later, while she is still in the guardian's scanning range, she raises her left hand and strokes her hair while tilting her head (l. 6; fig. 6). As she lowers her hand again, she gazes towards the dog from the corner of her eyes (fig. 7–8). This is also the moment when she is "just beyond the sight line" (Goffman 1971: 126), where she cannot meet the gaze of the guardian. The excerpt shows a case in which one individual displays social availability, the other avoids engaging in a focused interaction by skillfully by-passing the establishment of mutual gaze.

Gaze behavior is also central to other examples of civil inattention, as observed for example in elevators. Goffman (1971) showed that individuals in an elevator face problems of equally allocating the available space while maintaining a position oriented towards the elevator's door. As a new person enters, passengers need to adjust their position and, as people leave, adapt their position in order to obtain more distance from co-present people, but paying attention not to perform what could be treated as offensive avoidance behavior (1971: 32). Hirschauer (1999) described the "practice of elevator riding" (1999: 226) as a situation characterized by a "continuum of presence" (1999: 242), within which passengers can interact maximally or minimally with one another. Similarly, in situations in which individuals are waiting for a service and find themselves in close proximity, they can be seen to pursue only minimal engagement, thereby balancing the avoidance of eye contact with others with the need for monitoring any change in the environment of the co-waiters (Ayaß 2020). The following excerpt was recorded in a waiting room of a medical practice in Italy, with the informed consent of all the participants. It shows Giulio (GIU) silently entering the waiting room (w.r.) and joining Lara (LAR), Elena (ELE), Silvia (SIL), Luca (LUC), and Paola (PAO) waiting.

Ex. 4 (corpus first5words—IT_DOCWAIT_1203_2.06.23-2.06.40)

```
1        # (0.3)          $* (0.6) +α
     giu  >>enters w.r.------------+stops->
     giu  >>gazes twd w.r.-*gazes twd door->
     lar  >>gazes twd door$
     ele  >>gazes twd door->
     sil  >>gazes twd door->
     giu                              αcloses door->
     fig  #fig.9
```

9

```
2          (1.1) Δ # (0.2) Φ # (0.4) Γ (0.3) Δ*
     luc          Δgazes twd GIU--------------Δ
     pao       >>gazes w.r.Φgz twd GIU->
     ele                          -->Γgazes w.r.->
     giu                                  -->*gz corner->
     fig            #fig.10,11#fig.12
```

10

11


12

```
3          # (0.5) α*+(0.5) *   (0.3)  * (0.4)*% (0.3)
     giu          -->*gz down*lifts gaze*gz rcp*gz down->
     giu        -->α
     giu          -->+walks twd chairs->
     sil                                    ->%
     fig       #fig.13
```


13

```
4       Γ (0.3) *# (0.4) Φ (0.7) Γ (0.1) Δ# (0.8)  Δ
    ele Γgazes twd her left------Γ
    giu      -->*gazes twd corner->
    pao              -->Φgazes down->
    luc                                  Δgazes GIUΔ
    fig          #fig.14                  #fig.15
```


14


15

```
5       (0.5) Φ# (0.6) Δ#
    pao     -->Φlateral gazes twd GIU->
    luc              -->Δlateral gaze twd GIU->
    fig        #fig.16  #fig.17
```


16


17

```
6       (0.2) + (0.4) ΔΦ (1.5) + (0.4) *(1.1) * (0.7)
    giu       +sits down------>+
    luc            -->Δgazes twd reception->>
    pao             -->Φgazes down->>
    giu                          -->*......*gz rcp->>
```

Giulio's entrance in the waiting room passes the "physical/social threshold" (Pillet-Shore 2018: 216) around which he becomes co-present for the other individuals in the room. Lara, Elena and Silvia momentarily gaze towards the door from which he is entering, thereby acknowledging his entrance (l. 1; fig. 9), while he makes his first steps inside and gazes towards the central area of the waiting room. He briefly stops and closes the door behind him (fig. 13). Luca also briefly gazes

towards Giulio, thereby acknowledging his presence (fig. 10). Luca withdraws his gaze just before Giulio turns and gazes towards a corner of the room where some seats are free, close to where Luca and Paola are seated (fig. 13). Paola now also gazes at Giulio (l. 2; fig. 11–12). As he starts walking towards the corner, Giulio gazes at the floor, thereby displaying social unavailability, then lifts his head and briefly gazes towards the reception, and gazes down again (l. 3). When he comes into closer proximity to Elena, she gazes to her left (fig. 14), thereby reducing the possibilities to establish mutual gaze with Giulio. He again gazes towards the corner towards which he is walking, while Paola gazes to the floor, equally displaying social unavailability. Luca again quickly gazes towards Giulio, while the latter approaches the free seat next to him (l. 4; fig. 15). Shortly thereafter, both Paola and Luca gaze at Giulio by moving their eyeballs but keeping the position of their heads stable and oriented forward (l. 5; fig. 16–17). By doing so, Paola and Luca monitor Giulio's conduct in a way that prevents the co-present individuals to engage in focused interaction. Giulio then takes a seat, while looking towards a little table situated in the corner of the room (l. 6). Once Giulio is seated, Paola and Luca withdraw their gaze from him.

This excerpt shows that individuals becoming co-present acknowledge each other's presence through quick glances enabling them to monitor the conduct of newcomers in a shared inhabited space. This also allows them to avoid engaging in focused interaction by, for instance, withdrawing their gaze when they find themselves in the newcomer's proximity.

That the establishment of mutual gaze makes relevant a more sustained encounter is also illustrated by Goffman's (1963: 94) description of a waitress "who may prevent a waiting customer from 'catching her eye' to prevent his initiating an order". Customers may thus look at waiters, thereby displaying an asymmetrical pre-engagement, which waiters can witness without overtly engaging in mutual gaze.

Unfocused interaction is just one way in which individuals deal with co-presence. The following section shows how individuals who find themselves in co-presence move into focused interaction. The focus will be on the resources individuals mobilize when approaching – and thereby constituting as such – a possibly prospective co-participant and on the coordinated achievement of focused interaction, based on the initiation and maintenance of mutual eye contact, enabling individuals to gradually establish an encounter.

3.2. From co-presence to mutual engagement

Co-present individuals may establish "a communion of a face engagement" (Goffman 1963: 100), by moving to a mutually ratified state of participation, which can be sustained for a brief moment of time or for hours. This progression from "mere co-presence" to "full scale co-participation" (Goffman 1963: 102) is what gradually establishes focused interaction, in which participants share a "single mutual

activity". In focused encounters, persons may engage in talk, but they may also engage in silent encounters, as is the case when two individuals walk together next to each other without talking.

Goffman (1963: 104) observed that persons should display "some readiness for potential face engagements".

The transition from "mere *physical* co-presence into *social* co-presence" (Pillet-Shore 2008: 58, italics in original) entails multiple preliminary and preparatory activities that lead to the establishment of a social interaction. In one of the first studies focusing on these emergent activities, Kendon and Ferber (1973) described the step-by-step organization of guests arriving at an outdoor birthday party and engaging in focused interaction. These activities can be treated as the "pre-beginning" (Schegloff 1979) or "pre-opening" (Mondada 2010) of an encounter. Individuals first scan the local environment and sight, or exchange glances with, potential prospective co-participants. They physically approach each other and organize their way in the inhabited space. Similarly, pedestrians moving in space as "vehicular units" (Goffman 1971) exploit the recognizability and projectability of walking paths to achieve collision-free trajectories, mutually adjusting them as they come closer (Mondada 2009). In order to do so, they need to adapt to the spatio-material configuration of the surrounding environment. During the approach, they may look away in other directions and, when reaching a closer position, they may establish mutual gaze just before possibly exchanging the first words of the transient encounter (see Sacks 1992; De Stefani and Mondada 2018).

The resources individuals mobilize when becoming physically and socially co-present exhibit their social relationship and display the identification or recognitional work that is done in the very first moments of an encounter. When individuals approach an unknown person, they face the practical problem of categorial identification of a potential co-interactant, based on the real-time scrutiny of visually available "inspectables" (Schegloff 1979: 64). In encounters between acquainted people, individuals mutually display recognition of the other as a known person. Even when they happen to meet in unplanned encounters, minimal proper conversation is expectable. Participants may thus use recognitional displays to index that the other has been recognized or to orient to the surprise of unexpectedly meeting in the same place (De Stefani and Mondada 2010, 2018).

While the abovementioned activities are preliminary to and preparatory for an imminent encounter with continuously sustained talk, how interactants engage with each other in continuing states of incipient talk merits additional attention. Schegloff and Sacks (1973: 324–325) pointed out the following:

> Persons in such a continuing state of incipient talk [e. g., "members of a household in their living room, employees who share an office, passengers together in an automobile"] need not begin new segments of conversation with exchanges of greetings, and need not close segments with closing sections and terminal exchanges. Much else would

> appear to be different in their conversational circumstances as compared to those in which a conversation is specifically 'started up' […].

Taking into account multimodal details of embodied interaction during states of incipient talk, González-Martínez et al. (2017) focused on "fleeting moments of co-presence" (Ryave and Schenkein 1974: 273) occurring between medical staff who repeatedly meet during their working hours in the corridors of a hospital. Whereas in some cases staff members engage in passing-by "*ça va?* checks" (González-Martínez et al. 2017) about the working situation, in other cases they just minimally acknowledge each other's co-presence. This transient co-presence involves certain embodied practices: individuals meet each other's gaze at a distance, briefly adopt a smiling face before shifting gaze orientation and adjusting their walking trajectories. When coming closer, they direct their gaze downward and continue to walk towards their destination. Such reflexive embodied behavior displays a common understanding that they are not inviting each other to engage in any mutual sustained activity.

On occasion, individuals coordinate their entry into a face-to-face engagement through summons-answer sequences. Summonses can be initiated verbally/vocally with resources that constitute the very first words addressed to the prospective co-participant(s). These are recognitional address terms (e. g., personal names) or hesitation markers like French *euh* followed by *excusez-moi*, as an attention-getting device (Mondada 2009; cf. Schegloff 1979: 33–34).

Summonses can also be implemented in an embodied way. For instance, approaching and positioning oneself in front of the counter is sometimes treated as an "embodied summons" (Merritt 1976) in customer service interactions. Moreover, the summons-like character of "incipiently smiling" (Schegloff 2004: 81) has been discussed (Kendon and Ferber 1973: 164, 188–189; Mortensen and Hazel 2014: 52; Pillet-Shore 2008: 278–279; see also Goffman 1971: 160).

Interactants-to-be have also been shown to use material affordances for "doing summonsing". This is the case for door-knocks (Pillet-Shore 2008; Tuncer and Licoppe 2018), doorbell rings (Oloff 2010), or police car sirens and flashing lights before traffic stops (Kidwell 2018).

The use of different resources for doing summonsing is often intertwined with one another and temporally fine-tuned. Moreover, they do not always mandate an overt verbal (go-ahead or blocking) response, but can be embodied-only instead, such as when reciprocating the gaze, reorienting the body posture, slowing down, opening the door, etc.

Concomitant with the progressive establishment of a mutual focus of attention and the stabilization of a common interactional space (Mondada 2009, 2013), or "F-formation" (Kendon 1990), is the delivery of the reason for the encounter. De Stefani and Mondada (2018) have shown that in chance encounters between unacquainted people, the interactants orient to issues of accountability and legitimacy

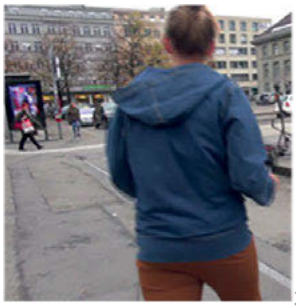
by producing the reason for the encounter as early as possible, thereby engaging in a "ticketed" (Sacks 1992: II, 195) entry into interaction. This is shown in the following excerpt, video-recorded in a bilingual Swiss town by shadowing a reporter (REP) working for a local French-speaking radio station and engaging in interaction with passers-by (here PED) in order to conduct person-on-the-street interviews:

Ex. 5 (corpus first5words—CH_MICTROT_1022_MICFR_00.04.50-00.05.00)

```
1            (1.8) + (0.2) † (0.7)#
  ped      >>walks->>
  rep      >>walks->>
  rep      >>scans-+gazes twd PED->>
  ped                    †gazes ahead->
  fig                           #fig.18
```

18

```
2 REP      la dame là-bas.
           the lady over there
3          (1.2)
4 REP      la datme.#
           the lady
  ped        -->†gazes twd rep->
  fig              #fig.19
5          (2.9) † (0.2) * (0.5) † (0.6)#
  ped        -->†gazes ahead----†gazes twd rep->
  rep                -->*accelerates->>
  fig                                  #fig.20
```


19


20

```
6 REP      bonjour madame, ext•cusez-moi, •
           hello   madam   excuse me
  ped                    -->†looks down->>
  ped                        •shakes head•
```

At the beginning of the excerpt, the reporter is scanning the area, inspecting the local ecology for potential interviewees-to-be (l. 1). After 1.8 seconds, she directs her gaze towards a pedestrian in her perceptual field (l. 1). This initial sighting from a distance is unilateral as it occurs before the located "target", who is looking ahead, has displayed awareness of the incipient approach (l. 1; fig. 18). While maintaining sustained gaze towards the pedestrian, the reporter verbally identifies her with the category term *la dame*/'the lady' followed by the locative *là-bas*/'over there' (l. 2), thereby referring to the visual recognizability of the potential prospective co-participant (which is possibly also designed to be overheard by the shadowing cameraperson). As she is walking towards the target person, the reporter again singles out the pedestrian by uttering the category term *la dame* (note the prosodic stress on the definite article), which co-occurs with the pedestrian's shifting her gaze towards the reporter (l. 4; fig. 19). They thus establish mutual gaze and hold it for some time before the pedestrian withdraws her gaze and faces forward while continuing to walk straight ahead (l. 5). It is at this point that the reporter begins to accelerate her walking pace during the spatial approach (l. 5), thereby orienting to increased visibility and to establishing a side-by-side body arrangement. The pedestrian subsequently brings her gaze back to the fast-approaching reporter (l. 5; fig. 20). Having progressively established a mutual focus of attention in spatial proximity, the reporter goes on to deliver her opening turn with *bonjour madame, excusez-moi,*/'hello madam, excuse me', (l. 6). The turn-initial greeting token and the subsequent address term are produced with upward intonation and can be heard as doing summonsing, whereas the ensuing "apology" *excusez-moi* works as an attention-getting device that projects the kind of interaction that is taking place and contributes to producing the accountability of the reporter's approach (Mondada 2009; cf. Schegloff 1979: 33–34) – a recurrent feature of "stranger-stranger interaction" (Sacks 1992: II, 195). After the reporter's greeting-summons, almost concomitantly with her "excuse me", the pedestrian visibly displays unavailability to engage in sustained focused interaction by responding with gaze withdrawal and shaking her head laterally while continuing to walk forward (l. 6).

This excerpt not only demonstrates that the (non-)amenability of passers-by is an emergent and progressively coordinated interactional achievement, but it also showcases how prospective co-interactants orient to space and its local affordances. For instance, they may engage in initial unilateral monitoring for pre-opening categorization work from a distance, use an accelerated walking pace as an interactional resource in open space environments to achieve convergent trajectories, or bodily implement a blocking response to a verbal summons by maintaining

an away-oriented walking path, here reflexively used in conjunction with gaze withdrawal and a head shake.

While Ex. 5 illustrates the step-by-step emergence of openings by paying particular attention to how individuals emergently transition into co-participation, the following section addresses the first moments of a focused interaction by zooming in on the production of greetings.

3.3. Greetings

Greetings constitute a prolific area of interdisciplinary research that has variously shown their importance for creating, negotiating and maintaining interpersonal relationships. While a substantial body of research has provided descriptions of the cultural variability (Basso 1970; Duranti 1992; Firth 1972; Irvine 1974), but also universality (Duranti 1997a) of greetings, the notion of "greeting" is often employed in putatively "self-explanatory" and analytically more or less granular ways. Despite the wealth of literature on greeting practices, research that systematically focuses on the formal delivery of greetings is relatively scarce. Addressing the lexical content of verbal greetings, a number of studies have, however, touched upon temporal aspects highlighted in greeting tokens (such as in time-of-day salutations; D'Antoni and De Stefani 2022); spatial dimensions (such as in "where are you going?" formulae; e. g., Duranti 1997a; Firth 1972; Hanks 1990); prior (un) acquaintance of interactants (De Stefani and Mondada 2010, 2018; D'Antoni and De Stefani 2022); the degree of (in)formality (Irvine 1974; Nilsson et al. 2020); or personal state inquiries (e. g. *how are you?*) as a "greeting substitute" (Sacks 1992: I, 554) in American English. Moreover, how participants accomplish not only dyadic, but also collective greetings has also been discussed (Albert and Raymond 2019; Duranti 1997b). Relatedly, several studies have demonstrated the interactional significance of co-present double greetings for managing issues of (un)availability (Harjunpää et al. 2018), claiming recognition of the co-participant(s) (D'Antoni and De Stefani 2022), negotiating the language of the interaction (Mondada 2018a), or displaying a positive affective stance toward the encounter (De Stefani and Mondada 2018). Correlatively, participants have been shown to prosodically recipient-design their greetings, thereby tailoring them to their particular addressee(s) (Pillet-Shore 2012).

Greetings have also been conceptualized as sequential phenomena (Section 2.1), already in Harvey Sacks's (1992) pioneering work. By distinguishing a "greeting item" (e. g., *hello*) from a "greeting place", Sacks (1992: I, 97) showed how greetings are contingent on their sequential position. Furthermore, they often occur at "beginnings of beginning sections" (1992: II, 200), although some interactions are greetings-only (1992: II, 193).

The spatial dimension of naturally occurring greetings was highlighted early on in pioneering work by Kendon and Ferber (1973), who distinguished between

"distance salutations" (eyebrow flash, head toss, waving) and "close salutations" (smiles, nods, verbal greetings, body contact). Duranti (1992) underlined the importance of examining the interplay of greeting practices and embodied spatiality by looking at how participants co-organize their bodies in space in encounter openings. In a variety of settings, greetings have been shown to play an important role in how interactants-to-be spatiotemporally organize the coordinated entry into an encounter (see Fox and Heinemann 2020; Hausendorf and Mondada 2017; Hochuli 2019; Sorjonen and Raevaara 2014). Moreover, embodied greetings provide instances of haptic sociality (M. H. Goodwin 2017) and interaction-oriented research on openings highlighted the fine-grained temporality and coordination of proximal tactile co-engagements such as hugging (Laurier 2013) or shaking hands (De Stefani and Mondada 2018). More recently, this body of work has been complemented by examinations of novel ways of accomplishing distant embodied and tactile greetings during the Covid-19 pandemic (Mondada et al. 2020a, 2020b).

Consequently, these studies show that spatiality goes hand in hand with embodiment. However, work on embodied conduct (e. g., waving, smiling, nodding) during greeting sequences remains limited, with a few notable exceptions such as the aforementioned study by Kendon and Ferber (1973), in which video-recorded data were analyzed to examine naturally occurring greetings (see also Scheflen and Scheflen 1972: 37–40). Similarly, Pillet-Shore (2018) also viewed embodied actions as interactional practices in a larger opening phase of co-present interaction.

Embodied actions such as waving (Hochuli 2019) or nodding (Mondada 2018a) have also been described as responses to greetings which display certain interactional (e. g., unavailability) and affective (e. g., surprise, satisfaction) stances. Another type of close salutation is smiling (cf. Section 3.2). Described by Firth (1972: 23) as "one of the major signs of welcome", smiles are used to display recognition and a positive affective stance (Pillet-Shore 2008; D'Antoni and De Stefani 2022). Participants accomplish these embodied actions alongside utterances or other embodied actions in temporally adjusted ways (Mondada 2009; Mortensen and Hazel 2014): smiling while approaching a counter, for instance, projects a potential upcoming interaction, before a turn-at-talk is launched. Furthermore, the interrelationship between verbal and embodied greetings is not conflictive (either one or the other), but intertwining, as individuals jointly deploy embodied and vocal resources, constructing a Gestalt through which they achieve greeting actions. This intertwinement of different resources is shown in the following excerpt, video-recorded with fixed cameras in a tourist information center in a town in Belgium, featuring here Deborah (DEB), an English-speaking female person, approaching the counter where two tourism officers, Bart (BAR) and Anne (ANN) are sitting.

Ex. 6 (corpus first5words—BE_TOUROFF_1112_0.57.20-00.57.36)

```
1  BAR    #huhum,
   bar    >>looks down->
   deb    >>looks at bar->1.08
   deb    >>walks to counter->1.9
   fig    #fig.21
```

21

```
2          (0.4) +# (0.4) +# (0.6) £# (0.3)
   bar        -->+looks  R+looks twd deb->>
   deb                                £smiles->1.9
   fig             #fig.22 #fig.23  #fig.24
```


22


23


24

```
3  BAR   #hallo,
   fig   #fig.25
4        (.)
5  DEB   hello,±#
   bar          ±smiles->l.9
   fig           #fig.26
```


25

26

```
6        (0.2)
7  BAR   hi:,
8        (.) # (0.5) € (0.2)
   deb             -->€looks down->
   fig        #fig.27
9  DEB   #hi, (0.2) £d'you have± $in€formation on bi:king
   deb            -->£
   bar                        -->±
   deb                          -->$
   deb                             -->€looks at bar->>
   fig   #fig.28
10       routes: around here?
```


27

28

The excerpt starts with Deborah approaching the counter while looking at Bart (l. 1; fig. 21). Bart briefly looks sideways (l. 2; fig. 22), then looks up at Deborah (l. 2; fig. 23). Deborah then smiles incipiently (l. 2; fig. 24) while continuing towards the counter. Bart then verbally greets Deborah with a greeting in Flemish (*hallo*, l. 3; fig. 25). Deborah returns the greeting in English (*hello*, l. 5), as Bart smiles back at her (l. 5; fig. 26), potentially displaying availability as a service provider. He then redoes a greeting in English (*hi*, l. 7), thereby aligning with English as the language of the interaction (Mondada 2018a). Deborah continues

towards the counter in silence (l. 8; fig. 27). As she is reaching it, she returns a *hi* to Bart (l. 9; fig. 28) and, upon arriving and standing still, she formulates her request for touristic information, the actual reason for the encounter. Deborah's second greeting is thus a way to spatiotemporally organize the opening, i. e., to "buy time" before reaching a stationary position at the counter (Fox and Heinemann 2020; Hausendorf and Mondada 2017; Sorjonen and Raevaara 2014).

This excerpt illustrates that greetings – both verbal and embodied – are more than mere interpersonal rituals and "bracketing" devices. They are practices interactants deploy within the opening to accomplish consequential socio-interactional and practical work in the very first moments of an encounter: through greetings, individuals become co-participants in encounters, deal with spatio-temporal contingencies, display availability for further interaction, and negotiate the language of the encounter (Mondada 2018a), paving the way for the reason for the encounter. They are thus used by participants in the openings of focused encounters in a temporally fine-tuned fashion, alongside various other sequentially organized resources such as smiling and gaze behavior.

4. Conclusion

This chapter has provided an overview of how openings have been studied from the perspective of Conversation Analysis, with a special focus on embodied face-to-face casual openings between unacquainted persons. While initial work in CA dealt with openings –, between two parties in telephone conversations – enabling Schegloff to propose a first systematic description of the sequences constituting and achieving openings, later work explored how openings in face-to-face encounters progressively emerge out of a situation of co-presence.

This latter focus responds to some early insights reported on by Goffman on various modes of co-presence in space, including unfocused and focused interactions. Different from Goffman's approach, based on written sources and self-observation, the studies reviewed here rested on video-recordings, enabling a precise characterization of the moment-by-moment emergence of openings, as well as of multiple embodied practices achieving them. Video data also enabled us to show that the distinction between unfocused and focused interaction is not clear-cut, but rather a matter of fluid, progressive, and sometimes transient transition between different modes of co-presence.

This sequential approach also locates greetings, which have been abundantly described by anthropological studies on the basis of ethnographic sources, within temporally emergent opening sequences. Contrary to a substantial body of literature in which greetings are generically treated as the initial moment of an encounter, studies based on the sequential organization of openings locate them after other forms of mutual contact, such as exchanges of gaze, have been estab-

lished. Likewise, the integration of greetings within other practices for establishing contact confirms and expands on initial findings about their socio-cultural importance. They cannot be reduced to simple rituals, but are fundamental for the accomplishment and confirmation of social relationships as well as shared definitions of the context at the beginning of an encounter. This highlights the relevance of considering openings as constituted by a series of sequentially organized practices, mobilizing a diversity of vocal, verbal and bodily resources, integrated within ongoing courses of action and adjusted to the contingencies of the context.

The focus on situated embodiment in openings also highlights the importance of their spatial organization. Parties engaging in openings are always located in some place – even in distant encounters, in which this can be thematized explicitly by the participants. For face-to-face openings, co-location in space is an important feature of co-presence. The distribution of bodies within space, their specific arrangements, their proxemic relations, display the (un)availability of the various parties, their socio-interactional relationships, and their projected courses of action – as achieving civil inattention and sustaining an unfocused interaction, or as making a focused encounter expectable and actually engaging in it. Interactional spaces change dynamically within the sequential unfolding of individual and collective actions, displaying how they orient to avoiding collisions and convergent movements or to organizing a convergent and coordinated entry into focused interaction. This also depends on the local ecology and its spatial characteristics, exploitable as potentials or constraints for action.

By offering a discussion and illustration of conversation analytic approaches to openings in public and institutional places between unacquainted people, this chapter aimed at showing both the systematicity of the organization of openings in a variety of institutional and material ecologies, and the importance of spatial arrangements for the emergence of face-to-face encounters – thereby contributing to a better understanding of the ways people co-exist in social space and possibly engage in common courses of action.

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11. Interactional spaces in stationary, mobile, video-mediated and virtual encounters

Pentti Haddington and Tuire Oittinen

Abstract: In any focused social interaction, people come together, move, and position their bodies with respect to each other, and maintain and change such formations while they interact. Establishing and sustaining such formations makes it possible for them to see and hear others, to show and share objects, and to orient to same features in the environment. Forming copresence and a shared space is core and a precondition to any social interaction. Since the influential work by Adam Kendon (F-formations) and Erving Goffman (participation frameworks, focused encounters, withs) an accumulating body of research has explored – in different interactional settings – the pragmatics of how humans organize themselves spatially for interacting with each other. More recently, Lorenza Mondada (2009) has introduced the term "interactional space" to refer to the dynamic ways in which people not only initiate and establish copresent formations but also continuously (re)organize them with respect to each other, the unfolding activity and material environment. In this chapter, we offer an overview of pragmatics research on spatial arrangements in interaction. We illustrate how people organize their copresence in order to interact with each other in stable, mobile, video-mediated (i. e., distributed) and virtual settings. We explore "interactional space" as a visual phenomenon and thereby focus on situations where participants can (at least partly) see each other.

Keywords: interactional space, engagement, copresence, mobility, virtual encounters, multimodality

1. Introduction

When people interact, in real-time and face-to-face, they establish a shared space between them in which the interaction takes place. During an interactional encounter, they position and move their bodies with respect to each other, the material environment, and the unfolding activity, all the while maintaining and (re)shaping the shared space between them through talk and with their bodies. In pragmatics, "interactional space" is used to describe this phenomenon (e. g. Mondada 2009, 2013).

Why is "interactional space" an important object for empirical analysis in pragmatics? It is a precondition to any real-time and copresent interaction. It is also a

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resource for interactants to orient to each other; to maintain reciprocity and mutual availability (e. g., to see and/or hear each other), to focus on a common point of attention (e. g., to show and share objects), and to engage in a joint activity (e. g., to work and study together). It is also an embodied and tacit process that involves mutual recognition and careful coordination of talk, body movements and gaze behavior (Mondada 2009). By moving and arranging their bodies in this or that way, participants continuously seek for and provide access to each other's interactional conduct and thereby establish and renew their copresence and mutual availability. Finally, it is also a verbal and vocal phenomenon; the ways in which co-participants talk and use language reflect the shapes and changes of interactional spaces, and they are used to establish, maintain and reconfigure them.

The work by Erving Goffman (1963), Adam Kendon (1990), Charles Goodwin (2000, 2007b, 2013) and Lorenza Mondada (2009, 2011, 2013) provides pragmatics research a wide range of analyses and concepts for understanding the notion of interactional space. They have explored how social participants inhabit a space and organize themselves with respect to copresent bodies in recognizable and meaningful ways for establishing and maintaining reciprocity in interaction. Goffman explored the phenomenon broadly through such concepts as "focused interaction" (1967: 144–145), "face engagement" (e. g., 1963: 89), "encounter" (1963: 88–89, 243), "eye-to-eye ecological huddle" (1963: 95), "ratified mutual participation" (1963: 101) and "with" (1971: 19).[1] The different meanings between the concepts do not need to concern us here, but what they have in common is that they illustrate and conceptualize the vocal and embodied practices (e. g., glances, mutual gaze) that participants use to open and progress an interactional encounter. During encounters, participants maintain a single focus of cognitive and visual attention, while the focus might change during the encounter, for example, with respect to the task or activity in which the participants are engaged. Goffman showed how such encounters are recognized not only by the participants themselves but also by outsiders (e. g., "bystanders") (1963: 135). While Goffman's work explored the social aspects of face engagements, especially as they relate to accountability, he makes occasional references to their "spatial conventions" or "physical aspects", for example, as they relate to the distance between the participants and the shape of the environment (Goffman 1963: 98, 100).

Kendon (1990) focused specifically on how people in everyday interactional encounters create and recreate physical and spatial formations with their bodies. He noted how two or more persons can group themselves into various formations (e. g., clusters, lines, circles, or half-circles). Such formations can range from rela-

[1] The notion of "with" refers to "a party of more than one whose members are perceived to be 'together'" (Goffman 1971: 19). Goffman (1971: 19) saw a "with" as an interactional unit that pertains to the management of copresence. See also Jensen (2010: 338).

tively stable to highly fluid and dynamic arrangements of bodies. The (transforming) shape of a formation reflects situational factors, such as how the participants orient to the situation, the surrounding space and each other. The participants in such a formation can change, while the arrangement of the bodies in it remains the same. Kendon (1990: 209) used the notion of "F-formation" to describe this spatial-orientational relationship between participants. Two terms are helpful for understanding the meaning of F-formation. First, Kendon (1990: 211) uses the term "transactional segment" to refer to a space into which an individual looks or speaks, or in which they work. Second, he uses the term "transactional space" to refer to at least two overlapping transactional segments, which form a space between the interlocutors and in which they engage in a common activity. In essence, the transactional space constitutes the F-formation, offering the participants direct, equal, mutual, and exclusive access to each other. F-formations can come in different spatial forms and shapes, such as (semi)circular, vis-à-vis, side-by-side, linear or rectangular arrangements (Kendon 1990: 21). The shape of and possible changes in the arrangement depend on the number of participants, the environment, and the arrangement itself (e. g., the distance between the participants) (Kendon 1990: 213–214). Kendon (1990: 213) emphasizes that the F-formation system is a unit of behavior at the interactional level of organization.

Charles Goodwin complemented Goffman's and Kendon's work by using the term "embodied participation framework" and tying it firmly to the details of talk and embodied conduct, and thus to "social action". For Goodwin, embodied participation framework was one element – a semiotic resource – that participants use to produce and ascribe meanings to social actions (Goodwin 2000, 2007b, 2013). The ways in which social participants face each other, establish formations and orient to each other provides an interactive ground in which actions emerge; in other words, embodied participation frameworks are structured (and can be contested) in the midst of the unfolding activity and interaction (Goodwin 2013: 176). Thus, arranging bodies in different and dynamic ways provides participants a resource for establishing joint attention, that is, for hearing each other, seeing each other's embodied actions, and orienting to the same objects or features of the physical environment (Goodwin 2007b: 56–57).

By building on the works of Goffman, Kendon and Goodwin, Mondada takes a multimodal and praxeological approach to the way social actions shape and are shaped by joint activities in the sociomaterial environment. An important development here is that Mondada takes into consideration "the spatial dimension of participation framework" and the perception of space as both "action-shaping and action-shaped" (Mondada 2013: 50). From this perspective, the physical surroundings do not merely afford the interlocutors the resources for progressing mutually recognized trajectories, but they also make relevant the situation-specific constraints. The term "interactional space" was first used by Mondada (2009, 2011, 2013) to describe a dynamic, social, and embodied construct that is

> constituted through the situated, mutually adjusted changing arrangements of the participants' bodies within space, as they are made relevant by the activity they are engaged in, their mutual attention and their common focus of attention, the objects they manipulate and the way in which they coordinate in joint action (Mondada 2013: 250).

Mondada has focused specifically on openings of interactions and the systematic emergence of interactional spaces before the first words are spoken or greetings exchanged (Mondada 2009; see also D'Antoni et al. this volume). The beginnings of encounters are crucial because it is at those moments where interlocutors move from separate activities into a shared focus point and multiple converging trajectories turn into one unique participation framework (see also Goodwin and Goodwin 2004). This stabilization of an interactional space (Mondada 2013: 252) requires close monitoring of the other party's conduct and collaborative achievement of the prerequisites for talk. After establishing the initial contact, efforts must still be made to maintain the formation relevant for the ongoing event. Furthermore, interactional space is susceptible to changes as the interaction unfolds, since all the actions produced, such as gaze and gestures, both manifest and shape, but are also restricted by, the overall configuration (Mondada 2009; see also Goodwin 2000).

In sum, all focused encounters (Goffman 1967: 144–145), both spontaneous and planned, require mutual effort to accomplish and sustain the frames and (pre) conditions of interaction. This means that the interlocutors must be in each other's "perceptual range" (Gibson 1979; Hutchby 2001), that is, they can hear and/or see each other, they must recognize the affordances of the setting and know the procedures and resources with which to indicate their (un)availability to take part in the imminent or ongoing conversation in a timely and organized manner. As simple as it may sound, interaction must be situated and mutually accessible in order to make sense to the people involved in it (Hausendorf 2013). Focused encounters thus involve people arranging, positioning, and adjusting themselves in a way that affords and ensures copresence and access to each other's conduct (Kendon 1990).

In this chapter, we extend these notions and discuss interactional space not only as a multimodal and embodied configuration in copresent interaction but also how it is oriented to and constructed through interlocutors' situated practices in settings where visual access is limited. How participants orient to one another's state of availability for mutual engagement and form and design actions is thus treated as a matter of access (i. e., to mutually recognized vocal, visual and material resources), modality (i. e., with which meanings can be created and conveyed), and senses (i. e., what makes cognitive processing of each other's conduct possible). Thus, rather than being dependent solely on the interlocutors' perceivable bodily behaviors, such as gaze, gestures and body position, connected to a physical environment (Kendon 1990; Mondada 2009, 2011, 2013), we present interactional space as relative to the situated contingencies and affordances for making meanings. We present how the practices of participants in interaction, regardless of the setting, reflect the form(s) of mutual engagement in an interactional space.

Additionally, we present and analyze the dynamics of interactional spaces in different interactional contexts. We focus specifically on two aspects in the organization of interactional spaces: how interactional spaces are maintained and how they are reconfigured.[2] We explore interactional space in situations where participants have at least partial visual access to each other. We explore the organization of interactional space in different interactional contexts: stationary copresent encounters (Section 2), mobile settings (Section 3), video-mediated online meetings (Section 4) and immersive virtual reality (Section 5). Each section provides a brief state-of-the-art of related research. We build on concepts and principles used in conversation analysis (CA): the analyses focus on the details of talk and embodied displays as they accomplish social actions within sequences of interaction (e. g. Goodwin 2000; Schegloff 2007; Sidnell and Stivers 2013). We focus specifically on verbal and multimodal phenomena that feature in the organization of interactional space. The data excerpts have been annotated by using the systems developed by Jefferson (2004), for talk, and Mondada (2019), for embodiment and multimodality.

2. Stationary interactional spaces in copresent encounters

Mondada's (e. g. 2009, 2011) extensive work on openings of encounters has shown how the initial moments are progressively organized via the interlocutors' close monitoring of each other's behaviors, such as movement, gaze and talk. What makes the emergence of a common interactional space relevant is a certain degree of proximity, such as entering the same room with someone, and making initial contact by establishing mutual gaze (Mondada 2009: 1980). Through the details of their conduct, the interlocutors are thus able to establish a formation relevant to the event and know when launching the conversational opening is appropriate. However, the negotiation of the spatial-orientational relationship also continues after the initial configuration has been stabilized, and it is relative to several things: for instance, the number of interlocutors, the type of formation pursued, the affordances and restrictions of the material environment and the phase of the ongoing activity. Susceptible moments for an interactional space to be modified or reconfigured are transitions (e. g. LeBaron and Jones 2002; Modaff 2013; Ticca 2012) and turns-in-progress that require bodily adjustments, such as those involving embodied referencing (Mondada 2013). The resources with which the spatial and bodily arrangement can be maintained and readjusted amidst interaction depend on the opportunities to monitor the co-participants' detailed actions and their relevance for the ongoing activity. In F-formations where bodies are facing each other, vocal

[2] We do not focus on the emergence of interactional spaces as part of beginnings of interactions. This phenomenon is explored in D'Antoni et al. (this volume).

and embodied behaviors, including talk, gaze and gestures, are typically used for mutual coordination of actions. Another aspect that has a bearing on the ways interactional space is (re)organized is the physical location and the degree to which the setting may invoke the social order (Hausendorf 2013; Jucker et al. 2018). In other words, there are surroundings and situations that guide us to behave and organize ourselves in a certain way, leaving less room to maneuver the overall configuration. For instance, when attending a formal meeting that takes place in a room designed for this specific purpose, the production of social actions and positioning of bodies are likely to be impacted by the institutionality of the encounter, the room architecture and material features available (Jucker et al. 2018: 88; see also Hausendorf and Schmitt this volume for "architecture-for-interaction"). Furthermore, Kendon (1990: 216) suggests that seated F-formations may require less active cooperative maintenance of the arrangement compared to standing formations, such as those in public places, in which orientations and stances are not similarly restricted by furniture, making them more susceptible to alterations amidst talk. This section discusses the ways in which the initial configuration is maintained and renegotiated in interactions that call for remaining in a stationary arrangement.

2.1. Maintaining the initial configuration

Even in encounters where people remain in the same F-formation for most of the time, interactional space is constantly managed and shaped through the mobilization of verbal and embodied resources as the turn-taking evolves. For instance, when sitting around a dinner table, even the slightest of changes in the co-participant's bodily-visual behavior, such as shifts in gaze direction, body position and movement have the potential to redirect the ongoing course of action and invite modifications in the participation framework (see Goodwin and Goodwin 2004). In these situations, maintaining the established configuration typically involves an "eye-to-eye ecological huddle" which Goffman (1963: 95) describes as one of the fundamentals to indicating full-scale participation and agreement regarding situational consensus on how things unfold. However, previous studies also show that the activity framework may require different forms of participation from different people, highlighting the varying resources and recipient-designed ways with which engagement can be invoked and displayed at specific moments (e. g. Hazel and Mortensen 2014). Excerpt 1[3] illustrates this point, showing how the arrangement of a stable seated formation affords the interlocutors a specific set of verbal

[3] Excerpts 1–3 come from the Oulu Video Corpus of English and Finnish and recordings called Always in Oulu (Excerpts 1 and 2) and Never in Canada (Excerpt 3). Prior to the recordings, the participants have given their consent to the use of the recordings, including the use of transcriptions and frame grabs, for research purposes. The names are pseudonyms.

and embodied resources with which to construct their participation in the shared interactional space.

Excerpt 1: **Always in Oulu, 6:02**

```
01  JEN   did *you +e~#ver have that summer, (.)
    jen       *turns gaze to Viola --->*
    edi            +turns gaze to Jenny -->>
    vio              ~turns gaze to Jenny -->>
    fig               #fig1
```

Figure 1: Interactional space and face engagements

```
02          where you didn*#::'t (.) wo:rk, or do anything::
    jen                   *turns gaze to Edith -->>
    fig                    #fig2
```

Figure 2: Jenny shifting gazes between Viola and Edith

```
03  VIO   yeah.=
04  JEN   =and it was only- it *was a one sum↓mer,
    jen                        *smiles, raises index fin-
                                ger
```

In the excerpt, the interactional space is maintained by all three participants who have similar, maximal access to each other's conduct. The alternating gaze direction and head movement by Jenny, who initiates the sequence (line 1), and the fact that she establishes mutual gaze consecutively with both Viola and Edith indicates how

co-participation is actively invoked and shaped along with her talk. Her embodied actions are not only a way to include the listeners around the same table, but they also clearly invite recipiency of both (lines 2). Furthermore, unlike Viola, Edith does not provide an immediate response, which can be due to their diverse levels of commitment to the ongoing discussion. Only seconds before the excerpt's beginning, Edith has been oriented to her laptop screen and still rests her right hand on the keyboard. Hence, despite Viola's verbal agreement token (line 3), Jenny maintains her gaze at Edith and uses a sequence expansion to ensure co-participation. Due to the seating arrangement and proximity of the interlocutors, the work to maintain orientation to one another and to a mutual focus point within the engagement framework does not require further effort. To conclude, participation is dynamically constructed via multiple resources and modalities, that is, not just through what is heard but also what is seen, and it renders visible the role of the spatial arrangement and its affordances and constraints (Mondada 2013: 259; cf. Goodwin and Goodwin 2004). Overall, it is the actions and practices produced and employed at a specific moment and place that make the features of the spatial dimension relevant, and vice versa.

2.2. Reconfiguring interactional space

In addition to the work that goes into maintaining an initially established configuration, alterations and (re)negotiations of interactional space can also occur or even become relevant for progressing the mutual activity. Some of these modifications have to do with adjustments in terms of the "size" of the configuration (see Mondada 2011), while others may be occasioned by multiple focus points and attempts to be half-in and half-out of the "face engagement" (Goffman 1963: 102). In relation to this, Schegloff (1998) introduces the term "body torque" to refer to the kind of a change in one's postural stance in which the head and upper body are visibly redirected, making participation in two distinct activities relevant at the same time. This often means halting the main activity for the duration of completing the temporary activity that the body torque manifests (Schegloff 1998; see also Kamunen 2019).

Excerpt 2 shows how an entry of a new person, a bystander, changes the participation framework and suspends the ongoing activity. The practices to include Cassandra and hear her out also take momentary precedence over upholding the initial bodily arrangement.

***Excerpt 2:* Always in Oulu, 9:43**

```
01  JEN   are you ↑really doing ~any correc#*t↑ing,
      vio                        ~starts wiping crumbs,
                                  gaze at table
      jen                                  *leans to see
                                            the screen
      fig                                 #fig3
```

Figure 3: Reconfiguration to a smaller arrangement

```
02  EDI   ye↓ah.
03  JEN   wai::t, how you're doing that-
04        ↓oh you're doing like *the ~£red writing.£
    jen                         *turns gaze to edi, smiles
    vio                              ~turns gaze to Edith
05  EDI   h+mh.
    edi    +nods
06  ?     °I ~hate [that°
    vio      ~turns gaze and upper body to Cassandra;
              starts wiping hands
07  CAS           [°(  )° how *#am I supposed to go to my
    jen                       *turns gaze and upper body
                               to cas
    fig                        #fig4
```

Figure 4: Jenny's and Viola's body torque attending to Cassandra's entry into the room

```
08        flat-+my room?
     edi       +turns gaze to Cassandra
```

In the excerpt, Cassandra has stood in the kitchen doorway for a while without Jenny, Viola and Edith noticing her. She is faced with the difficulty of having to interrupt the discussion, since she is outside the visual range of the others and does not know how to get to her room past the equipment on the floor. The main

activity upon her arrival includes a discussion regarding the way Edith is making corrections on a written document with her laptop (lines 1–6). Jenny, who initiates the topic, also leans over to see what Edith is doing, contributing to a more closed spatial rearrangement (Figure 3). Although during this, Viola starts wiping cookie crumbs off the table with her hands and is thereby momentarily excluded from re-shaping the interactional space, her gaze at Edith indicates that she is still oriented to the conversation. The circumstances make it challenging for Cassandra to accomplish a subtle entry, which is also indicated by her quiet, barely audible turn-beginning (line 7). Immediately after this, her presence becomes acknowledged by Viola, who turns her head and upper body towards Cassandra. At the same time, she continues the manual activity and shakes the crumbs in her hands off to a plate in front of her. Her body torque invites a similar, mirroring action from Jenny, who turns smilingly to look at Cassandra (Figure 4). A moment later, Edith also raises her gaze and by so doing acknowledges what is going on (line 8). The main activity has hitherto become gradually suspended, and the new configuration is maintained until Cassandra's problem is solved: she manages to get past the equipment and leaves the kitchen.

Previous studies have also shown that interactional spaces can be more substantially shaped and reconfigured so that the interlocutors remain within each other's perceptual range (e. g. Gibson 1979). Multiparty encounters are particularly sensitive to alterations that might change or halt the cooperative maintenance of the initially established formation. For instance, when there are more than four interlocutors, disengagement from the joint arrangement may create opportunities for two or more parallel ongoing discussions, or "schisms" (Egbert 1997; see also Sacks et al. 1974). In addition, the surroundings and material objects, such as paper documents, coffee cups, laptops, and smartphones, play an important role as they can be reflexively oriented to and manipulated as part of the unfolding conversation, shaping one's participation in or withdrawal from the main activity (DiDomenico and Boase 2013; see also Licoppe 2004). Excerpt 3 illustrates how they can also become resources for accomplishing activity transitions and reconfiguring the interactional space so that its boundaries are momentarily stretched.

Excerpt 3: **Never in Canada, 20:14**

```
01  JAS  I would rather see Gore in office, than Bush,
02       I can live with the fact that the *Supreme Court
     mar                                   *.............
03       made #*that decision.
     mar   .....*stands up
     fig       #fig5
04  MAR  even though *it wasn't, the will of people,
     mar             *glances at jas
05       *and everybody knows that, that wasn't.
```

```
    mar  *starts walking away
06       (2.0)~(0.2)
    sop        ~turns gaze to mar
07  MAR  do you guys want tea too,
08       there is a lot of water.
09  JAS  +#no thank you.  +
    jas  +looks    at    M+
    fig   #fig6
```

Figure 5: Mary stands up.

Figure 6: Sophie and Jason attending to the reconfigured interactional space.

The excerpt shows how the activity's trajectory and interactional space become shaped by what happens in the conversation. During Jason's long epistemic account that has begun before the excerpt's beginning, Mary has shaken her head and thereby projected her disagreement with him. Towards the end of Jason's turn (lines 2–3), Mary first stands up (Figure 5) and briefly glances at him. Then, in the midway of her disagreeing statement, she starts walking towards the kitchen facilities and thereby emphatically accomplishes the sequence closure. During the long silence that ensues, Sophie acknowledges Mary's relocation by the kettle via gaze (line 6), and after this, Mary initiates a new sequence by asking whether the others want to have tea as well (line 7). Jason's verbal response aligns with the opening act, and it is accompanied with gaze that concurrently ratifies the established rearrangement of their bodies. Overall, material objects and the setting function as resources to accomplish a way out from an uncomfortable moment and to facilitate a transition into a new topic. By remaining within a perceptual range, Mary's movement in the room does not result in a break from the mutual activity, but it merely changes its course and the form of the configuration relevant to its progression. After Mary has filled her teacup, she returns to the table, thereby reestablishing the seated formation.

This section has focused on the ways in which interactional space that involves a stable F-formation is maintained and reconfigured in copresent interaction. We

have shown the relevance of 1) access (to mutually established conduct), as it can be both afforded and restricted by bodily (re)arrangements and adjusted in relation to proximity to co-participants, and 2) modalities, as made visible through the situated practices of the interlocutors and the resources they utilize. These have significant import on the dynamic construction of participation and engagement. Next, we will discuss mobile settings that are more susceptible to changes and remodifications of the embodied participation framework as the overall activity unfolds.

3. Moving together in interactional spaces

A large part of our daily lives is spent together in different sites and modes of mobility; we walk, ride bicycles, travel on busses, trains, or in cars – together. The interactional work involved in moving together in group formations is nicely illustrated by Daniel Everett when he thinks back on his experiences of city walking with three members of the Pirahã indigenous people[4]:

> As we strolled down the city's sidewalks, Xipoógi walked behind me, with Xaboási behind him. I slowed down to let them catch up. They slowed down too. I slowed down more. Ditto. I stopped. They stopped. They simply would not walk beside me, not even when I asked them to. This makes sense on a narrow jungle path. [. . .] In the city, though, walking abreast, while spatially inefficient, allows the walkers to converse more easily and to be perceived as a group. I smiled about our walking arrangement. (Everett 2008: 250–251)

The quotation is not only a vivid example of the joint and embodied organization of moving together in formations; it is also exemplary of the tacit and inherently meaningful practices through which joint mobility is constituted. Mobile interactional spaces have been studied from two perspectives (see Haddington, Mondada and Nevile 2013: 40). On the one hand (see Section 3.1), research has studied how people talking and interacting in particular ways while on the move visibly and accountably maintain and constitute "moving together": how do participants interact to start moving together, maintain joint movement and relative proximity, change direction, stop movement, or reconfigure the interactional space with respect to the unfolding activity (e. g. Broth and Lundström 2013; Broth and Mondada 2013, 2019; McIlvenny, Broth and Haddington 2014; vom Lehn 2013)? On the other hand (see Section 3.2), research has shown how mobile interactional spaces are transformed and reconfigured when participants enter or leave a mobile interactional space, when shapes, features or objects in the environment occasion

[4] This quotation is also made in McIlvenny, Broth and Haddington (2014: 104)

changes in it (e. g. Weilenmann, Normark and Laurier 2013), and when one mobile interactional space encounters another for a fleeting moment (e. g., Haddington and Rauniomaa 2014).[5]

3.1. Maintaining mobile interactional spaces

When people engage in joint mobility, such as walk (Mondada 2013), run (Smith 2019), cycle (McIlvenny 2013b) or drive (Mondada 2013) together, they often do so in what could be called "vehicular units" (Goffman 1971: 6–7), "mobile assemblages" or "mobile formations" (McIlvenny, Broth and Haddington 2014: 104).[6] The shape of mobile formations varies: people can move in groups, a single file, side by side, back-to-back, front-to-back or in stretching formations, and so on. Whatever the formation, participants constantly negotiate their spatial-orientational relationship (e. g., relative proximity and access) to maintain mutual orientation (Haddington, Mondada and Nevile 2013: 41; McIlvenny 2013a).

In the following, we focus on the car interior as an example of a stable mobile interactional space. The car interior creates a spatial configuration where the driver and the passengers are distributed and arranged (and physically constrained by seatbelts) in a forward-facing arrangement, with their mutual and stable orientation towards the front of the car, sitting side by side or front-to-back. This spatial arrangement organizes the ways in which in-car participants can engage in joint activities and establish joint orientation to each other or features in the environment (Laurier et al. 2008: 11). The arrangement also raises expectations of who will talk to whom (Laurier et al. 2008: 9), the participants sitting next to each other either in the front or rear row of seats being more likely to talk to each other. While drivers cannot easily and for long periods of time shift their gaze to the backseat, they sometimes use the rear-view mirror to visually access a back-seat passenger (Laurier et al. 2008: 11; Nevile 2012). Backseat passengers can also lean forward to the space between the front seats to make themselves available for interaction with the participants in the front seats. This stable and internally static configuration moves around relative to other similar assemblages and features in the environment. Entering or withdrawing from this stable interactional space requires specific interactional work (e. g. Haddington 2019).

All in all, co-participants deploy various methods for taking turns, selecting

---

5 Some of this research has been done in "interactional mobility studies", which study how the design and organization of talk and interaction can become intertwined with the demands and progression of movement and mobility (see e. g. McIlvenny, Broth and Haddington 2009; McIlvenny, Broth and Haddington 2014; Haddington, Nevile and Keisanen 2012; Haddington, Mondada and Nevile 2013).

6 For an overview on "being mobile together", see Haddington, Mondada and Nevile (2013: 40–42).

speakers, and initiating topics in ways that reflect the fixed spatial configuration of the participants in the car (Laurier et al. 2008: 9). Excerpt 4 offers an example of how a passenger sitting in the back draws the front-seat passenger's attention to a feature outside of the vehicle that is relevant for their joint activity. The excerpt comes from a UN military observer course.[7] In this exercise, the military observer trainees' task is to patrol an imaginary demilitarized zone and to notice, observe and report possible violations of ceasefire and peace agreements. There are three military observer trainees in the car, the driver (DRV), the front-seat passenger (FP) and the backseat passenger (BSR) sitting behind FP. The vehicle is approaching a military base (see *It's a Blueland signal °over here°.*, lines 5,7) of which the team is not aware. They should notice and report the base. After remaining silent (line 1), BSR notices a Blueland sign on the road and draws FP's attention to it with a summons: *Jamie look*.[8] The use of the address term selects FP as the target of the summons turn, reflecting the missing visual engagement between them. BSR's following actions – tapping the window and touching FP's shoulder – as further attempts to redirect FP's attention to the noticed feature reflect their back-to-front seating arrangement.

[7] Prior to the data collection, the participants in the crisis management training course have given their informed consent for the use of the video data from their training for research purposes and publications. Unisex pseudonyms are used to hide the identity and the gender of the participants when names are used. All signs that might reveal their identity, rank, or country of origin have been changed or removed from the transcriptions and illustrations. The images are presented as Laurierian comic strip representations (Laurier 2013, 2019) to visualize the connection between talk and multimodal actions. The images have been done by the first author with ComicLife software.

[8] FP's turn *Okay::,* which begins at exactly the same time with BSR's summons turn indicates FP's own orientation to a shift to a next activity, which turns out to be navigation (see line 10).

Excerpt 4: **UNMEM2, Zulu, GOPRO526.mp4: 5:45**

```
01          (15.0)
02  BSR     [Jamie] #+›look,
03  FP      [(Okay::,)]
    bsr              +.....--> moves hand to window
    fig             #fig7
```

Figure 7: BSR prepares to move the hand for tapping the window.

```
04          (.)+(0.3)#+(0.3)+(0.3)
    bsr     ---------------------->
    bsr        +       +      + taps window three times
    fig               #fig8
```

Figure 8: BSR taps window three times with a pen to draw FP's attention.

```
05  BSR   Look +Jamie your right side?#
      bsr   -----+...................moves hand forward
      fig                                #fig9
06          +=I§t's a +Blueland+ [si]gnal
      bsr   +touches FP on shoulder
      fp       §looks right
      bsr   ..,,,,,,,,,+ withdraws hand
      bsr                        +taps window
07  FP                           [Yeah.]
```

Figure 9: BSR touches FP's shoulder

```
08  BSR   °over §here°.
      fp          §shifts gaze forward
09  FP    >Blueland signal,< (.) yei.
10        (2.5)
11  FP    Hotel One, this is Zulu, reporting (.)
12        Victor two zero, over.
13        (4.4)
```

After noticing a feature (flags, other insignia, weapons, vehicles or troops) that indicates a possible violation, the team should stop, start observing the environment, and attempt to make contact with the troops to inspect the base. In Excerpt 4, FP does not respond to BSR's initial summons and noticing (line 2 and Figure 7). BSR then moves their hand, which is holding a pen, to the window (line 3) and makes a new attempt to draw FP's attention by tapping the window three times with the pen (line 4 and Figure 8). BSR then produces a directive (*Look Jamie on your right side?*, line 5) together with a description of the seen feature (*It's a Blueland signal °over here°.*, lines 5, 8). During the turn, BSR extends their right arm and touches FP's right shoulder, again inviting them to switch attention to the sign. The embodied actions that are used for drawing FP's attention and producing

the noticing turns, together with the sensorial – sound and touch – resources they generate, reflect the interactional space in the car and the limited resources for BSR and FP to have direct and mutual access to each other's actions. FP reacts by taking a quick look at the roadside and by acknowledging BSR's turn: *>Blueland signal,< (.) yei.*, line 9. The response, however, discounts the relevance of the noticing, and FP continues to report their location to the net control station (lines 11–12). The next section explores reconfigurations in mobile interactional spaces.

3.2. Reconfiguring mobile interactional spaces

As mobile formations move through space, they often undergo dynamic changes in their configurations. For example, mobile interactional spaces may shift their shapes with respect to the unfolding activity, which often occurs in guided tours in which the foci and the participation frameworks are in constant flux (e. g. Broth and Lundström 2013; Mondada 2013). Mobile interactional spaces may also be reconfigured – and involve special interactional and multimodal work – when participants enter or leave the formation as part of conversational beginnings or closings (Mondada 2009; Broth and Mondada 2013, 2019; Haddington 2019). The shape of a mobile interactional space may also change relative to natural features of the environment or architectural shapes and objects (pavements, stairs or bollards) in it (e. g. Weilenmann, Normark and Laurier 2013; McIlvenny, Broth and Haddington 2014; Haddington, Mondada and Nevile 2013: 41). Weilenmann, Normark and Laurier (2013), for example, study how participants transform a side-by-side formation into a single file formation to pass through revolving doors. Then, after passing through the doors and by adjusting their pace, they reassemble the side-by-side formation (see also Haddington, Frogell et al. 2012). McIlvenny (2013b) focuses on the ways in which cyclists accomplish and sustain a "with". He shows how co-riders can maintain and reconfigure flexible formations in different ways, for example, by riding side by side, singling up and tucking in. He also shows how such "vélomobile withs" can become extensively "stretchy" while still affording opportunities for interaction. Very often such vélomobile actions within a formation involve the coordination of movement with other cyclists, or pedestrians and cars.

Indeed, mobile interactional spaces, such as groups of pedestrians or cyclists, are also visible and recognizable entities whose trajectories and shapes are projectable. This becomes evident when such formations organize their relative movement with others by adjusting their direction, speed, and pace or when participants within the formations talk and use their bodies to communicate such adjustments to avoid colliding into and obstructing others (Goffman 1971: 5–18, 1963: 94; see also Haddington, Mondada and Nevile 2013: 40–42; De Stefani, Broth and Deppermann 2019).

Such fleeting encounters may also lead to "passing-by" interactional spaces where the individuals engage momentarily without stopping to establish a stable

formation. González-Martinez, Bangerter and Lê Van (2017a, 2017b) show how hospital staff members can exchange quick words while passing each other in parallel trajectories but to opposite directions in corridors. The authors call these interactional spaces "informal handoffs" or "micro-briefings". They also show how staff members create a diverse array of interactional configurations when engaging in these fleeting encounters: they may pass a colleague or move in front of or behind one, walk side by side or in single file, or sometimes engage in a brief encounter from a distance, relying on neutral facial expressions, gaze aversion and unrelenting fast-forward gait. In some situations, staff members can also communicate a "trouble" which leads to a focused encounter and a more solid interactional space (González-Martinez et al. 2016, 2017b).

Similar fleeting encounters between interactional spaces can also be witnessed in traffic (see De Stefani, Broth and Deppermann 2019), for example, when traffic users establish a momentary interactional space between them to negotiate their relative mobility (Haddington and Rauniomaa 2014). In such encounters, the positioning of a formation and its velocity function as resources for coordinating the encounter. Additionally, traffic users have little time to coordinate their spatial copresence because of the expectations and requirements to keep moving (see Laurier 2005). In other situations, establishing an interactional space in traffic may be impeded by other things, such as the car's "iron cage" that prevents verbal interaction and hinders visual contact between drivers and other traffic users (see Urry 2006: 21–23).

Two mobile interactional spaces can also meet and merge to form one formation. Goffman (1963, 1971), for example, notes how pedestrians passing each other in the street can check each other's availability for interaction and move from an unfocused to a focused interaction. By building on Goffman's work, Mondada (2009) focuses on verbal, bodily and gaze practices involved in "emergent focused encounters", where two mobile formations evolve into a joint interactional space before engaging in a conversation. At the same time, mobile assemblages are visible and recognizable as such to outsiders, and people generally avoid disrupting their shape by walking through, entering into, or joining them without accounting for it (Goffman 1963; De Stefani 2013; Haddington, Mondada and Nevile 2013: 40; Haddington, Frogell et al. 2012).

Excerpt 5 presents an example of a fleeting interactional space between participants in two cars.[9] In it, the driver of the car (car1) with the cameras (Figure

[9] The excerpt comes from the Habitable Cars video corpus collected by Eric Laurier, Barry Brown and Hayden Lorimer in Britain (left-side traffic) in the early 2000s. The participants volunteered to be recorded or to record themselves during their mundane car journeys. The materials were recorded with two cameras. One camera was positioned on the dashboard and faced the car interior to capture the participants' talk and bodily actions. The other camera faced forward to capture some of the traffic situation

11, left frame) shows that he is letting the driver of another car at an intersection (Figure 11, right frame) take the space in front him. In the excerpt, a family is driving on a countryside road. The parents are having a conversation in the front and three children are sitting and talking in the backseat. A car (car2) in front of them (as seen in Figure 10) indicates for a left turn (line 1). At the same junction, there are two other cars (car3 and car4) waiting to enter the road. While the driver on the main road is not obliged to yield, after the car (car2) in front of them has turned left, he stops and offers the waiting cars an opportunity to enter the road.

Excerpt 5: **Habitable Cars: Passenger assistance [0:00]**

```
01 BSC   #(°I wanna- Do you know any [apples?°)]
   car2  >>indicating a left turn
   drv   >>slowing down
   fp    >>gaze to the backseat, looking at Lisa (BSC)
   fig   #fig10
```

Figure 10: Car2 (right frame) in the front is indicating a left-turn.

```
02 ?                                    [Hey.     ]
03       (0.4)+(1.5)
   car2       +turns left
04 FP    *Lisa's-* (0.5) Lisa's €↓eye↑:: #(0.9) €&looks a
         bit ↑better,
   fp    *-------*turns gaze forward
   drv                          €...--------,,,€ offering
                                gesture
   car1                                        &comestoanear
                                               full stop
```

as seen through the windscreen. The figures try to illustrate the situation inside and outside the car. The excerpt has been analysed in Haddington and Rauniomaa (2014), but from a different perspective.

```
   fig                                          #fig11
```

Figure 11: DRV produces an offering gesture to the car (car3) entering the road.

```
06 FP    do+esn't it§.
   car3    +"thank you" gesture
07       §#(0.5) §(0.8)§(0.9)§(0.5)§
   drv   §..--,, § "you're welcome" gesture
   fig    #fig12
```

Figure 12: DRV produces a 'you're welcome' gesture.

```
   drv                    §..---# offering gesture
   fig                          #fig12
```

Figure 13: DRV produces another offering gesture to the second car.

```
   drv                                §leans forward, moves the
                                      gesture higher
08 DRV  °You're g-° You're going?
09 FP   >=No, she's showing you to go.<
10 DRV  §OK.
        §speeds up
```

Both cars (car1 and car2) slow down before the first of them (car2) takes a turn to the left at the junction (lines 1, 3). As the latter car (car1) with the cameras arrives at the junction, it comes to an almost full stop, however, without stopping movement entirely. The driver tilts his head forward and with his right hand leaning on the steering wheel, produces a palm-up, open-hand gesture to indicate that he is offering space for the other car (car3) to pull in (line 4). Car3 then pulls into the road and produces a "thank you" gesture (line 6) which the driver in car1 reciprocates with a "you're welcome" gesture (line 7). For this brief moment, the two drivers have relied on mutual gaze and gestures to establish an interactional space and to negotiate relative mobility. Moreover, during the fleeting encounter between the drivers, FP initiates a new topic for conversation with DRV (lines 4–5). FP's turn includes a tag question (line 6), expecting a response from the DRV. However, since DRV is engaged in the offering sequence with the driver in the other car, he never answers FP's question, suggesting how the fleeting encounter with the other driver takes precedence over the interactional space inside the car. During FP's turn, a new interactional space emerges with another driver in the next car (car4) waiting at the junction. DRV produces another offering gesture (line 7), but this time the car (car4) does not move. The driver upgrades the gesture by moving it up (line 7) and says *Y- you going?* (line 8). DRV actions not only orient to a possibly missing relevant response to his space-offering gesture but also reflect the challenges in establishing mutual access and an interactional space between the drivers in the two different cars. At this point, FP steps in and verbalizes her seeing of the other driver's embodied action: *>=No, she's showing you to go.<* (line 9) DRV

then confirms FP's seeing by saying *OK*. (line 10) and speeds up to continue their journey.

In this section, we have shown how co-participants maintain and reconfigure interactional spaces in mobile situations. We have discussed how interactional spaces and formations may be shaped relative to the contingencies of the mobile situation. We have shown how features in the environment may occasion reconfigurations in the proximity and relative distances between copresent participants and how mobile encounters may involve interactional spaces that evolve and dissolve quickly for the purposes of specific activities. We have also discussed how mobile interactional spaces usually avoid colliding into each other but that they also may merge to form a new one. The following section explores interactional spaces in technology-mediated interactions.

4. Technology-mediated interactional spaces

During the past decades, many aspects of our daily lives have shifted to online and digital environments, which has forced us to create ways to display engagement also across physical distances (see also Auer and Stukenbrock this volume and Meyer and Jucker this volume). Since the early works in human-computer interaction (Suchman 1987), a lot of attention has been given to the joint coordination of activities in settings where the interlocutors are not in each other's immediate copresence: when interaction is technology-mediated, or "technologized" (Hutchby 2001). In the attempts to eschew "technological determinism" and treating "technology-as-context", or merely as a medium that enables interaction, data-driven empirical studies have shown the special ways interactional practices can both shape and be shaped by the surrounding technologized contexts (Arminen et al. 2016: 292). How actions that are coordinated in the sociomaterial and sequential environment become a part of collaborative and organizational practices has formed the core of these investigations (e. g. Arminen et al. 2016; Heath and Luff 1992, 2000; Hutchby 2001, 2014; Luff et al. 2003; Luff et al. 2016). While these studies have not focused on the aspect of space or spatial configurations as such, their role in understanding the affordances and constraints governing technologized settings is irrefutable. In this section, we revisit some of the central works on technology-mediated interaction (e. g., Due 2021; Heath and Luff 2000; Licoppe 2017; Licoppe and Morel 2012) and narrow down the discussion of spatial configurations to synchronous contexts and distributed participation frameworks in which interlocutors have at least partial visual access to each other.

4.1. Interactional space in video-mediated settings

In video-mediated encounters, establishing and sustaining the conditions for mutual monitoring of actions and engagement is a complex matter, and the resources to do so vary depending on the context (for an overview, see Mlynář et al. 2018). Previous literature shows that the work that goes into organizing and maintaining "the technology-mediated spatial arrangement" is very much impacted by the affordances of the technology, such as those regarding the used devices, but also other variables, such as the purpose of meeting, the number of interlocutors and/or parties, and the preferences they have for progressing interaction and solving troubles (see Oittinen 2018; Rintel 2013). There are also distinct ways for the interlocutors to make their presence and participation known at the beginning of encounters (Muñoz 2016; Licoppe and Morel 2012) and indicate their engagement after these preliminary moments (e. g., Halvorsen 2016; Hjulstad 2016). For instance, Licoppe and Dumoulin (2010) illustrate how the initial configuration of remote courtroom hearings is accomplished in an orderly fashion through special arrangements in which the conventional opening formula is partly replaced by the steps taken to establish the connection with the remote party. Furthermore, the findings suggest that the (video-mediated) interactional space is sensitive to the participants' orientation to the practical concerns relevant to openings (e. g., checking the quality of the system, greetings, and recognizing the presence of relevant parties).

Establishing and maintaining face engagement to co-participants and their bodily behaviors from chest up, has been found prevalent in video-mediated encounters and something that supports the smooth organization of activities (e. g., Stommel et al. 2019). Licoppe and Morel (2012) call this the "talking-head configuration", which is based on the maxim "Show the face of the current speaker on-screen" (2012: 407). However, this overall organization is susceptible to modifications and reconfigurations stemming from aspects in one's immediate environment, such as purposeful showing of objects or other features (e. g., Licoppe et al. 2017; Stommel, Licoppe and Stommel 2020), or from issues with the communication channel, such as delays, lags, and image distortions. Even in settings that have been designed to make bodily conduct as accessible as possible, emulating copresent configurations (e. g., Luff et al. 2014; Luff et al. 2016; O'Hara et al. 2011), there may be "fractures" in the interactional ecology that have the potential to disturb the ongoing activity (see Luff et al. 2003). Excerpt 6[10] illustrates how in a multi-

[10] Excerpts 6 and 7 come from a corpus of recordings including technology-mediated meetings. All the participants have given their consent to be recorded and to the use of the data for research purposes. The extracts have been analyzed in Oittinen (2020b and 2018), but the transcriptions have been updated to conform with the style used in this chapter. All the names are pseudonyms and the figures have been edited to secure the anonymity of the participants.

party meeting, for which an enhanced video software (Cisco Telepresence) is used, the participants employ subtle means to attend to a trouble in speaking and being heard. The problem is caused by two participants, Dietmar and Rob, having the mic accidentally muted in their location. This becomes sequentially relevant when Dietmar attempts to take the floor (line 4) and his turn beginning goes unnoticed by the others.

Excerpt 6 **(from Oittinen 2020b, Extract 1)**

```
   DIE  >>--sits in upright position, gaze at the screen
01 NOA  we're not going to change that booking then (.)
02      +because it's partial +delivery
   noa  +palms to sides-------+hands together
03      (0.3)
04 MAR  m*↓hm
   Mar   *turns gaze to screen 3
05      (0.2)~#(0.4)
   die       ~turns gaze to Marja;
             ~mouth starts moving---> l.9
   fig        #fig14
06 MAR  and ¨it *#doesn't have a (pod)
   rob      ¨turns gaze towards Dietmar; hand on chin
   mar          *points to screen 3 with pen-->
   fig           #fig15
```

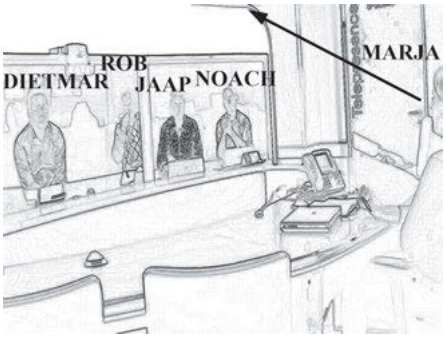

Figure 14: D gaze to M; mouth starts moving

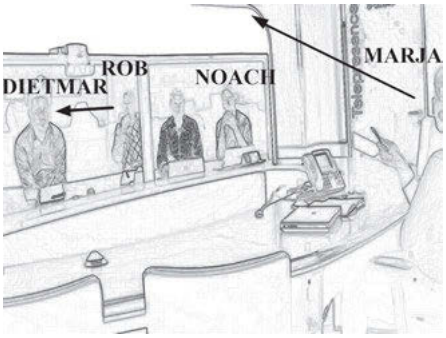

Figure 15: R gaze to D; M points to screen 3 with pen

```
07        *be¨cause this one is
   mar    *turns gaze to Noach pen still in hand-->
   rob       ¨starts to reach to the microphone-->
08        ~be¨#fore the goods
   die    -->~stops talking and glances down at Rob's hand
   rob       ¨clicks mute button; hits remote, causing
             slamming sound
```

```
   fig          #fig16
09            are ¨shipped right?
   rob          ¨corrects posture
10            (0.5)^#(1.5)+(0.2)
   jaa           ^turns gaze to Noach->>
   fig            #fig17
   noa                 +leans forward->>
11 NOA        sor↑ry
```

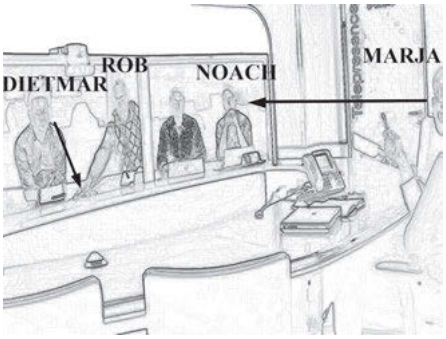

Figure 16: D gaze to R's hand; R clicks mute

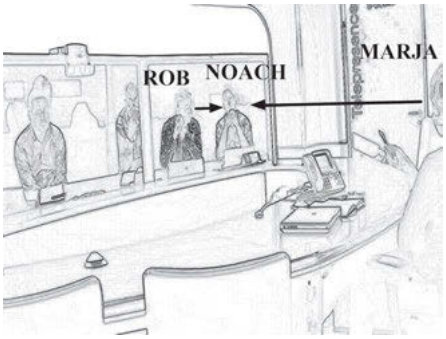

Figure 17: J and M gaze to N

The above excerpt shows the emergence of an organizational issue, owing to Dietmar's limited possibilities to make his utterance audible and intelligible to everyone at the right time (cf. Heath and Luff 1992). The participants in the other locations cannot hear or notice his attempt to take the floor (line 4), as they are bodily orienting to each other, the agenda screen (Figures 14 and 15), and the discussion that Marja continues to verbally progress (lines 6–9). The problem is yet acknowledged by Rob, who first turns his gaze towards Dietmar and then, following his embodied noticing of the trouble (e. g., Schegloff 2007), starts the corrective action: he reaches to the microphone on the table and clicks the mute button (Figure 16). With these bodily-visual behaviors the interactional space is recovered as a parallel activity and in a way that does not disturb the main activity or break the configuration relevant to it. Overall, the practices to maintain and modify the video-mediated spatial arrangement depend on the affordance of the human body which is partly restricted by the lack of visual and full-bodied presence and intercorporeality (see Due 2021: 258). Section 4.2. illustrates what this means in settings that include more limited access to the co-participants' environments, making it challenging to detect shifts in gaze direction and the movement of lower body and hands.

4.2. Technology-mediated settings with limited or restricted visual access

Various studies have shown that face engagement is also pursued in situations where the interlocutors cannot see all the relevant parties, such as in audio only or hybrid meetings (Saatçi et al. 2020). A significant finding is that, despite the shortcomings relating to access to each other's visual or auditory fields and to the challenges this might cause for the mutual organization of actions, the interlocutors tend to adjust their language and interactional practices to meet these demands (Hjulstad 2016; Luff et al. 2016; Nielsen 2019; Stommel, Van Goor and Stommel 2020). For instance, in his work on a healthcare setting utilizing a telepresence robot that represents a remote doctor on site (i. e., RoboDoc), Due (2021; see also Nielsen 2020) illustrates how the RoboDoc is oriented to as an assemblage of a real doctor by the co-located participants through their embodied "face-to-screen-face orientation". Therefore, despite the "fractured semiotic ecology" in which not everyone has access to the same set of resources or sensorial experience, interactional work is actively being done to include the doctor who is not physically present and to maintain an F-formation relevant to the encounter (Due 2021).

In hybrid settings where the distributed parties have asymmetric access to verbal and embodied resources, the many dimensions of space become emphasized. Research on multiparty remote meetings illustrate how the interlocutors balance their vocal and embodied behaviors while being oriented to the co-construction of multiple interactional spaces: the local space, the overall (shared) space and (other) adjoining spaces (Oittinen 2018, 2020a; see also Wasson 2006). This view manifests one's possibilities to engage in multiple, potentially competing involvements within the technology-mediated spatial arrangement, highlighting how parallel activities may or may not be consequential for progressing the main activity and achieving meeting-related goals. Furthermore, as pointed out by Saatçi et al. (2020), maintaining a configuration that is inclusive to both local and remote participants requires additional interactional work but is also a matter of the room design. Excerpt 7 illustrates the situated nature of this complex ecological and organizational hub, focusing on how meeting participants can co-construct their participation and (dis)engagement in two interactional spaces. The moment entails an audibility issue (from line 5 onwards) which becomes a resource for the local participants (Figure 18) to accomplish an alliance without the remote parties knowing about it.

Excerpt 7 **(from Oittinen 2018: 6–7, Extract 1)**

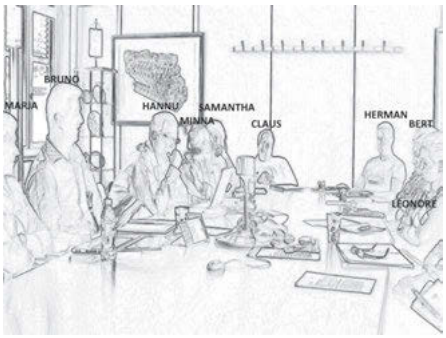

Figure 18: Participants in a local space.

```
01 DIE   any judgements from you: Petri or Anders that you
02       would like to, (.) share too
03       (1.1)
04 PET   u:h (.) <yes but> yeah (.) if you think about
05       (the character)*(   )
                        *((flash from wide screen, every-
                         one but Bert turn gaze to
                         screen))
06        +(        )
          +((Bruno and Minna frown, shake heads; Bruno and
           Leonore turn heads to left; Bruno whispers to
           Hannu))
07        +( ) ~(   )
          +((Hannu leans forward, gaze directed at laptop
           screen)) H --->*
               ~((Leonore and Claus giggle quietly, Herman
                sneers))
08        +(  ) * (  )
          +((Bruno whispers to Marja, leans back, smiles
           at people
          sitting opposite))
                *((Minna leans forward, Hannu straightens
                 posture)) H --->*
09        +(  )
          +((Samantha raises hand on pursed lips))
10  CLA   +no- now it's clear
          +((Claus turns gaze to Leonore, raises right hand
          holding up index finger, smiles))
11       ((Minna, Samantha, Leonore, Sarah and Herman turn
         gaze to Claus))
12 LEO   £↑a(h)h£
```

```
13        ((Leonore raises left hand holding up index
          finger))
14         ((laughter among local participants))
```

The excerpt illustrates the limited set of resources available for the renegotiation of a common interactional space. Although the local participants visibly orient to the technical trouble and sound distortion (line 5), they do not make it public nor orient to solving it. Instead, they produce various embodied displays that flag their inability to hear what is said (e. g., frowns and headshakes; line 6) and orient to alignment building via quiet but audible expressions, such as giggles and whispers (lines 7–9). In addition, by gazing at each other they construct a parallel formation that is relevant only to them and their emerging alliance, but it has no bearing on the way the main activity unfolds. Claus's humorous comment (line 10), which makes relevant similar troubles experienced during the earlier phases of the meeting, functions as another exclusive practice as it is not acknowledged by anyone else expect for the people in the same room. To conclude, the practices to momentarily disengage from the initial configuration and become a half-member in the ongoing activity (cf. Goffman 1963; see also Section 2.2) are impacted by asymmetric access to co-participants' environments and affordances through which communicating copresence and participation are possible (e. g., Heath and Hindmarsh 2000).

In video-mediated interaction, the coordination of activities and ways to display engagement in common interactional space are complex. This is partly due to limited access to some key resources, especially gaze, the lack of full-bodied experience (see, e. g., Due 2021), and the possibility to be involved in parallel activities. Even when interlocutors have equal access to available resources and each other's environments, bodily-visual behaviors can never be seen in their entirety, if at all. This in turn impacts on the possibilities to monitor the co-participants' actions and the work done to maintain mutual focus and the initial configuration. In contrast, hybrid settings that entail an arrangement formed by co-located and distributed parties are particularly sensitive to fractures and implicit alterations that may exclude some participants. Overall, the practices and modalities with which face engagement is pursued in video-mediated interactions varies a great deal, posing specific challenges for creating the sense of togetherness and connectedness.

5. Interactional spaces in immersive virtual reality

Immersive Virtual Reality (VR) refers to digital, computer-generated, and visually rich environments that create a powerful sense of immersion for the user. People enter an immersive virtual environment by using a head-mounted display (HMD) and move around in the environment and manipulate objects in it with special hand-held controllers (Figure 19). The system tracks the movement of the HMD

and the controllers and translates the users' body movements and actions into the virtual world as movements of virtual characters – avatars (Figure 20). Immersive VR is becoming more popular as a social environment for real-time interaction ("Social VR"), providing possibilities for people to interact, spend time and do things together. However, there are few studies exploring its potential for social interaction (see, however, Hindmarsh et al. 1998; Hindmarsh et al. 2000; Hindmarsh et al. 2006; Spets 2018; Kaisto 2020).

Figure 19: Head-mounted displays (HMDs). Picture by Pentti Haddington.

Hindmarsh et al. (2006) show how immersive virtual interfaces shape the ways in which participants can access each other's actions and use and rely on their senses and interactional resources for interaction. In this respect, immersive virtual reality presents a distinct case for exploring how participants maintain and reconfigure interactional spaces through their verbal and embodied conduct. In the video corpus on which we build our observations, co-participants shape interactional spaces with their avatars in different ways. Often, interactional spaces emerge and involve practices and phenomena that are familiar from physical face-to-face interactions. For example, Figure 20 shows how several avatars have formed an F-formation and display availability to each other when organizing themselves for a game of paintball.

Nevertheless – and despite the fact that VR systems have improved dramatically since Hindmarsh et al. (2006) did their study – similar observations regarding mutual availability and copresent action can be seen in interactions with contemporary VR technology. Hindmarsh et al. (2006) show, for example, that while co-par-

Figure 20: Avatars in an F-formation

ticipants assume "a world in common", immersive virtual worlds are not accessible to copresent participants in the same way; participants encounter a fragmented visual world which may limit ways to make sense of co-participants' actions. Most clearly this becomes evident in actions that require mutual visual access to gestures, body movements or to features in the immediate environment (cf. Goodwin 2007a). The fragmented world in common may disrupt joint coordination of action, orientation to the same objects in the virtual world, and the sense of being together and sharing a space.

Another distinct feature of interactions in immersive virtual worlds is that participants inhabit two spaces simultaneously: the virtual space and the physical space. Furthermore, a participant inside a virtual reality environment may interact with someone who is not copresent in the (same) virtual space but inhabits the same physical space (Olbertz-Siitonen, Piirainen-Marsh and Siitonen 2020). In such cases, the distributed participants – while sharing an interactional space – have only partial and changing sensorial access to the events, actions, and interactions in the space that their co-participants in the other space inhabit. At the same time, the two spaces are interdependent, which becomes evident in the distributed participants' talk and embodied actions in both spaces (see also Olbertz-Siitonen, Piirainen-Marsh and Siitonen 2020).[11]

[11] For similar observations on interactional space in distributed interactions, see Oittinen (2018) and Wasson (2006).

In Excerpt 8, we focus on an interactional episode involving three participants in a research laboratory (see Figure 21). Two of them, Lisa and Pat, are inside an immersive virtual world, or an online video game, called Rec Room.[12] Rec Room is a room-scale and multiplayer game environment that resembles a recreational center with possibilities for game play and interaction. The avatars that represent Lisa and Pat have a head, an upper body and two hands, but no arms, legs, feet, or neck (see Figure 20). Their avatars are called leafvr2 and leafvr1 respectively.[13]

Lisa and Pat can see the movements of other avatars, and they can talk with the users behind the avatars in real time. The game allows the microphone in the HMD to be muted, but in this episode Lisa and Pat have their microphones on. The HMD goggles prevent them from having visual access in the physical world. They are wearing headphones through which they hear the sounds in the virtual world and each other's talk. In addition to this, they can hear the talk in the laboratory. The third participant in this episode, Matias, is a student from the group that has organized the VR experiment for a study project. There are also three other students who are observing Lisa and Pat's actions. The excerpt shows how Lisa, Pat and Matias establish and reconfigure their joint interactional spaces across and within physical and the virtual space. It also shows how their talk and embodied actions reflect the varied access they have to each other's actions in it.

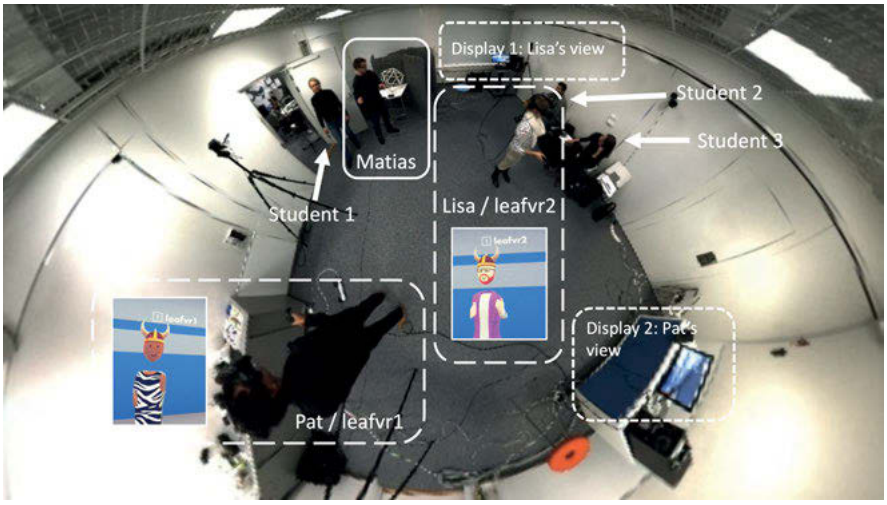

Figure 21: The participants and contextual configuration in Excerpt 8

12 https://recroom.com

13 The video recordings were collected as part of a university course on interaction analysis. The participants were not students in the course. Prior to the recordings, they gave their informed consent to be recorded for research on social interaction in immersive virtual reality. The names in the transcriptions are pseudonyms.

At the beginning of the experiment, the participants have met each other in the laboratory. After putting on the VR gear and entering Rec Room, Lisa and Pat have independently wandered around the virtual world and familiarized themselves with it. Just prior to the excerpt, they have been asked to move to Rec Room's lobby. Pat has just done so and is waiting for Lisa when she teleports into the same virtual space. Pat and Lisa have not yet seen each other's avatars. With other avatars in the same space, identifying each other becomes an issue. One resource that they have is the avatar's name on top of the avatar (see Figure 21).

In line 2, with *Okay, u:hm, (0.7) Just (0.5) stay still for now, (0.2.) and (0.2.) >let me explain<,* Matias asks Lisa and Pat to stop moving and begins to give them instructions on what they should do next.

Excerpt 8: **Group 1 (10–20 min clips, group 1_v2.m4v, 0:11–0:40; 360° video, 31:15)**

```
01          (0.2)%(0.2)
    mat     >>looks twd Pat and Lisa
    mat          %gaze shift to Display 1
02  MAT     Okay, u:hm, (0.4)%(0.3) *J+ust (0.5) stay still
    mat                         %gaze shift twd Pat and Lisa
    pat                                *turns head twd mat
    lis                                  +enters the Rec Room
                                          lobby
03  MAT     for ↑now,
04          %(0.2)[a:nd] (0.2) >let me %explain<,
    mat     %gaze shift to Display 1
    mat                                 %gaze shift twd Pat
                                         and Lisa
05  PAT           [Okay.]
06  MAT     (.) >what you're [gonna   ] %do,<+ (0.5)
07  PAT                      [Alright.]
    mat                                  %gaze shift to Dis-
                                          play 1
    lis                                      +turns upper
                                              body left
08  MAT     U::h, (1.2) you can do:, (.) whatever you
09          %want,+ (0.7) but,
    mat     %gaze shift twd Pat and Lisa
    lis           +turns body right
10          *(0.7) %you need to stick
    pat     *nods
    mat             %gaze shift to Display 1
11          toget%her, (0.4) and (0.7)
    mat          %gaze shift twd Pat and Lisa
```

```
12        *+#°you know°, (0.3) do it as a team, (.) +or,
     pat  *turns gaze to the left to look at lis
     lis   +turns body left
     fig    #fig21
     lis                                          +nods
                                                  twice
```

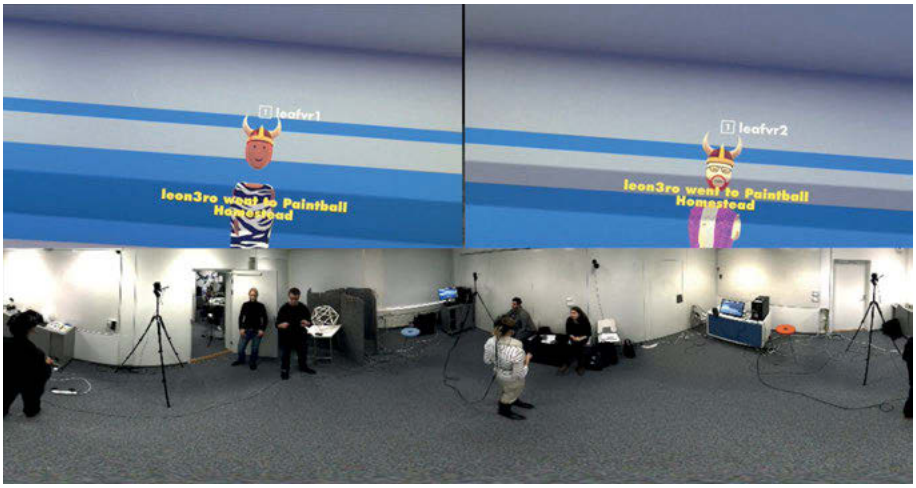

Figure 22: Lisa and Pat in a facing formation in the virtual world

```
13        (0.9) +>do it [together*<   ].%
     lis          +nods twice
14   PAT                  [So this *is- ] %
     pat                           *....pointing..>
     mat                                 %gaze shift to
                                          Display 1
15        (0.3)
16   PAT  +>This is you.<#
     pat  ............----->
     lis  +,,,,,begins to raise left arm,,>
     fig                  #fig22
```

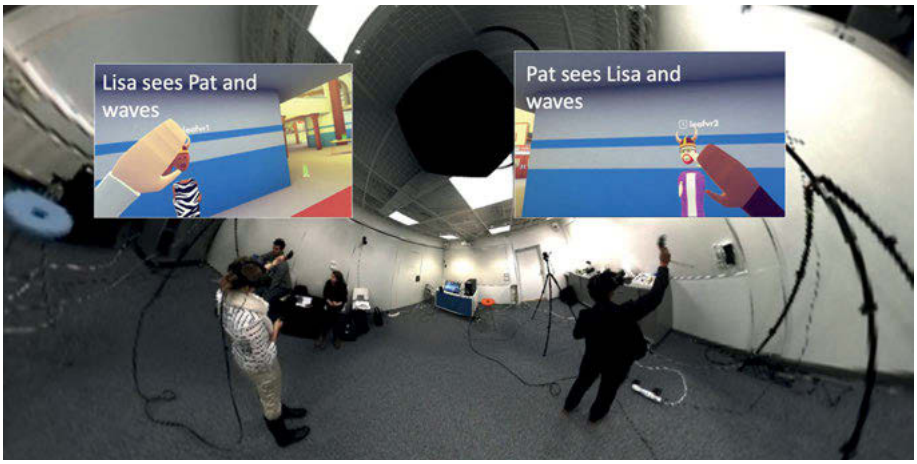

Figure 23: Pat and Lisa waving to each other

```
17          %(0.4)*(0.4)+(0.3)
      mat   %shifts gaze twd Pat and Lisa
      pat   ------*waves with right hand--->
      lis   ,,,,,,,,,,,,,,,,,>
18    LIS   Hm[mmm    ].
19    PAT     [%+Okay.]
      mat      %gaze shift to Display 1
      lis   ,,,,+waves left hand------->
20          (.)
21    LIS   °Okay.°
22          (0.4)
23    PAT   This is me.
24          (0.4)
25    LIS   hhh.
26          (0.8)+(0.4)*(0.6)
      lis   --,,>+
      pat   -----,,,,,>*
27    PAT   >Okay.<%#
      mat           %...> turns to Student 1 with arm and hand
                     movement
      fig            #fig23
```

Figure 24: Matias turns to Student 1 and moves his arm and hand.

```
28          (0.7)%(0.3)
    mat     .--,,%
29  LIS     Let's play basketball?
30          (0.4)
31  PAT     Okay.
32          (0.9)
```

Matias's turn *Okay, u:hm* interrupts Lisa's and Pat's ongoing activity and frames what follows as a distinct move to a "next-positioned matter" (Beach 1993, 1995), initiating a transition to a new activity. Then with *(0.7) Just (0.5) stay still for now, (0.2) and (0.2) >let me explain<,* he asks Pat and Lisa to stop moving and accounts for the interruption by verbalizing his next actions. In this way, Matias forms a new interactional space. By specifically asking Pat and Lisa to "stay still" and let him verbally explain, he orients to their lacking visual access to the new interactional space in the physical space.

One contextual feature that affects the coordination of actions in their joint interactional space is that Matias, on the one hand, and Lisa and Pat, on the other, have only partial access to the space inhabited by the others. This becomes evident in different ways. For example, Matias keeps shifting glances between Pat and Lisa and two computer displays that show Pat's and Lisa's views in their HMDs (lines 1, 2, 7, 10, 14 and 19). By shifting glances between the displays and the two other participants Matias can access Pat's and Lisa's actions in the virtual space and check their availability as recipients in the physical space.

Pat and Lisa's talk and embodied actions also reflect the partial perceptual access to their joint interactional space with Matias. For example, in line 2, just after Matias has started the turn *Okay, u:hm,* Pat turns his head towards Matias. Similarly, just after Lisa has entered the virtual lobby, she also turns her upper body to the left, displaying orientation to Matias in the physical space. Turning their heads helps Pat and Lisa to hear Matias's talk over the Rec Room sounds and music in their earphones, but at the same time, their physical stances embody a recognizable "listening position" showing that Matias has captured their attention. Furthermore, they respond to Matias's talk with nods (line 10, 12, 13) which also display their recipiency in the interactional space despite the missing visual connection to Matias. At the same time, and because of the momentary interactional space in the physical world, despite being in each other's perceptual range, Lisa and Pat are not yet oriented to each other – bodily or otherwise – in the virtual space.

In lines 6–13, Matias instructs Pat and Lisa to form a team and do something together in the virtual space. Pat and Lisa's subsequent actions comply with the instructions and reconfigure the interactional space. First, in line 12, Pat turns his head away from Matias, thus withdrawing from the "listening position" in the physical space, and turns his gaze to Lisa in the virtual space. At the same time, Lisa turns to look at Pat, and at this point they have formed a face engagement in the virtual space. In lines 14–16, Pat says: *So this is- This is you*. This initiates

an identification sequence that associates the avatar with Lisa and pursues a confirmation. Pat's turn is accompanied with a pointing gesture (lines 14–16) which is reciprocated by Lisa's arm movement (line 16). Their hand waves and talk – the "hmms" and "okays" – work as self-identification devices and confirm their mutual participation in the reconfigured interactional space that has moved from the physical space to the virtual space. The use of deictics (gestures and pronouns) also shows how reconfiguring the interactional space builds on the possibility for Lisa and Pat to see and hear each other. At the same time, their actions show how distinct interactional work is required to recognize a co-participant as a particular person behind the avatar and thus to create a new interactional space in the virtual space. Matias's subsequent actions also indicate how the reconfigured interactional space now excludes him (line 27–28): he makes a quick turn to Student 1 and produces a hand gesture signaling the closure of the instructional episode and recognition of the reconfigured interactional space that Pat and Lisa have formed.

Excerpt 8 shows how the participants design and coordinate their actions to maintain and reconfigure a joint interactional space when it cuts across the boundaries of the physical and a virtual space. Their talk and embodied actions reflect their (partial and fragmented) perceptual access to the distributed spaces in the virtual-physical configuration.

6. Discussion

When people interact in real-time, they establish a shared space between themselves to enable access to mutually shared social conduct. This space is called "interactional space". The participants in an interactional space establish a mutual focus point and interact to progress some activity together (e. g., Mondada 2009, 2013). Interactional spaces are dynamic and changing; they are locally created by the participants' talk and bodily actions with respect to the unfolding activity and the material environment. In a long line of research in pragmatics, Erving Goffman, Adam Kendon, Charles Goodwin, and Lorenza Mondada have built the analytic and conceptual foundation for exploring the ways in which social participants organize themselves – bodily, spatially, and otherwise – in order to interact with each other. In this chapter, we have offered a summary of both this work and subsequent work and also advanced it by exploring and enriching the understanding of how people establish, maintain, and reconfigure interactional spaces in previously unstudied settings. This chapter has complemented previous research by analyzing the organization of interactional spaces – in addition to a relatively stable spatial arrangement at a dinner table – in mobile situations, video-mediated environments, and immersive virtual reality (VR).

Especially, this chapter has invited us to look beyond interactional space as an embodied and multimodal configuration requiring immediate, physical copres-

ence. Indeed, existing work on interactional space can be seen to largely build on how Goffman conceptualized "social situation" and "copresence":

> I would define a social situation as an environment of mutual monitoring possibilities, anywhere within which *an individual will find himself accessible to the naked senses of all others who are "present," and similarly find them accessible to him*. (Goffman, 1964: 135) (italics added)

In other words, for Goffman, "copresence" was a matter of coparticipants having full sensory – and, apparently, physical – access to others in the same situation. In this chapter, we have highlighted practices and resources that co-participants rely on to maintain and reconfigure interactional spaces when they have partial or limited visual access to each other. For example, becoming involved in an interactional space in a car when seated in the backseat, requires intensified and tangible means. Even more interactional work may then be needed to establish joint focus on something outside the vehicle, in the quickly changing surrounding environment. Consequently, interactional space is not just internally organized but also reconfigured with respect to shapes, materials, and objects in the environment. Furthermore, our analysis shows how an interactional space within a car may also be populated by participants in other "mobile withs" (cars, cyclists, and pedestrians) in traffic; the "mobile withs" across some physical distances may establish fleeting interactional spaces to negotiate and solve traffic- and mobility-related issues.

Furthermore, the analyses of video-mediated interactions and interaction in immersive virtual reality show how "copresence" and "displaying engagement" are phenomena that social participants orient to also across connections made possible by digital technologies (consider, e. g., the notion of "tele-copresence", Zhao 2005). Maintaining and organizing interactional spaces also in such "fractured ecologies" (cf. Luff et al. 2003) calls for an understanding of one's physical actions and how they may be perceived by coparticipants in different locations, although having only limited possibilities for mutual monitoring of conduct. For example, we have shown how in immersive virtual reality participants design and coordinate their actions to maintain and reconfigure a joint interactional space also when it cuts across the boundaries of the physical and a virtual space. In such situations, participants' talk and embodied actions are carefully adjusted to reflect their partial and fragmented perceptual access to the distributed spaces and the participants in the virtual-physical configuration. Considering interactional space as it relates to new digital communication technologies (also beyond the technological solutions currently available) is important and may have far-reaching implications. For example, future multimodal AI systems may be programmed to recognize and learn from situated human actions – and eventually to be able to interact in real-time with human participants. In the future, "interactional space" – and other issues related to "space" and "spatiality" – may be one of those things, beyond processing

language and linguistic detail, that AI systems need to consider in order to recognize and interpret human action, let alone produce relevant actions itself.

In sum, this chapter has shown that the vocal and multimodal mechanisms participants use to establish, maintain and (re)negotiate interactional spaces and copresence are not only locally situated but also versatile, flexible and fluid; they adapt to the possible limitations of sensory perception and contingencies introduced by interactional settings and digital technologies that allow real-time interaction. Indicating availability for mutual engagement and interpreting that of others, namely establishing mutual access in a shared space, is a matter of access to each other's perceptual range, the modalities in which meanings can be created and conveyed, and the ability to understand the sensorial experience of the co-participant(s). On the one hand, these behaviors are illustrative of the intuitive way we orient to and construct formations in all kinds of situations; on the other hand, they show the ability of humans to adjust to contingencies and secure mutual access, reciprocity, and availability when building interactional spaces for joint action and activity. Organizing and reorganizing interactional spaces is a complex process; it is always tied to the ongoing activity, the talk and bodily actions that constitute it, the architectural and material surroundings, and other situated resources.

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12. The pragmatics of gesture and space

Ellen Fricke

Abstract: Visual co-speech gestures differ from auditory verbal utterances with regard to their mediality. In contrast to words in spoken language, which only occur in the linear dimension of time, gestures that accompany them additionally use the three-dimensional space. Due to their specific spatio-temporal mediality, gestures are particularly well suited for the representation of qualities, movements, and spatial relations. Consequently, this prompts the question of what is meant by the term "spatiality" in the context of speech and gesture. The required *tertium comparationis* can be provided by semiotics and, notably, by the Peircean concept of sign applied to the notion of "space". With reference to Peirce, distinctions are made between spatial hand movements (representamen), space as an object of communication (object), and space as a concept (interpretant). A main focus of this chapter is on different forms of gestural spaces created by communication partners using different gestural means and different spatial concepts while talking to each other about space. Different forms such as sphere-like, map-like, or screen-like spaces can be created by speakers in collaboration with their addressees while turn-taking. Two main types of interactive gesture spaces can be observed: shared spaces and separated spaces. Moreover, these kinds and other types of gesturally created spaces hold the potential to be used also metaphorically or metonymically by means of complex sign concatenation. New fields of research on gesture and space emerge from new technologies, like motion-capturing and gesture control, in different application settings of human-machine interaction, e. g., VR environments or human-robot-interaction.

Keywords: multimodality, gesture space, face-to-face interaction, shared spaces, spatial metaphors, gesture control, semiotics

1. Introduction

If you watch people talking to each other, you can clearly see that they speak not only with their lips and tongues, but with their whole bodies, in particular with their hands. Co-speech gestures are spontaneous movements, especially of the arms and the hands, that are related to speech in terms of temporal organization, meaning, and function (McNeill 1992, 2005). The anthropologist and gesture researcher Adam Kendon (1980: 207) calls this kind of movements "gesticulation" and posits that they form a part of "gesture-speech ensembles" (Kendon 2004: 128). That is,

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gestures and speech are synchronized with regard to the temporal organization as well as the intonation of the utterance. They are furthermore semantically and pragmatically co-expressive and "partnered in the common enterprise of discourse construction" (Kendon 2004: 128). The arrangement of different gesture classes in Kendon's continuum (McNeill 1992), ranging from spontaneous co-speech gestures through conventionalized emblematic gestures like the V-sign to the fully developed sign languages of the deaf, demonstrates that hand movements have the potential to be linguistic and, therefore, can also attain a particular level of semioticization (e. g., Birdwhistell 1970; Calbris 1990, 2011; Efron [1941] 1972; Enfield 2009, 2013; Fricke 2007, 2012, 2013; Kendon 1980, 1989, 2004, 2013; Kendon and Versante 2003; Mittelberg 2006, 2008; Müller 1998, 2004, 2008, 2013; Müller, Bressem, and Ladewig 2013; Pike 1967; Wundt [1900] 1904, [1900] 1973). However, in contrast to hand movements in sign languages (Pfau, Steinbach, and Woll 2012; see also Wilcox, Martinez and Morales this volume) and to emblematic gestures, co-speech gestures do not form independent lexicalized repertoires of manual signs (McNeill 1992). Co-speech gestures can extend, complement or supplement the meaning of what is being uttered.

In this context, Kendon (2013: 12) distinguishes five main ways, arguing that they can be referred to as referential, operational, performative, modal, and parsing. According to him, gestures can contribute to the propositional or referential meaning of what is being uttered, they can function as operators by negating or confirming it, they are performative in manifesting the illocutionary force, they have a modal aspect "in indicating that what the speaker is saying is a quotation, is hypothetical, is to be taken literally […]" and, finally, they can become parsing or punctuational by providing emphasis or contrast in order to make distinct different segments of verbal speech (Kendon 2013: 12).

Close connections between speech and gesture like this lead Kendon to conclude that they are two manifestations of the same underlying process of utterance:

> […] this work shows that this bodily activity is so intimately connected with the activity of speaking that we cannot say that one is dependent upon the other. Speech and movement appear together, as manifestations of the same process of utterance. (Kendon 1980: 208)

Psychologist and gesture researcher David McNeill adopted Kendon's thesis in further comparing the relationship between speech, gestures, and mental representations with "a kind of triangulation":

> The iconic gesture channel can be used as a second channel of observation onto the speaker's mental representations during speech; the first channel being speech itself. These channels can be compared: a kind of 'triangulation' onto the speaker's mental representation. Thus an interest in studying gestures is to obtain an enriched view of the internal mental processes of speakers. (McNeill 1986: 108)

The assumption that cognitive processes, which underlie the construction of space in multimodal face-to-face interaction, can be directly observed through co-speech gestures makes the investigation of spatiality in multimodal utterances interesting for cognitive psychologists, linguists, and semioticians alike (for an overview on gesture and cognitive linguistics, see Cienki 2013a; on gesture and space, see Cienki 2013b; Williams in press; Fricke 2007; and for an overview on different approaches in gesture studies, see Müller, Cienki, Fricke et al. 2013 and 2014; on space in language and linguistics, see e. g., Auer, Hilpert, Stukenbrock and Szmrecsanyi 2013; Schmitt and Hausendorf 2021).

In contrast to spoken words, which only occur in the linear dimension of time, co-speech gestures that accompany them additionally require the three-dimensional space. Consequently, the question arises as to what is meant by the term "spatiality" when talking about the pragmatics of space in multimodal utterances including co-speech gestures. With the following example from a route description as our starting point and case study, I would like to exemplify various aspects of spatiality that might turn out as relevant for further analyses of gesture and space (Fricke 2007: 279).

Speaker A on the right was instructed to describe a pre-fixed route at Potsdamer Platz in Berlin, which she had previously walked along, to Addressee B with enough precision for B to find the way independently. The primed perceptual input for A and the subject of the description in this particular conversation are, therefore, both spatial. Basically, space can also be described by non-spatial means. This is the case if the description is made solely by verbal means such as prepositions or local deictics (e. g., *here*, *there*) and leaves out the use of any accompanying gestures. In telephone conversations, for example, the listener is exclusively dependent on the acoustic information he/she receives. In order to be communicatively successful, the speaker needs to consider these media-specific conditions.

In our example, however, the verbal utterance is accompanied by communicative hand movements. The particular spatiality of gestures as sign vehicles makes it possible that the two hands can perform two different gestures at the same time. Due to the temporal linearity of spoken language, a comparable simultaneity of words and sentences is completely impossible.

(1) A:
Right hand: [1][{ja} also wenn **hier** so die Straße iss (.) von da Fußgängerweg und von da auch Fußgängerweg (.) und da iss McDonald's/ (xxx)]$_1$
Left hand: {ja} also wenn hier so die [2][Straße iss (.) von **da** Fußgängerweg]$_2$ [3][und von **da** auch Fußgängerweg (.)]$_3$ [4][und **da** iss McDonald's/]$_4$

'if the street is here like this (.) from there pedestrian path and from there pedestrian path too … and there is McDonald's'

Figures 1 and 2: Aspects of spatiality in co-speech gestures (Fricke 2007: 279, 2012: 137) (all drawings of this case study by Karin Becker, see also the acknowledgements; for transcription conventions, see the appendix)

In the utterance *wenn hier so die Straße ist* 'if the street is here like this', the speaker uses the verbal deictic *here* to name a vague, delimited spatial area that includes the deictic *origo* (Bühler [1934] 1982: 107, 149). The right hand is located within this spatial area. The gesture is not a deictic pointing one, as the outstretched index finger seems to suggest, but an imitative iconic one in which the index finger merely mimics the elongated shape of a street. This description of a quality, in this case instantiated by an iconic gesture, is obligatorily required by the qualitative deictic *so* 'like this' (Ehlich 1987; Fricke 2007, 2012; Herbermann 1988; Streeck 1993; Stukenbrock 2015). On the verbal level, the arbitrary sign "street" forms the conventionalized part of the gesture-speech ensemble, whereas on the gestural level, an iconic sign is used, the shape of which is motivated by the properties of the represented object. Consequently, the same object is thematized by the verbal and gestural parts of the utterance in different ways.

This example illustrates a particular division of labor between spoken words and co-speech gestures: Due to their specific spatio-temporal mediality, gestures are particularly well suited for the representation of qualities, movements, and spatial relations. Complements to verbal descriptions like this are often the cognitively easier means for speakers to apply. According to Müller (1998, 2014), the iconic index finger gesture instantiates the mode of representation "the hand represents" in which the hand represents an object as a whole. Regardless of where the hands are located in gesture space (McNeill 1992: section 2.2) when performing a gesture, their mode of representation also contributes to the production of a specific spatiality. In contrast to the mode of representation "the hand draws", in which the gesture draws a two-dimensional flat outline, a gesture in the mode of representation "the hand models" forms a three-dimensional volatile sculpture. In the mode "the hand acts", an action is imitated by hand movements that can be comparatively expansive.

If we consider the pointing gestures of the left hand, then the speaker, firstly, points to spatial objects such as the outstretched index finger of the right hand and,

secondly, to "empty" points in space (McNeill, Cassell and Levy 1993; Fricke 2007; Stukenbrock 2014) that stand as signs for objects and spatial points at Potsdamer Platz. An additional semiotic resource for indicating the communicative relevance of the iconic gesture in example (1) is the speaker's gaze directed to the respective hand position in gesture space (e. g., Streeck 1993; Stukenbrock 2014, 2015; see also Hausendorf 2003 on "perceived perception" and Tomasello 1995, 2008, 2009 on "joint attention").

Which different types of spatial concepts are embodied gesturally and how are they embodied? In our example (1), the iconic gesture of the right hand and the pointing gestures of the left are used to create a model of Potsdamer Platz that resembles a horizontally oriented map seen from a bird's eye view. Other spatial forms that can occur are sphere-like and screen-like models (Fricke 2007, 2009, in press; McNeill 1992). In contrast to a map-like space, a screen-like space uses the vertical dimension. The form of this kind of space creates the impression of a screen or a "shallow disc" (McNeill 1992: 86) augmented by the dimension of depth, like a box. Sphere-like spaces surround the speaker. In the default case they resemble the typical model of three-dimensional Euclidean space in which the speaker occupies the center.

If Speaker A in our example had pointed her right index finger to a perceivable object in the utterance situation, she would have made the surrounding space communicatively relevant for both speaker and addressee. If the demonstratum in this surrounding sphere-like space was merely imagined, we would have a case classified by Karl Bühler as the first main case of deixis at phantasma (see the contribution by Auer and Stukenbrock in this volume; Bühler [1934] 1982; Fricke 2007, 2014; Stukenbrock 2014, 2015). Moreover, co-speech gestures have the potential to be interpreted as indicators for a certain kind of perspective as McNeill has shown (McNeill 1985, 1992). According to him, the manner of gesture execution can be used to determine whether the speaker assumes a viewpoint of an observer or that of a protagonist (McNeill 1992: 86–91).

Psycholinguistic studies have shown (e. g., Franklin and Tversky 1990; Bryant, Tversky, and Franklin 1992; Franklin, Tversky, and Coon 1992; Hörnig et al. 1996) that, depending on prior knowledge, different mental representations can be built up as mental tours as described above. For example, if a tour is entirely new, the mental representation would be structured as route knowledge with a protagonist's perspective. If the route and the environment are known, an overview knowledge about where the objects are is established. What makes the study of gestures so interesting for cognitive scientists is, moreover, the fact that dynamic aspects of mental representations become intersubjectively observable and, thus, complementing reaction time analyses as "a second channel of observation" (McNeill 1986: 108).

Concepts that can manifest themselves gesturally include not only simple spatial concepts, but also conceptual metaphors (Lakoff and Johnson 1980). By means of co-speech gestures accompanying the verbal expressions *einerseits* 'on the one hand' and *andererseits* 'on the other hand' for example, abstract arguments can be

conceptualized as something spatial. The arguments are gesturally positioned like movable delimited objects either to the left or to the right in the gestural space on a horizontal plane. The vertical plane can also be used metaphorically: The positioning of the elite in example (4) below is an example for the conceptual metaphor CONTROL IS UP according to Lakoff and Johnson (1980) (see also Cooperrider, Nuñez, and Sweetser 2014 on the conceptualization of time as space; on metaphor and gesture, see Cienki and Müller 2008; Müller 2008).

In the case of grammatical negations, the negated ideas can also be conceptualized as an entity in the gesture space that can be removed by the use of an AWAY gesture (e. g., holding away) on the front-back axis (Bressem and Müller 2014, 2017; Harrison 2009, 2010, 2018; Fricke, Bressem and Müller 2014; Fricke 2019). However, spatial concepts can be created not only individually, but also collaboratively across speakers within the interaction process itself. Based on the distinction between personal space, interpersonal space, and extrapersonal space provided by Sweetser and Sizemore (2008) as a starting point, Williams (in press) conducted a study on collaborative reasoning about everyday scientific questions in groups of three or four undergraduates. He describes processes of moving from personal to shared space and of re-aligning gesture space to shared perspective. These kinds of collaboratively created micro spaces are usually embedded in the macro space dimension of whole-body interaction (e. g., Schmitt and Hausendorf 2021) that are not the primary focus of this article.

New fields of research on gesture and space emerge from new technologies like motion-capturing (Priesters and Mittelberg 2013; Schüller and Mittelberg 2017; Schüller et al. 2017) and gesture control in different application settings of human-machine interaction, e. g., human-robot-interaction (Pitsch et al. 2016; Holthaus, Pitsch, and Wachmuth 2011; Pitsch in press; Fricke and Bressem 2019). As an outlook, Section 4 presents another case study on how recourse to gestures of interhuman communication can provide a convincing coupling of virtual, imagined and real spaces and, thus, makes human-machine interfaces become more intuitive for users (Fricke 2019).

2. Language and space: A semiotic approach based on the Peircean concept of sign

2.1. The Peircean triadic sign

Using the Peircean concept of sign as a starting point for our further analyses, the dynamic aspect of space will be addressed here by integrating the various dimensions outlined in the introduction of the previous section. Peirce's nineteenth-century concept of pragmatism and indexicality is an important contribution to pragmatics in general (Peirce 1931–1958). Unlike that of Saussure, it is not limited to

conventionalized signs and simultaneously neutral with regard to the respective materiality of signs. This property makes his concept suitable as a *tertium comparationis* for consistent analyses of multimodal "gesture-speech ensembles" (Kendon 2004) with respect to their specific spatiality. Moreover, it can be used to analyze processes of semioticization (e. g., semantic loading) and processes of a more complex semiosis like sign concatenation (Fricke 2007, 2012).

According to Peirce, a sign is understood as a triadic relation between the representamen or sign vehicle (R), its object (O), and its interpretant (I) (cf. Peirce 1931–1958).

> A sign […] [in the form of a *representamen*] is something which stands to somebody for something in some respect or capacity. It addresses somebody, that is, creates in the mind of that person an equivalent sign, or perhaps a more developed sign. That sign which it creates I call the *interpretant* of the first sign. The sign stands for something, its *object*. It stands for that object, not in all respects, but in reference to a sort of idea, which I have sometimes called the *ground* of the representamen. (Peirce 1931–1958: 2.228)

With regard to the three relata of representamen, object, and interpretant outlined in Peirce's definition of the triadic sign, we can distinguish between 1. communication by spatial means (space used as a representamen or sign vehicle e. g., gestures), 2. communication about space (space used as an object of the triadic sign, e. g., Potsdamer Platz in Berlin as an object of multimodal route descriptions), and 3. space as a concept (space used as an interpretant, e. g., a map-like vs. a sphere-like concept of space or spatial meanings like that of "here" as an origo-inclusive local deictic expression) (Fricke in press; for gestures as expression of conceptualization, see Cienki 2013a, 2013b).

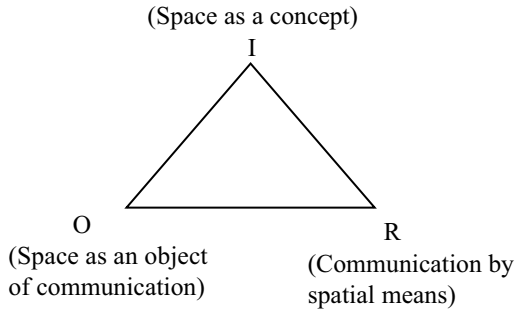


Figure 3: Space as a relatum in the Peircean triadic sign

If a particular space is not interpreted as standing for something else and, moreover, instantiates none of the three relata of the Peircean concept of sign, then it is treated as a non-sign. Such is the case with certain types of gestures which are allocated

to particular regions, e. g., gestures of the Aborigines in Australia (Kendon 1989), or the gesticulations of Southern Europeans which are found to be more expansive (Müller 1998). The presence of mere localization is genuinely non-semiotic as long as it is not semioticized by being integrated into a sign configuration.

According to Peirce, any entity can be interpreted as a sign or a non-sign. The resulting interpretation of the addressee can be independent of the sign producer's intention. Take a cup, for example (Fricke in press):

> In the default case, cups contain liquids and people use them for drinking. Apart from that, speakers can also use them spontaneously in creative ways, for example, to illustrate a car-crash scenario: "Two days ago, I was in a car crash. I was parked here (cup 1) and this idiot came speeding at me from the left (cup 2) and smashed into me". In this scenario, the cups are dissociated from their standard use and gain a new context as part of a sign relation: They are standing for something else, namely the two cars which the speaker is referring to, and which are not present in the utterance situation. Analogously, concrete space – like any other entity – can be interpreted as a sign in Peirce's triadic model of the sign […]. (Fricke in press)

Starting from this systematic distinction with regard to the three Peircean relata, we arrive at a schema of four sub-fields of semiotic space as illustrated in Table 1 (Fricke in press). Each of the four sections covers a different aspect of the subject gesture and space associated with different research areas in linguistics and semiotics.

Table 1: Schema of four semiotic sub-fields of space (Fricke in press)

Interpretant Space as a concept	Representamen Spatial means
Object Space as an object of communication	Space as a non-sign (concrete space)

The four sub-fields are considered to be inherently dynamic. As a relatum of a particular sign configuration, space has to be thought of as a dynamic process of semiosis and not as a static entity (Fricke in press). Despite their mutual interference, the four sub-fields can be distinguished analytically and constitute separate fields of research. Their underlying systematicity only allows for four specific areas: The first distinction is between space as a sign and space as a non-sign (sub-field 4). Within the triadic (or three-place) sign relation, space can only occupy three different places (sub-fields 1–3). These four sub-fields of space have to be considered as primary. Other secondary types of space can be created by further concatenation of Peircean triads in complex processes of semiosis (Fricke 2007, 2012, in press). In the following sections, we will examine phenomena of gesture and space that correspond to the three places of the Peircean triadic sign.

2.2. Space as a representamen

The representamen or sign vehicle on its own can take many forms of manifestation which differ in their nature medially. Co-speech gestures – as well as the signs of the deaf – are, in contrast to vocal utterances, visual and spatial. What they have in common with vocal utterances is a temporal linearity. For linguistic and semiotic research, gestural utterances are recorded on video or captured by the use of different motion-capturing methods (for an overview see Siefkes 2019; Priesters and Mittelberg 2013; Schüller and Mittelberg 2017). Motion-capturing methods such as optical marker-based tracking have the advantage that by their use particular movements and positions in space can be precisely determined. However, due to the fact that different hand shapes as a central parameter of gesture analysis can only be recorded with relatively low accuracy up to now, video analyses are still indispensable for linguistic and semiotic gesture studies. Another disadvantage of current motion-capturing methods is that if dyadic interactions or even larger groups are to be investigated, usually only one person is provided with markers. Thus, depending on the research question, an additional video analysis should be carried out in most cases.

Nevertheless, especially for research questions concerning gesture space, motion-capture studies such as those conducted by Priesters and Mittelberg (2013), which examine, for example, individual differences in use of gesture space, represent an important supplement to quantitative studies. Their visualizations can be imported into the annotation tool ELAN that has become the standard in gesture research (Wittenburg et al. 2006; Schüller and Mittelberg 2017). In order to make methods of gesture research tangible for museum visitors, an interactive exhibit with motion tracking was developed for the exhibition "Gestures – past, present, future" (2017) as part of the research project MANUACT (head: Ellen Fricke). It allows up to five visitors to explore their gesture space simultaneously. This "gesture space visualizer" integrates the two-dimensional schema for annotating co-speech gestures developed by McNeill (1992) into flat stick figures and uses infrared-based tracking in order to map each visitor's movements and color-code the hand's position in gesture space in real time (Figure 4 and Figure 5). This and other exhibits (see Section 4 below) have been developed in collaboration with the Ars Electronica Futurelab (Linz). Even infrared-based tracking, however, is still too inaccurate to capture gestural hand shapes with the necessary differentiation.

Figures 4 and 5: Gesture space visualizer in the exhibition "Gestures – past, present, future" (Fricke and Bressem 2019) (photographs by Tobias Naumann)

Central parameters for the analysis of co-speech gestures, adopted from sign language linguistics, are hand shape, orientation of the palm, position in gesture space, form and direction of movement. Similar to phonology in spoken languages, changes on the level of form can cause a difference in meaning. This is also true for the parameter of position in gesture space, as can be exemplified by the conventionalized Victory gesture. Figures 6 and 7 show how the same hand shape executed in different positions can take on different meanings, even though all other parameter instantiations remain unchanged. This hand shape executed in front of the body (center space) is interpreted as a Victory gesture. Positioned behind the head the very same hand shape will probably be interpreted as a sign for rabbit ears.

Figures 6 and 7: Distinctive function of position in gesture space: from V-sign to rabbit ears (Fricke 2010: 70) (drawings by Mathias Roloff)

For the annotation of co-speech gestures, the annotation schema of David McNeill (1992) has established itself as a standard (Figure 8). The schema shows a plane in front of a seated person which is first divided into central and peripheral spaces. These spaces are then subdivided along the vertical and horizontal axes (into upper/lower/left/right/etc.).

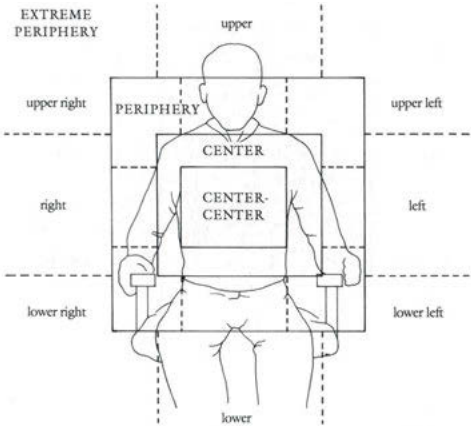
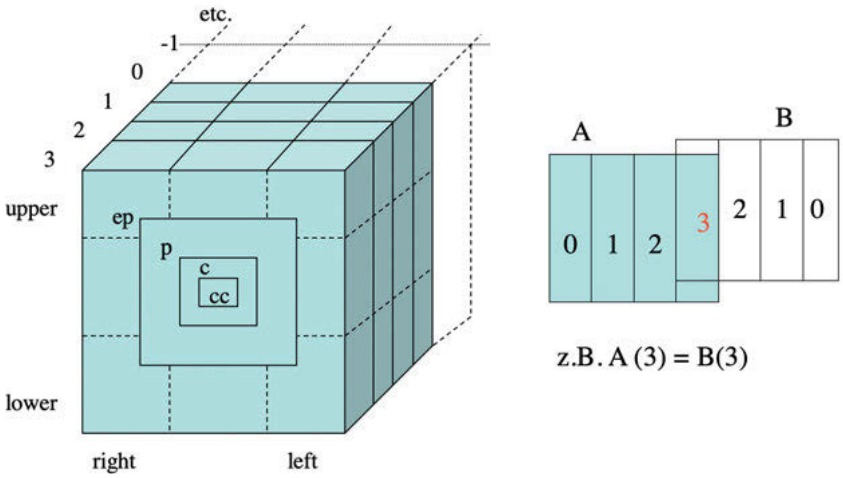


Figure 8: Annotation schema: Two-dimensional gesture space according to McNeill (1992: 378)

Not only individual gestures, but also whole classes of gestures are distributed differently in the gesture space (McNeill 1992: 86–91). While iconic and metaphorical gestures are predominantly performed at the center, gestures with a deictic function are rather positioned in the periphery of the gesture space.

An extension of McNeill's schema by a third dimension was proposed by Fricke (2005). This schema has the advantage of being able to annotate movements from one gesture space area to another within the same gesture phase. Furthermore, it can be used to mark overlaps of gesture space usage by multiple communication participants. In the vast majority of cases, however, the two-dimensional McNeill schema is sufficient.



Figures 9 and 10: Annotation schema: Expanded three-dimensional gesture space according to Fricke (2005) based on McNeill (1992: 378) (see Williams in press)

In search of a fitting concept to represent the relation between annotation schema and the gestural representamen or sign vehicle, one finds a concatenation of Peirce's sign triads particularly apt. The two- or three-dimensional annotation as a sign vehicle or representamen (R_1) stands for the specific spatial properties of the gesture (O_1) that form the object of this first sign triad, which in turn functions as a representamen (R_2) in another sign triad.

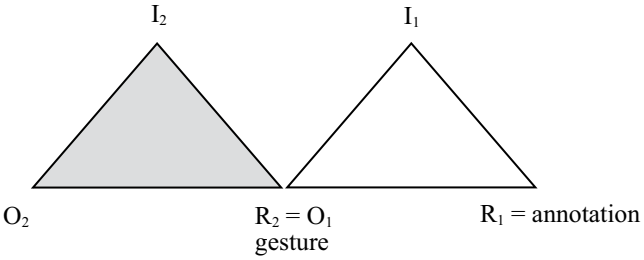


Figure 11: Annotation standing for the localizations of particular gestures in gesture space

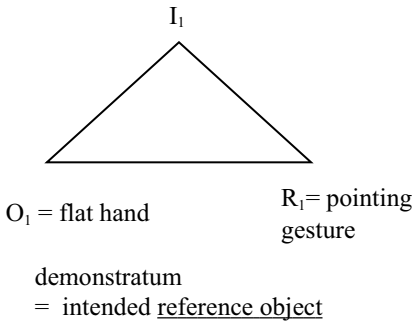
The object of a gestural spatial representamen can itself be spatial in turn. Though not necessarily limited to this aspect, gestures are particularly well suited to represent spatial relations, due to their media properties.

2.3. Space as an object

2.3.1. Space as an object in Peircean triadic signs

The examples we will look at in this and the following sections are route descriptions of a given tour at Potsdamer Platz in Berlin that took place in the same setting and with the same instructional task as our first case study example in Section 1. In example (2.b) below, both communication partners create a map-like representation of the Potsdamer Platz from a bird's eye view. The flat hands of person B represent the two opposite buildings of the Arkaden shopping mall and the Stella musical theater at Potsdamer Platz. It is interesting to note that not only spatial landmarks of the tour function as objects of gestural description, but also, when pointing to a gesturally embodied street or shopping mall as in the examples (1) and (2.b), spatial co-speech gestures themselves can in turn be the object of a representamen instantiated by a spatial gesture. Let us compare the empirical example (2.b) with example (2.a) constructed on this basis:

(2.a) A: Das ist deine verletzte Hand. 'that is your injured hand'
(2.b) A: [**das** iss die Arkaden/] 'that is the Arkaden'



Figures 12 and 13: Deixis at non-signs in example (2.a): Pointing at the flat hand as the intended reference object

In the constructed example *that is your injured hand*, the index finger points to the flat hand of the addressee, making it the demonstratum as well as the reference object intended by speaker A. The situation is different in the empirically documented utterance which involves the Arkaden in example (2.b). Here, the flat hand functions as the object of the pointing gesture, but it is no longer the reference object intended by the speaker.

2.3.2. Complex sign concatenation: spatial representamens as objects

The examples (2.a) and (2.b) show a fundamental difference, namely the difference between deixis at signs and deixis at non-signs (Fricke 2007: 123–133). When pointing at a sign, the demonstratum is not equal to the speaker's intended reference object, whereas when pointing at a non-sign, the demonstratum and the intended reference object coincide. In this case, the object (demonstratum) of the pointing gesture does not function as a representamen in another sign triad.

Figure 14: Deixis at signs in example (2.b): Pointing at flat hand that stands for the Arkaden (Fricke 2007: 208)

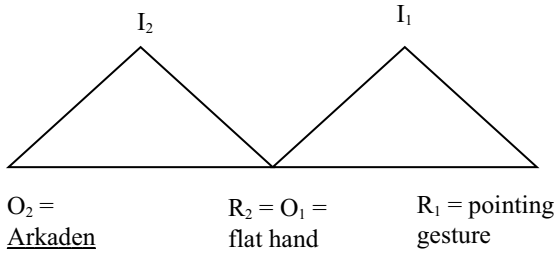


Figure 15: Deixis at signs in example (2.b) (Fricke 2007: 211)

With the concatenation of sign triads, different types of deictic reference space can be semiotically reconstructed, which, following Bühler, fall under the concept of deictic modes ("Zeigmodi") in deixis theory (see Fricke 2007, 2014a). In example (2.a), the speaker points to a perceptible hand (*demonstratio ad oculos* according to Bühler), which stands for a shopping mall at Potsdamer Platz that is not present in the utterance situation.

Thus, Bühler's distinction between *demonstratio ad oculos* and imagination-oriented deixis or deixis at phantasma can, if comparable examples are considered, only relate to the reference objects intended by the respective speaker without

contradiction and not to the immediate demonstratum. These intended reference objects can be perceptible or imagined.

The purely ontologically motivated categories "perceptible" and "imagined", however, can be defined in terms of signs and relational logic in the sense of a scientific metalanguage that is much closer to linguistics (Fricke 2007: 86–141). Another advantage would be that in the field of anaphora the distinction between text deixis and text phorics can be defined quite analogously, leading to a simplified and more stringent descriptive apparatus in the field of deixis theory (Fricke 2007: 116–133).

2.3.3. Complex sign concatenation: spatial interpretants as objects

In a complex sign concatenation, objects of a gestural representamen function can not only function as the representamen of another sign triad, but they can also be instantiated by an interpretant. This fact can be substantiated by the following example (Fricke 2012, 2014c).

(3) A: [**da iss einfach nur son Loch im Haus | sozusagen …**]$_1$ [**son Tor**]$_2$
'there is just such a hole in the building'| 'so to speak' 'such an entrance'

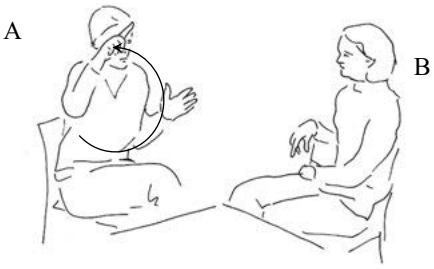


Figure 16: Arc-shaped stroke (Fricke 2012: 235)

Figure 17: Straight stroke (Fricke 2012: 235)

In order to refer to the same rectangular building, the speaker on the left applies two different types of gestures within the same turn. Accompanying the verbal utterance of *son Loch im Haus* 'such a hole in the building', a practically circular form resolves into the shape of a rectangle. In contrast to the rectangular shape, the contour of the circular gesture does not correspond to the rectangular opening (Fricke 2012: 235). How can this contradiction be explained?

According to Fricke (2012, 2014c), the differentiation between object-related and interpretant-related gestures allows for a resolution of this contradiction: "Object-related gestures are bodily movements that are related to the reference object intended by the speaker, whereas interpretant-related gestures are bodily movements that are primarily related to a meaning or concept attached to a spoken

word form. These concepts can be mental images of prototypes" (Fricke 2014c: 1800) (For further analyses of the qualitative deictic expression *son* in this example, see Fricke 2012: 230–254 and 2014c: 1798–1800).

Without going into further detail on the analysis, what is most interesting in this context is the different Peircean sign configurations that come with the distinction between object-related and interpretant-related gestures.

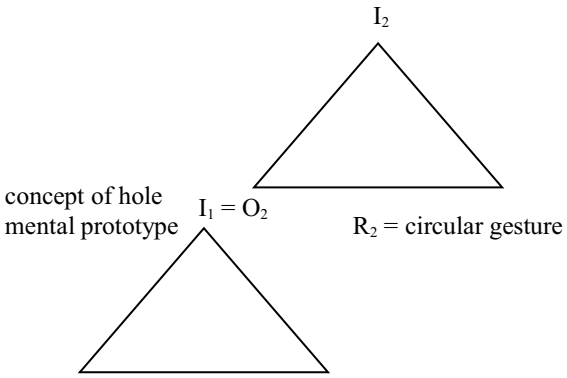


Figure 18: Peircean sign concatenation of an interpretant-related gesture

The utterance *son Loch* is interpreted as standing for a rectangular wall opening. This relation between the representamen R_1 (*son Loch*) and the object O_1 (rectangular wall opening) is endowed by the interpretant I_1, which contains the mental image of a prototypical hole as an aspect of meaning.

The circular gesture R_2 as a representamen of a second sign configuration has this mental image as its object. Thus, the interpretant I_1 of the first sign configuration becomes the object O_2 of the second sign configuration in which the representamen R_2 of the circular gesture is interpreted as standing for the mental prototypical image of a hole ($I_1 = O_2$). Thus, the speaker does not refer directly to the intended reference object with the circular gesture, but only indirectly via the interpretant of the core noun *hole* of the noun phrase *son Loch*.

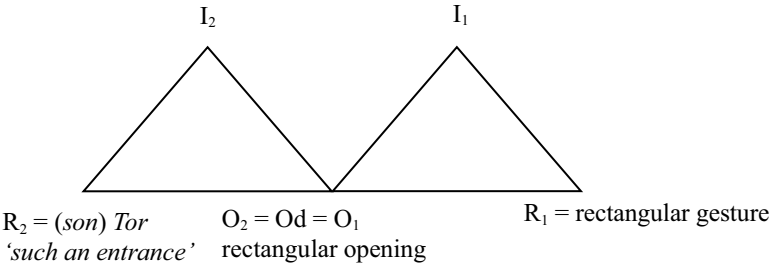


Figure 19: Peircean sign concatenation of an object-related gesture

The reference object intended by the speaker is still the rectangular passage of the musical theater at Marlene-Dietrich-Platz, even in the utterance *son Tor*. In this case, the rectangular gesture refers directly to this passage, without the detour to another sign. In our example, gesture and verbal utterance share the same reference object (O_d) intended by the speaker, but they thematize it in a different way, depending on the specific verbal or gestural code including the respective media limitations in each case. Since the verbal and gestural signs do not capture the same but different aspects of the remembered or imagined passage, there is also a specific object (O_1 and O_2) for each of the verbal and gestural signs. (For a detailed analysis of object-related and interpretant-related gestures as Peircean concatenation of signs, see Fricke 2012: 248 ff and 2014c: 1798 ff.).

2.4. Space as an interpretant

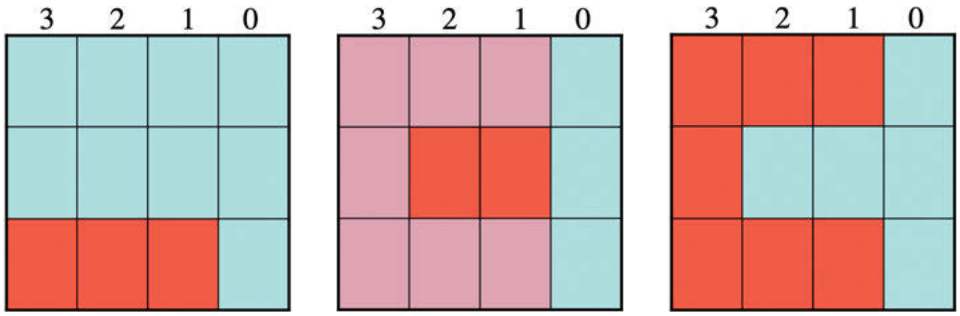
2.4.1. Space as an interpretant in Peircean triadic signs

According to Peirce, the concept of the interpretant goes beyond the notion of a conventionalized word meaning and is able to encompass extra-linguistic concepts as well as ad hoc semanticizations or effects on the addressee, comparable to the appeal function of Bühler ([1934] 1982). Spatial concepts can, for example, be associated with verbal expressions such as local deictics or local prepositions, which, unlike gestures, are not themselves spatial with respect to their external form. Since co-speech gestures in multimodal utterances are closely connected to spoken words, they can provide us with an intersubjectively observable real-time access to aspects of the respective verbal interpretants. However, co-speech gestures themselves can also manifest spatial concepts independent of the verbal level. In the following sections, we will highlight some particularly salient areas as examples.

2.4.2. Forms of gesturally created spaces

Cognitive spatial concepts such as that of a two-dimensional mental map from a bird's eye view can also be manifested by co-speech gestures independent of verbal meanings (see Figure 16 above). In the example (2.b) *that is the arcade*, spatiality is maximized within the triadic sign: Spatial gestures are associated with the spatial concept of a map and represent a spatial building located at Potsdamer Platz in Berlin.

In the corpus of route descriptions (Fricke 2007), which this example is taken from, a total of three different spatial forms can be observed. They can be further subclassified with respect to their temporal structure and mode of interactive creation (see Section 3). These spatial forms are screen-like (McNeill 1992), sphere-like, and map-like spaces (Fricke 2007, in press) and can be annotated with regard to the respective hand positions in the NcNeill model of gesture space extended by the third dimension (see Figure 9 above).



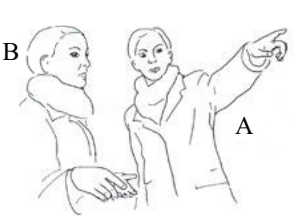
Figures 20, 21, and 22: Position in gesture space (side view): Annotation patterns of map-like, screen-like, and sphere-like spaces according to the annotation schema in Figures 9 and 10

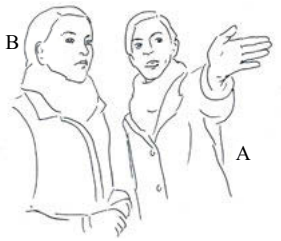
Examples of map-like representations can be found in Figures 1 and 14, for screen-like in Figures 16 and 27, and for sphere-like in Figure 23.

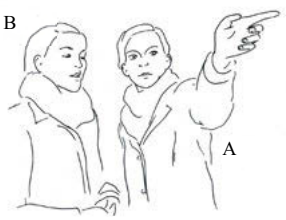
2.4.3. Semanticization of gestures

In German we can also observe a form differentiation in the pointing gestures themselves, analogous to other languages (Kendon and Versante 2003; Kendon 2004; Haviland 2003), which is also accompanied by a differentiation of the respective spatial meanings (Fricke 2010, 2012: 101–115, 2014b). The meaning of the pointing gesture with the outstretched index finger (G-form) can be paraphrased as "pointing to an object", whereas the flat lateral hand shape (PLOH) is associated with a directional meaning ("pointing in a direction"). It is particularly interesting

that based on these types of pointing gestures even a rudimentary morphological compositionality can be observed (Müller 2004). In Figure 27 the hand shape of the outstretched index finger is blended with the palm orientation of the flat lateral hand. The meaning of this blending can be paraphrased as "pointing to an object in a particular direction" (for a detailed analysis of this example, see Fricke 2007: 110; Fricke 2014b: 1624). Examples like this show not only that pointing gestures can be obligatorily integrated into a deictic utterance, but also that they have the potential of partially manifesting semantic differentiations within the local deictic system of an individual language (e. g., *dieser* 'this' vs. *hin/her* 'to/fro' in German).







Figures 23, 24, and 25: Three types of pointing gestures in German: G-form, PLOH, and blending of hand shape and palm orientation (Fricke 2007: 109, 2014b: 623)

2.4.4. Conceptual metaphors

As already mentioned above, co-speech gestures provide a possibility of visualization that offers directly observable access to the speaker's mental representations while speaking. These include conceptual metaphors (Lakoff and Johnson 1980) like the orientational and ontological metaphors to be identified in the following example from the German talk show "Friedmans Agenda" (Fricke 2015) (for an overview on metaphor and gesture, see, e. g., McNeill 1992; Müller 2008; Cienki and Müller 2008).

(4) [1][**dass der Zugang zu Eliten nicht offen iss**]$_1$ [2][und deshalb **die dann auch mehr oder weniger**]$_2$ [3][unabhängig von der **großen Masse der Bevölkerung**]$_3$ [4][**selbst reflektierend** an der Spitze stehen]$_4$

[1][that access to elites is not open]$_1$ [2][and therefore they are more or less]$_2$ [3][independent of the great mass of the population]$_3$ $_4$[self-reflecting at the top][4]

Figure 26: Spatial metaphors (gesture 3): The population is conceptualized as a separated container localized in the lower center of gesture space (LACK OF CONTROL IS DOWN) (drawing by Mathias Roloff)

Figure 27: Spatial metaphors (gesture 4): The elite is conceptualized as a container localized in the upper periphery of gesture space (CONTROL IS UP) (drawing by Mathias Roloff)

In example (4), the gesture space is divided vertically into two areas (see Figures 28 and 29): The elite is positioned at the top, while the mass of the population without access to the elite is positioned at the bottom (Fricke 2015: 156–158). This corresponds to a combination of ontological and orientational metaphors, which are structured according to basic image schemata (Lakoff and Johnson 1980: 14 ff; Müller 2008: 75):

> Orientational metaphors use basic, spatial orientations, such as up-down (HAPPY IS UP, SAD IS DOWN) or front-back (the past is behind, the future is in front); ontological metaphors substantiate nonphysical entities, that is, they transform nonphysical objects (EVENTS ARE PHYSICAL OBJECTS, ACTIONS ARE PHYSICAL OBJECTS) or containers (UNDELINEATED OBJECTS ARE CONTAINERS, NONPHYSICAL OR ABSTRACT ENTITIES ARE CONTAINERS). (Müller 2008: 74)

Example (4) illustrates the orientational metaphor CONTROL IS UP – LACK OF CONTROL IS DOWN (Lakoff and Johnson 1980: 15; Müller 2008: 75). The elite, to whom a societal control function is attributed, is located in the upper area of the gesture space. The hands are slightly curved, with the fingertips oriented upward, and model a sphere-like shape with oscillating back-and-forth movements at the wrist. At the same time, there are two "containers" (ontological metaphor) separated from each other: the spherical elite at the top and the broad masses located below a gesturally constructed and, thus, conceptualized as separated from the elite. Both palms are located at the center of the gestural space and are moved from the inside to the left and right outside. Below the palms, unconnected to the spherical container of the "elite", is the "great mass of the population". Gestural metaphors have gained particular relevance in cognitive linguistics, especially because the now extended access to cognitive concepts could effectively counter the argument of circularity in the reconstruction of cognitive concepts. Especially for metaphors with space as a source domain, the investigations of multimodal metaphors prove to be extremely fruitful.

3. Space in multimodal interaction: Collaborative creation of space

During turn-taking, various interactive spaces can be created collaboratively by speakers and their addressees (Goodwin 2000; Hausendorf, Schmitt and Kesselheim 2016; Hausendorf and Schmitt 2018; Mondada 2013; for an overview on coordinating and sharing gesture space in collaborative reasoning see Williams in press; Sweetser and Sizemore 2008; Fricke 2007 in press; Stukenbrock 2015; Stukenbrock and Dao 2019). Based on the three forms of sphere-like, map-like, and screen-like spaces introduced in Section 2, two main modes of interactive gesture space creation can be observed: 1. shared spaces and 2. separated spaces. The co-speech gestures produced by the speaker and the addressee either temporally overlap or are executed in temporal succession (Fricke 2007, 2009, in press). Table 2 summarizes the classification schema.

Table 2: Interactive gesture spaces: mode of creation and temporal structure (Fricke 2007: 272, in press)

Mode of creation	Temporal structure	
	Successive	Simultaneous
Separated	Example (7)	Example (8)
Shared	Example (6)	Example (5)

The following sections will provide examples for each item in this schema and illustrate how interactive space construction can be semanticized by conceptual metaphorical projection.

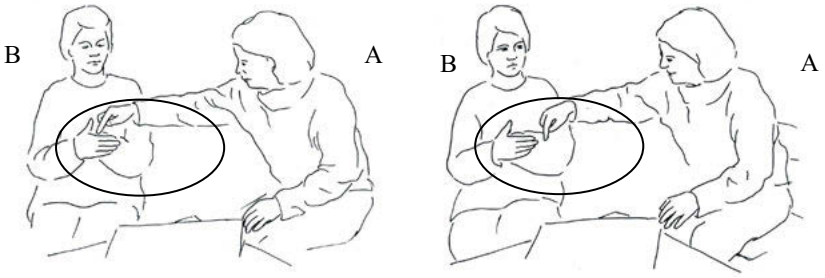
3.1. Shared Spaces

3.1.1. Shared and Simultaneous

In example (5) both communication partners are sitting in an office at the TU Berlin, trying to solve the task of reconstructing a certain route at Potsdamer Platz that A has been walking along previously. B's hands form a T, which represents a crossing. Speaker A uses her right hand to point at B's hands and, thus, to localize her as an imaginary pedestrian projected into the future. In this example, speaker and addressee share the same gesture space, which stands as a complex sign for Potsdamer Platz that is not present in the utterance situation.

(5) A: [1][nein du bist jetzt eigentlich= (.) **du gehst hier die Straße entlang** (.) dann bist du hier/ (..)] und (.) äh (.)]$_1$ [2][überquerst **hier**/ (.) die Straße/ (.) die Ampel (.) bist auf der andern Seite (..)]$_2$ [3][und **hier** überquerst du dann wieder\]$_3$

'[1][no you are now actually= (.) you go here along the street (.) then you are here/ (..)] and (.) er (.)]$_1$ [2][cross over here/ (.) the street/ (.) the traffic lights (.) you are on the other side (..)]$_2$ [3][and here you cross over again\]$_3$'



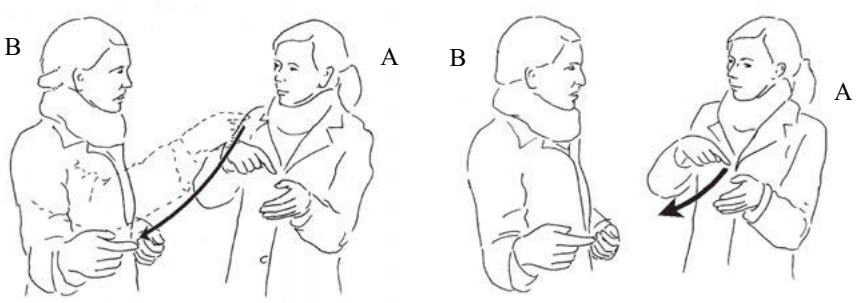
Figures 28 and 29: Shared and simultaneously created space in example (5) (Fricke 2007: 272)

3.1.2. Shared and Successive

In contrast to the previous example, the multimodal route description given in example (6) (Figures 30 and 31) takes place at Potsdamer Platz, where A and B collaboratively create an interactive space in temporal succession. With her right index finger, B draws a line that represents a path at Potsdamer Platz leading along

the back of the Stella Musical Theater. This volatile visualization of the path is gesturally maintained during the subsequent direction given by A. Since there is no temporal overlap between the gestures produced by A and B, the gesture space they create is classified as shared and successive.

(6) B: [1][also ich bin **hinter dem Theater** langgelaufen\ (..)
'So I walked along behind the theater'
A: [2][**genau du bist hinter dem Theater**]$_1$ **lang**/ …]$_2$
'Right you walked along behind the theater'



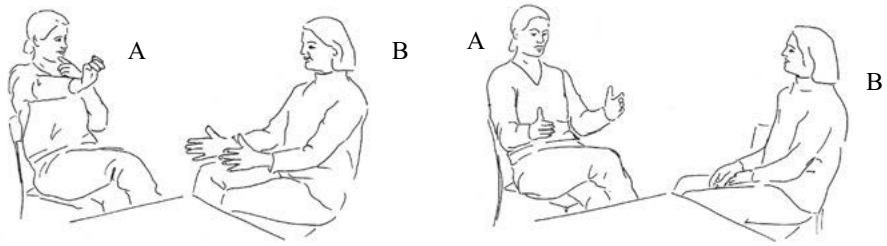
Figures 30 and 31: Shared and successively created space in example (6) (Fricke 2007: 271)

3.2. Separated Spaces

3.2.1. Separated and Successive

Analogous to shared spaces that are created successively, separated spaces with the same temporal organization are characterized by the fact that the positions of the gesturally located objects are not maintained, as illustrated by example (7). By using successive iconic gestures, A and B locate their own respective *Infobox* building in their own gesture space.

(7) B: also [(.) **hier** iss die Infobox (.)]
'so here is the Infobox'
A: [**ja (..)**]
'right'

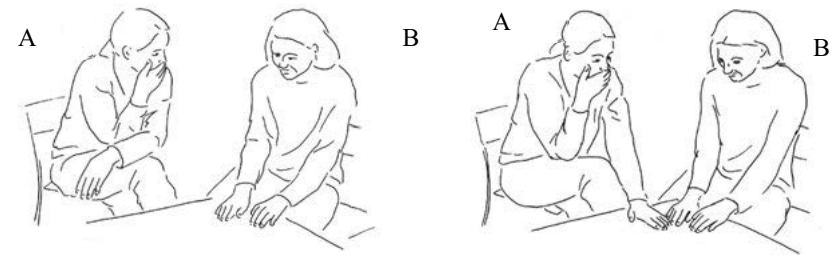


Figures 32 and 33: Separated and successively created space in example (7) (Fricke 2007: 269)

3.2.2. Separated and Simultaneous

In contrast to the example of a simultaneously created shared space (Figures 28 and 29), in this example A and B split the gesture space and create separate models of Potsdamer Platz with conflicting localizations of the same entities at the same time. B is localizing a stretch of water with her left hand and a particular building with her right hand. A disagrees with B, claiming that the spatial relation between the building and the water is in reverse to that suggested by B. Her voice is slightly raised. B reacts to A's objection and shouts "I don't understand this!".

(8) B: [1][wenn **HIER** das Gewässer iss\ (.) {(.)}
'[1][if here is the stretch of water\ (.) {(.)}'
A: {hm} (.)
B: [2][und **DA** das Haus\ (.)
'[2][and there the building\ (.)'
A: nein [3][nein **HIER** iss das Gewässer [4][und **DA** iss das Haus\ (..)
'no [3][no here is the stretch of water [4][and there is the building\ (..)'
B: das verSTEH ich nich\ $]_4]_3$ (..)$]_2]_1$
'I don't understand this\ $]_4]_3$ (..)$]_2]_1$'



Figures 34 and 35: Separated and simultaneously created space in example (8) (Fricke 2007: 270)

The slight antagonism observed in this particular example is more likely to occur in separated than in shared spaces that have been created simultaneously. This correlation might be explained by a metaphorical projection that conceptualizes certain emotional states during face-to-face interaction as spatial configurations created multimodally by gestural and verbal means (Fricke in press):

> When comparing examples of shared and separated spaces that are simultaneously created, we can observe that some occurrences of separated spaces are correlating with emotional antagonism due to conflicting communicative intentions and interactional goals […], whereas shared deictic spaces […] correspond to emotional consensus and joint communicative goals. From a semiotic point of view, these kinds of spaces metaphorically stand for something else; they are interpreted as indexical signs of different emotional states. (Fricke in press)

Figure (36) shows the spectrum of gesturally created spaces between maximum emotional consensus and maximum antagonism:

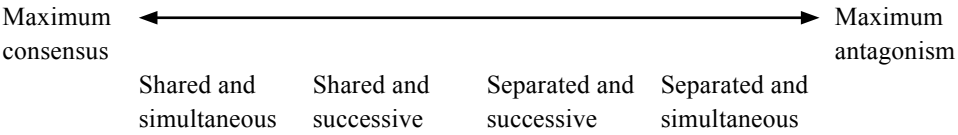


Figure 36: Forms of gesture space and their correlation to increasing emotional distance in face-to-face-interaction (Fricke in press)

As we have seen in the previous sections, a semiotic approach to the pragmatics of gestures and space does not only allow for a *tertium comparationis* with respect to the modality of the signs under investigation, but also provides us with tools for representing implicit semiotic processes like complex concatenation of Peircean sign triads, e. g., deixis at signs or metaphorically "doing" consensual (shared spaces) or agonal (separated spaces) emotion. By clearly indicating the steps and levels of analysis, this kind of approach also provides a basis for comparative analyses focusing on the concept of space even in virtual environments or augmented reality. As an outlook, the next section provides a case study of navigating Google Earth by flying a virtual airplane with a particular kind of gesture control.

4. Outlook on gesture control and virtual spaces in human-machine interaction: The example of flying a gestural airplane in Google Earth

Recent technological developments like motion-capturing and gesture control will open new perspectives for future research on both gesture as a spatio-temporal

medium and movements in space in general. How do technologies such as these shape the way in which we will interact with each other in the future? How do the gestures we use for gesture control and interaction in virtual spaces impact interpersonal communication? How does this change our fundamental concepts like that of space, for example? These questions deserve to be addressed separately in further projects and publications.

The following example of a virtual globe with gesture control being part of the aforementioned exhibition "Gestures – past, present, future" (see Fig. 37 and 38) provides a first insight into the complexity of coupling real and virtual spaces. The focus is on the following question: To what extent can gestures of interpersonal communication and related spatial concepts serve as a starting point and model for gesture control in human-machine interaction?

Figures 37 and 38: Hand representing an airplane: Virtual globe in the exhibition "Gestures – past, present, future" (Fricke 2019: 83 and 79) (photographs by Tobias Naumann)

The virtual environment of this experimental exhibit from the TU Chemnitz MANUACT project in collaboration with the Ars Electronica Futurelab (Linz) does not only contain Google Earth, but also an added virtual airplane. The spatial metaphor of an airplane flying around the earth is simultaneously embodied by the flat hand as a conventionalized gesture of everyday use standing for an airplane with the palm as the plane's underside.

Since the virtual airplane can be steered manually by the use of an infrared-based gesture control (Leap Motion), the gestural hand movements of the user serve as "intuitive" ways of connecting virtual and real environments via semiotic concatenation of signs analogous to those that can be observed in children's play: The visitor's real hand and its movements represent the virtual airplane flying around a virtual globe and heading for a particular target such as the Berlin TV tower (see Figure 39 below). Google Earth in turn represents areas of the "real" earth iconically and indexically.

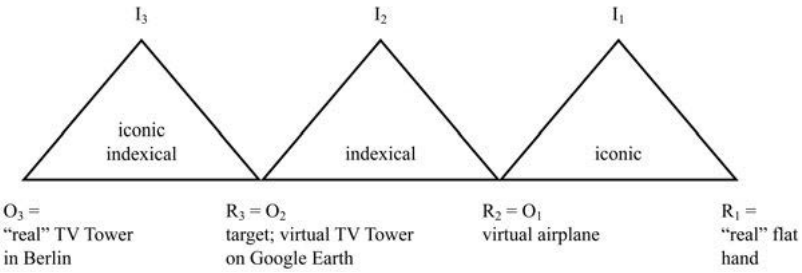


Figure 39: Real and virtual spaces as concatenation of Peircean signs: Navigating to the Berlin TV Tower via gesture control

The successful application of interpersonal gestures such as the conventionalized gesture for airplane in the particular context of an exhibition substantiates the idea that by further recourse to metaphorical concepts, digital human-machine interfaces can be made much more intuitive (Seeling et al. 2016). It, therefore, makes sense to extend the methodological spectrum of usability studies based on the findings of gesture research from a linguistic and semiotic perspective. Moreover, interpersonal gestures of everyday use including their various spatial dimensions that have been elaborated on in this article provide a promising starting point for designing artificial gestures for gesture control of robots and digital interfaces (Fricke 2019: 78–85).

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Appendix: Transcription conventions
(based on McNeill 1992 and Fricke 2007)

1. on the verbal level:
Pauses of different length: (.), (..), (3sec)
Intonation: rising /, falling \, constant –
Capital letters indicate noticeable stress: [THIS one]

2. on the gestural level:
Square brackets indicate the beginning and end of a gesture unit. They are inserted

in relation to the verbal utterance. If several gestures occur in an example sequence, they are differentiated by subscript figures: [left]$_1$ [and right]$_2$ [huge skyscrapers]$_3$

In the case of gestural overlaps of communication partners, the starting points of the respective gesture unit are marked by superscript figures, the end points by subscript figures: $^1[\ldots{}^2[\ldots]_1\ldots]_2$

Gestural embedding: $^1[\ldots{}^2[\ldots]_2\ldots]_1$

Bold letters indicate gestural strokes: [**left**]$_1$ [and **right**]$_2$ [**huge** skyscrapers]$_3$

Underlinings indicate gestural holds: [**that** is the arcade]

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13. Distance and closeness: The im/politeness of space in communication

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Abstract: Space has been integral to the way that im/politeness has been theorized, most notably in the concept of "social distance" (Brown and Levinson 1987) and also Arundale's (2006) "connection/separation face" dialectic. In this chapter, we show how previous research has positioned what we refer to as "socio-proxemic space" not merely as a theoretical concept, but as interactionally relevant in the ways that speakers understand and perform im/politeness across multiple languages. Speakers invoke the metaphor of space when talking about human relationships ("close"/"distant" relationships) and the language used within them (speaking in a "close"/"distant" way; speaking "up/down" to someone). In order to index various degrees of proximity and separation, research shows that speakers manipulate deictic expressions related not just to interpersonal distance but also to physical distance. Furthermore, speakers manipulate the spatial organization of communication in relation to im/politeness factors. When im/politeness is called for, research shows that physical proximity is modulated, along with bodily alignment and the use of large gestures that may threaten personal space. To illustrate how interaction is spatially organized in relation to im/politeness factors, we employ a case study of speakers of Catalan performing a map task in two contrasting social situations: (1) with an intimate and (2) with an unfamiliar status superior. Our analysis shows that speakers make subtle adjustments to the form of deictic gestures according to the relative socio-proxemic distance with the interlocutor. In sum, this chapter demonstrates the importance of space in the way that im/politeness has been conceptualized in im/politeness research.

Keywords: politeness, social distance, socio-proxemic space, metaphor, deixis, multimodality, gesture

1. Introduction

Im/politeness has emerged as a key concept in contemporary pragmatics from the 1970s until the present day. Early work in this area was led by philosophical work on the nature of language (Brown and Levinson 1978, 1987; Leech 1983), which focused on establishing linguistic and cultural universals that could explain assumed preferences for speakers to use indirect and linguistically more complex utterances in situations that required politeness (e. g. "Can you pass the salt?"

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rather than "Pass the salt!"). The underlying motive for politeness was identified as individual rationality and "face", which was defined as the speaker's "wants" to be unimpeded and to be approved of. While these initial studies claiming that certain aspects of politeness were universal actually tended to mostly focus on English, they were followed by a wave of studies that put forward culture-specific politeness trends that did not necessarily follow these assumed universals. For instance, Ide (1989) claimed that in Japanese culture discerning your social position is more important than saving face, whereas Wierzbicka (1985) showed that Polish speakers prefer direct speech acts over indirect formulae in many situations.

In the post-2000 era, politeness research underwent a discursive turn whereby scholars moved away from viewing politeness as being contained in particular language forms, and instead proposed that politeness resides in the contested and context-specific ways that speakers evaluate linguistic behaviour (e. g. Grainger 2011; Locher and Watts 2005; Watts 2003). The scope of research was also extended so that it included impoliteness (see Culpeper 2011) as well as signed languages (e. g. Mapson 2014). Whereas many of these earlier discursive studies tended to focus on qualitative analysis, there has recently been a shift towards using larger data sets and quantitative approaches to complement qualitative data (for an overview see Kádár 2019). Post-2000 research has also emphasised the need to differentiate theoretical conceptualizations of im/politeness (which are referred to as "Politeness$_2$") from emic culture-specific understandings of im/politeness ("Politeness$_1$") (Watts, Ide and Ehlich 1992). With the movement away from equating im/politeness with particular language forms, inevitably the scope of im/politeness has broadened to include a wide swathe of social practices used across different cultures that, broadly speaking, are applied to maintain (or damage) emotional attunement in human interaction. With this broadening of scope, some scholars have suggested moving away from the term "politeness" towards alternative terms such as "relational work" (Locher and Watts 2005).

A review of im/politeness research to date shows that the concept of space has been evoked in numerous ways by different theorists. The most well-known example is the concept of "social distance" (i. e., degrees of (un)familiarity, see below for further discussion). We also see space being evoked in concepts such as "connection face" and "separation face" offered by Arundale (2006), as well as various culturally-specific emic concepts described in different studies on cultures, including Japanese *ba* (Hanks et al. 2019; Haugh 2005) In this chapter, we adopt from Bax (2011) the term "socio-proxemic space" to refer to a variety of ways in which metaphorical and physical interpersonal distance are evoked and performed as speakers negotiate im/politeness.

In this chapter, we begin by looking in more detail at how the concept of socio-proxemic space has been treated within im/politeness theory. We then delve deeper into the metaphoric evocation of space in im/politeness discourse, before looking at how deictic expressions and nonverbal behaviors are recruited for im/

politeness related meanings. We include a case study to demonstrate via hands-on analysis how speakers modulate deictic gesture production according to the level of socio-proxemic space with the interlocutor. After looking at how the marking of socio-proxemic space is achieved via degrees of accommodation between interactants, we offer concluding remarks on the importance of the concept of space for im/politeness theory.

2. Space in im/politeness theory

The concept of space appears most prominently in im/politeness theory via the notion of "social distance". This concept originated in social psychology and the early twentieth century work of Georg Simmel (e. g. Simmel 1908), where it is taken to refer to (un)familiarity that individuals feel towards people belonging to different social groups (see Hodgetts and Stolte 2014). The term appears frequently in the academic output of the sociologist Erving Goffman (Goffman 1959, 1963), whose work is known to be a precursor to politeness theory.

The term was then imported into early renditions of politeness theory, including Brown and Levinson's (1978, 1987) universals of politeness and Leech's politeness principle (1983). Interestingly, these two theories apply the concept in rather different ways. Whereas Leech (1983) uses it to refer to both vertical distance (i. e. distance derived via power distinctions) and horizontal distance (i. e. distance via (un)familiarity, (a lack of) solidarity, etc.), Brown and Levinson (1978, 1987) use it only to refer to the latter, and refer to the vertical concept as "power". Both theories see social distance and its influence on politeness as being context-specific. Brown and Levinson (1987: 74) ilustrate this via the example of two American strangers who would not even greet each other on the street in New York, but may embrace each other if they were to meet in the Hindu Kush.

These early politeness theories claim that, all things being equal, increases in social distance lead to more polite language usage (which is thus considered more "distancing"), which these theories tend to equate with the use of more indirect language. Subsequent studies found that vertical distance (or "power") is a fairly reliable predictor of politeness-related behaviour (see Goldsmith 2007 for overview). For example, Holtgraves and Yang (1992) found that Korean and American respondents use more polite request strategies when addressing higher status interlocutors (professors). (Un)familiarity has also been shown to interact closely with politeness, although the relationship appears to be more context-specific: Holtgraves and Yang (1992) found that respondents made the most polite requests when addressing complete strangers, with politeness being measured according to the type of strategy used in the request head act and the number of adjuncts (supporting strategies) applied. In contrast, Baxter (1984) found that students used more polite strategies towards close friends when making certain highly

face-threatening requests (e. g., asking a fellow student to redo their part of a group project).

The importance of distance in im/politeness theory is further fleshed out by Arundale (2006). In this paper, Arundale is critical of early politeness theory (such as Brown and Levinson 1987) for their mechanical and individualistic perspective on language, whereby politeness is seen merely as something that is encoded by speakers and decoded by hearers, and based purely on individual "wants". Arundale thus joins other scholars in the post-2000 in calling for an approach that sees politeness as an interactional achievement, and face as something that is maintained in conjointly co-constituted relationships. Borrowing from Baxter and Montgomery's (1996) Relational Dialectics Theory, Arundale proposes that face be reimagined as an interplay between relational "connectedness" versus relational "separateness". Here, "connectedness" refers to the indexing of meanings such as interdependence, solidarity, association, congruence and so forth. "Separateness" refers to differentiation, independence, autonomy, dissociation, divergence, etc. As pointed out by Arundale (2006), this dialectic is integral to all human relationships and interaction: "there exists no relationship except as two separate or differentiated persons achieve some form of connection or unity." Arundale thus proposes that "connection face" and "separation face" can be used as culture-general frameworks to replace Brown and Levinson's notions of "positive face" and "negative face", respectively. By operationalizing "connectedness" and "separation" as the underlying abstract forces that shape human relationships, Arundale puts forward a model of im/politeness that has socio-proxemic space at its very heart.

The idea that human relationships and interaction depend on the interplay between separation and connection is consistent with various accounts from fields as diverse as social psychology and linguistic anthropology. Semin (2011) talks of interpersonal relationships in terms of the "self *versus* the other" in socially distant relationships, and the "self *and* the other" in intimate relationships, and as the strategic regulation of interpersonal proximity and distance. Meanwhile, linguistic anthropologist Gumperz (1982) proposes that speakers have access to two "codes" (be they languages, dialects, registers, etc.), which he dubs the "we" code and the "they" code respectively. Whereas the first is aligned with an intimate, personal and subjective way of speaking, the latter is tied up with formality, objectivity, distance and detachment. Although Arundale proposes "connection face" and "separation face" as culture-general etic categories, they also correspond with layman metalinguistic categories in many cultures, as discussed in Section 3.

The importance of "connection" and "separation" to the concept of im/politeness is also supported in studies that take a language evolution approach. Bax (2011) looks at how socio-proxemic space emerged in (pre)history. He proposes that one form of politeness ("separation" in Arundale's framework, "negative politeness" in Brown and Levinson) evolved from ritual submission displays, the counterpart to superiority displays, which have their origins in animal bluff dis-

plays (2011b: 260). The second form of politeness (i. e. "connection" or "positive politeness"), on the other hand, stems from the altruistic recognition of and attention to the other, which can be found in medieval solidarity displays, but which only has rare homologues in the animal kingdom. Bax (2011) posits that the marking out of socio-proxemic space changed from behavioural/performative (i. e. primitive pre-language threat displays) to codal/verbal as early humans developed the ability to "act out" aggression behaviour for symbolic purposes.

In the discussions that follow, we apply Arundale's concepts of "connection" and "separation" to a range of metapragmatic and social practices. When discussing linguistic forms that mark "connection", we refer to them as "proximal", whereas those linked with "separation" are labelled "distal". When talking about the marking of social space in a more general way, we follow Bax (2011) in using the term "socio-proxemic space".

3. Spatial metaphor in emic concepts of im/politeness

The idea that im/politeness works as a dialectic between "connection" and "separation" also finds support in the way that im/politeness is talked about in everyday language. When discussing im/politeness in everyday talk, speakers frequently make use of expressions (and may also use accompanying gestures) that show the concept of politeness to be spatially organized. This is crucial given Kádár and Haugh's (2013) observation that "we cannot understand the social practices by which politeness arises without investigating the ways in which participants generally conceptualize their own behaviour."

The terms "social distance" and "socio-proxemic space" are primarily technical (or Politeness$_2$) terms, which do not feature in everyday English discourse, at least in the way intended by im/politeness researchers. Since the start of the COVID era, "social distance" has become most readily associated with quite a different meaning: the act of "social distancing" (i. e. adopting measures to prevent the spread of contagious disease by maintaining physical distance between people and reducing close contact between people). Readers interested in how these "social distancing" measures have influenced the multimodal organization of human interaction are referred to Mondada et al. (2020).

Although the term "social distance" is not used in everyday English discourse (apart from in the pandemic-related usages mentioned above), the word "distance" and other-space related concepts do occur frequently in the everyday metalanguage that people use to talk about im/politeness-related concepts. Intimacy may be conceptualized as "closeness", and a lack of intimacy with "distance". These are not just properties of relationships, but also of behaviour and language use. Someone who is using too polite language or behaviour is said to be acting in a "distant" way, whereas someone strategically using intimate language to build a relationship is

trying to get "close". Such concepts appear to generalize across multiple languages. For instance, in Korean *kakkawun sai* refers to a 'close relationship', whereas someone who is acting aloof (i. e., being too formal or polite in a context where more friendliness is called for) is said to 'give a sense of distance' (*kelikam-ul cwu-nta*).

Social groups also have distinct space-related organizations, onto which politeness-related norms are mapped. Someone who belongs to a group is considered to be "in" it, whereas someone who is not is an "outsider". In Japanese, the concepts of *uchi* 'in group' and *soto* 'out group' are important politeness metaconcepts that determine the level of honorific speech (Yoshida and Sakurai 2005) and the use of referential terms (Horie, Shimura and Pardeshi 2006) (see Section 4.1 for discussion of these linguistic devices).

Distance and proximity in relations with status superiors and subordinates are organized metaphorically on a vertical plane. Status superiors are conceptualized as occupying "high" positions, whereas subordinates are "low". We look "up" to those who we admire and respect and look "down" on those who we don't. In Korean and Japanese, superiors are referred to as "person above" (*wi salam* and *meue-no hit*o, respectively), and honorific forms in Korean are referred to as *nophimmal* 'elevating language'.

Whereas the patterns noted in the previous two paragraphs may be fairly culture-universal, we also see evocations of spatial metaphors in conceptualizations of politeness that are more culture-specific. In Japanese, the concept of *ba* (or *basho*) 'place, space, field' has been argued to be an important part of an emic politeness perspective (Hanks et al. 2019). Haugh (2005) sees *basho* as comprising of both of the *uchi/soto* distinction noted above and also *tachiba*, which denotes one's individual position in terms of rank, circumstance or perspective. Hanks et al. (2019) propose that *ba* can itself be used theoretically as a construct for conceptualizing language usage ("*ba* theory") in terms of the mutually dependent and situated nature of linguistic practices.

The associations between im/politeness concepts and metaphorical spaces can also be observed in the ways that people gesture when they are talking about im/politeness. Brown et al. (forthcoming) found that speakers of Korean used upwards gestures when referring to honorific language, status superiors and advanced age, whereas they used the lateral gesture space (i. e. they gestured to the side) when referring to symmetrical social relationships such as those with friends. They also used deictic gestures to locate politeness-related concepts in the mind (pointing to the head), or locate impolite language as residing in poor verbal habits (pointing to the mouth). The use of gestures alongside metaphoric language to map abstract concepts in language is extremely developed, especially on the horizontal and vertical spaces (Woodin and Winter 2018), showing the importance of space in the way that we conceive of our social worlds.

Finally, another way that im/politeness may be connected to space in everyday im/politeness metalanguage and conceptualizations is via associations between

particular im/politeness-related forms and different physical or temporal spaces. Put simply, speakers may associate "being polite" with certain environments (e. g. service industry locations, high-class neighbourhoods or specific cities or countries), or time periods. In Korea and Japan, the potentially ungrammatical overuse of honorifics frequently found in service talk is referred to as *paykhwacem-sik contay* 'department store-style respect' and *kombini/famikon keigo* 'convenience store honorifics', respectively, thus associating these registers with specific locations (Brown 2015). Jay and Janschewitz (2008) found that American university students associated swearing with the dorm room or parking garage, rather than with the Dean's office. Meanwhile, Kádar and Pan (2011) demonstrate how deferential modes of politeness in China are temporally located in the historical era, whereas the usage of terms such as *tongzhi* 'comrade' are located in the post-1949 communist era. Although the use of *tongzhi* has now all but died out, it retains a strong temporal connection with the post-1949 period. Metalexes for "politeness" also have etymological connections to specific locations where politeness was performed. In European languages, there are a number of politeness lexemes that refer to the location of the "court", such as English *courteous*, German *höflich*, and Hungarian *udvaria*s. Bax (2011) notes that the proliferation of these words suggest that European politeness emerged from the refined codes of conduct developed in the twelfth-century French courts. Notably, the socio-spatial arrangement of these courts whereby physical distance and closeness were strictly routinized played a role in the politeness practices that evolved in them. Due to their deep social meanings, politeness-related lexemes have a strong potential to evoke specific spatial and temporal locations, as part of what is referred to as the chronotopic function of language.

4. Verbal marking of socio-proxemic space

Space is relevant to im/politeness not just in the metaphorical ways that people talk about "being close" and "being distant", but also in the linguistic (and nonverbal) practices that speakers employ to negotiate separation and connection during interaction. In this section, we focus on how speakers manipulate deictic forms (i. e. linguistic devices that anchor speech in time and space) in order to mark socio-proxemic space (Sections 4.1–4.4), before considering other verbal markers (Section 4.5).

4.1. Social deixis

The term "social deixis"[1] is understood here as the symbolic use of language to mark socio-proxemic space, and more specifically, to "locate" speakers, hearers and referents in terms of their relative vertical and horizontal relationships (Brown and Levinson 1987: 179–180; Fillmore 1975; Levinson 1983). Social deixis is manifested in language through various verbal markers, such as 2P (second person) pronoun distinctions, honorifics and other culture-specific politeness-related practices.

Many languages contain pronoun alternations which mark the degree of socio-proxemic space. The distinction is represented robustly across European languages with so-called T/V distinctions (Brown and Gilman 1968), such as French (*tu*/*vous*), German (*du*/*Sie*) and Turkish (*sen/siz*), but similar distinctions can be observed in many other languages including Mandarin Chinese (*ni*/*nin*) and Hindi/Urdu (*tū/āp*). Whereas the T forms are prototypically used as markers of connection, the V counterparts mark separation (see Brown and Gilman 1968; Helmbrecht 2003; House and Kádár 2020). Semin (2011) points out that the V forms also tend to be grammatically plural, thus rendering them more generalized and abstract (and therefore more distant), whereas the T forms refer to a non-plural specific "you" and are thus more personal. The marking of socio-proxemic space by 2P pronouns is also complemented by alternations in address term usage, with more formal forms being used in distant contexts and more intimate forms being used when the speech situation is proxemic.

In some languages, social deixis is marked in the lexicon or grammar in a more wide-reaching or fundamental way via what are known as "honorifics". In Japanese and Korean, speakers need to make an obligatory choice between honorific and non-honorific verbal suffixes in every single sentence depending primarily on socio-proxemic space. For instance, when addressing a status superior, Japanese speakers will add *masu* to the end of every verb (see Ide and Yoshida 1999; Shibatani 1990) and Korean speakers will add *–yo* or *–supnita* (Brown 2015), whereas these forms are omitted when addressing intimates. Thai (Shibatani 2006), Persian (Izadi 2015), Akan (Agyekum 2003), Wolof (Irvine 1992) and Indonesian regional languages lack these verbal inflections, but instead recruit a rich variety of lexical substitutions and other devices for marking socio-proxemic space.

Other languages use social deictic devices to mark socio-proxemic space along planes that differ somewhat from the notions of familiarity/solidarity and status/power. In the Australian Aboriginal language Dyirbal, speakers switch to specific variations of the language known as "mother-in-law language" and "brother-in-law

[1] Here we follow Fillmore (1975) and Levinson (1983) among others in recognizing five deictic categories: person, spatial (place), time, discourse and social. Other accounts contend, however, that there are only two basic types of deixis: participant and object (see Diessel 2012).

language" whenever so-called "taboo" kin, namely the mother-in-law or brother-in-law, is in earshot (Dixon 1989).

Rather than simply marking socio-proxemic space in a static way, speakers can actively modulate their use of social deictic forms to modulate connection and separation. In other words, speakers can shift to proximal forms in order to extend intimacy to someone, or use distal forms in order to withdraw it (Brown and Gilman 1968; Semin 2011). In addition to withdrawing intimacy, the appearance of distal forms in intimate interactions can also communicate sarcasm (Brown 2013).

4.2. Personal deixis

Personal deixis (or "person deixis") is concerned with the identification of the participants in an interaction or text, through the use of pronouns and other forms that mark first, second or third person.

The crucial point here is that speakers can shift grammatical person in order to modulate interpersonal distance. For instance, a barista may ask a lone customer "Are we having the usual?" Or a teacher might say "Ok, now let's stop the chatter and get on with our little essays" (Brown and Levinson 1987: 19). Or a Polish ticket collector might say *Nie mamy biletu?* 'We haven't got a ticket' to a passenger in the humiliating position of being on a train without a ticket (Grundy 2020). Brown and Levinson (1987: 118) refer to these as "point of view operations" that promote proximity (or "positive politeness") by including the speaker in the action.

Semin (2011) notes a wider pattern for speakers to use inclusive pronouns (i. e. *we*) rather than exclusive forms (i. e. *you* and *I*) to mark connection. In a task reported in Agnew et al. (1998), plural pronouns were found to pattern with "relationship commitment" among romantic partners, whereas the same pattern was not so strong among close friends. Meanwhile, Fitzsimons and Kay (2004) showed that use of we/us were perceived to signal increased social proximity.

4.3. Spatial deixis

Spatial deixis (or "place deixis") features the use of demonstrative forms (*here*, *there*, *this way*, *those people*, etc.) indicating locations whose reference can only be interpreted in relation to the location of the speaker.

Speakers make switches in spatial deixis in order to manipulate socio-proxemic space and mark their im/politeness-related stances. As noted by Brown and Levinson (1987: 121, 205), speakers can use the strategy of "space switch" to modulate between proximal and distal forms to mark different levels of connection. To signal increased involvement or empathy, speakers may choose a proximal demonstrative form (e. g. "*This* was a lovely party"), but may use distal forms for distancing functions in order to index negative politeness or anger/impoliteness ("Get *that* cat out of my house").

As one interesting example of how spatial deixis can be modulated for im/politeness-related stances, let us consider the case of quasi pronouns in Korean, which are formed by combinations of a demonstrative form plus a noun for denoting a human referent such as *salam* 'person' or *ay* 'kid'. When referring to a person who is present at the speaking event, the demonstrative *i* 'this' is prototypically used when referring to someone who is located in proximity to the speaker, whereas *ce* 'that … over there' is used for referring to someone who is sitting or standing further away from the speaker. However, Oh (2010) demonstrated that speakers can in fact modulate the use of these forms to mark category membership, which can be considered a metaphorical form of space. Participants who are in the same "category" as the speaker are marked with *i* 'this', whereas those who are not are marked with *ce* 'that … over there'. For instance, in a conversation about whether to turn off the air conditioning, a husband refers to his wife as *ce salam* 'that person over there' even though she is sitting right next to him. This usage marks the fact that she is in the category of "people who are cold and would like the air conditioning turned off", whereas he is not. Similarly, in a conversation between friends about who tans more easily, S uses *cyay* 'that kid over there' to refer to N since N belongs to the category of "people who tan easily", whereas she does not. Through the indexing of category membership, speakers index degrees of similarity or difference with the hearer, thus modulating socio-proxemic space.

4.4. Time deixis

Time deixis refers to the use of tense markers and adverbial expressions (*now*, *then*, *later*, *yesterday*, *tomorrow*) indicating points in time that can only be determined in relation to the time when the utterance was made.

Interpersonal distance can be modulated for im/politeness-related meanings via shifts in time deixis. Distance can be established via "point of view distancing" (Brown and Levinson 1987), which involves using expressions that decrease the sense of urgency, and therefore negate the impression that the hearer has to act straight away. For instance, when prefacing polite requests in English, speakers use forms such as "I was just wondering if …". Conversely, in intimate language and also impolite utterances, speakers may instead use expressions that increase the sense of urgency such as the use of the "vivid present" (i. e. switching to the present tense) (Brown and Levinson 1987: 120).

4.5. Other linguistic markers of socio-proxemic space

A range of other im/politeness markers are also recognizable as markers of socio-proxemic space due to their conventionalized associations with specific (im)polite or (in)formal contexts. For instance, conventionalized indirect request formulae may be associated in many languages and cultures with non-intimate con-

texts, meaning that their usage between intimates would sound "distancing". This may particularly be the case in languages such as Polish, where spontaneity and directness are valued over distance and tolerance (Wierzbicka 1985).

Socio-proxemic space may in fact be encoded in languages at a much more fundamental level. The Linguistic Category Model (LCM) advanced by Semin and Fiedler (1988, 1991, 1992) provides a taxonomy of predicate types, and looks at how the usage of these forms is linked to interpersonal distance and interpersonal rapport. The use of abstract state verbs focusses the answer on the logical object of the question (e. g. *Why do you like dogs?*), which tends to prompt general answers (e. g. *because dogs are ...*). Questions with an action verb (*Why did you buy a dog?*), on the other hand, tend to prompt self-referent answers (e. g. *because I ...*) (Semin 2011). Rubini and Kruglanski (1997) found that participants reported feeling less friendly towards their interlocutor in a condition that encouraged the use of abstract questions using state verbs. Meanwhile, Fiedler et al. (1995) reported that couples alter the abstractness of their language over time, with couples who have known each other longer using more concrete language. It therefore seems likely that separation is marked by more abstract language in general, whereas connection involves the use of language that is more precise and tangible, at least in some languages and cultures.

As shown throughout this section, languages employ various shifts of deictic forms and other devices to mark degree of "separation" and "connection" on the verbal level. The way that deictic forms in particular are intricately bound up with the marking of im/politeness shows us that notions of socio-proxemic space are not merely abstract concepts that are used to theorize im/politeness, but are properties of human relationships that are interactionally relevant to the way that im/politeness is performed.

5. Prosodic and multimodal marking of socio-proxemic space

A recent wave of studies has shown that connection and separation are also marked in acoustic and multimodal ways through the use of specific vocal patterns, bodily movements and gestures.

5.1. Prosody

Until recently it was widely assumed that high pitch had a strong association with the marking of politeness-related meanings, including socio-proxemic space. In addition to Brown and Levinson (1987: 267) making such claims based on observations on Tzeltal and Tamil, Ohala (1995) proposed that high pitch is universally associated with politeness and deference via the acoustic projection of body size, as part of a phenomenon that he dubs the "frequency code". Human listeners are

known to associate higher pitch with a smaller body size, and therefore, potentially with a more non-threatening, subservient and submissive demeanour.

A number of studies have shown support for the frequency code. Caballero et al. (2018) found that polite indirect requests in English were delivered with higher pitch than direct requests. Likewise, Orozco (2010) found that Mexican Spanish speakers used a high initial and a high final boundary tone in the production of polite requests. In Japanese, Loveday (1981) found that female speakers used higher pitch in formulaic politeness expressions.

However, a number of recent studies that have focussed specifically on politeness-related meanings associated with socio-proxemic space have produced different results. These studies show that separation is marked with lowered pitch, as well as slower and quieter speech and a more monotonous prosody (Hübscher, Borràs-Comes and Prieto 2017 for Catalan; Idemaru, Winter and Brown 2019 for Japanese and Korean; Lin, Tse and Fon 2006 for Taiwanese; see also Winter et al. 2021 for a meta-analysis). Rather than trying to appear small and submissive, speakers instead choose a vocal strategy of "prosodic mitigation" (Hübscher et al. 2017) when addressing status superiors and/or non-intimates whereby they selected a more formal, "damped down" and composed mode of delivery, which is perceived as being more distal. These studies suggest that the marking of socio-proxemic space occurs at a very fundamental level in the way that utterances are delivered.

5.2. Body Movements

Speakers can alter their body movements in various ways to negotiate socio-proxemic space. On the most basic level, socio-proxemic space can be modulated in a direct manner via the relative distances at which people sit or stand during interaction. All things being equal, speakers will sit or stand nearer to an intimate, and further away from someone who is socially distal, although the preferred distance may vary across cultures (Beaulieu 2004). In intimate interactions, speakers can lean forward or even touch the interlocutor to further decrease physical distance (Guerrero and Floyd 2006: 87–88). In intimate interactions, speakers prefer to be on the same physical plane (i. e. both sitting, both standing), whereas distal interactions may feature interactions on different planes including instances where a status superior remains seated, but does not invite a status inferior to take a seat (Andersen, Guerrero and Jones 2006; Brown and Winter 2019).

Space is also relevant in terms of the physical locations in which interactions take place, and how these locations are organized. Formal interactions tend to take place in specific locations (classrooms, churches, conference halls, etc.) which have fairly rigid seating/standing arrangements, which pattern with the prescribed roles of the interactants (Brown and Fraser 1979). Those with more dominant roles tend to be positioned in central locations, and may have their roles indexed by artefacts such as name tags or specific modes of attire. Where there is a power difference

between speakers (or groups of speakers), interactions tend to take place on the "home territory" of the superior (i. e. the subordinate visits the office of the superior, but not the other way round) (Burgoon and Dunbar 2006). Various other bodily cues are associated with displays of connection and separation. In some cultures, iconic markers of submission such as bowing the head have become conventionalized markers of socio-proxemic space and take on meanings very similar to the use of distal address forms or honorifics. Other conventionalized markers of socio-proxemic space include the use of two-handed gestures for giving and receiving objects in many East Asian cultures (Brown and Winter 2019; Dennison and Bergen 2010). In Japanese, frequent head nodding (as well as response tokens) are used to mark embodied attention, which is particularly important when interacting with a superior (Kita and Essegbey 2001). In sign languages, various body movements are used for politeness. Mapson (2014) found that users of British Sign Language employed raised eyebrows, tight lips, grimaces, tilts of the head (or head and upper body) to the side and a "polite duck" (lowering the head while hunching the shoulders) when performing sensitive speech acts (see Wilcox et al. this volume).

In socially proximal interactions, speakers use frequent facial and bodily cues that are associated with engagement, animacy and playfulness. Speakers use higher rates of adaptors (i. e. touching their own bodies), haptic behaviours (i. e. touching the interlocutor), and facial and body cues (Brown and Winter 2019; Hübscher et al. forthcoming). Socio-proxemic space is thus marked in a way that is fundamentally multimodal.

5.3. Gesture

Socio-proxemic space may also be communicated via the way that manual gestures are delivered, although this area has not been widely explored as yet. A small number of studies mention that gestures are performed less frequently in distal contexts (Brown and Winter 2019; Burgoon and Dunbar 2006), or that certain deictic gestures are avoided due to culture-specific taboos. For instance, speakers in Ghana may avoid pointing with the left hand (Kita and Essegbey 2001), whereas in Yoruba, index finger pointing towards a referent who is older may be impolite, although open-hand pointing is acceptable (Orie 2009). In the first detailed quantitative and qualitative analysis of how gestures differ according to socio-proxemic space, Brown et al. (forthcoming) found that in both Catalan and Korean speakers use fewer large gestures when interacting with a distal social superior, although only Korean speakers reduced the overall number of gestures. They also supress the coding of manner (i. e., the type of motion, such as sliding, bouncing, rolling) and use fewer character-oriented gestures (gestures where the speaker's hands become the hands of the character in the narration, and the speaker's body becomes the character's body). In sum, a more curtailed delivery of gesture characterizes the marking of distal social meanings.

6. Case study: Gesture usage and socio-proxemic space

As noted above, a couple of previous studies have shown that the modulations of deictic gestures can become markers of socio-proxemic space (Kita and Essegbey 2001; Orie 2009). However, only one study so far has investigated both quantitatively and qualitatively (and in a context that was controlled for politeness across different speakers) the way that gestural behaviour is involved in marking socio-proxemic space across several dimensions, including gesture frequency, size and form (Brown et al. forthcoming).

Brown et al. (forthcoming), showed that with an increase in socio-proxemic space, speakers of both Korean and Catalan curtail their gestures when retelling a cartoon to an unknown interlocutor. In this case study, we would like to further investigate how variation in gesture becomes a resource for communicating socio-proxemic space. We use data from Catalan that was collected as part of the same project as Brown et al. (forthcoming), but this time focus on a different task. Specifically, we look at how four of our participants performed a map task (i. e., a route direction interactional task) depending on whether they were interacting with a proximal or with a distal interlocutor (HRC Map Task, Human Communication Research Centre, 2007). The inclusion of the case study is designed to illustrate the quantitative and qualitative ways that gesture can be analyzed in relation to socio-proxemic space and politeness.

6.1. Background of the data

Fourteen main participants took part in two data collection sessions: one with their friend (socially proximal) and one with a status superior (socially distal). The main participants were responsible for bringing a friend of similar age and the same gender to the recording session. All the main participants and their friends were in their early twenties in the friend interaction, whereas the status superior was 64 years old. All participants were Catalan-dominant bilingual speakers of Catalan and Spanish living in and around Barcelona. The two different sessions took place on different days within a four-day period, with the order being counterbalanced. Each session involved four interactional tasks: a natural conversation, a description of a "Tweety Bird" cartoon Canary Row, a map task and a role-play. For the current case study, we only focus on selective data from the map task as due to the spatial nature of the task, the map task is well suited to eliciting deictic gestures. Research indicates that gestures overall occur very frequently when communicating spatial information (e. g. Alibali et al. 2001).

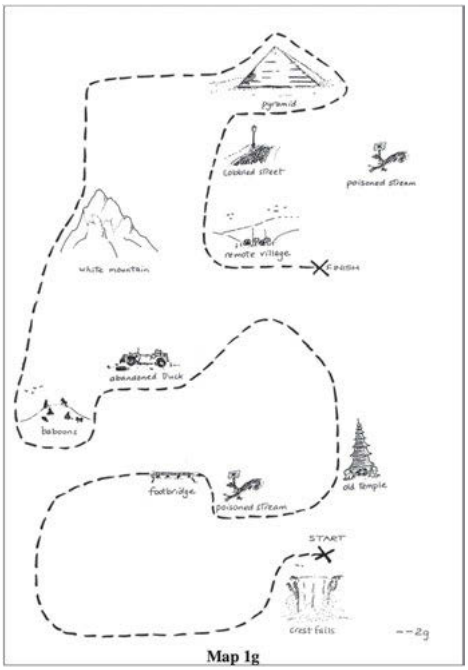
As for the procedure, the main participants (who participated in both sessions) and the interlocutor both had a map in front of them, but only the main participant had a path drawn on it (see Figure 2). The task was to explain the path as accurately as possible to the interlocutor who had to draw the path on his/her map. The

interlocutors were told that there might be certain differences on their maps (i. e., a landmark which is displayed on one map might not appear on the other map, for example, the cobbled street in Figure 2). The recordings were performed in sound-proof booths and the main participant and their partner sat facing each other on chairs fixed to the ground, in order to make sure that the distance between the interlocutors in the two different conditions stayed the same.

Route direction interaction with professor

Route direction interaction with friend

Figure 1: Set-up of map task showing participant S1 with the status superior (left) and friend (right). The maps are on the clipboards held by the participants.



Map of the route giver

Map of the route receiver

Figure 2: Example of maps, HRC Map Task (Human Communication Research Centre 2007).

The interactions were coded in ELAN (2020), which is a tool for the multimodal annotation of video and audio resources. For the purpose of the present case study, the focus will only be on pointing gestures. Here we follow the definition of Kendon (2004), who treats pointing gestures as "indicating an object, a location or a direction, which is discovered by projecting a straight line from the furthest point of the body part that has been extended outward into the space that extends beyond the speaker" (2004: 200). Tracing gestures, used to draw a route directly on the map with a finger, a hand or a pen were excluded from the analysis, however all other points were included (pointing to the map, pointing in the air and also pointing a short path or in a direction very close to the map).

6.2. Analysis and results

For this case study, the data of four speakers (two female and two male participants, both in interaction with their friend and with the superior leading to a total of eight interactions) was randomly selected out of the bigger sample and analyzed quantitatively and then qualitatively.

Beginning with the quantitative analysis, Table 1 displays the raw number of deictic gestures employed in the eight interactions. In order to make sense of the number of deictic gestures employed, also the length of the individual interactions is reported.

Table 1: Raw number of deictic gestures in both conditions.

	Interaction with friend Total number of gestures/gestures per min.	**Length of the interaction (in min.)**	**Interaction with professor Total number of gestures/gestures per min.**	**Length of the interaction (in min.)**
S1 (male)	65/8.37	7min. 46 sec.	16/2	8 min.
S2 (male)	35/4.28	8min. 11sec.	34/5.35	6min. 21 sec.
S3 (female)	76/6.44	11min. 48 sec.	56/9.39	5 min. 58 sec.
S4 (female)	59/6.61	8min. 55 sec.	23/5.25	4 min. 23 sec.

In terms of quantity of deictic gestures, no clear picture emerges regarding the use of dectic gestures depending on socio-proxemic space (distal vs. proximal), since two speakers (S1 and S4) use more deictic gestures per minute when interacting with their friend, whereas the other two main participants (S2 and S3) behave the opposite way. S1 uses deictic gestures four times as frequently with the friend (8.37 per minute, compared with 2 per minute), with smaller distinctions seen for the other participants. At least for these four participants, we do not see any support for the finding in previous research that speakers reduce gesture frequency in distal interactions (see Section 5.3). However, the results are consistent with Brown et al. (forthcoming), who found that Catalan speakers did not consistently modulate gesture frequency according to socio-proxemic space, different to Korean speakers in the same study.

In line with previous studies, we also conducted a qualitative analysis to see whether participants altered the form of gestures as part of the way that they multimodally marked socio-proxemic space. In this analysis, we looked for instances where identical (or near identical) verbal content occurred for multiple speakers across both of the interactions (i. e., with the friend and with the superior). Tables 2–4 display three such instances for the verbal content of "going up" (Table 2), "going below something" (Table 3) and "going to the right" (Table 4).

Looking at Table 2 ("going up"), while most of the speakers use a clear finger point to signal the destination, speaker 1 uses the whole hand (a so-called open hand palm vertical) to point to the direction in interaction with the professor. The hand shape is relevant here given that previous studies have claimed that open-hand pointing is considered more polite in some cultures (see Section 5.3). Furthermore, in these qualitative examples there is a tendency for the speakers to produce larger gestures on the vertical plane with the friend. Although this result is attested across all four participants, it is particularly clear for speakers 1 and 3. It is also notable that individual differences in overall gesture space mean that the "smaller" gestures used with the superior by some participants actually extend higher than the "larger" gestures used with the friend by other participants. For instance, although participant 3 (who tends to use a large gesture space) reduces the height of her gesture with the professor, it is still higher than any of the other gestures with the friend.

Table 2: "Going up"

Interaction with friend			
			
1f- *va cap a dall* 'it goes up'	2f- *fins a dalt* 'to the top'	3f- *per dalt* 'above'	4f- *de dalt* 'from above'
Interaction with superior			
			
1p- *en línea recta cap a dalt* 'in a straight line upwards'	2p- *lloc d'incendí a dalt* 'fire place above'	3p- *quan has arribat com a dalt* 'when you arrived above'	4p- *com si anessis cap a dalt* 'as if you were going up'

Similar tendencies can be found in Table 3 ("go below something"). In general, the gestures, are produced lower in the gesture space with the superior. But additionally, gestures in distal interactions are signaled more closely to the map, again with certain individual differences leading this trend (e. g. participant 3 in the friend interaction). These results also match previous findings in narrative data, where speakers in socially distant situations used overall smaller gestures both on the vertical and the lateral plane (Brown et al. forthcoming).

Table 3: Go below something

Interaction with friend			
			
1f- *és a sota del llac* 'it's below the lake'	2f- *després has de passar per sota* 'then you have to go under'	3f- *passes per sota* 'you pass below'	4f- *passa per sota* 'you pass below'
Interaction with superior			
			
1p- *fins a sota* 'down'	2p- *pasa per sota* 'you pass below'	3p- *està per sota de la granga* 'It is below the barn'	4p- *passas per sota* 'you go below'

The tendency for using gestures that are lower in the gesture space with the superior extends to those for "going to the right" (Table 4). While three of the participants show consistent gesture form across the two conditions, participant 3 uses an open hand palm vertical when interacting with the friend, but points with the thumb when giving route directions to the superior. Overall, there is substantial individual variation across the speakers in terms of the hand shapes that they use, including open hand palm vertical, point with the thumb is employed or an open hand palm away.

Table 4: Going to the right

Interaction with friend			
			
1f- *horizontal cap a la dreta* ‘horizontally to the right’	2f- *a la teva dreta* ‘at your right’	3f- *per la dreta ‘o*n the right’	4f- *tires a la dreta* ‘you turn right’
Interaction with superior			
			
1p- *cap a la dreta* ‘to the right’	2p- *cap a la dreta* ‘to the right’	3p- *pases per la dreta del monastir* ‘you pass to the right of the monastery’	4p- *cap a la dreta* ‘to the right’

To sum up, the results here are consistent overall with Brown et al. (forthcoming) in that Catalan participants vary the size of their gestures depending on socio-proxemic space, even if overall gesture frequency does not change. Across all three gesture types analyzed (“going up”, “going below something”, “going to the right” (Table 4), deictic gestures are produced in a more constrained way by using a smaller expansion and producing them closer to the map. As the first study which analyses the variety of pointing gesture forms in Catalan, besides the size and location of the deictic gestures, no clear picture emerged regarding how the form of these gestures may be modulated in relation to socio-proxemic space. We saw isolated examples of speakers using open hand points with the superior (Table 2, Speaker 1), which are known to be more polite in some cultures (see Section 5.3), but also examples of speakers using these gestures with the friend (Table 4,

Speaker 4). Although previous studies for a variety of different languages show that deictic gestures can be articulated with the head, lips, eyes or other body parts (see e. g. Mechraoui and Noor 2017), all pointing gestures in our data were performed with the hands.

Our results suggest that there is considerable individual variability in how speakers use deictic gestures, and how they modulate the form of gesture in relation to socio-proxemic space. When looking at speakers 1 and 3 in Tables 2 and 4, it can be seen that both of them use open palm hand vertical with a friend and also with the superior, or similarly speaker 4 varies quite a bit in the exact form of the gesture (point with index, point with thumb) when giving route directions to the superior. We also see that whereas speakers consistently reduce the vertical size of their gestures with the superior, exactly what counts as a "large" gesture displays considerable individual variability. By expanding the analysis to a larger number of participants (including the Korean corpus collected with the same methodology), going forward we plan to investigate further how these individual differences pan out across different speakers and cultures.

7. Accommodation

The previous sections 3–6 have largely conceived of the realization of im/politeness in terms of the use of cues that work to signal socio-proxemic space. However, if we are to adopt a dyadic and interactional perspective on im/politeness as espoused by Arundale (2006), we also have to consider how speakers work together to "converge" or "diverge" during interaction. As speakers interact, their behaviour may become more similar over time – their ways of talking, the sound of the voice and the use of gestures becomes more similar, and they may copy verbal content and gestures produced by the other. Or, in some cases, this might not happen. This phenomenon we refer to here as "accommodation" (Coupland, Coupland and Giles 1991; Giles 1979), although the same phenomenon (or similar ones) are also referred to in the literature by terms such as "interpersonal synchrony", "alignment", "behaviour matching" and "mimicry" (see Rasenberg, Özyürek and Dingemanse 2020).

Theories of accommodation, notably "Communication Accommodation Theory" (Coupland, Coupland and Giles 1991; Giles 1979) posit that convergence or divergence are dynamic processes that work to decrease or increase socio-proxemic space. Convergence promotes social integration, whereas divergence creates distance. These underlying meanings related to connection and separation merge into perceptions of im/politeness. During compliant interaction, repeating the words of the other parts at the same relative pitch is perceived as supportive (Couper-Kuhlen 1996), although absolute pitch-matching (or "hyper-accommodation") runs the risk of being perceived negatively as mimicry (Culpeper, Bousfield, and Wichmann 2003: 1574). On the other hand, failure to accommodate can become a feature of

non-compliant behaviour (Culpeper et al. 2003: 1574). In support of this, Ofuka et al. (2000) observed via a perception experiment that listeners gave higher politeness ratings to voices that had a similar speech rate to their own. Meanwhile, LIN showed that shorter word duration is found in speech between strangers in Taiwan Mandarin.

Speakers may also accommodate to each other's bodily movements and gesture style in order to modulate interpersonal distance. Overall body movements become less similar during arguments and game-like competition (Paxton and Dale 2013), but more similar during friendly conversations (Tschacher, Rees and Ramseyer 2014). Paxton et al. (2018) found that Korean speakers synchronized their bodily movements when interacting with a friend, but not when interacting with an unknown status superior. In this way, verbal and multimodal markers of space do not just work as absolute markers of specific degrees of "connection" or "separation", but also work via convergence and divergence to produce im/politeness-related meanings.

8. Conclusion

In this chapter, we have shown that the notion of space is integral not only to the way that im/politeness has been theorized in previous studies, but moreover to the way that im/politeness is understood and performed by actual language users. Although notions such as "social distance" or "socio-proxemic space" represent technical etic terminologies, we have shown that language users actively evoke space as a way of understanding the way that they construct and navigate social relationships during human interaction. Furthermore, speakers manipulate various aspects of language in order to modulate degrees of connection and separation during interaction including, crucially, the use of deictic language. At the same time, speakers modulate prosody and the frequency and size of their gestures and also manipulate physical space in order to promote closeness, or maintain distance. Through an in-depth case study of four Catalan speakers, we observed how they used smaller deictic gestures that were located closer to the map when interacting with a distal superior, whereas they used a larger gestures space with a proximal friend. The data showed considerable individual differences, however, which hint at the instability of gesture size as a marker of socio-proxemic space.

This chapter has been innovative in the way that it has attempted to draw together various aspects of space into one paper, including etic and emic perspectives, metaphor, deictic language, prosody, nonverbal behaviour and gesture. We believe that understanding im/politeness in terms of socio-proxemic space has special potential to explicate the multimodal way that im/politeness is encoded across verbal, prosodic and gestural modalities, which can be theorized as strategies for the creation of connection or separation. These underlying meanings related to proximity and distance take on more concrete im/politeness-related meanings

when used in different contexts. Although previous studies have tended to focus on politeness rather than impoliteness, verbal, prosodic and gestural markers of socio-proxemic space also play important roles in the expression of impoliteness, such as the strategic use of forms that are either too distal or too proxemic. Going forward, research will need to fully embrace impoliteness as a context where socio-proxemic distance is negotiated, or flaunted outright. In addition, im/politeness research should give more attention to sign languages, which are also known to employ various nonverbal markings of socio-proxemic space (Mapson 2014; see also Wilcox et al. this volume). If we accept Arundale's (2006) proposal that the dialectic between "connection" and "separation" is key to human relationships and interactions, then this promises to be a highly fruitful way of approaching im/politeness across various layers of interactions, and across diverse cultures and signed/spoken languages.

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III. Communicative resources of constructed spaces

14. Architecture-for-interaction: Built, designed and furnished space for communicative purposes

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Abstract: Doing space does not require a *creatio ex nihilo* but depends instead on manifold resources. Among these is the architecture of built, designed and furnished space. Semiotic resources such as natural language, and embodied resources such as sensory perception, body movement and spatial cognition, have received much attention in recent years. In contrast, architecture has long been neglected when it is the interactive achievement of space that is placed on the agenda. We shall begin our contribution by roughly sketching out how space and spatiality have been treated in linguistic pragmatics, and how conversation analysis and related research has coined the term "interactional space" to account for the many ways in which spatial aspects of the environment can become interactively relevant. Contrary to the notion of space as achievement, the role of space as a resource in social interaction has only recently been rediscovered. We shall, therefore, take up the concept of "architecture-for-interaction" to account for what architecture affords social interaction. It will be shown that architecture-for-interaction manifests itself in a wide range of usability cues that are systematically taken up within social interaction.

To illustrate these recent developments in the field, we shall take a closer look at the heavily structured social settings of institutionalized communication, presenting the case study of lectures given in a purpose-built lecture hall. The lecture hall was selected as a prototypical example of architecture-for-interaction that affords the particular social practice of academic teaching.

Keywords: architecture, interaction, lecture hall, co-orientation, co-ordination, co-operation, usability cues

1. Introduction: Interactional space as starting point

According to Goffman's pioneering work in the sociology of face-to-face encounters, social interaction depends on the participants' "copresence", which arises from their mutual perception of being perceived by each other (Goffman 1963). As a consequence, interaction does not occur without a mutually shared local anchoring (what is shared being the participants' specific "here") and it typically emerges within a spatially distinct environment. Accordingly, there is an "interactional space" that naturally belongs to what can be accessed via participants' sensory

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perception and motor skills (i. e. those things that are visible, audible, tangible, or that can be entered, sat upon or passed through: see Section 3, below) and which is made use of by participants for different social occasions: a room with a table at which you sit together with others, a cabin where you reside among strangers during a journey, a corridor in a building or a pedestrian area in a shopping mall where you encounter passers-by and shoppers, a bar in a pub where you find yourself having a drink side-by-side with other guests and opposite the barkeeper, a railway-station counter where you queue to buy a ticket when it is your turn, a church interior that you enter to join a congregation or a lecture hall where you sit among the rising rows of seating and listen to the lecturer. Interaction typically occurs within such spatial arrangements that constitute the built, designed and furnished settings, places and localities of our everyday social ecology. This becomes especially distinctive in the realm of "focused interaction" since it often implies an exchange of words (as already illustrated in some of our examples). Interactional spaces accordingly emerge as spaces for speaking and spaces for listening, and as such are closely connected with social routines and practices. Positioning yourself spatially might already constitute positioning yourself socially. Take, for instance, the courtroom with its manifold different spatial and social areas and seating positions. It is not by chance that institutionalized communication in modern society (for instance, in the sphere of law, politics, science, the arts or economics) has developed distinct cultures of architectures-for-interaction. The material(ized) elements of functional buildings (such as courthouses, parliament buildings, universities, art galleries or factories) can, therefore, be seen as the sediment of social structuring (see Section 4.1.2, below).

Within linguistics, the spatial anchoring of social interaction has traditionally been a matter for pragmatics, due to which space is known as a crucial parameter of the so-called speech situation. In his classical and still regularly cited approach, Karl Bühler introduced a speaker-centered "origo" consisting of personal, temporal and spatial markers (*I*, *now*, *here*) that define a (mostly taken-for-granted) "deictic domain" ("Zeigfeld") as a basic common ground for understanding (Bühler 1982). And up to now, there persists the basic endeavor to sort out the implications of such a "deictic domain" for linguistic theories of situational anchoring through language (cf. Auer and Stukenbrock, this volume). Some of the assumptions of the classical approach have, moreover, increasingly turned out to be misleading. Take, for instance, the "ego-centrism" (Hanks 1990) of the origo-centered approach, due to which the speech situation has been unduly narrowed in favor of a merely cognitive point of view, unable to account for social interaction as a genuine social reality (in Goffman's sense, see above). To make matters worse, there has been a tendency in linguistic pragmatics to take the speech situation as a naturally given entity. As such it could be tacked on to the utterance where required – for instance, to account for the obvious open slots of deictic expressions – without being studied in itself. For a long time, the situation has been largely neglected in linguistics

(as Goffman put it at an early stage in a critical essay: "The Neglected Situation", Goffman 1964); likewise, the spatial environment as an essential part of the situation.

However, one might view these shortcomings from a different angle; the still ongoing discussions on deixis leave no doubt that interactional space is anything but trivial. To take up one of the joint rectifications of recent conversation-analysis oriented approaches to deixis (Hausendorf 2003), space must no longer be considered a given physical datum independent of social interaction in its fully fledged, multimodal manifestations, i. e. independent of what is spoken and heard, touched, handled, seized or in whatever way moved and mutually perceived by the participants. Instead, space should be accounted for as an interactional achievement emerging within and through a multimodal social situation. It is something that has to be "done" by the participants ("doing space": cf. Jucker et al. 2018 with respect to the prevalent concept of "doing"). The notion of interactional space that has arisen in a number of empirical case studies over the last decade or so (Mondada 2007) indicates renewed interest in the pragmatics of the spatial environment, in which space is shifting from *explanans* to *explanandum*. In spite of this analytical shift, one should not disregard the fact that conversation analysis has itself long neglected the spatial dimension of social interaction. An impression of its neglect of space can be sufficiently gained by observing the way in which time and temporality have been dealt with and elaborated upon empirically, methodically and theoretically. There can be no doubt that time and temporality have been the predominant concern in conversation analysis. In terms of sequentiality, time-in-interaction has become one of the key concepts of this research tradition (Deppermann and Streeck 2018). There are manifold reasons for this mismatch between the attention given to space and time, among which methodological and technological considerations are of particular importance. Ever since early conversation-analysis research discovered the analytic potential of recording and transcribing spoken discourse (telephone conversations, strictly speaking), which was of great value in reconstructing the details of "turn-taking" (an outstanding manifestation of verbal sequentiality), the visual manifestations of face-to-face interaction that had been previously studied on the basis of video recordings within so-called context analysis (Kendon 1990) have to some extent been lost from view. It is not by chance that the analytical preference for verbal data brought with it a long-lasting data preference for audio rather than video recordings – a trend that has only recently been reversed. There has therefore been a great deal of video-based research dating back to the 1960s and 70s that has been rediscovered in recent studies (Hausendorf 2013). It comprises not only studies in the realm of the then-novel realm of "non-verbal communication" (a term now adequately replaced by "multimodality") such as Birdwhistell ([1970] 1990). There are also studies that explicitly highlighted the role of space in social interaction (cf. Goodwin 1981 with respect to gaze; Heath and Hindmarsh 2002 as a survey; Kendon 1990; Scheflen and Ashcraft 1976 and

Hall 1969; the title of the last, *The Hidden Dimension*, was translated into German as *Die Sprache des Raumes*, i. e. 'the language of space'). Hand in hand with the video-based interest in visual manifestations of face-to-face interaction, built, designed and furnished space has also attracted attention (for instance, as "behavior setting", Barker 1968, or as "affordances", Gibson 1979; cf. also Mehrabian 1976). But it has typically been treated as something objectively given in the "environment" or "ecology", a variable external to communication. It is astonishing that these research traditions could have fallen so comprehensively into oblivion, while language-oriented conversation analysis began to forge ahead so successfully. As a result, there has been a tendency to define and to study social interaction more and more in terms of its verbal manifestations (as "conversation" or as "talk-in-interaction"), and for space to become a situational aspect to be added on if necessary. Space could only prove its empirical relevance if, and to the extent by which, it could make itself apparent in transcript, i. e. if it had been verbalized, or by whatever verbal means highlighted as something relevant (Schegloff 1972; De Stefani et al. 2012). Given the recent boost of video-based data collection and a renewed interest in multimodality, there can be no doubt that a language-bound point of view of interaction is irreversibly outdated. The notion of "interactional space", therefore, indicates not only a conceptual shift (see above) but also a new turn to the social situation in its complex spatial dimensions. In what follows, we shall begin with current trends in linguistic research on interactional spaces (Section 2), before turning to architecture as a powerful resource for interaction and introducing the concept of "architecture-for-interaction" (Section 3). The latter will be illustrated by means of a case study that provides empirical evidence from the lecture hall as the "natural home" of lecturing (Section 4). To conclude the chapter, we shall present a short overview of future research perspectives relating to the relevance of architecture in view of online "telecopresent" interaction (Section 5).

2. Current trends in linguistic research on interactional spaces

The resurgence of interest in space within pragmatics, conversation analysis and related approaches to social interaction cannot be isolated from the development and spread of digital video-recording technologies. These have changed the practices of data collection, preparation and processing dramatically within linguistics in the past twenty years and will continue to shape these practices in the future (Emmison and Smith 2000; Schmitt 2006; Schmitt 2016; Schmitt and Hausendorf 2016; Hausendorf and Schmitt 2016b). Differing from recent approaches within the sociology of space and architecture that participated in the spatial turn in the humanities and social and cultural sciences, and which proposed a number of theoretical reorientations towards space and spatiality (Fischer and Delitz 2009; Steets 2010), the renewed interest in space within social-interaction research was in fact

empirically founded. Inasmuch as video recordings and the documents derived from them (for instance, video stills) have complemented and replaced the verbal transcript as the key point of reference for analysis (Mondada 2016), spatial manifestations of the social situation have become obvious – and suggested themselves to analysis. Recent research has accepted this challenge in various ways, as we shall outline in the following (cf. also the reviews given by Mondada 2013; De Stefani et al. 2012; Schmitt 2013). In doing so, we shall focus on the different ways in which space and spatiality have been conceptualized and treated analytically. Up to now, there has been a predominance of studies that take up the previously mentioned tradition of early video analysis (especially that of context analysis, see above) and that try to account for space and spatiality as interactive achievements in the conversation-analytic sense. These studies generally struggle hard to reject the idea that spatial factors might determine what is taking place interactively (see Section 2.1, below). Besides these, there are more sporadic attempts to approach the independent communicative impact of built, designed and furnished spaces. According to this approach, space is not only an achievement, but also a resource for interaction that has to be accounted for in itself (see Section 2.2, below). It is this line of thinking that our concept of architecture-for-interaction will tie in with (see Section 3, below).

2.1. Space as achievement

The notion of interactional space that is indicative of the renewed interest in spatial parameters within conversation analysis and related social-interaction research is closely connected with the basic condition of copresence (in Goffman's sense). Whenever two or more persons happen to meet, they do so by establishing some common ground of joint attention (Enfield 2008) to ensure that they can rely on at least the minimum required level of shared sensual perception. In many cases, this happens without their awareness, not to mention explicit verbalization. Instead, it apparently emerges, in the absence of any particular effort, from the participants' spatial positionings. By realizing a certain formation, the participants find themselves within a spatial configuration of copresence that depends on co-orientation and co-ordination within a common perceptual field. The most prominent, and indeed canonical configuration of copresence, constituting a prototype of such configurations, is known under the attribute "face-to-face": participants turn the front of their bodies, and thus mutually orient their sensory organs, towards each other. As is well-known, "face-to-face" has evolved into the phrase "face-to-face interaction" and has in this form served as a label to refer to the entire subject of social-interaction research. Taken literally, it merely refers to a certain, typically dyadic configuration also described as "F-formation" (Kendon 1990). As such it is neither exclusive nor static. Depending on the interactive requirements of the social practice in play (including the number of those present), participants can change

their configurations of copresence at any time and can dynamically and repeatedly establish new formations: side-by-side, face-to-back, one-to-many and many-to-many, circular and semicircular, inclusive and exclusive, stationary and mobile, to name but a few possible constellations. "Face-to-face" is therefore not always simply "face-to-face", but rather indicates a prototypical bodily configuration of copresence, a prototypical embodiment of mutual perception and its accountability through gaze, facial expression, proximity, posture, gesture and/or the trajectory of movements. That being said, it has become clear that bodily configurations of copresence necessarily both imply and produce space: namely in terms of the common space of the participants' perception, movement and action. Altogether, they contribute to what constitutes interactional space as an interactive achievement. In order to emphasize that interactional space does not simply exist when two or more persons convene, it has been suggested that a genuine interactive task referring to the problem of space must be assumed, a task of "situational anchoring" (Hausendorf 2013, 2015). This operationalizes the abstract claim of interactively achieved space by means of the idea that participants, through interactive tasks (such as opening and closing, turn-taking, framing and positioning), have to make sure whether, and in what way, their being copresent also affects their common access to spatial aspects of the situation. In short, they have to agree on a common "here" of sensual perception, bodily movement and social action. Due to the threefold distinction of perception, movement and action (Kruse and Graumann 1978), the general task of situational anchoring consists of three subtasks, introduced as co-orientation (Kendon 1990), co-ordination (Schmitt 2007) and co-operation. In a basic sense, co-orientation, co-ordination and co-operation need be done at each and every encounter, though these sub-tasks are generally accomplished very inconspicuously and without attracting attention. As has already been pointed out, situational anchoring typically draws on the human body as a highly developed, mobile and intelligent sensor, and it manifests itself in corresponding bodily activities (such as gazing, pointing, moving, approaching and distancing). This holds especially true for co-orientation and co-ordination, while co-operation, in terms of social practices of exchange, often involves speaking and listening (see Section 2.2, below, with regard to the different resources that situational anchoring might draw upon).

When we speak about co-orientation, co-ordination and co-operation, we are dealing with genuine *social* events: The relevant aspects of "here" that we have in mind need be related to joint sensual perceptions, fine-tuned bodily movements and concerted social actions that in each case require at least two participants, i. e. ego and alter, reciprocally referring to one another. This is the reason for the "co-" prefixed to each subtask; it expresses the social nature of interactional space as a jointly produced outcome of co-orientation, co-ordination and co-operation. As such it is not physically given but socially co-constructed, and it does not refer to a single participant's cognitive constructs but to a communicative construct at the surface level of discourse.

Compared to other interactive tasks (such as, for instance, turn taking), situational anchoring has long been somewhat neglected in language-biased social-interaction research. This does not come as a surprise when one bears in mind that situational anchoring often does not cross the threshold of verbalization. Of course, multimodal (for a long time misleadingly referred to as "nonverbal") manifestations of interactive space at the surface level of discourse might not be noticeable in a verbal transcript, and it took a shift in the methodologies of data collection and preparation to overcome this barrier (see Section 1, above). In retrospect, there has been yet another solution to this problem, namely to turn to empirical cases in which the situational anchoring was no longer done inconspicuously in the interactive background, but was a striking part of the foregrounded social practice itself. Take, for instance, social practices such as giving route directions or practical instructions, which naturally require that the participants explicitly assure one another that they can count on a common "here" of co-orientation, co-ordination and co-operation. In such cases, situational anchoring can no longer do without verbal means, so that its manifestations become audible and visible – and apparent. The same holds when we think of mobile rather than stationary encounters, or hands-on activities within practical settings (such as workplaces) rather than purely verbal exchange systems (such as telephone conversation). Generally speaking, it was due to the study of social practices that imply a special need and a corresponding effort concerning sensorimotor activities that problems of co-orientation and co-ordination could come to the fore. Up to now, a lot of empirical research on the achievement of interactional space draws upon data from mobile and practical settings (cf. Nevile et al. 2014; Haddington et al. 2013; McIlvenny et al. 2009, for instance). In keeping with this research trend, driving lessons (of all things) have attracted much interest in recent research (cf. De Stefani and Gazin 2014; Rauniomaa et al. 2018).

Fine-grained empirical studies on different social practices have provided rich evidence of the many ways in which situational anchoring is performed bodily (often prior to or without speaking and listening). The existence of and ways in which local gestural and verbal deixis and explicit spatial reference are intimately connected with participants' embodied configurations of copresence has been shown in various studies (cf. Streeck et al. 2011, for instance). Spatial reference itself has been shown to be an embodied social practice due to which spatial aspects of one's surroundings become communicatively relevant parameters. To summarize this line of research, it is the complex interplay of bodily and verbal means of co-orientation, co-ordination and co-operation that has come to the fore. The human body itself and natural language used in connection with it ("intercorporeality": Meyer et al. 2017) have proven to serve as powerful resources for situational anchoring. It should not take us by surprise that pointing and deixis have also once again attracted attention in this context (cf. Stukenbrock 2014), since the verbal deictic system can be systematically related to interactional space.

Embodied configurations of copresence provide the basic resources that deictic expressions can make use of and contribute to establishing.

Focusing on language and the human body as resources for situational anchoring, space has proven to be an interactive achievement. What has however been overlooked until now is the role of space as a resource itself. In one sense, the notion of interactional space has in fact promoted the idea that participants create the kind of space they need, without depending on spatial prerequisites. As a candidate for such spatial prerequisites, it is architecture – in terms of built, designed and furnished space – that has been erroneously abstracted away from situational anchoring.[1] This is what we wish to highlight in the following section, while presenting an overview of what has been done with respect to space-as-resource.

2.2. Space-as-resource

It has in fact been noted that situational anchoring – the establishing of interactive spaces in many aspects of everyday life – is done within more or less (pre)structured settings (Jucker et al. 2018). A setting can be described as (pre)structured if and to the extent to which it offers a material framework for configurations of copresence, i. e. affordances for participants to arrange themselves in terms of the necessary conditions or furnishings, for instance, to sit around a table and face each other in a circular or square arrangement. The so-called "lounge" (in German, "Sitzecke": Linke 2012) is a telling case in this regard, since it shows the way in which furnishings help participants not so much to create, but rather to enable a certain interactive space, by assuming one's position and sitting down – and thereafter to suspend that space merely by standing up (Hausendorf 2012a and Hausendorf 2012b, with regard to the kind of framework classrooms and lecture halls provide; see also Section 4, below). Modern societies' organizations tend to manifest themselves in strongly prestructured settings that offer a rich framework of built and designed space, including not only selected furnishings, but also entire architectures for special purposes (namely in terms of complex buildings: see Section 1, above). It goes almost without saying that they allow for rather ambitious and sophisticated solutions to the participants' situational anchoring. Taking up the pioneering work of early social interaction research, Müller and Bohle (2007) have suggested a difference between spaces "which are prestructured by significant objects and those which are freely structured by participants in interaction". The "arrangement of seating and standing areas" would constitute a part of such "significant objects" (2007: 154, our translation). Disregarding the maybe misleading distinction between "free" (in the sense of free from presuppositions) and

[1] At this general level of spatial prerequisites, we subsume furniture under the notion of architecture albeit furniture and architecture have to be distinguished conceptionally.

"prestructured" (in the sense of determined), the difference suggested confirms the idea that situational anchoring can often take up built, designed and arranged spatial structures that are independent from ongoing interactions. This notion comes close to the understanding of space as a resource for social interaction in general, and for situational anchoring in particular. Built, designed and arranged space is a powerful and highly effective resource, and at the same time a rather inconspicuous one. By comparison with natural language and the human body, it has attracted far less attention in linguistics and pragmatics.

Within the conversation-analysis tradition, the emphasis on prestructured space has typically aroused skepticism that social interaction could be determined by structures existing prior to the interaction itself. Mondada, for instance, critically remarks that prestructured space "was used in a generalized way to suggest typical, expectable and even predetermined actions" (2007: 59, our translation). There seems to have been the fear that basic methodological postulates of conversation-analysis research might be affected, specifically that interaction could be described in terms of social categories other than those revealed by the data themselves. Accordingly, it has been argued and shown that participants are "free" to use objects (including furnishings) in whatever way they desire, and especially in unpredictable ways not determined by the objects themselves. Pitsch (2012), for instance, shows how participants alternately use parallel bars as a workaday object to lean on, as a museum piece to look at and, in fact, as a piece of apparatus for gymnastics (2012: 240 f.). What was derived from such evidence was the verification that prestructured objects may exist, but that they need to prove themselves as significant objects within the interaction itself. One would willingly concede this argument to conversation analysis while still calling into question whether the independent existence of prestructured space (including objects) can so easily be disregarded: parallel bars used as an object to lean on still persist, and their being made use of as an object with unforeseen affordances still bears meaning. Hausendorf (2012a), for instance, provides data of a speaker in a lecture hall who refuses to use the lectern to begin his talk, instead choosing to access the no man's land between the podium and the first row of seats to start talking. The lecturer is obviously disregarding a spatially prestructured arrangement that suggests the lecturer's position in favor of doing something unintended by the lecture hall's spatial design. But the social meaning of his activities arises out of this deviation from the "normal" and expected position. An important study often quoted in this context is that by Goodwin (2000). Goodwin analyses in some detail how young girls use the marking of graphic fields on their playground to play hopscotch. The material structure in their environment is treated as a "semiotic field" that is used and occupied by the participants as a powerful resource for what occurs. This study is often cited to demonstrate that interactional space has to be considered an achievement arising from the interplay of different semiotic resources, among which are verbal means, embodied resources and the "semiotic field" in terms of material structures

in the environment. "The surroundings themselves produce nothing", as has nevertheless been significantly commented with regard to this study by Mondada 2007: 61, our translation). Along with this reservation, prestructured space as a resource has only been accounted for in an abbreviated manner. Taken as a subject in its own right, the "surroundings" themselves (i. e. built, designed and arranged space) seem to be contrasted with what is actually occurring within them (Mondada 2007: 59). Up to now, space as a resource has almost exclusively attracted attention as a research topic only to the extent to which it can be accounted for as an interactive achievement by its participants. Strictly speaking, there is no concept for prestructured space beyond interactive space. This holds true for most of the contributions in Hausendorf et al. 2016.

It is important to note that the reluctance of conversation analysis to accept space as a topic in its own right has much to do with underlying methodological and theoretical assumptions. As far as theory is concerned, the question is whether other forms of communication beyond face-to-face interaction and copresence are identified or not (Hausendorf and Kesselheim 2016). As far as methodology is concerned, the question is how seriously it is intended to handle the multimodal complexity of face-to-face interaction (according to the latest state of the art in data collection and preparation), or if it is necessary that supplementary data be recorded in addition to the still dominant verbal transcript. Video recordings generally suffice to provide such supplementary data. But analyses often fall silent once it becomes the point to grasp the fine-grained structures of built, designed and arranged space. It quickly turns out that our typically interaction-oriented video recordings need complementing with techniques of data collection that we are just starting to make use of (Hausendorf and Schmitt 2016b). Take, for instance, LeBaron and Streeck (1997), a pioneering study on the prestructured police-interrogation room, in which the authors drew upon recordings made by a ceiling-mounted video camera installed by the local police. It is due to these recordings, which were rolling even before participants had entered the room, that the authors were able to scrutinize in detail the primary spatial structure of the interrogation room, namely the arrangement of chairs around the table. Independent of the interrogation that took place later on in this room, the authors could explore the subject of space-as-resource in its own right. Identifying the interrogation room's "built-in spatial features" and its "constraints", the authors could then show how the police officers used the "built space" to successfully elicit a confession. The suspect's positioning in one of the chairs, tightly squeezed between wall and table, in a way anticipates the suspect's limited options for participation within the interrogation. Besides this exceptional study, pragmatic research in space-as-resource has to date been only marginally pursued. The concept of architecture-for-interaction, to be introduced in the remainder of this chapter, can be considered a contribution to bridging this gap.

3. Architecture-for-interaction and social topography

In order to emphasize the stand-alone characteristics of space-as-resource it has been suggested that the conversation-analysis concept of interactional space be supplemented by two other concepts. The notion of interactional space will thus be used exclusively to refer to space as an interactive achievement emerging as soon as two or more persons meet in each other's immediate presence. Interactional space can accordingly only be studied on the basis of social-interaction data; but space exists, on the contrary, in terms of built, designed and furnished space independent of, and prior to, social interaction. This is what has been introduced under the notion of architecture-for-interaction. There is thus no need to refer to social-interaction data to study architecture-for-interaction. Finally, there is space in terms of participants' native familiarity with and tacit knowledge of space (an essential part of spatial cognition: Waller and Nadel 2013). We take it as part of a realm of "background expectancies" (Cicourel 1974) that participants bring with them and activate whenever they happen to arrive at a certain place. Spatial common sense of this kind has been introduced under the notion of social topography (Hausendorf and Schmitt 2016a) and it refers to (concrete) place(s) rather than to (abstract) space (cf. Streeck 2013 for a discussion of space vs. place). Social topography is manifest in the mostly self-evident ways in which spatial affordances are used, but it can be elicited from other types of data as well, including recordings of site inspections by subjects "thinking aloud" while individually perambulating and looking around a site (Schmitt et al. 2018). Both concepts, architecture-for-interaction and social topography, resulted from empirical case studies focusing on religious services within a church (Hausendorf and Schmitt 2016c) but have since been applied to other social practices and settings (for instance, to lectures in lecture halls: see Section 4, below). Architecture-for-interaction refers to basic spatial implications that address the participants' sensorimotor skills as intelligent, mobile human beings. Social topography refers to more demanding implications that address participants' knowledge and sense of belonging as members of social groups and their place(s). Both implications can be elaborated as usability cues (see below).

Architecture-for-interaction reflects the idea that architecture enables and suggests social interaction, albeit without having the ability to determine or forestall what will take place. Architecture is heuristically understood as an umbrella term that includes architectural forms ranging from built space (made of stone, cement or wood), to designed space (in terms of interior decoration and furnishing) to equipped space (by means of technology and decoration). This broad definition concurs with the view of architecture in social anthropology (cf. Lawrence and Low 1990, for instance). The power of architectural implications for social interaction results from architecture as an evolutionary achievement. It is assumed that architectural forms emerge and establish themselves as material answers to gen-

uine communicative problems connected with concrete social practices. It is by means of architecture(s) that successful communicative routines of problem-solving can leave their material traces, enabling aspects of the communicative problem to be deduced from its architectural sediment. In doing so, one might be led to an archaeology of interaction (Hausendorf 2012b) that exploits the stability and durability of architecture as a so-called "heavy" societal medium (Fischer 2009). In order not to fall back into a reification of architecture-for-interaction as an objective and given entity (as still seems to be the case in Barker's "behavioural setting": Schoggen 1989), we consider architecture as a genuine type of communication that systematically differs from face-to-face interaction. Contrasting with face-to-face interaction, communication through architecture does not depend on copresence (of, for example, architects and users), but on usability cues (Hausendorf 2020a). Usability cues are built-in spatial features that allow for certain forms of use and, moreover, suggest not only possible, but rather the more probable and most likely forms of use. By means of such cues, architecture suggests usage forms that range from the basics of human sensory and motor behavior to sophisticated activities within highly differentiated social practices. With regard to architecture-for-interaction and social topography, we suggest differentiating between usability cues that are more-or-less dependent on participants' familiarity and knowledge: basic navigational cues, acquired reading cues, and full-fledged participation cues.

Navigation cues address embodied human sensory techniques and motor activities in a highly self-evident way. They suggest where to look and where to turn to, where to go and where to stop, where to walk and where to sit, where to pass by and where to stay, where to enter and where to leave, in short how to navigate or orient yourself as a mobile sensor. It is what architecture affords users at the basic level of sensory-perception and body-movement related usability: indications of walk-on-ability, stand-on-ability, go-through-ability, climb-on-ability, sit-on-ability, look-at-ability, take-hold-of-ability, and so forth. Put in this way, navigation cues are similar to what has effectively been introduced as "affordances" in the context of ecological psychology (Gibson 1977). Navigation cues lack the external preconditions of users' expert knowledge or familiarity with certain places and their cultures, but they should not be simplified and reified as givens. Instead, they need be related to users' basic perceptual and motor skills. But they work whether or not you can read them, i. e., you get the built-in navigation cues (for instance, in terms of actual physical constraints imposed by furniture).

Reading cues accordingly take a step in the direction of further requirements. They address readings of architectural manifestations in terms of architectural semiotics (with elements such as "doors", "windows", "rooms", "steps", "tables", "chairs") and accordingly depend on users' reading competences with respect to what can be understood as a sort of "architectural literacy". Architectural items such as the ones just mentioned do not only afford navigation cues. They are loaded

with certain meanings, which is the reason why we can refer to them according to a vocabulary of more-or-less technical terms and why there is something like a readability of space (cf. Hausendorf and Kesselheim 2016).

Finally, there are participation cues that provide indications of social practices beyond those that can be found and gleaned by lexical inspection. Participation cues are typically embedded in far-reaching contextualization cues (Gumperz 1982). They give hints not only of a more-or-less context-free architectural meaning, but of a certain communicative framework that relates to participation in a certain social practice beyond mere navigating and reading. Participation cues accordingly address not only mobile, intelligent human sensors, and not only readers, but also members of communities of practice. They call on social belonging and bear a certain type of social appeal – for those who are familiar with these social practices (Schmidt 2012). Participation cues, therefore, are the most demanding of usability cues: they depend on navigation and reading cues but overlay them with social meaning. They call for understanding in a deeper sense. Institutional architectures ("churches", "hospitals", "university buildings", "court rooms", etc.) are abuzz with participation cues of this kind, so that situating oneself in such a space already implies social positioning in terms of rights and duties (Hausendorf and Schmitt 2018).

It is by means of usability cues that architecture can be imagined to configure social interaction in a highly effective, but at the same time highly inconspicuous way. It need hardly be said that configuration does not imply determination. Usability cues cannot prevent participants from using architectural frameworks in a quite unpredictable and, so to speak, "creative" way. But usability cues make it possible to explain how people can begin participating in a differentiated social practice without any prior understanding or agreement. This is what our concepts of architecture-for-interaction and social topography are concerned with. Built-in architectural navigation cues, reading cues, and participation cues constitute extremely strong and robust resources for situational anchoring, so that it takes extra work to override them.

The analytic task, then, is to reconstruct usability cues from architectural forms. Presented as such, they are durable and solid (in contrast to the spoken word), which means that they can be documented through video recordings, photography, and ethnographic consideration. This is what we shall turn to in our case study in the next section.

4. The lecture hall and its architecture-for-interaction

We have chosen the lecture hall to illustrate our concepts for a few reasons. It appears a telling case in more than one respect:

– There is a close connection between the kind of built space and the kind of social practice: The lecture hall is "the natural home" (Erving Goffman) of lecturing.
– The lecture hall is notorious for its communicative constraints: Since the 1960s, it has been disparaged as an "architecture-against-interaction" inasmuch as it hinders dialogue, exchange and conversation between those present (Hausendorf 2020b).
– The lecture hall bears an "iron-cage" (Max Weber) like architecture: It is firmly fixed rather than mobile, systematically differentiated by functional requirements rather than multifunctional, predetermined rather than versatile.

It comes as no surprise that the atmosphere of the lecture hall has a bad reputation. Whether this has a good cause or not, the lecture hall shows great promise for a full-blown architecture-for-interaction with a pronounced set of usability cues.[2]

Let us begin with a piece of data taken from the opening of a lecture; strictly speaking, it is taken from the first twenty minutes or so before the lecture starts and documents the gradual arrival of the participants in the hall (Section 4.1). We shall then include material collected from so called "ghost lectures", which took place in lecture halls behind closed doors during the COVID-19 pandemic, and which were recorded and made available as podcasts. As strikingly deviant cases, these data allow a reassessment of the lecture hall's architecture-for-interaction by providing a kind of negative evidence (Section 4.2).

4.1. Key architectural elements of the lecture hall

In what follows, we shall first illustrate the key elements of the lecture hall's architecture-for-interaction, giving some evidence of the ways in which participants make use of these elements and, in doing so, activate the architectural usability cues of the lecture hall. Secondly, we shall seek to identify the communicative problems of lecturing, the empirical solution for which is manifested and materialized by the lecture hall's key architectural elements.

Architecture-for-interaction does not depend upon the activity of participants to establish an interactional space. It is operative on the basis of built-in spatial features that by their very nature outlive personal copresence, and that have become

[2] In what follows we return to a series of studies devoted to the social practice of lecturing and the architecture of the lecture hall (Hausendorf 2012a, 2020a, 2020b).

semantically sedimented in lexical expressions for places, rooms, buildings and their characteristics. "Lecture hall" (or "lecture theater") accordingly refers to a set of architectural traits with which we are (more or less) familiar and that we tacitly expect when we enter a room on university premises that is presented to us as a "lecture hall". Take, for instance, the following photograph, which places on record the moment just after the first person enters the empty lecture hall and encounters its built-in spatial features:

Figure 1: Gradual arrival of participants: Entering the lecture hall

This photographic still is taken from a video that documents what typically precedes the opening of a lecture without having been given much explicit attention, namely the gradual arrival of participants in the lecture hall.[3] What can be gleaned from this image regarding the key elements of the lecture hall's architecture?

Roughly speaking, Figure 1 illustrates three main characteristics that appear to constitute a kind of *prima facie* evidence. Firstly, we can identify rising rows of seating[4] mounted in fixed position and provided with folding seats and tabletops:

[3] The data stem from a lecture given by one of the authors at the University of Zurich, German Department, in the autumn semester of 2013. Many thanks to Nicolas Wiedmer and Michelle Bosshard for their personal and technical support, and to the students for their consent to the use of these data.

[4] The picture (Fig. 1) shows the hall from above, a perspective from which the rows of seating are descending, not rising. From the perspective of the entering person, they are of course rising.

Figure 2: Detail: Folding seats and tabletops

It is also easy to spot that there is a podium specially provided for with tables, overhead projectors, a lectern and a PC desk with monitor and keyboard:

Figure 3: Detail: Infrastructure of the podium

Finally, there is an area at the front of the hall equipped with a blackboard, which in the present case is for the most part covered by a projection screen (displaying a digital slide with the University of Zurich logo and the text "Willkommen!" ('welcome') in large letters):

Figure 4: Detail: Projection screen (taken some minutes later)

Provided only these three basic characteristics, the built space offers a clear division between front and back (not in the sense of "backstage" but in the back region of the stage), a spatial area for a single (or a few) participant(s) to speak, to demonstrate and to perform on the one hand, and a spatial area for a larger group of participants to pay attention, to look on, to listen and to write something down, that is, to follow a performance. Note that the podium as a "focal zone" (Streeck 1983) is reduplicated by the foremost area behind the podium, which is designed to assist with both writing and reading with its projection and viewing screen. This is an area obviously attracting attention: Whoever takes a seat at the back is bound to look at the podium and the foremost area. Due to the distinction between front and back, the lecture hall's architecture suggests distinct social positions for those willing to enter and to stay. To some extent, they are invited to position themselves either as potential speaker, performer and presenter, or as prospective listener, audience and public. Spatial positions accordingly reveal themselves to be social positions (Hausendorf and Schmitt 2018).

Having identified a first approximation of relevant aspects of the lecture hall's architecture, we shall now return to our video still (Figure 1, above) to study how participants begin to handle the architectural affordances. The first participant has just opened the door and entered the room. The door has not been closed and stands open – maybe manifesting the expectation that others will follow. It takes a minute or so before the next person enters the room:

Figure 5: A second person arrives (08:40)

At this moment, the first person to have entered has already taken off and hung up her coat, and has occupied one of the peripheral table-seat units with her bag, but is still standing. The second person is purposefully heading for one of the front seating rows and will then start to establish herself somewhere in the middle of the row, while the first has in the meantime sat down:

Figure 6: Taking seat(s) (08:54)

The first two participants have thus entered the room and, in a typical, natural manner, have immediately turned left in order to reach the rows of seating via the gently ascending steps:

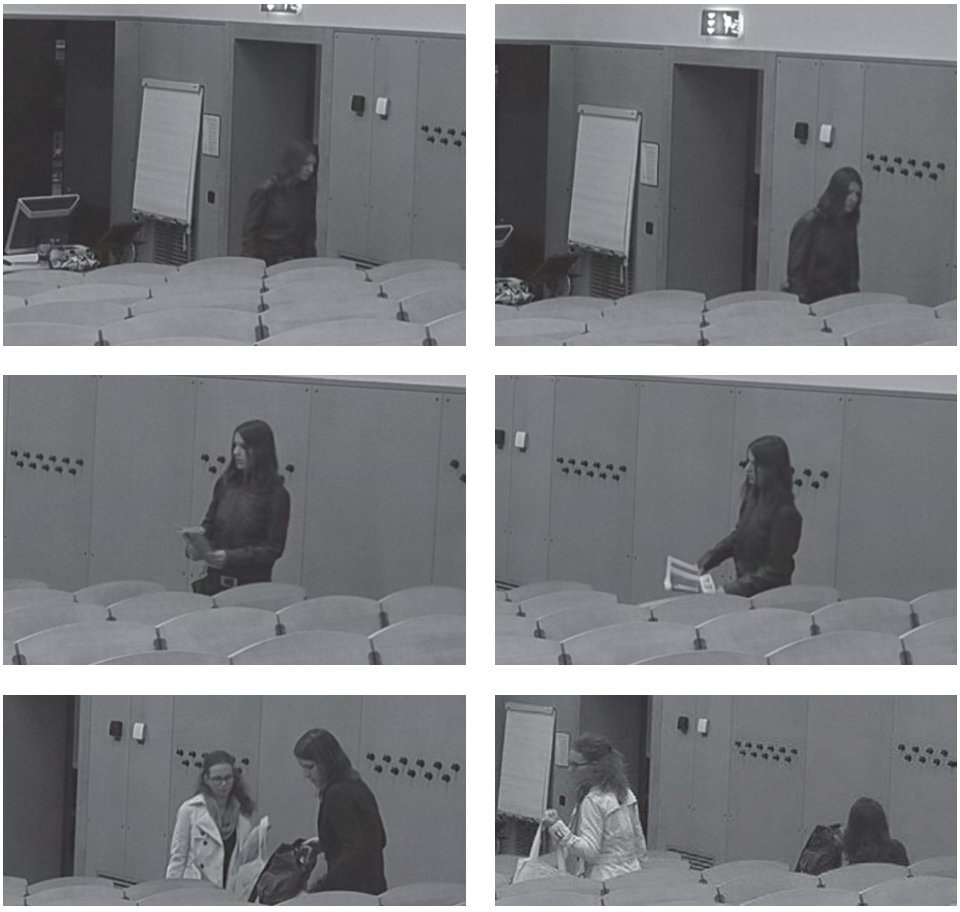


Figure 7a-f: Turning left, ascending the steps and taking a seat (07:36 – 08:50)

We go into some detail to document this arrival – a routine event that happens thousands of times every day – in order to emphasize that it is tantamount to an unnoticed utilization of quite inconspicuous navigation cues within the lecture hall. The lecture hall is dominated by its furnishings, which greatly limit the area deemed traversable. In essence, there are only two possible routes for those who enter:

Figure 8a–b: Navigation cues in the lecture hall: Line of sight from the entrance left and gently ascending (a); or straight ahead behind and alongside the podium (b)

Without hesitation, both the participants took the turn left and up the steps to reach a convenient row of seats and finally sit down. In doing so, they obviously follow the built-in affordances for walk-on-ability. Indeed, we are dealing not only with navigation cues but also with corresponding reading and participation cues. There is a "walkway" with "steps", and there are "folding seats and tables". Readily taking "your" place in the lecture hall's rows of seating means to position yourself as part of the audience and public that is an essential part of the expected social practice (the "lecture"). The kind of movement and behavior pattern documented in Figures 7a-f illustrates the self-evident manner by which participants make themselves accountable as members of a social group defined by the architectural characteristics of the occupied spatial positions. Here are members of an auditorium, consisting of a number of persons, their attention directed towards a focal zone and their mobility greatly limited. Due to the arrangement of the seating, extensive communication between those sitting in the rows is hindered (except with direct neighbors) when the hall is tightly packed. As far as participation cues are concerned, the first two participants have designated themselves within this social practice as listeners, audience and public. This example also appears to reflect an architecturally manifested social expectation that the first two persons to enter the hall should ostentatiously restrict themselves to taking their positions without further acknowledgment of one another. It is remarkable that no exchange

occurs between them. Although neither person can avoid close proximity to the other before turning into their seating rows, there is no trace of a verbal greeting. This also holds true when the next (i. e. the third) person enters the room. Seats and tables are flipped down, papers and writing utensils are placed on the table. When the next (i. e. the fourth) person enters the room, we see an overlap occur between the fourth person walking up the steps and the third person taking off her coat, necessitating a process of mutual co-orientation and co-ordination:

Figure 9a-f: Passing by (11:13 – 11:15)

But even in this and other similar situations involving fine-tuned co-orientation and co-ordination (by means of gaze, body posture and proximity), one observes nothing that amounts to a greeting or verbal comment.

We are apparently dealing with "unfocused interaction" (Goffman 1963) since there is no focus of joint activity beyond the management of copresence. The participants seem to agree upon staying separate, albeit while sharing the same place. Their interaction is also reminiscent of what Goffman has called "civil inattention" (Goffman 1971), by means of which participants treat each other as being copresent without expecting further engagement (such as conversation). The social situation is defined as one depending on external conditions – like sitting together in the waiting room at a doctor's practice. Treating each other with civil inattention while taking position among the lecture hall's rows of seating, the participants implement the social reality of university lectures so far as the audience's part is concerned: It is the public announcement of the lecture that accounts for the participants' early arrival in the hall and their display of civil inattention. In this sense, their own bodies and the available architecture are used most effectively and most economically as resources for revealing themselves as students waiting for the lecture to start – without a single word having to be uttered.

The same holds for the opposite side of the room. After a quarter of an hour or so, another person enters the lecture hall, turns to the podium and starts to ensconce himself there – while others are still busy establishing themselves among the seating rows:

Figure 10: Making use of the podium (17:08)

Here activities obviously continue to coexist without a joint focus of attention. The situation continues for a while, and remains unchanged when the video projector begins to display content from the laptop:

Figure 11: Laptop display on projection screen (19:40)

Participants continue to enter the lecture hall, but there is still no effort made by the person positioned foremost to establish contact with the audience. Instead, he seems to be busy with his own affairs. With only a few exceptions, the participants maintain a mode of civil inattention. But due merely to the passage of time (more than twenty minutes have elapsed) and the increasing number of persons sat in the rows of seating, the participants' orientation towards the front becomes gradually noticeable – the more so as the video projector has already begun displaying the first slide of the lecture:

Figure 12: The first slide is projected (22:04)

Finally, some 24 minutes after the first person entered the hall, a gong sounds, a video starts and the person at the front turns to the door, closes it and returns to the lectern. That is the moment when the lecture is initiated verbally:

Figure 13: Initiating the lecture (24:32)

01: **ja**: // yes
02: guten MORgen & //good morning and
03: willKOMmen (.) ähm zu unserer heutigen VORlesung //welcome to today's lecture

As can be discerned from Figure 13, the person in front begins his greeting while still about to return to the lectern (and, likewise, one of the participants is still busy returning to his seat). The lecture has now been initiated and the event that has for some time been awaited can finally start. Note the way in which the opening given by the front-positioned person can be tied in with organizational structures already established: Those who are greeted are copresent not by chance but due to an official arrangement and due to formal university membership. The participants' gradual arrival in the lecture hall and their responses to the architectural usability cues already implement the university lecture's social system even before the first words are spoken and heard. It is this social and material infrastructure that the lecturer can so effectively utilize.

Of course, not everything is predetermined and set in stone. The social occasion that is to some extent materialized through architecture and activated by the participants' bodies has still to be communicated between those present. Seen from this perspective, the inconspicuous manner in which participants take their seats, maintaining civil inattention towards each other, can already be considered a multimodal way of tacitly communicating the social occasion in question. At this point, the front-most positioned person resolves the social tension that has been created, and in doing so can reveal himself to be the lecturer. He can take part in what Roland Barthes once called the "great sociological power of expectation" as it is ceremonially and ritually played out within public assemblies (Barthes 1964: 11 f.). Although there are no special ceremonial activities of announcement and

delay, the gradual occupation of the lecture hall can be considered a typical university ritual that the lecturer plays upon when he systematically delays the beginning of the lecture while already copresent with his audience.

It is in the gradual occupation of the lecture hall that the social expectations of a pre-announced event becomes manifest – with an increasing number of projective cues as the appointed time approaches. Among the most striking are the increasing number of participants who take their place among the rows of seating and the arrival of a frontally positioned or "focus person" (Schmitt and Deppermann 2007) who situates himself at the podium. Due to such cues, the passing time can be experienced as a social time (of waiting), oriented towards a pre-announced social event. In a sense, the social expectation of the lecture becomes progressively embodied. Given this embodiment of expectation, the last projective cues – the sound of the gong and the closing of the door determining who is now to be included in the lecture – can be elicited as attention getters for the verbal greeting: the first words of the lecture do not run the risk of being lost in the lecture hall's acoustic space, but can depend on being met by the audience's already rapt attention. We take this as further evidence of the multimodal resources closely connected with the lecture hall and routinely exploited during the participants' arrival, and their responsiveness to the hall's usability cues.

From this cursory inspection of the lecture hall's architecture-for-interaction, a key set of architectural elements can be identified. Taken seriously, these characteristics hint to the structural implications of lecturing as a particular social practice (which, in each specific case, will be interactively achieved through different means). We would like to point out these structural implications in order to expose some communicative problems, the routine solutions to which are materially sedimented in the built environment of the lecture hall.

To begin with, the ascending rows of (hundreds of) seats can be understood as a solution to the problem of interaction among a considerable quantity (a "mass" or "crowd") of persons simultaneously present. Face-to-face interaction tends to reach the limit of manageability by on-board means of co-orientation when the number of involved participants substantially exceeds a one-digit number. As a result, a group will resolve into smaller units and the prospect of including all parties present will collapse. The lecture hall's rising rows of seating provide an answer to this genuine problem of interaction by defining the "mass" as an audience oriented toward a kind of presentation and performance – an answer that occurs in numerous other examples of architecture intended for gatherings (such as sport stadiums, churches or theaters, to name but a few). The focus here is on some kind of public assembly with an increased requirement for co-orientation in terms of perceivability (visibility and audibility). Due to the sophisticated arrangement of ascending rows of seating, a great number of participants is brought into a position to be perceived in their perceiving-of-others and, in this way, is able to maintain basic forms of co-orientation, co-ordination and co-operation.

Indeed, the maintenance of interaction in the lecture hall is achieved at great cost: There is a striking asymmetry between participation and involvement that results directly from the social position of an audience rigidly oriented toward what is performed in front of them. The podium is the spatial and social counterpart of the rows of seating. Its equipment (with lectern and microphone, see above) already indicates the predominance of verbal action to be expected from those at the podium: speech, talking and various kinds of demonstration. A single person lectures, and many others listen. As is well known, it is exactly this sort of asymmetric interaction that the lecture hall favors when it provides for the social positioning of audience and performer (with category-bound activities, rights and duties).

Due to the design of the lecture hall's front area (with blackboard and projection screen), one can expect the lecturer's spoken words to be complemented by the written word and by visualizations of all kinds (pictures, diagrams, figures, etc.). The blackboard and the projection screen turn out to be the counterpart of the folding tables provided at each of the seats. Both the design of the foremost area and of the furnishings provide an answer to a communicative problem that has to do with the transfer of knowledge and a requirement that content be visualized. The "auditorium" is a space designed not only for speaking and listening, but also for writing and reading. As such, it manifests a prioritization of literacy and, accordingly, a tendency toward preparation and a preplanned presentation of the subject matter and the knowledge to be imparted.

The lecture hall, to sum up this brief overview of communicative problems sedimented in architectural form, systematically favors and affords:

– an organized, intermittent influx of persons in the form of a public assembly,
– a resolute asymmetry of involvement and participation, determined by the social positions of audience and performer,
– a preplanned presentation of the subject matter and an elaborately literate dissemination of knowledge.

This diagnosis results exclusively from our inspection of the lecture hall – not from the analysis of lectures. It sheds some light on what possibilities the lecture hall affords social interaction, namely, to approximate forms of mass-media communication that have completely eschewed the requirement of copresence. For what appears in tendential form in lecturing, as determined by the lecture hall, has already been irreversibly implemented in mass-media communication:

– the public assembly has been replaced by a public that is reachable by means of broadcasting media,
– the asymmetry of involvement and participation has turned into the dichotomy of sending vs. receiving ("Don't talk back!"),
– the preplanned presentation with its elaborate literacy has turned into the comprehensive orchestration of communication (for instance, in terms of "secondary orality").

What was at least an option in the lecture hall has been eliminated through technologies of sending and receiving, first and foremost the basic mechanism of perceived perception as the constitutional principle of social interaction. Copresence has been completely replaced by reachability. Could it be that the lecture hall stands for an architecture that has already prepared us for the transition from copresence to telepresence? Are we right in proposing that the lecture hall can be considered a precursory architectural affordance for modern mass-media communication, disengaged from the boundaries of copresence albeit while being realized among copresent participants? If such an impression proves reasonable, lectures given behind closed doors and emitted as podcasts should create no serious problems, but should instead speed up a process started long ago. As we shall see in the next section, the case proves somewhat more complicated.

4.2. Lecturing behind closed doors

With the onset of the COVID pandemic in spring 2020, lecturing with copresent participants became a risky activity and the Executive Board of the University of Zurich decided to exchange face-to-face, on-site lectures for lectures held online without physically copresent participants. This change happened midterm and it triggered a considerable number of improvised solutions, among them so-called "ghost lectures": lectures recorded behind closed doors in the lecture hall and then provided as audio and video podcasts. Lecturers suddenly found themselves in a new and somehow strange situation, allowing for a deeper insight into what forms the normal and routine usage of the lecture hall's architecture-for-interaction. Without aiming at an independent study of these materials, we shall briefly inspect a series of three consecutive lecture openings by one and the same lecturer, and in doing so shall illustrate with these examples the way in which the lecturer adapts to the new conditions. As we shall show, the lecture hall's architecture-for-interaction reveals itself to be an inhibiting factor: It strongly hinders the lecturer from ignoring the absence of copresent students and from returning to normal. The first lecture opening is a particularly telling case in this regard. To begin with, we shall look at the verbal introductions (documented in the transcript) before adding further evidence from the video recordings (documented through selected stills). This approach to the data reflects our finding that within the multimodal realm of means of expression, language turns out to be the most relevant resource used by the lecturer. If so, the transcript will prove itself the most relevant document, while the video data will turn out to add further supporting evidence from other multimodal means of expression.

The first lecture opens with the following words:

```
1   mein gott ist das erSCHLA::gend (--) vor so einem lör
    (.) leeren hörsaal (--) zu stehen und da vorne in
    ein blinkendes lÄmpchen (---) zu reden,
    my god it's upsetting to stand in front of such an
    empty lecture hall and to talk to a little flashing
    lamp ahead of me
2  keine ahnung ob mich jemand SIEHT oder hÖrt, (---)
   no idea if anyone can see or hear me
3  ich (-) hoffe ich HOFfe das mal, (---)
   I hope, I hope so
4  u:nd möcht sie daher LIVE, (---)
   and would therefore like to (welcome) you live
5  dann für sie zeit be verSETZT (-) vIrtuell (--)
    begrüssen (--)
    but for you at a different time, virtually
6   ÄH::- (---)
7  halLO zusammen, (---)
   hello everybody
8  I:CH-
   I
9   (2.0)
10  werde jetzt versuchen (--) IHNen (-) ihnen die:: (-)
    geheimnisse der (.) funktIOnfolgen (-) weiter näher
    zu bringen,
    shall try now to continue to give you, you an under-
    standing of the secrets of functions
```

Extract 1: First opening (VL 01_09)[5]

Without going into the details of fine-grained sequential analysis, the fragment obviously reveals the lecturer's difficulties in adequately positioning himself socially and spatially (see below) under the new and stressful conditions. Taking his own words seriously, he finds himself "in front of" the "empty lecture hall": It seems that as long as he is alone, i. e. as long as a face-to-face audience is missing, the lecturer cannot begin lecturing: Copresence proves to be an indispensable communicative condition and it is the unfilled auditorium, with its empty rows of seating, that makes the missing copresence highly apparent, and in this way confronts the lecturer with a condition of lecturing that had otherwise been taken for granted. What becomes obvious through this reflexive commentary and its continuation is that the lecturer does not respond to the new (and time-delayed) conditions of lecturing online but sticks to his situational anchoring within the lecture hall, although

[5] The data were collected, edited and analyzed as part of the project "Interaction and Architecture" funded by the Swiss National Science Foundation (SNF, see Acknowledgements, below). First results will be presented in Hausendorf et al. (2021).

the lecture hall has already lost its formative power for the proceedings. On the contrary, at the very moment in which the lecture hall becomes disused, it proves to be strikingly relevant in the sense that it confronts the lecturer with copresence as a *conditio sine qua non* of lecturing. Faced with and somewhat defeated by the vacant auditorium, which in some sense is reminiscent of the situation within Garfinkel's "breaching experiments" (Garfinkel 1967), the lecturer verbalizes a routinely assumed and architecturally manifested condition of lecturing, namely the face-to-face copresence of an audience. Note, indeed, that he elaborates upon the underlying mechanism of copresence, namely of perceived perception, when he agonizes over the missing evidence for his being seen or heard ("no idea if anyone can see or hear me": line 02). What has to be acted on immediately and directly in the occupied lecture theater – without being reflected upon, not to mention explained, by the lecturer – is verbalized in the present case: perceived perception as the very mechanism of copresence (see Section 1, above). And even in the course of his greeting (lines 04–07), when he turns to his (absent) audience, the lecturer adheres to a manner of reflexively commenting on the situation of being in an empty lecture hall. He apparently refuses to adapt to the new conditions of virtual teaching with an absent auditorium. It looks like a final comment when he ostentatiously re-addresses his audience (line 10: "…shall try to give you, you an understanding of…") having moved on to his subject matter and taken his lecturer's position directly in front of the blackboard (see below).

The following two lecture openings illustrate the ways in which the lecturer begins to emancipate himself of the lecture hall's architecture-for-interaction in favor of adaptation to the new conditions of a pre-recorded lecture for viewing online. The second opening starts as follows:

```
001 (7.3)
002 ich (--) begrü:sse die leere menge hier im (--)
    hörSAAL?
    a warm welcome to the empty set here within the
    lecture hall
003 (1.4)
004 ähm
005 (2.3)
006 und werd wieder (-) so eine geistervorlEsung HALten?
    and I shall again hold a kind of ghost lecture
007 (1.0)
008 ich bin nicht so SEHR zufrieden-
    I'm not very happy
009 ich finde einglich die lö:sung mit dem adobe connect
    etwas besSER,
    I would rather prefer the adobe connect solution
010 da gibt es aber (.) bei (--) SWITCH zeha: (.)
    kapazitätschwierigkeiten,
    but there are capacity problems with Switch CH
```

```
011 und der deKA:N-(.) möchte auch das eher in dem stil
    hAlten –
    and the dean would prefer to stick to this style
012 ich hab ihn AngeFRAGT ob ich das auch weil ich das
    weil das für meine Vorlesungen in meinen augen (.)
    besser (.) !PASST!?
    I asked him if I, because I, because from my view that
    would better suit my lectures
013 ob ich das auch,
    if I (could also do) them
014 (1.5)
015 h° mit (.) adobe conNECT machen kann?
    with adobe connect
016 ähm
017 da wart ich noch auf eine ANTwort-
    I'm still waiting for an answer
018 <<all> auf jeden fall halt ich sie auf dem> LAUFenden?
    (-)
    anyway I'll keep you updated
019 u::nd (-) solang sie nIchts von mir !HÖ:R!en
    and as long you don't hear anything from me
020 müssen sie nicht in den HÖRsaal kommen;
    you don't have to come to the lecture hall
```

Extract 2: Second opening (VL 01_10)

In the second opening, the lecturer begins his greeting without any preface (line 2). But it seems as if he cannot continue without at least briefly reflecting upon the situational characteristics of the empty lecture hall. In his greeting, he explicitly turns to the "empty set [i. e. the vacant space] here within the lecture hall" (the German phrase "leere Menge" literally refers to a "vacant crowd" but is, as discussed below, also a pun on the mathematical concept). Again, he picks out the discrepancy between the absent audience ("empty set") and the still persisting architecture-for-interaction ("here within the lecture hall") as the central theme of his positioning. Due to the lecture hall's architecture-for-interaction, the audience's absence proves to be a marked one (just as the "empty set" is a very relevant entity in mathematics), although the audience's copresence is no longer necessary!

Nevertheless, and contrary to the first opening, the lecturer no longer expresses his feelings (of being defeated by the empty rows of seating), but seems prepared for the new situational circumstances, referring to social categories by which means he finds himself in a position to better handle the conflicting conditions of copresence (which is still inoperative) and telepresence (which is already in force). One of these social categories is the empty set (an ingeniously co-opted mathematical term). Another one is the "ghost lecture" itself, announced directly after the initial greeting (line 6: "and I shall again hold a kind of ghost lecture"). Note that

this categorization continues to orient itself toward the suspension of copresence in the empty auditorium, and that it still defines the event negatively: highlighting what is missing rather than emphasizing what is gained. Consistent with this positioning, the lecturer goes on to inform his audience of an alternative software solution that would allow for some sort of "telecopresence" (Zhao 2003). Given the choice between the strict exclusion and complete replacement of copresence (the "ghost lecture") and technical provision to provide an albeit restricted version of telecopresence, the lecturer leaves no doubt about his preference for telecopresence, since it better adheres to his understanding of lecturing (influenced by his experience of the fully occupied auditorium and its plenary copresence).

Turning to the third and final opening, it appears at first that the lecturer has finally adjusted to the new conditions:

001 (11.0)
002 so::;
003 (5.5)>
004 halLO zusammen-
    hello everybody
005 (2.0)
006 ich versUch sie zu spüren obwohl sie nicht HIER sind;
    (--)
    I'm trying to sense your presence although you're not
    here
007 Ah::
008 willkommen wieder zur (-) anAlysis zwei vorLEsung?
    (--)
    welcome again to the analysis two lecture
009 u:nd ich will auch gleich losLEGen (.) mit dem stoff,
    and I'd like to start immediately with the subject
    matter
010 und natürlich da weitermachen wo wir (.) das letzte
    mal (--)
    AUFgehört hA:ben, (--)
    and of course continue from the point where we stopped
    the last time
011 das war (-) bei dem thema funktiONfolgen,
    that was at the topic of functions
012 u::nd die: (-) wichtigen sätze WA::ren,
    and the important sentences were
013 wenn ein
    if a

Extract 3: Third opening (VL 01_11)

These openings are not only shortened gradually from lecture to lecture. In the last example, the lecturer starts without further ado with a direct greeting (line 4) that bears no more trace of bemusement. Instead, the lecturer seems to treat the anticipated audience as if it were copresent – a known characteristic feature of so-called "parasocial interaction" (Horton and Wohl 1956; Hausendorf 2001). Nevertheless, it does not pass without a striking comment being made on the actual situation within the empty lecture hall, that nicely aligns with previous remarks (line 6). In this comment, reference to the lecture hall is maintained but is carried out merely as a form of deixis ("although you are not here"). What is expressed is a tension between presence and absence: There is no copresent audience here and now, but maybe it can nevertheless be sensed and perceived with effort. In a quite consistent manner, the audience is referred to as if it were the ghost audience of the second lecture: this audience cannot be grasped by means of sensual perception but might perhaps be sensed and perceived in a different, incorporeal way. However described, it is clear that the lecturer proceeds with tongue in cheek beyond the lecture-as-broadcast framework to address, and to conjure up once more, a no longer present audience in the vacant lecture hall.

To sum up this brief inspection of the three lectures' openings, a transition is apparent from irritation to categorization and finally to normalization that makes clear how the lecturer detaches himself (and emancipates himself) step by step from the architectural implications of the lecture hall, and in doing so finds a social position that proves a proper expression for his understanding of lecturing under significantly altered conditions of communication.

Turning to the video recordings of these openings to complete our inspection, it will become apparent that the social position the lecturer is struggling to arrive at appears, at the same time, to be a spatial position, and that the verbal effort (documented in the extracts) is systematically supported by the use of other multimodal resources (Norris 2009; Selder 2018 on "modal density"; Putzier 2011: 86–88, "Modalitätssynchronisierung"). In order not to get lost in details, we shall limit ourselves to just a few, telling stills and images from the first lecture's opening.

In this first opening, the lecturer initially takes the following position at the podium, besides the lectern:

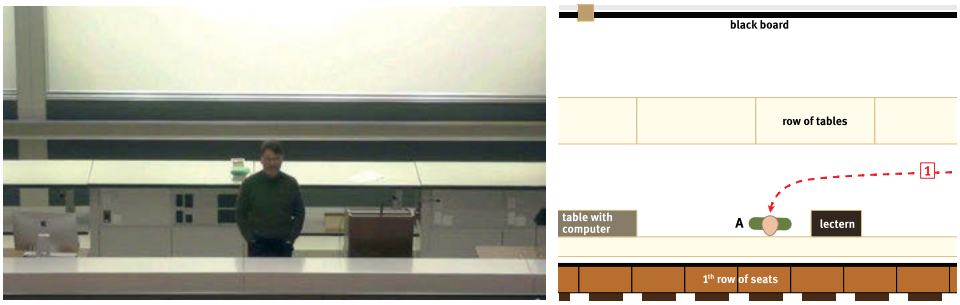


Figure 14: Position 1, "vor so einem leeren Hörsaal", see Extract 1, line 1, above[6]

It is obvious that he has not yet reached his lecturing position but is still in a mood to reflect upon his own feelings of being confronted with the "empty lecture hall". His actual social position as a commentator (instead of a lecturer) coincides exactly with his physical spatial position, what we refer to as "socio-spatial positioning". It allows for an impressive embodiment of what is expressed verbally ("I'm not yet ready to start"). Note, furthermore, the posture, with hands in pockets, contributing to this multimodal embodiment. As the opening proceeds, the lecturer continues to delay taking his lecturing position. Instead, he seems to test out different temporary positions that match his verbal display of being a person still lost in a place "in front of" the empty lecture hall, instead of utilizing the lecture hall's podium as a lecturer:

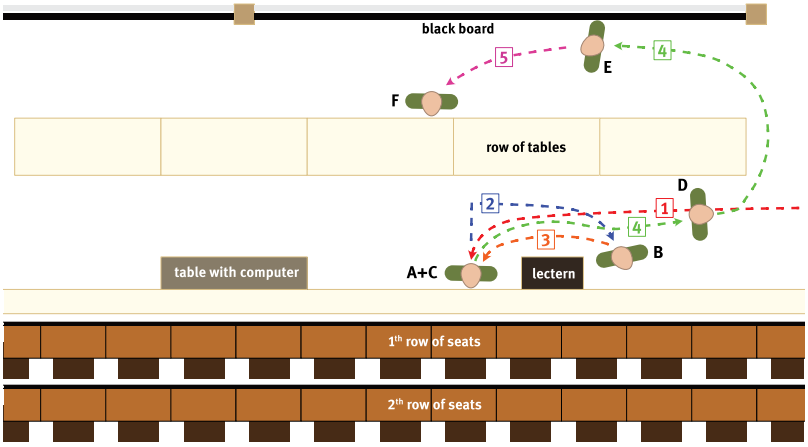
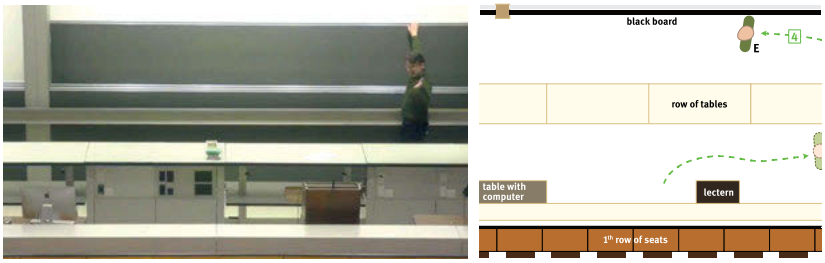


Figure 15: Positionings during the opening, with positions (A-F) and routes labelled in chronological order (1–5)

[6] Many thanks to Andi Gredig (University of Zurich, German Department) for preparing the images.

As it turns out, the lecturer's most convenient starting position for his lecture is one between the blackboard (on which he starts writing following the opening) and the first row of tables (see positions E and F in Figure 15). There is a telling moment in the transition from commenting to lecturing that concretely illustrates the multimodal interplay of different means of expression:



I:CH-
(2.0)
werde jetzt versuchen (--) **IH**nen (-)

ihnen die:: (-)

Figure 16: Position E, turning to the rows of seating with ostentatious gesticulation, cf. extract 1, line 10

To express his difficulties addressing an absent audience in the lecture hall "in front" of him, the lecturer re-addresses the audience with special emphasis ("IHnen") and by turning to the empty rows of seats and an excessive and ostentatious gesture of attention (see above). We interpret this as further evidence of a marked embodiment of what is simultaneously being spoken. In a way, it seems as if the lecturer is again paying respect to the lecture hall's architecture-for-interaction with its implication of copresence – before returning to normal, i. e. starting his lecture as usual.

The ongoing process of adaption is evident in the lecture hall's verbal presence in reflexive comments: In the first opening, the lecturer stands "in front of" an empty lecture hall, in the second, he already positions himself "within" it, and in the third opening, the lecture hall becomes an abstract "here". It seems as if the lecture hall has finally lost its dominant relevance as a specific architecture-for-interaction requiring attention and explicit verbal reflection.

5. Conclusion

What is it, finally, that we can learn from this excursion into the (empty) lecture hall? To begin with, there is reason to believe that the lecture hall represents an architecture-for-interaction (instead of an architecture-against-interaction). The lecture hall might hinder a speech-exchange system that requires turn taking, but then turn taking is not a mandatory element of interaction. Although we maintain the view that the lecture hall can be considered a precursory architectural affordance for modern mass-media communication completely independent from copresence (see Section 4.1, above), it has become clear in the course of our last investigation that copresence is a communicative condition architecturally manifested in the lecture hall, and that it emerges in a concrete and conspicuous way. The lecture hall might be at the edge of face-to-face interaction, understood as communication among those present, as far as it promotes and suggests a highly asymmetric allocation of rights and duties for participation (hindering, for instance, turn taking and dialogue). But it nevertheless makes possible a mass meeting of participants and the experience of each other's copresence, i. e. expanding the possibilities of perceived perception (cf. Knoblauch 2016; Hauser 2019 for special forms of large-audience copresence in the sports stadium). The lecture hall's architecture makes it both possible and obvious that you can share this perception of being perceived together with a mass of others – even when it remains empty.

The case study accordingly provides strong evidence for space as a resource involved in social interaction. In terms of architecture-for-interaction, with its inbuilt usability cues, space appears to be both an important indicator and factor of social interaction. This holds especially true with respect to institutionalized communicative practices and their purpose-built buildings, by means of which relevant social structures (of law, politics, science, arts or the economy) become visible and, more than that, become enter-able. When language emerges within institutionalized communication, i. e. when participants start to speak and to listen, it typically does so, and they typically do so, within such buildings. As a matter of course, architecture-for-interaction is already incorporated into the use of language, as it typically impacts the way we do things with words, for instance, the way we perform the conversational task of greeting and opening discussion. Under normal circumstances, there is no need to explicitly account for the kind of architecture that is taken for granted. It is not before this tacit assumption becomes problematic for some reason that people begin to broach the issue of architecture-for-interaction – as is the case when a lecturer is faced with an empty lecture hall.

The audibility of social structures that is due to institutionalized manners and cultures of speaking and listening has, therefore, to be considered in its multimodal relation to a powerful, prestructured social setting. In many cases, the contextual and situational embedding of language – a key postulate of linguistic pragmatics –

depends on architectures-for-interaction, and we have just begun to recognize this resource as our subject. It is perhaps not by chance that it comes to the fore (as in our case study) when communication detaches itself more and more from the condition of copresence (for instance, due to the recent onset and spread of the COVID-19 pandemic) and, in so doing, detaches itself from built, designed and furnished physical space(s) in favor of "telecopresence" (Zhao 2003) and electronic platforms that allow for the doing of space by virtual means (cf. Jucker, Hausendorf et al. 2018 and Meyer and Jucker this volume).

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15. Building, dwelling, and interacting: Steps in the evolution of public space from Paleolithic to present

Kenan Hochuli and Jürgen Streeck

Abstract: The design of contemporary cities has led philosophers and sociologists to put the geometry of built space in opposition to practices of dwelling in them. Where and how did this apparent contradiction begin? In this chapter, we trace select stages of the history of hominin and human encounters and sociality in environments built by them – from the Paleolithic to the first built settlements to public squares in contemporary cities. We show how the question of the relationship between design and everyday use already arose for the biface, a Paleolithic stone tool that first exhibited geometric features. From there, we turn to proto-architectural stone circles and discuss the importance of the material marking of a human domain versus a segregated outdoor space. Does the creation of private homes automatically lead to the creation of a distinct public sphere? We trace how, in the course of urbanization, cities are forming increasingly complex architectural and social distinctions. Initially, a place where people of different classes meet and sometimes fight their battles, the city in the twentieth century becomes a place of unfocused encounters where people leave each other alone. Our empirical studies of encounters in a neighborhood square in a coastal city in Colombia and a marketplace in Zurich nevertheless reveal a wide range of interactive forms through which co-presence continues to be established and maintained in thoroughly man-made public spaces. By examining the cumulative evolution of material structures and their role in organizing human co-presence, the article substantiates the relevance of discussing selected archaeological and paleo-anthropological research for a pragmatically grounded understanding of space. Moreover, it explores possibilities for an interaction-analytic perspective on prehistoric settings and practices to generate new insights into the development of human communication.

Keywords: architecture, prehistory, public space, evolution, interaction

1. Introduction

Of all the feet that touch the ground, only a few step on *terra incognita*. Like most species, we humans tend to move in the same circles every day. More than for any other living being, however, the sounds of our steps reverberate in spaces that have

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been established, shaped, and transformed by our predecessors. The largest and most symbol-rich genre of human-made "architecture-for-interaction" (Hausendorf and Schmitt 2016) is the city. It offers an elaborate spatial-material framework (and ground, Ingold 2004) for our daily encounters.

Figure 1: A typical situation in a public square in Zurich. People walk by, a man is having a conversation on his telephone, people gather around a game of chess. The environment in which these encounters take place is human-made from the ground up.

Today, more than half of the human population lives in urban regions (and the number is growing, United Nations 2019). Moreover, global human-made mass (the so-called "anthropogenic mass") exceeds all living biomass. The largest human-made object, however, is buildings and infrastructure (Elhacham et al. 2020: 444). In light of this, we take an interest in the origins of architecture as a means for organizing and transforming human sociality: What can be said about the cumulative evolution of material structures and their role in organizing human co-presence?

The study of this evolution is at its beginning, and empirical research about the constitution of public spaces and places through interaction, as well as of the shaping of interaction by architectural constraints, is scattered. Important work includes W.F. Whyte's classic ethnography *Street Corner Society* (Whyte 1981) and his later film studies of pedestrian traffic and conversations within it, carried out in part with a time-lapse camera; Low's ethnography of a plaza (Low 2000); and Borden's closely observed study of ways in which city-spaces are perceived, known, and inhabited by the counter-public of skateboarders (Borden 2001). Linguists interested in the pragmatics of space will especially benefit from research on "configurations of the public sphere" that has recently been conducted by urbanists, sociol-

ogists, and planners (Koch, Kurath and Mühlebach 2021; see also Krusche 2011). Moreover, central to our interest in how the relationship between architecture and forms co-presence has changed over time is work in landscape archaeology (David and Thomas 2008), which has focused on the (pre)history of human use of space.

We begin our attempt to shed light on the coevolution of interaction and architecture by discussing three approaches to the contrast between designed and used city space (Section 2), mostly for contemporary cities: Michel de Certeau (2011) contrasts the "geometrical" view of the city adopted by planners with the dynamic and fleeting nature of encounters among city walkers. Phenomenologists (Casey 1996, 1999) and "humanistic geographers" (Tuan 1979) insist on the difference between (abstract, physical, geometric) space and lived-in, meaningful places as basic dimensions of human experience and action. And urbanist and sociologist Richard Sennett (2018) distinguishes between the planned structures of *ville* and the city emerging from the living motions and actions of the citizens, *cité*. We then discuss stages in the evolution of human (and hominin) capabilities in using material resources for organizing and representing social relationships. In particular, we address:

– practices for making hominin stone tools as indicators of focused and rhythmic forms of co-presence (Section 3);
– the establishment of structures of inside and outside in caves and huts as fundamental prerequisites for the creation of a public sphere of interaction (Section 4);
– the construction of monumental architecture in the course of sedentarization (Section 5); and
– the opening gulf between city design and lived sociality during urbanization (Section 6).

Examination of these different contexts allows us to trace some of the crucial transformations that built space has undergone as affordance and scene of social practices and typical forms of co-presence. This discussion culminates in a closer analysis of encounters in two public squares, one in Colombia, the other in Zurich (Section 7).

2. Three perspectives on human-made spaces

A question that has been raised in studies of contemporary city sociality is: How does the complexity of built urban space, the overall city design, relate to the everyday practices of its inhabitants who are animating local places with activities that are meaningful to them? Three frameworks articulate an irremediable tension between the forms and intentions of designed artifacts and spaces on the one hand

and their affordances as discovered as they are subjected to actual use on the other.[1] This tension serves as the basis for our later exploration of the origins of human spatial practices. How are building and dwelling connected evolutionarily, we will ask with reference to the famous essay by Heidegger (2014), whose basic argument is a theme of our discussion in the following.

2.1. Geometric city vs. practices of walking

Michel de Certeau (2011), in his book on *The Practice of Everyday Life*, points to a sharp contrast to the static and rigid built city environment, the static nature of the built city environment. He distinguishes between the "urban text" that city dwellers write and read during their movements on the ground and the panoptic, geometrical perspective of planners. To illustrate this opposition, he reflects on the movements of pedestrians in New York: "These practitioners make use of spaces that cannot be seen", he writes, adding: "their knowledge of them is as blind as that of lovers in each other's arms" (de Certeau 2011: 93). The familiar blindness of pedestrian movements unfolds its dynamic nature in the repeated encounters with other experienced city walkers, each of which becomes "an element signed by many others", says de Certeau. These encounters thus give rise to an "urban 'text'". This text, however, eludes readability – both for pedestrians, engaged in the somnambulant precision of their encounters and in particular for urban planners who believe they can grasp the essence of a city by looking down at its streets and buildings from a skyscraper. It is against them, the planners, designers, and theoreticians of the city, that de Certeau's antipathy is directed. Up there, he writes, all one can see is the "panorama-city" rendering visible the "'geometrical' or 'geographical' space of visual, panoptic, or theoretical constructions" (de Certeau 2011: 93).

The perspective provides a clear image of the city, de Certeau admits, but this image obscures the view of the city that is enfolded in the practices of its inhabitants. Figure 2 offers an illustration of this issue. Looking out from the skyscraper, the city comes into view as a "geometric" artifact of orderly planning – we see a map. Pedestrians are barely visible, and so we lose sight of their practices and perspectives.

[1] The contrast can be summed up in the image of two paths in a park, a broad one designed by a landscape planner and constructed by city workers, the other laid down in walking by an infinite succession of pedestrians (who discovered that there is a shorter way from one location to another than the "official" path suggests).

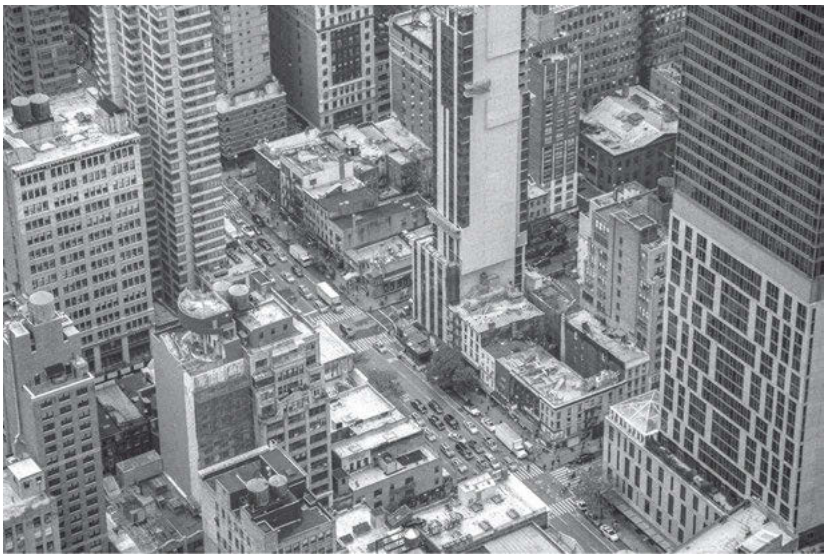

Figure 2: According to De Certeau, looking down on the city from a skyscraper allows "to be a solar Eye, looking down like a god" (De Certeau 2011: 92). Source: Christopher Burns on Pixabay

2.2. Sociological space vs. emplacement

In the humanities, space is primarily regarded as a domain of sociology. Sociologist Georg Simmel (1908) noted early on that various forms of social organization (*Vergesellschaftung*), including states, groups, and societies themselves, manifest themselves and are "fixated" in spatial units such as territories, borders, locations, and buildings. Since then, sociologists have been interested in the question of the spatio-temporal organization of societies and how space contributes meaning to social action and interaction. Treating it as an example of the "duality of structure and action", Giddens developed his conception of space by focusing on the intersections of people's daily paths in certain recurrent locales, what he called "stations", because it is in them that encounters take place (Giddens 1984). In a similar vein, Löw has investigated space from the point of view of the "relational order(ing) of bodies and social goods at places" (Löw 2001: 131), but her conception of relational space is more dynamic than Giddens': bodies are constantly in motion, and as a result, spatial order changes incessantly. Nevertheless, "analyses of space must be able to explain the 'material substrate' and the 'semiotic character' of situations" (Löw 2001: 67). Common to these works is a view of human existence in the world that is irrevocably shaped by and interwoven with social space-time structures. There is nothing like "pure access" to our environment. All our being and perception of the world are embedded in sociocultural patterns and practices.

This is also assumed by humanistic geographers. Humanistic geography (Tuan 1979; Relph 2008) emphasizes how certain locations in space have been made distinct and meaningful by human action. It draws on phenomenological conceptions of human embodiment (Merleau-Ponty [1945] 1966) and being-in-the-world (Heidegger [1927] 1967). As we "emplace" ourselves in locations and get to know them, our bodies incarnate these places. The incarnate knowledge of places – perhaps the form of human knowing on which all other knowledge rests – is manifested in our ability to get around. This is personal knowledge (Polanyi [1958] 2009), acquired by and inalienable from the individual body and impossible to state in the form of explicit representations or rules. Rather, it is "the lived body's peculiar combination of being at once a 'general medium for having a world' and something quite idiosyncratic and personal (as always *my* body) [that] enables it to ensure the concreteness of the regions in which we are immersed in implacements" (Casey 1999: 74; emphasis original).

The term "emplacement" emphasizes this human agency in the emergence of place. It highlights the fact that places emerge in our experience as we situate and orient ourselves in them in the conduct of our everyday affairs. As we get to know places and incarnate them in our bodies, they become part of our identities. In other words: rather than assuming a semiotic web of signs and meanings that determines our access to the environment, phenomenologists and humanistic geographers attribute primacy to the experience of being in a particular place. This is expressed in Heidegger's essay "Bauen, Wohnen, Denken" (Building Dwelling Thinking, Heidegger 2014), to which many of the contemporary works in sociology, anthropology, and architectural theory refer (Ingold 2013; Sennett 2018).

2.3. Cité vs. ville

Richard Sennett (1977, 1990, 1994, 2018) reconstructs how built space shaped the sensory experiences of the inhabitants of metropolitan cities, from ancient Rome to Paris and London in the eighteenth and nineteenth centuries. What they had in common, apart from their size, was that they were cities of strangers and that, in order to thrive in them, citizens had to learn how to interact with strangers. Sennett distinguishes between the "built environment" – ville – and "how people dwell in it" – cite. He writes:

> Initially these named big and small: *ville* referred to the overall city, whereas *cité* designated a particular place. Sometime in the sixteenth century the *cité* came to mean the character of life in a neighborhood, the feelings people harbored about neighbors and strangers, and attachments to place. This old distinction … is worth reviving …, because it describes a basic distinction: the built environment is one thing, how people dwell in it another. (Sennett 2018: 1)

These two layers of cities are often in conflict:

> It might seem that *cité* and *ville* fit together seamlessly; how people live should be expressed in how cities are built. But … experience in a city … is rarely seamless, it is much more often full of contradictions and jagged edges. (Sennett 2018: 2)

Villes get inhabited – turned into cités – in ways not intended by their designers, and dwelling can be made difficult by the grandeur of urbanist design. Sennett gives the example of the sidewalk, a spatial feature designed to reduce congestion by channeling traffic into different tracks according to speed, but which instead intensified the feeling of crowding:

> The translation of "dense" into "crowded" derives physically from the compressive effects of sidewalks, in comparison to the looser movements of navigating older, more amorphous street space. (Sennett 2018: 56–57)

2.4. A contradictory union: Geometric design and everyday interaction

While these three traditions of thought express somewhat divergent understandings of the relationship between humans and the world, crucial to our interest is that they all recognize, in one form or another, the existence of man-made artefacts with conceptual and esthetic – in de Certeau's word: geometrical – qualities that are neither the product of nor, at least initially, adapted to situated, improvisational action. The question arises of how these features have come into existence in our social histories. As inventions of minds that have achieved a new level of hominin cognition, esthetic sensibility and ambition, and planning capacity, or as epiphenomena, unintentional by-products, of skilled bodily actions, in which a budding human consciousness may then retrospectively find geometrically striking features, features that could be standardized, conceptualized, and elaborated? This question will guide the following review of selected studies from archaeology and paleoanthropology about the evolution of public spaces.

3. Social architecture from the bottom up

Humans, like some other species, in order to survive, need to create artefactual shelters. This essentially distinguishes them from other primates, which build only temporary sleeping places (Leroi-Gourhan 1993: 318). A hominin species that played a key role in the evolution of techno-social practices was *Homo erectus*, the first primate to walk consistently (and powerfully) on two legs. *Homo erectus* lived for around two million years, with the last representative becoming extinct around 117,000–108,000 years ago (Rizal et al. 2020)[2] and hunting ever-larger

[2] No other human species has (yet) lived this long. Also, it was *Homo erectus* that first spread widely across the world.

prey. To dismember the carcasses, they relied on stone tools.[3] The shape of these tools provides us with one of the few direct links to the living world of our ancestors. Yet archaeologists and paleoanthropologists are of two minds about the significance of symmetric features in these tools. Especially the geometric features of the bifaced stone-axe pits "designers" against "users". We explain the arguments of this debate. The increasingly standardized elaboration of tools with geometric features testifies to the relevance of public working spaces, in and through which group individuals more and more aligned their postures and movements. We discuss how modification of the tool shape provides an indirect link to a shift in the organization of hominin co-presence and social interaction.

3.1. Biface and the finished artefact fallacy

The biface is a symmetrically and teardrop-shaped stone-tool that *Homo erectus*[4] produced (Porr 2005) and which replaced the Oldowan stone-axe that lacked geometrical features (Figures 3 and 4).[5]

Figure 3: Oldowan stone tool. Source: Locutus Borg, Public domain, via Wikimedia Commons. These tools were used from ca. 2,6 million to 1.7 million years ago.

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3 The lower paleolithic also marks the time when the raw materials necessary for the production of stone tools were carried for the first time – over short distances – to central and favored sites (Chamberlain 2008: 107).

4 Sometimes a distinction is made between *Homo ergaster* and *Homo erectus*. The early representatives of homo erectus (in the Oldowan) would have to be called homo ergaster according to such a distinction.

5 Recent studies assume that *Homo erectus* produced both stone tools, depending on his needs. For our argumentation, it is sufficient to state that a clear difference in the elaboration of the stones can be seen.

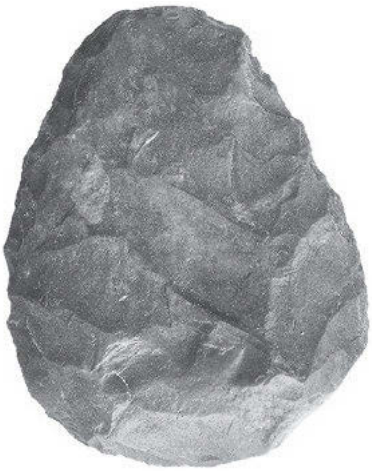

Figure 4: The Acheulean biface was first developed 1.76 million years ago and (re-)produced until 130,000 years ago. Source: Gallo-Roman Museum, CC0, via Wikimedia Commons.

Both tools are made by forcefully hammering one stone (the core) with another so that flakes come off and the core takes on sharp edges and corners, making it usable as a large cutting tool . Oldowan technology has been described as "a least-effort system for the production of sharp cutting and chopping edges by the hominin tool-makers" (Schick and Toth 2006: 4). The Acheulean biface, by contrast, provides the first archaeological evidence for a standardized model of human creation. It is a stone core processed on both sides, rounded on the "hand-side", while angular and sharpened on the "knife-side". In the symmetry of its elaboration, prominent scholars see the emergence of "spatial competence" (Wynn 1989), "a major transition in human evolution" (de la Torre 2016), or, in the words of the archaeologist Porr, "material style is now added into the dynamics of social life" (Porr 2005: 75).

However, critics have argued that enthusiastic interpretations of Acheulean biface design spring from a misguided focus on perfect samples in the archaeological record, leaving aside what does not fit into the conceptual scheme, for example, less well-worked tools, chippings, and exemplars that show wear and tear. Archaeological studies tend to regard stones as finished tools. But Davison and Noble argue that the shape of the biface may have emerged as a by-product of a flaking technique (Davidson and Noble 2008 [1993]), and we cannot know "whether there was a sense in which they were finished" (Davidson and Noble [1993] 2008: 372). To believe that the form found is the intended end state is what Davidson and Noble call the "finished artefact fallacy".

The question of how the geometrical shape of a human artifact (in this case: a

tool) relates to human action – not only production but also use – is analogous to the questions de Certeau and others have asked about the geometry of cities. Can geometry arise from a human activity without being that activity's premeditated goal? This is a question about the evolution of built space.

Whether or not Acheulean tools were intentionally produced as such, their geometry emerges from an increasingly uniform embodied practice of hitting one stone against another. Whereas Oldowan tools witness a "least effort system", the Acheulean biface gains shape in the course of elaborate movements that go hand in hand with specific postures, brief moments of concentration, and the repetitive sound of stones clashing against each other, in other words, forms of *emplacement*. We get a rudimentary idea of how places with people working on stone tools might have looked and sounded.

3.2. A million years of rhythmic alignment

Referring to the seminal work of paleontologist Leroi-Gourhan (in particular, Leroi-Gourhan 1993), Gary Tomlinson, an ethnomusicologist interested in the evolution of music, points to the rhythmicity of actions involved in the making of Acheulean handaxes. In the very stability of this rhythmic practice, passed down through generations, Tomlinson sees the emergence of a system of "interlinked oscillators": Paleolithic humans (perhaps only some of them) found in toolmaking an activity in which their bodily movements and postures for producing the form of Acheulean bifaces – with or without intention – are more elaborately executed than for Oldowan tools. And precisely because of this, the respective movements are also increasingly similar. In a process of "cultural *transmission* but little or no cultural *transformation*" (Tomlinson 2015: 83, emphasis in original), the repetitive practices of stone knapping both sharpen and shape the emergence of social bonds, a cultural tradition, and, not least, visible tools.[6] Compared to the Oldowan, Tomlinson sees in the stone tools of the Acheulean evidence not only of a "more focused form" of engagement with the material environment but also of an elaborated form of "social entrainment" (Tomlinson 2015: 81). From an interaction analytical perspective, this musicological take on prehistoric space is compelling because it brings into focus the bodily-spatial organization of hominins. The rhythmic organization of tool-making practices is a social form of organization, in which multiple senses come together: the kinesthetic movement patterns and haptic and tactile contact with the material – percussion angle, percussion force; hand-eye coordination in the work process as well as visually

[6] Other scholars, however, have argued that skills for shaping the Acheulean biface could have been acquired individually, while its production is "socially induced" (Tennie et al. 2020).

mediated imitation; and the sonic and rhythmic fabric by which movements could be aligned between multiple individuals. The geometry of the biface can therefore be seen as a witness to a practice that gave *Homo erectus* a rhythmically induced sense of place. The numerous manufactures of stone tools, therefore, provide early traces of "co-orientation, co-ordination and co-operation" of actions – basic procedures for situating organized co-presence within the limits of a spatial environment (Hausendorf 2012). The spatially anchored organization of everyday life (and corresponding activities) precedes the later creation of meaningful areas around fireplaces in caves and simple dwellings. In the transition from dwelling in the open steppe to the making of material structures, caves play an intriguing role.

3.3. From making the biface to city architecture: A preview

What do stone tools have to do with the structures of human-made urban architecture that frame our encounters today? We know that the landscape of *Homo Erectus* was characterized by the repeated use of specific places, which had a special meaning. Drawing on the distribution of stones, Diez-Martín (2021) reveals that paleolithic humans in the Olduvai Gorge transported fleshed carcasses to central locations and consumed them collectively. Many of the archaeological finds come from caves. These protect against the weather and represent naturally fixed locations in the otherwise arbitrarily open landscape – for both paleolithic humans as well as for archeologists. The stone circles at Bruniquel – stalagmites dragged deep into the cave by Neanderthals and arranged in two circles – are among the oldest human-built structure (176,500 BCE). As such, they are a direct witness to a social form.

Figure 5 shows a photo from the cave. A total of about 400 stalagmites were used, with average lengths of 34.4 cm for the large ring and 29, 5cm for the small ring – another indication of an intentional building (Jaubert et al. 2016).

We do not know what the circles were created for. But their structure fits findings of stone circles on earlier and later campsites which indicate that Neanderthals and early homo sapiens erected huts, some of them free-standing in the landscape, others at the entrance of caves. Can we understand these circle formations, in the Bruniquel cave or at prehistoric campsites, as a result of social processes and above all interaction spaces? Do they represent what was socially there, i. e. did such material structures enclose existing interaction units? Or did stone circles, huts, and fires bring them about in the first place?

In the following, we will discuss how stone circles mark the architectural transition from primordial forms of social alignment, for which, on the one side, the geometry of biface presumably gives an early material indication, to subsequent architectures of campsites, settlements, and then prehistoric cities, on the other hand, all of which increasingly predetermine the material conditions of copresence.

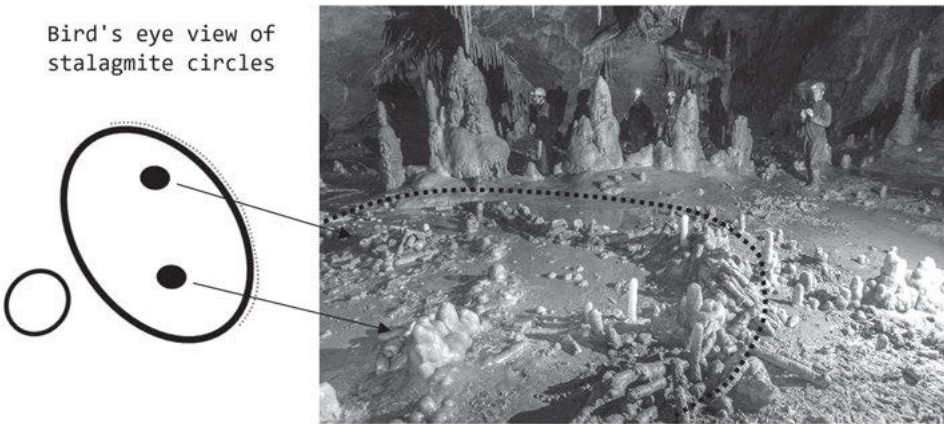

Figure 5: Rudimentary sketch (bird's eye view) and picture of stalagmite-circles in the Bruniquel Cave. The black curve marks the edge of the larger of the two. In the center of this circle, there are two smaller clusters of stalagmites (see black arrows). Source of photograph: Luc-Henri Fage/SSAC, CC BY-SA 4.0 <https://creativecommons.org/licenses/by-sa/4.0>, via Wikimedia Commons.

Stone circles invite for a coming together, an alignment of presence that is accompanied by a general calming of breathing and movement.

We will trace back how the material shaping of sociality continues in the formation of ever more complex architectural structures. The emerging geometry of (prehistoric) cities – we will focus on the structure of Neolithic Çatalhöyük – suggests specific modes of locomotion, perception, and thus encounter among inhabitants. The more geometric the city, the more clocked our paths. The flatter the ground, the more regular our gait.

This process of building ever more complex structures of collective architecture runs along with the separation and constant renegotiation of inside and outside: The more material spheres of privacy but also powerful institutions emerge in the course of urbanization, the more strongly open space appears as a sphere for the public. We roughly sketch how architectures of public spaces are increasingly putting forward an organization of copresence and encounters that is rhythmic but also uniform – allowing for passing by each other rather than encountering each other.

Examining questions of the coming together (and separation) of *ville* and *cité* (Sennett 2018) leads over to the empirical analysis of interaction at Plaza de la Trinidad and Oerlikon which represent two very different forms of dwelling in built public space.

4. The sociality of hominin architecture-for-interaction

Prehistoric structures of early dwellings are regarded as indices of specific forms of copresence and interaction. The shift from adapting to natural habitats to building stand-alone constructions has, of course, been fluid, and the interpretation of the archaeological record is accordingly difficult. Most of the materials that would be used for building huts (wood, leaves, vine, etc.) are subject to weathering.

In *The Prehistory of Home*, anthropologist Moore (2012), discussing features of some of the most famous prehistoric sites, addresses fallacies in the interpretation of stone circles. For example, the circle found in the Olduvai Gorge[7] (in today's Tanzania), dated to over 1.6 million years BCE, turned out *not* to be the "earliest man-made structure known", as the discoverer Leakey claimed (Leakey 1979: 55; in: Moore 2012: 24). Instead, it consisted "of chunks of the underlying bedrock jutting into the layers containing bone and stone tools" (Moore 2012: 25).

4.1 Humans – the organizer of space

So why do archeologists fall for stone circles? Among the oldest relics of human activity, they often mark the foundation of huts. Moreover, if it can be shown that they were deliberately placed, they must count as unmistakable signs of focused sociality (see above our description of the stalagmite circles in the Bruniquel cave). In other words, stone circles are witnesses of socially shared emplacement activities. Fortunately, there are a serious number of key archaeological sites that "have retained their integrity" (Gamble and Porr 2005: 2). However, these finds are nearly a million years younger than the fossils from the Olduvai gorge. By then, *Homo erectus* and other hominins[8] created campsites. However, these places are characterized by the fact that domestic zones still are difficult to distinguish from those of working zones. Somewhat disparagingly, Leroi-Gourhan writes about an open-air site in Moldova on the Dniestr (Figure 6): "Neanderthal man lived surrounded by carcasses of his game, which he pushed aside in order to provide himself with living space" (Leroi-Gourhan 1993: 319).

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7 In today's Tanzania, the oldest stone tools found in the region mark the Oldowan age, which preceded the Acheulean age (and its more elaborated stone tool production, see above.)

8 The classification of hominins – another candidate for designating the human form at Bilzingsleben is *Homo heidelbergensis* – is a subject of debate.

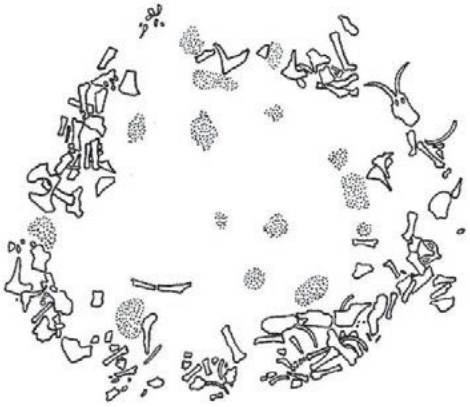


Figure 6: The circular area of about eight meters in diameter represents the floor space of a tent or hut in Molodovo on the Dniester. The structure is surrounded by animal remains. Source: Andre Leroi-Gourhan, *Gesture and Speech* (Cambridge, MA: MIT Press, 1993: 320), reproduced with kind permission of the copyright owner: © 1964 – 2021 Editions Albin Michel.

By contrast, Figure 7 shows a site of huts built under the porch of the Reinder cave at d'Arcy-sur-Cure in France from about 30,000 BCE. Here, evidence for elaborate spatial organizations of campsites can be found. Each tent "forms a circle 3 to 4 meters in diameter with a central area of clay that has been cleared of stones and compacted, surrounded by a ring of stone slabs forming a pavement" (Leroi-Gourhan 1993: 319). Leroi-Gourhan furthermore states:

> The whole space was carefully maintained; a few piles of coarse rubble, and scattered on the slope, some "rubbish bins"-small heaps of ash intermingled with discarded scraps of flint and small bone fragments-were found outside. (Leroi-Gourhan 1993: 319)

According to Leroi-Gourhan, this is the point at which the dwelling area is demarcated from the chaos of the environment. He points out that this process goes in hand with the emergence of paintings and other cultural artefacts. "The role of the human as the organizer of space manifests itself here in the systematic adaptation of space" (Leroi-Gourhan 1993: 319).

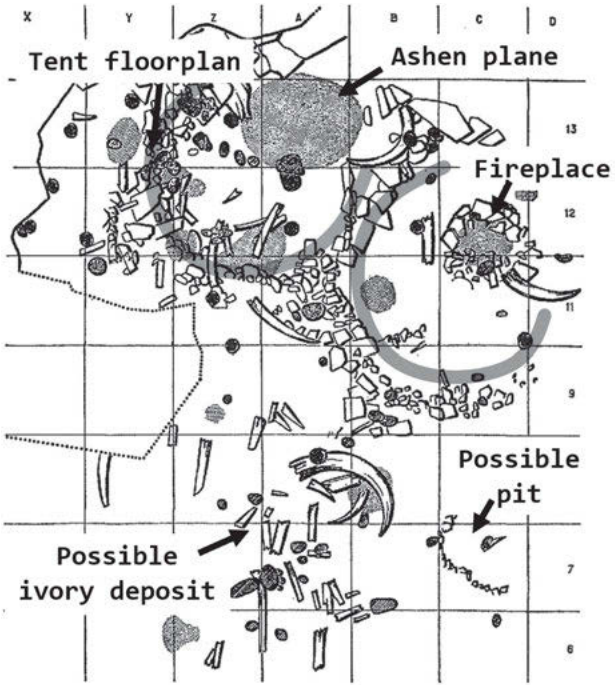


Figure 7: The layout of tent structures and pavements under the porch of a cave in d'Arcy-sur-Cure represents a more careful organization of the living area. The grid structure marks square meters. Source: Andre Leroi-Gourhan, *Gesture and Speech* (Cambridge, MA: MIT Press, 1993: 321), reproduced with kind permission of the copyright owner: © 1964 – 2021 Editions Albin Michel. We added information on tent layout, fireplace, the ash site, possible ivory processing sites and a pit.

4.2. Architecture for stationary copresence: Circle and fire

Whether in caves or huts, the rudimentary architectures of prehistoric sites provide material evidence for the establishment of areas of heightened sociality. We are faced with architectures for stationary copresence, additionally strengthened by the installation and use of hearths and fireplaces (Figure 8). The latter is even more directly related to the use, control, and handling of the immediate spatial environment.[9] Evidence for fireplaces as stations in the sense of Giddens has been found for long-term sites such as Gesher Benot Ya'akov (Shahack-Gross et al. 2014) and Qesem (Alperson-Afil 2008).

[9] For a discussion of the question of when fire was used and when it was mastered see Roebroeks and Villa (2011); Gowlett (2016); Chazan (2017).

Figure 8: Both fire and hut architecturally evoke the adoption of an f-formation (Kendon 1976) and thus a typical configuration of human interaction. Moreover, they create a prerequisite for the communicative establishment and elaboration of differentiated spaces: *here* and *there*, *inside* and *outside*. Illustration by Heike Würschem.

Fires not only suggest a group's extended presence in a location, but they also mark a circular area where it is pleasantly warm – and others where it is too hot or cold. They structure the environment circularly not only in terms of temperature but also light. In closed environments, this creates opportunities for projecting shadows of the body and other objects onto the walls – an important prerequisite for gaining a conceptual understanding of embodied presence. Moreover, a fire invites individuals to be copresent for a longer period – calming down, aligning breathing and movement. A spatial focal point can equally function as a point of orientation for interactive attention.

From an interaction analytic point of view, this arrangement strongly resembles what Kendon has described as embodied practices for establishing what he calls "f-formations" (originally "facing formations", Kendon 1976). As configurations of and among living bodies, f-formations dynamically "(1) define the type of interpersonal exchange, (2) delineate the number of participants, (3) create a congenial communication nexus, (4) maintain equality in participation, and (5) create a communication boundary between the inner space of exchange and

the rest of the environment" (Ciolek and Kendon 1980: 245–246 [with minor grammatical adjustments, kh and js]). This fundamental spatial organization in (human) social encounters is mirrored by the earliest traces of prehistoric architecture. Stone circles, fire sites, huts, and caves are in many ways fixed and inanimate counterparts of Kendon's f-formation, quite literally their *Interaktionsarchitektur* ('architecture for interaction', cf. Hausendorf and Schmitt 2016, this volume).

4.3. Creating inside and outside

We have argued that circular structures of prehistoric sites give us an elementary indication of forms of social focusing. Together with fire, they create zones for focused interaction. The architecture of prehistoric huts lays the foundation for further processes of differentiation and social use of the spatial environment: materially, visually, haptically and, to a certain extent, auditorily, it separates an interior sphere from an exterior and thus creates a boundary between them (Figure 8). This is what, according to reflections in architectural sociology (Delitz 2010) and systems theory (Baecker 1990), can be considered the elementary function of architecture.

However, there were immediate practical aspects to this process of differentiation – each shelter (including huts at the entrance of caves) was adapted to specific, contingent environmental challenges. Although prehistoric sites consisted "of little more than hearths and stone scatter", they "were not identical 'constructions'", as is the case with "oriole nests or beaver dens" (Moore 2012: 31). Rather, the "forms of home varied in adaption to resources and the local environment" (Moore 2012: 31).

Shaping their environment according to needs, available resources, and environmental conditions, hominins simultaneously established a profound, pre-conceptual separation between themselves as being inside, while the world is outside. A here and a there. This in turn laid the ground for semio-praxeological diversity with which the relationship between outdoor and indoor space is regulated in different cultures, religions, institutions, and their buildings (Frake 1980). The architecture of a hut not only creates a hitherto unknown interior sphere but also transforms the outer realm.

5. A place on earth

The process of demarcation between the inside and outside was further reinforced in the course of the creation and use of permanent settlements. The outside space was no longer traversed in endless cycles but became the steady counterpart of static homes. The transition from nomadic camps to temporary settlements with village structures was gradual and closely related to the emergence of agriculture.

It was long believed – and firstly stated by the archaeologist Gordon Childe – that the increased engagement with natural resources (both plants and animals) brought forward a surplus of goods that allowed humans not only to install themselves in long terms at a particular place but also to aggregate as a social community – in villages first, then in cities (cf. the seminal work by Childe 1936). But contemporary archaeology has shown that the processes of sedentarization and urbanization spanned thousands of years. Human settlement is not a coherent process. Rather, it took place in different places in the world, at different times, in often divergent ways. In the following, we will illustrate this with architectural features of Göbekli Tepe and Çatalhöyük – two architectural milestones in the human transition to sedentary lifeforms.

5.1. The architecture of a collective

One of the oldest known Neolithic sites is Göbekli Tepe, near Şanlıurfa in Turkey. Its discovery seemed to turn Childe's thesis on its head, according to which the creation of monumental architecture followed an agri-cultural way of life. The complex was presumably created 12,000 years ago by hunter-gatherers in a time when hardly any wheat and animals were domesticated, and it is the largest structure dating from that period. What is Göbekli Tepe? The size and complexity of the architecture were unexpected. "Never had such monumental structures been seen in the early Neolithic" (Mithen 2007: 712). Structurally, the site consists of several circular structures in which T-shaped pillars are placed (see one of these enclosures in Figure 9.) The main excavator of the site, Klaus Schmidt, argued that it must have played a role in a cult (Schmidt 2016: 246). Although this view is widely accepted, Banning suggests that this site could in fact have been a house – albeit a symbolically rich one that precedes the spatial separation of the sacred and the profane (Banning 2011).

There can be little doubt that the site had a symbolic meaning for nomadic groups. Presumably, it was a reference point on their circular route through the area. Scholars have argued that the construction of Göbekli Tepe may have acted as a catalyst for the adaptation of sedentary lifestyles (Schmidt 2016). Recent excavations, however, show various domestic activities around the site, in particular during times when the monumental structures were being built (Clare 2020). Moreover, larger groups of people must have worked together during the construction of Göbekli Tepe, others to provide the workers with shelter and food. Whether the monumental architecture was made for a society that had become semi-sedentary or was still nomadic, its building (and practices of dwelling around the construction site) mark the beginning of the emergence of increasingly sedentary forms of life in the region. It does not seem very far-fetched to think that the building of Göbekli Tepe provided a good opportunity to try out new forms of collective dwelling in the same place.

Figure 9: Enclosure with T-shaped pillars at Göbekli Tepe. Source: Kerimbesler, CC BY-SA 4.0 <https://creativecommons.org/licenses/by-sa/4.0>, via Wikimedia Commons.

Göbekli Tepe was used for about three thousand years (and repeatedly rebuilt during this time). The most recent years of its use coincide with the emergence of the town about 600 kilometers away in the Konya Plain, where coexistence first took on forms reminiscent of life in today's cities: Çatalhöyük.

5.2. The egalitarian community of Çatalhöyük

Çatalhöyük is another milestone in Neolithic archaeology. At its peak, Çatalhöyük was inhabited by about 3,500 to 8,000 people (Hodder 2006: 95) – an unprecedented number for that period according to today's archaeological record. One of the most striking features of this "town" is its layout: It consists of square houses, built wall to wall and climbed via a ladder to the roof. There were no streets, doors, squares, or monumental buildings in between the houses (Figure 10). To get from one house to the next, therefore, the inhabitants had to cross the roof of the town. Moreover, it can be assumed that a large part of public life took place on these terrace roofs. The basic structure of the city remained the same for a long time because old houses would be stamped down to build new ones on the ruins. When people moved, they would carry their belongings with them – including the bones of ancestors, excavated in the old house, reburied in the new one.

The Çatalhöyük community was thus not only held together architecturally in one block. The practices of exchanging bones of deceased ancestors served to consolidate social relationships across the individual house cells. All this resulted in a stable society whose practice of continually rebuilding the city in the same layout continued for over 1,000 years, reminiscent of the seemingly endless prac-

Figure 10: Excavation site showing parts of the town. Source: Omar Hoftun – Own work, CC BY-SA 3.0, https://commons.wikimedia.org/w/index.php?curid=26650324.

tice of making the Acheulean biface we have discussed in Section 3. According to Ian Hodder, the leading excavator in Çatalhöyük for decades, there was something "aggressively egalitarian" about how this community organized its life (Hodder 2014: 1). The repetitive practice of rebuilding houses is architecturally mirrored by their form: they look the same everywhere (Figure 10). The Çatalhöyük conglomeration of house cells lacks streets, squares, distinct quarters and thus any form of architectural differentiation that characterizes the later process of urbanization (Section 6).

5.3. Cubic copresence

Çatalhöyük tied its inhabitants to one particular place in the world. Living in Çatalhöyük, you had the dead ancestors below, buried in the ground, the neighbors next, behind the wall, and the outside area as a static counterpart of the town. The external world began on the roof. It was both the boundary of the cubic house cell towards the top and part of the roof structure that constricted Çatalhöyük as a town. Waking up in the morning, climbing a ladder, and opening a door in the ceiling, the inhabitants "emerged into an environment created entirely by human hands" (Newitz 2021: 43). The uneven structure of this square of roofs represents one of the first known forms of a material structure where people who presumably did not all know one another personally could meet – a public square in the making.

Newitz points out that in prototypical cities like Çatalhöyük, spheres of spatially-determined privacy were created and tested for the first time (Wilson 1991; Newitz 2021: 31). These stood in contrast to the distinct sphere of the public. "Opening the door to go outside meant putting on a public face, and with it, a set of behaviors that might be quite different than the ones acceptable within the home", writes Newitz (2021: 32).

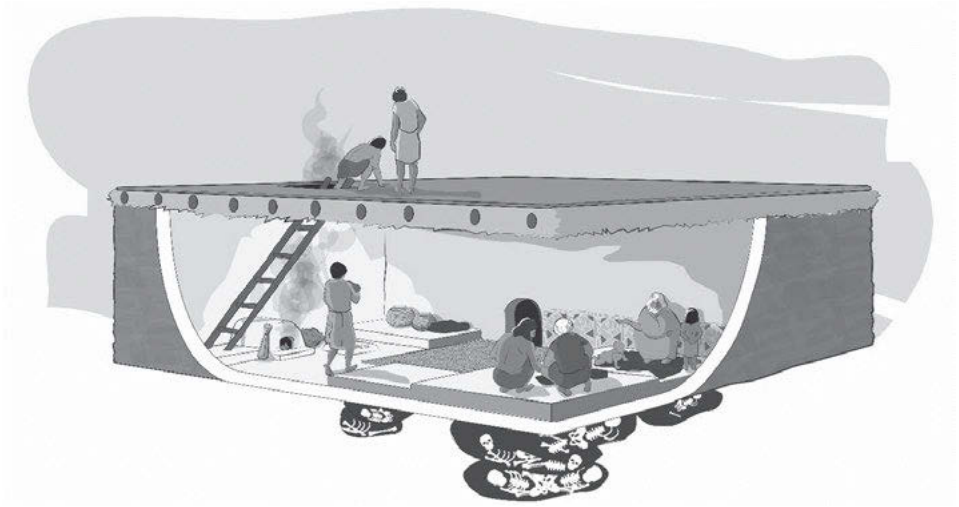


Figure 11: Reconstructive drawing of a Çatalhöyük with inhabitants. Reproduced with kind permission of Kathryn Killackey and the Çatalhöyük Research Project (http://www.catalhoyuk.com/site/architecture).

5.4. The emergence of public architecture

How should we conceive of the making of the rooftop square above Çatalhöyük, considering it an archetype of built public space? Did the inhabitants of the initial settlement anticipate the final layout of the Çatalhöyük that was buried and excavated, including a public roof, as they added ever more cells to the agglomeration? The question is analogous to that about the design or emergence of the biface. The emergence of Çatalhöyük falls into a period in which "clustered neighborhoods" were expanding everywhere (Düring 2006). But Çatalhöyük reached dimensions not seen previously or elsewhere. Just as Çatalhöyük was emptied later "in thousands of small acts […], each one a hard choice" (Newitz 2021: 61), the settlement was populated step by step, year after year.

While the initial building of such evolving structures can be regarded as an architectural by-product of the continuous process of living together in ever-larger communities, the question arises whether at a certain size the novel structures of the clustered town became recognizable, projectable, and thereby expandable. Was there a point at which the inhabitants of the city noticed that a larger and hitherto unattained architectural structure was in the making?

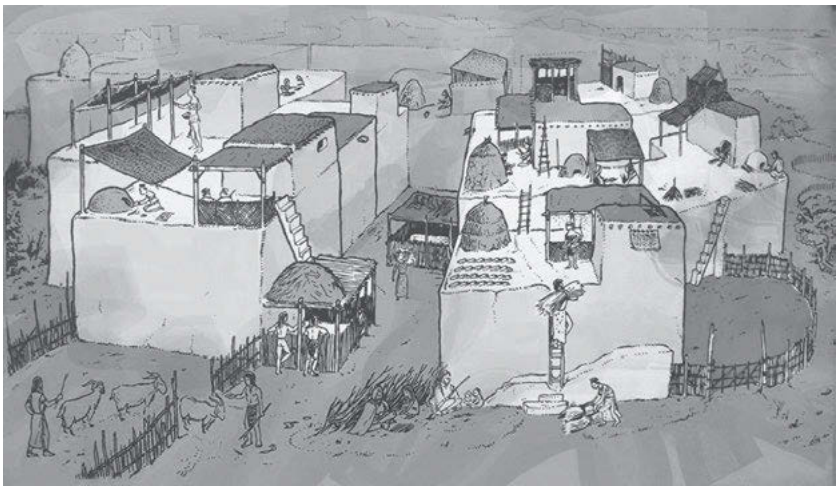


Figure 12: The illustration of Çatalhöyük by John Swogger gives an impression of how Çatalhöyük might have looked at the beginning of its expansion. Reproduced with kind permission of the Çatalhöyük Research Project (http://www.catalhoyuk.com/research/illustration).

Figure 13: The Model of Çatalhöyük by Wolfgang Sauber (Source: CC BY-SA 4.0, https://commons.wikimedia.org/w/index.php?curid=53242123.) gives an impression of what Çatalhöyük might have looked like in its heyday.

For a community whose ancestors were building Göbekli Tepe around 2,000–3,000 years earlier, it would be surprising if this were not the case. Çatalhöyük may offer a good example of how previously unattained structures of collective architecture can emerge in the course of the continuous dwelling and (re-)building of a place.

6. City structures and the social

In comparison to later Sumerian, Egyptian, and Roman cities, Çatalhöyük appears like a rudimentary block into which structures of open space in interplay with symbolic architecture, have ground their way (see, for example, Figure 14). It lacks all those elements that urban planner Kevin Lynch considers to be part of the "public image of any given city", namely: paths, edges, districts, nodes, and landmarks (Lynch [1960] 1990: 46–48). If Çatalhöyük was a conglomerate that held its community together through an egalitarian architecture and a variety of practices that strengthened social bonds among inhabitants (Hodder 2014), the subsequent history of urban development bears witness to diversification of society, practices, and spatial structures.

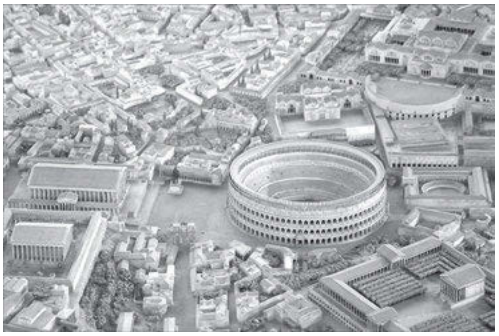


Figure 14: Model of antique Rome by Jean-Pierre Dalbéra (source: https://commons.wikimedia.org/w/index.php?curid=24669254).

How can we conceive of the complex developmental history of city architecture? How did it come about and what did the building of the divergent forms mean for the people who were encountering each other in the changing public realms of these cities?

The early sites of urbanization in Mesopotamia, Egypt, Greece, and Rome (Figure 14), each testify to distinct forms of organization of space and society.[10] Given the complexity and uniqueness of these developments, we limit ourselves to highlighting some aspects of urbanization that give a sense of how sociality in

[10] Architectural historians Kostof, Richards, and Tobias ([1995] 2002) offer an insightful overview of the origins of basic city structures like city walls, streets, and monumental buildings. They show how public space has been taking on ever-new forms – from the Greek Agora to the Forum Romanum to marketplaces in medieval cities, the plaza of the Renaissance, and, finally, public spaces in contemporary industrial cities.

built public space has changed over the millennia: On the one hand, in all cities presently spreading around the globe, inequality can be observed in architectural forms. They are tied to social and economic inequalities, that is, to the emergence of societies organized into classes with differential power and control over other classes. Encounters among city inhabitants, on the other hand, typically take place in egalitarian architectures like marketplaces, streets, promenades, and public squares. Urbanization in many ways represents the history of the creation and use of (public) places that follow principles of equality, as found in the iconic layout of Çatalhöyük.

6.1. Urban inequality

The archeologist Childe (1936) states that it was the surplus of food generated in agriculture that stands at the beginning of urbanism (see also Section 5). This surplus allowed an increasingly large part of the population to direct their energy to other areas of work. However, techno-economic progress benefited only the elite, those of religious and political authority. Urbanization is characterized by this elite occupying the city centers – usually in prestigious buildings that cover vast amounts of space (Figure 15) and are financed by the taxes of peasants who live in the hinterland (Leroi-Gourhan 1993). Within the city, the "topographical compartmentalization was all the more rigorous as larger numbers of individuals belonging to a wider range of social groups were obliged by constraints of space to rub shoulders with one another" (Leroi-Gourhan 1993: 179–180).

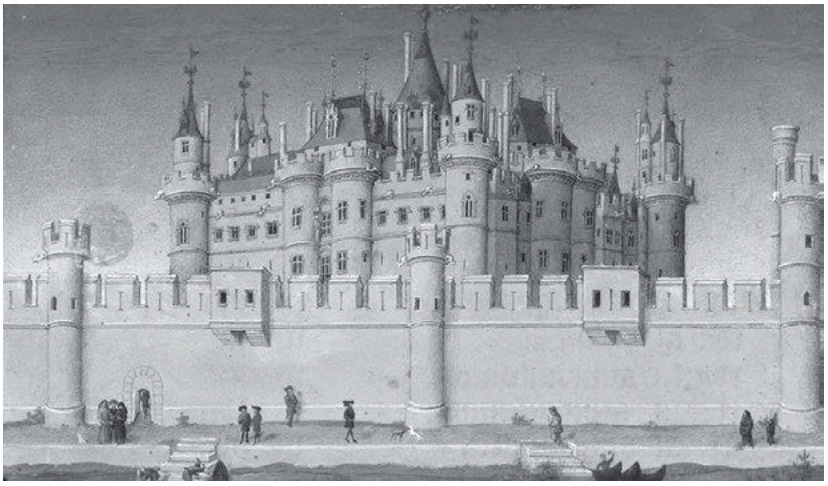


Figure 15: The Louvre pictured in the Très Riches Heures du Duc de Berry, 1410s, provides a picture of both the role of imposing architecture and the (equal) use of public pathways. Source: Wikicommons, Public domain.

In Childe and Leroi-Gourhan's description of urbanization, we find traces of the critique that de Certeau later made of the creation of elite urban geometry (Section 2.1.). Castles, temples, and government buildings are landmarks of cities as we know them today. The monumental architecture not only represents power relations, but it sets them in stone (Figure 15).

Is inequality in architecture and society the defining feature of urbanization? Studies on the emergence of Mesopotamian city-states (Stone 2007a) and the production of urban places in Mesopotamia, the eastern Mediterranean, the Roman Empire, China, eastern Africa, North America, and Mesoamerica (Creekmore and Fisher 2014) provide a differentiated picture of emerging sociality in ancient cities. Even though palaces and temples shape the urban landscape, studies on house sizes, house plans, and distributions bear witness to "numerous small, face-to-face communities" (Stone 2007b: 221) and a "significant stability in Mesopotamian social relations" (Stone 2007b: 219). At the gate of the cities, inhabitants and merchants from distant regions gather at marketplaces.[11] Here we find again what has its architectural antecedent in the rooftop of Çatalhöyük: built urban architecture for encounters among city dwellers. The archetype of a public square breaks away from the roofs of the houses of the community and gets a permanent place in the city. The Greek agora, the Forum Romanum,[12] or marketplaces in Mesopotamian and Medieval cities allow for new forms of collective copresence in cities that are home to increasingly high masses of people.

From the beginning, the city is also a place where principles of equality and freedom are promoted. Even in strictly class-segregated cities of the Middle Ages, according to a principle of law – *Stadtluft macht frei* ('city air makes you free') – serfs could gain freedom after a year's stay in a city. Of course, city inhabitants were never truly equal throughout the ages – think of the slaves and ethnic minorities who, for example, did not have the same say in the Greek polis. Even today, different social classes only come into close contact in cities where socio-economic differences abound. The idea(l) of equal access to community places, however, continues to shape the image of public space to this day.

6.2. A place for public encounters

Urban space is never given. It is interactively accomplished in the daily routines of encounters among the inhabitants. Therefore, sociality in the public sphere is subject to constant change. A glance at the last three hundred years of urban history

[11] Indeed, the sociologist Bahrdt (2006: 82) refers to the marketplace as the birthplace of the public sphere.

[12] The emergence of public space in Hellenistic and Roman Greece is discussed in Dickenson (2016).

in Europe illustrates the extent to which practices of interaction in public space are changing. The wealth generated in urban centers, especially in the industrial cities of the nineteenth and twentieth centuries, created newly designed public spaces that are used by the "crowd" (Sennett 2019: 52–58). Increasingly, the city is becoming a place of the masses – and thereby a place of equal anonymity, a city of strangers (Figure 16). While the practice of addressing unknown people in public was very common in the European cities of the eighteenth and nineteenth centuries (Sennett 2018: 27), the metropolitan city of the twentieth century is transformed into a place of "unfocused interaction" (Goffman 1963, 1971). People in the city no longer address each other; they leave each other alone. The public sphere increasingly becomes a place where people create a metropolitan form of unfocused copresence – cool and distanced interactional exchanges, limited only to what is necessary. The architectural equivalent to these encounters is a flat urban floor, offering ideal ground for a clocked and predictable passing of one another. It is the conglomeration of anonymous people from which city figures like the *flâneur* in Benjamin's studies (1982), the man of the crowd in Allen Poe's short story (1840), or "the metropolitan type of man" in Simmel's studies (Simmel 1969: 48; cited after Sennett 2018: 54) emerge.

In the twentieth century, the life of city dwellers becomes an object of study. On the one hand, sociologists investigate social structures of individual neighborhoods (Whyte 1981). In the 1950s and 60s, Erving Goffman launched a series of observational studies of the interactive effort we expend in order not to fall into focused interaction with one another as we navigate pedestrian traffic. Inspired by work in proxemics (Hall [1959] 1990, [1966] 1990), context analysis (Scheflen and Ashcraft 1976; Kendon 1990), and conversation-analytic sequence analysis, interaction researchers study the interplay of body, language, and space in public settings (Lee and Watson 1993; Mondada 2009; Haddington et al. 2012, see also D'Antoni et al. this volume). The main insights coming from these studies illuminate how the public space of cities is created by people who have developed mutually intelligible practices for encountering one another in public as strangers.

In the following, we take a look at two urban places – designated as such: *Platz/Plaza*. We show how their built-in affordances are used in very different ways, some of them not intended by the structures' designers. We thus leave the question of how the urban space was built and turn to forms of its contemporary use. We do this, however, especially with a view to tensions, ruptures, and indications of future spatial-material formations of these squares, which begin to emerge in the small-scale encounters of the inhabitants.

Figure 16: Yonge Street crowds celebrating the end of the Boer War, Toronto, Canada. 31 May 1900. Picture by William James, made available to Wikicommons from the City of Toronto Archives, listed under the archival citation Fonds 1244, Item 2049.

7. Public space and place as interactional achievements

Our focus first falls on Plaza de la Trinidad in Cartagena, Colombia, in the working-class neighborhood of Getsemaní, and we then zoom in on one architectural feature of great social importance, the base on which the church that anchors the plaza sits. We show how built-in, if unintended, affordances organically become part of social interactions and the social fabric of the neighborhood as different social groups and the generations organize their everyday copresence (Streeck 2013; Streeck and Harrison 2015). This system of places, "owned" by different neighborhood groupings, got erased when large numbers of young tourists began to occupy the plaza as their hang-out in what had become the "coolest" Cartagena barrio. Secondly, we analyze interactions between pedestrians in a square in Zurich. The example of the movements of a single man seemingly engrossed in a phone conversation shows how copresence among pedestrians can be negotiated and made accountable through minimal changes in body orientation and walking speed. We also see how pedestrians incorporate the geometrical grid shown by the stones in the ground in this organization.

7.1. Plaza de la Trinidad

Sennett (2018: 14) has argued that in cities, form does not follow function, but function follows form, although slowly. In other words, over time, unanticipated uses of built forms can develop and become habituated, whereas intended functions that motivated the form in the first place may no longer get enacted. This was vividly illustrated in 2009 by a small, enclosed urban square in the city of Cartagena de Indias on the Caribbean coast of Colombia, especially by one of its architectural details, the base of the church, *Iglesia de la Santissima Trinidad*, built around 1600 and dominating the square named after it. In 2009, *Plaza de la Trinidad* was the pulsating heart of the storied working-class neighborhood of Getsemaní. It was once the site of Spain's largest slave market in the New World and later became the part of town, outside the center, where freed slaves and other non-white subjects could live. Beginning in 1631, the fort that defended Cartagena against pirate attacks was extended to Getsemaní. Getsemaní is also the place where the struggle against colonialism began, leading to Cartagena's being the first city in Colombia to declare independence from the Spanish Crown. During the last decades of the twentieth century, Getsemaní was ridden with crime, its streets too violent to let children play in them, the Plaza was a drug market. Thanks to the law-and-order policies of the government of Álvaro Uribe, which sought to pacify the cities and attract tourists and investments while fighting a civil war in the countryside, as well as to the local political class, Getsemaní and, notably, the Plaza became safe again, in the first place for its inhabitants and children, but in the long run for tourists and their money.

In 2009, the Plaza had been refurbished with wooden benches, trees, a group of three human sculptures, and concrete benches arranged in a half-circle and separating the plaza from the small, little-used street around it. The church building – its outside – served its original religious functions only when processions entered or exited the church and occupied the stair leading to it. Otherwise, various sections of the building became home to a small set of groups of people and their activities, as did other architectural features of the plaza, including benches, stairs, sculptures, and various food carts operating in the evening. All of these small zones were "places" in the sense this term was given by humanistic geographers and other phenomenologists (Tuan 1979). They were also "stations" (Giddens 1984), locations where people routinely interrupted their daily walkabout to engage in sustained interaction with others. The following observations provide snap-shots of some of these habitualized, emplaced interactions and contextualize them.

The Plaza comes to life only after sundown when the tropical heat abates. During the day, only a few vendors offer their wares, older people may sit wherever there is shade, and in the late afternoon, a few middle-aged men, regulars all, lay on the elevated base of the church by a corner where the breeze coming

from the ocean can be felt. There are maybe a couple dozen locations where groups of people regularly gather, groups formed on the basis of age, gender, kinship, or friendship, in other words: locations that are places, not least because they connect individuals to one another. Couples, families, and other groups who come to the Plaza from other parts of the city, mainly on weekends, cluster in the available space between them, and many people, especially youngsters, make use of the affordances built into the plaza in ways for which they were not originally designed.

The church, called Iglesia de la Santa Trinidad on one plaque, Iglesia de la Santissima Trinidad on another, and simply Iglesia de la Trinidad by the people, sits on a base that is a meter and a half wider on each side than the nave and about a meter high, forming a platform. In the middle are stairs leading up to the large door of the church (Figure 17). This design was evidently geared towards theological meanings and ceremonial functions: the House of God was elevated and removed from the mundane life around, and the stairs channeled human traffic into solemn or joyous processions. But in the twenty-first century – and perhaps during most of the four-hundred years of its firm existence – the church base served people as a base for situated, sustained, and iterable engagements. In each of these uses, a different bundle of affordances of the location is recruited. The following series of images illustrates some of them.

Figure 17: The portal of Iglesia de la Trinidad in the daytime.

In the late afternoon, one corner of the church base is always occupied by middle-aged men – regulars – who rest or sleep here, because they can rest against the incline and a cool breeze from the sea comes through at this time of the day. These dwellers have a firm connection to this bit of space that is also recognized by others: this is their place (at this time). This function of the architectural detail evidently followed the form.

Figure 18: A corner of the church: a breezy resting place in the afternoon.

People in the Plaza, neighbors and visitors alike, often establish a formation in which the church base or the stairs serve as bleachers – and the otherwise undefined space beyond the base becomes a stage. In Figure 20, we see a storyteller and her audience, in Figure 19 a speaker whose talk is embedded in an elaborate bodily performance and his audience.

Figure 19: Performer and audience.

Figure 20: Storytelling.

"As a general proposition", Sennett (2018: 35) writes, "people move through a space and dwell in a place". But this is not an either-or issue: does someone who visits occasionally for a half-hour or so "dwell" or "move through"? Clearly, such a person does not "dwell" to the same extent that the neighbors do, especially those who routinely inhabit a particular location in the shared space. "Dwelling", we might say, is accumulative. The story-telling girl in Figure 20 used to live in Getsemaní but is now visiting, her seated listeners still live here. Is this her place to the same degree that it is theirs? When exactly does a space become a place for someone? While we should not hope for an unequivocal answer to that question, it is not doubtful that the activities in which these people engage belong to the *cité*, not the *ville*. What is captured in these pictures are not the uses and meanings of the architectural features that the church designers and builders in 1600 had in mind; those were ceremonial and theological.

In 2009, the church base and stairs accommodated many different configurations, F-formations, and participation frameworks, as these images show.

Figure 21: Parents and child.

Figure 22: Adult-children cluster, friends.

The base affords a couple's relaxed love-play and "bleachers" for those who want to observe the goings-on in the Plaza, alone or, more commonly, with others.

Figure 23: Couple, teenagers watching.

The church foundation also served as the home of a large cohort of pre-teens and teenagers of both sexes, neighborhood kids all, who assembled there regularly; for the church base had become a home-base, enabling large huddles and complex interactions. Those recorded were frequently keyed to teasing, banter, courtship, and performative displays, and in this large ensemble, too, participants taking an

observer's stance or the audience role would sit on the base while performers moved about the space before it.

Figure 24: The teen cohort.

For these teenagers, the Plaza and this place in it may become a biographical anchor point. They form a classic peer-group, an age-grade cohort in an urban face-to-face society in which every member more or less knows every other member, at least as others they have seen before. The children will eventually age out of this peer-group, and, in this case, many will in the near future move away, but many of their memories of growing up with these other children will remain anchored by this.

While each interacting cluster occupied its own limited interactional space, the Plaza thus inhabited in its entirety embodied a distinct relationship between the generations and of the local community with itself. Generally, the concrete benches around the plaza along with the wooden benches that were also placed near the periphery were reserved for older people who from this peripheral position observed the activities of children and youth in the center. (Often, multi-person games such as tag and football took up a sizeable section of the large center.) The overall configuration thus constitutes a biographical pattern: the plaza enabled the citizens of Getsemaní to observe the life and aging of the community by watching children and their activities growing older.

By 2015, Getsemaní, the Plaza, and, as Figures 26 and 27 show, the lived ecology of the church base had fundamentally and comprehensively changed. Now it was densely packed, with no room for mobile interactions, by a homogeneous crowd of youngish adults, all doing one of a small number of things: watching, talking, taking selfies and pictures of one another, reading, and texting on phones, and plainly sitting.

When Colombia's cities became safe for tourists, tourism in Cartagena, said to be one of the most beautiful colonial cities in South America and an UNESCO World Heritage Site since 1984, exploded. Getsemaní is now branded as 'el barrio *cool* de Cartagena'. Almost all of these individuals occupying the church base – and the rest of the Plaza – are tourists, many from Colombia and other Latin American countries, many from Europe and the U.S.A. If they were interested, they can

Figure 25: The church portal in 2015.

Figure 26 and 27: The church base in 2015.

read up on the architectural history of Cartagena, Getsemaní, and Iglesia de la Trinidad, and thus recover the meanings that the church design had for its designers. The meanings it had for the Getsemanisense of 2009 will, however, forever be inaccessible to them. They existed only in the actions and movements of people at that time.

For those whose meanings are sedimented in the place there is no longer space enough to retrieve, let alone revive, them. During three weeks in 2015, Plaza de la Trinidad was crowded as in the pictures on every night. The minority of Getsemanisense that have not sold their houses and moved away mostly stayed away from the Plaza in the evenings.

Except for Sunday nights. For one hour, *Ciudad Movil* took over the portal of Santa Trinidad with their big sound system and funk records and led hundreds of locals (and some tourists), mainly women and girls, in freestyle aerobic dancing. Most tourists stayed on the sidelines, watching, as Ciudad Movil presumably intended.

Figures 28 and 29: Public neighborhood dancing with Ciudad Movil.

How shall we conceptualize these changes? Do the conceptual distinctions between geometric city and on-the-ground practice, between space and place and *ville* and *cité* accurately articulate the two changes of Plaza de la Trinidad that we have described, from designed, theocratic artefact to social stage of the neighborhood, to a station on tourism's movable feast? In the following, we offer a second perspective on these questions by looking at interactions that occur almost imperceptibly and yet testify to the fundamentally embodied sphere of daily encounters in the built city.

7.2. Encounters in a public square in Zurich

How do people in a public square in Zurich (Figure 30) organize pedestrian traffic and other forms of copresence? We will shed some light on this question by discussing encounters that have been recorded from a high-rise building nearby (Figure 31). The modest height of the skyscraper offers a solution to De Certeau's problem: it is low enough both to see the "practitioners" of the city and to get a

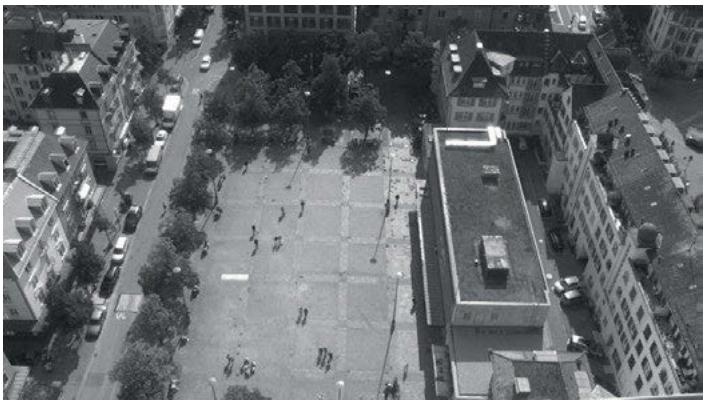


Figure 30: View on the square, as recorded from the skyscraper.

Figure 31: The skyscraper

small overview of the urban text they are writing blindly (de Certeau 2011: 93, see Section 1). The sequences were recorded in the early afternoon.

The trajectories of pedestrians have been traced by visual detection software coded for this purpose. A brief look at the visualizations in Figures 33 and 34 reveals that the square is often crossed diagonally from one corner to another. These trajectories mark the shortest way from a traffic hub to a shopping center (Figure 32). Likewise, the square provides the shortest connection from the busy area around the train station (bottom left) to a quarter with shops, offices, and schools (top right). In a sense, the trajectories reveal how pedestrians walk across the city map.

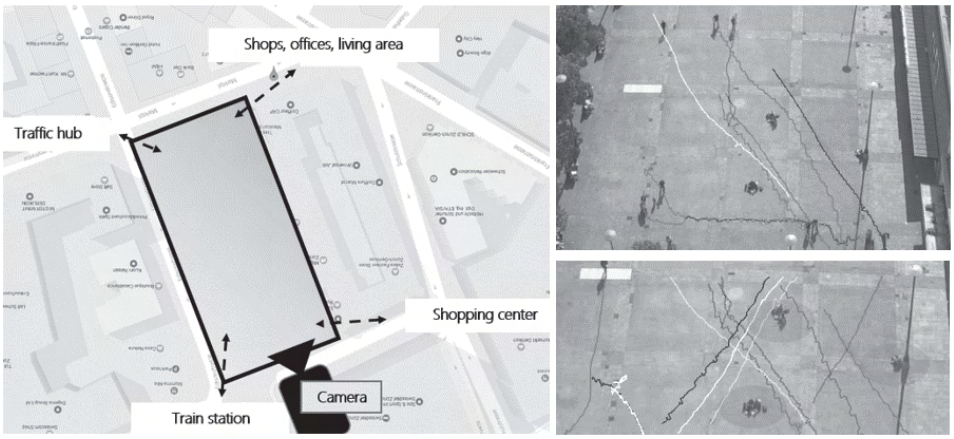


Figure 32: The square is an important transit point; *Figure 33* (top right): Trajectories of pedestrians crossing the square
Figure 34 (bottom right): Trajectories and people sitting on the ground marked.

The regularity of the trajectories not only confirms what many studies have described as the orderliness of interaction in public (Collet and Marsh 1974; Livingston 1987; Ryave and Schenkein 1975). They also reveal how moving within structures of what de Certeau called the "geometrical" city, pedestrians themselves create embodied trajectories of a geometric shape – straight lines in quite regular distance to each other.

Note that the orderliness is not diminished but rather enforced by the presence of people sitting on the ground (Figure 34). The groups sit at a very similar distance from each other. By doing so, they provide obstacles that guide participants' trajectories along with a spatial matrix. The order of spatial distances among sitting and walking people is mirrored by a very stable rhythm of presence – pedestrians are crossing the square in similar velocities, altogether establishing a "standard pace" (Watson 2005: 220 f.). We can therefore state that both the city design as well the

participants' effort of maintaining distance to each other provide an orderly picture of spatio-temporal copresence.

Within this "geometric" order, the movements of one person stand out. It is a middle-aged man – let's call him Adam – who walks around the square making a phone call. We recognize the phoning activities by the typical way in which he holds one hand to his left ear all the time. While talking on the phone, Adam crosses the paths of several other pedestrians (Figure 35).

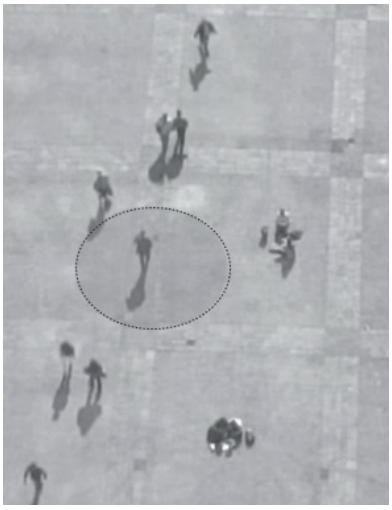


Figure 35: Adam (marked by a circle) is talking on the phone while being passed by and passing pedestrians

Conversation analysts have studied in detail the coordinated activities of walking and talking (Broth and Mondada 2013; Mondada 2014, 2017). The case of a person speaking on the telephone, however, is different. Adam is obviously engaged in an interaction that is not completely visible to outsiders – a conversation with a person at the other end of the line. What do Adam's movements say about his presence, which on the one hand is physically bound to a place where other people are traversing and dwelling and, on the other hand, is aligned with a long telephone conversation?

Overall, Adam spends more than 20 minutes in the square. Tracing his trajectory, we can observe the repeated emergence of several geometric forms: While all other pedestrians walk in a straight line, Adam walks back and forth. Where he turns around, he walks a small circle (Figure 36). In this situation, Adam is the only one following the patterns on the ground.

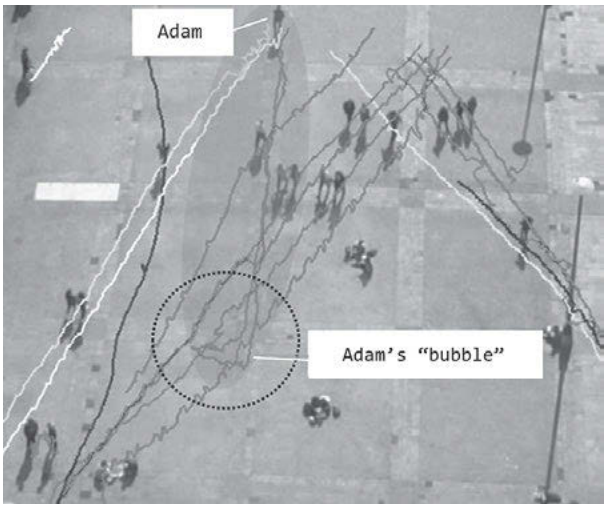


Figure 36: Adam's trajectory is different from that of the other pedestrians. He walks in circles and follows the visual pattern on the ground.

In the next image, however, we see that other pedestrians as well draw on the visual affordances of the square architecture as they organize their movements (Figure 37). However, Adam's movements again stand out. He walks right angles, reproducing parts of the overall geometric pattern. One could say that he walks around as is suggested by the square design.

Adam's trajectories appear as iconic representations of his state of presence as being in his own "bubble". In contrast to other pedestrians, he has no destination to go to. This is also visible in his walking speed. Adam walks more slowly than the average standard pace. But what do his movements reveal about the relationship between copresence and architecture? Adam's tracing of geometric design shows both that he moves in a separate world and that he is more strongly attached to the place than his fellow pedestrians. Of course, this is a question of perspective. We could say, conversely, that Adam's alignment to the square is a non-alignment to the wider geometrical structure provided by the city and followed by pedestrians moving from one junction to the next.

In any case, it becomes obvious that Adam does not seek contact with the co-present people. But this is also true for the other pedestrians walking across the square at higher speed. Is there, thus, no interaction going on at all?

Two short sequences show that Adam is not only aligning his movements with the geometrical patterns provided by the square design, he also quickly adapts his movements to the emerging presence of other people. When no one crosses his path for an extended period, Adam often – though not always – stops walking. He then remains standing, sometimes for two, three seconds, at other times even

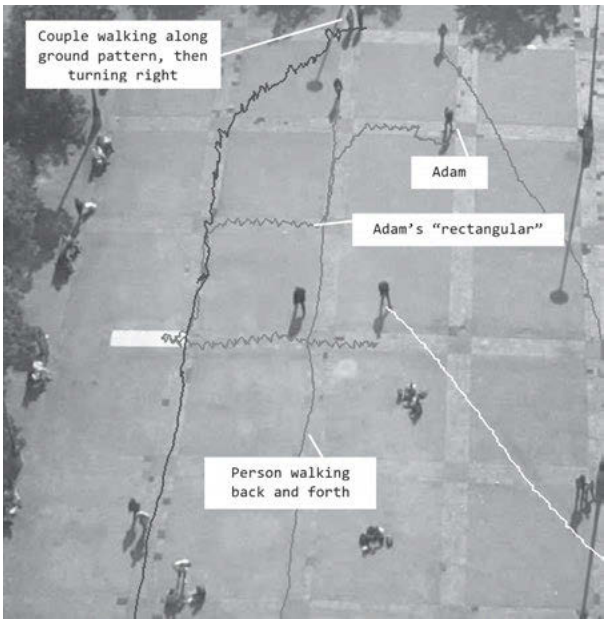


Figure 37: There are, in total, three parties walking along with the ground patterns. Unlike the other pedestrians, who walk in a straight line, Adam uses the pattern to walk at right angles.

for five seconds or more. These stops end when Adam is again approached by people.

Sequence A with figures 38–45 exemplifies this. The sequence consists of two major events:

1. **Coming to a halt**: As Adam walks up the middle strip (Figure 38), a group of three passes him on his right (Figures 38 and 39). Shortly afterward, at the outermost edge of the crossing center, Adam turns around (0.06–0.08, Figure 40) and remains standing at this place for about 22 seconds. As the group of three further walks away from him, the space in front of Adam "opens up".
2. **Getting back in motion:** There may, of course, be a whole series of reasons why a standing person starts to move again.
   A ready explanation of Adam's change in the mode of presence – from standing back to walking – is that the free area in front of him is progressively reduced. The reason for this is a couple first passing the group of three (Figures 42 and 43) and then moving toward Adam. When about three meters remain between him and the couple, Adam sets himself in motion (Figures 44 and 45) and passes the couple, walks in the opposite direction, along the strip again, towards the open space of the square.

Fig. 38: Adam walks up the middle strip,

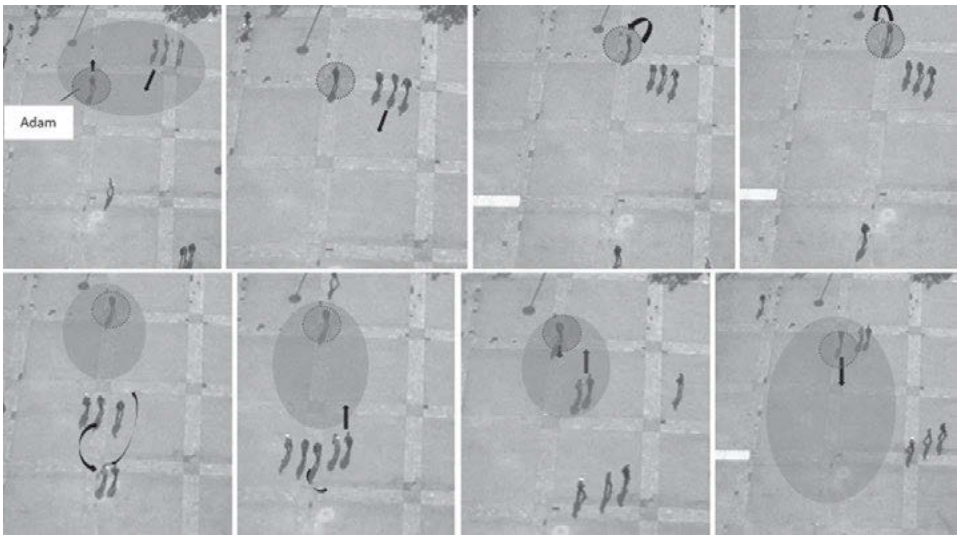
Fig. 39: Adam and a group of three pass by each other

Fig. 40: Adam turns left… makes a step and

Fig. 41: Adam comes to a halt

Time, Seconds: 4.00 6.00 7.00

Adam's movement: ----------



16.00 22.00 30.00 35.00

Fig. 42: The couple passes by the group of three

Fig. 43:

Fig. 44: Adam starts walking

Fig. 45: Adam and couple pass by each other

Why would a phone-talker react to the copresence of other pedestrians during a conversation on the telephone, where he is engaged in another "there", as Schegloff (2006: 287) puts it? Adam contributes to the accountability (Garfinkel 1967) and thus the orderliness (Sacks 1984) of the dynamic social situation (Goffman 1964) in this public square. He actively contributes to a state of smooth copresence and therefore to the rhythmicity of urban life, as it has been described in studies on mobility, space, and interaction (Smith and Hetherington 2013; Hall and Smith 2013; Steger 2019). When being in motion, Adam does not only shorten the moment of his passing by others, but he also increases the predictability of the encounters. Both walking pace and trajectory offer apparent cues for the projection and anticipation of the dynamic spatio-embodied future on this square.

The communicative relevance of the visibility of one's orientation to anyone's glance (Sudnow 1972) can explain why Adam circles around the middle of the square in the first place. There, he is more visible, more predictable – but also less "tangible". Like a seismograph, he adjusts his presence to the fleeting passing by

of other pedestrians. While talking to an invisible person at the other end of the line, Adam is in the "here" of two city texts: One being the design on the ground, which comes into focus especially when we look at the square from above. The other is the geometric text written by the pedestrians crossing the square in very linear ways.

We learn nothing about Adam's telephone conversation, nor about how small groups take their lunches on the ground or walk over the square, presumably exchanging short glances with each other while doing so. It is, therefore, true to say that we rarely see how the city "down there" becomes a place for the people dwelling in it.

The bird's-eye view analysis, however, gives us a sense of how people incorporate city design at a very fundamental level. Patterns of geometrical design do not necessarily stand in opposition to embodied practices of regulating copresence. But they can be reproduced to a different extent. Whether walking along with the rectangular ground design or crossing the square diagonally – the embodied conduct always stands in relation to the human-built environment. The affordances of built public space are what we have grown up in and into – both on an individual level and as ordinary members of the species.

8. Conclusion

Looking at encounters in the Plaza de la Trinidad and a public square in Zurich, we have shown how the architecture of urban space is made relevant in the everyday lives of city dwellers. The analysis also offers clues on how typical patterns of dwelling in these places can be maintained, broken up, subverted, and thus transformed.

From an individual point of view, it is difficult to perceive the historical upheaval in which one's actions are embedded. Accordingly, it can be doubted that paleolithic humans had even a rudimentary idea of where hitting two stones together could lead.

Roughly two million years later, archeologists debate whether the humble traces of embodied practices left in the stones lying around on the ground can be understood as signs of conceptual planning. From an interaction analytic point of view and with reference to musicological theory, we have argued that the geometry of the Acheulean biface can be understood as a rhythmically induced expression of increased capacity for social alignment among copresent individuals (Section 3). In a way, the symmetric shape of the stone already testifies to the demarcation between the human sphere of interaction and the outside world, as it has been established by our ancestors building of prehistoric stone circles and huts (Section 4). "The human act *par excellence* is perhaps not so much the creation of tools as the domestication of time and space, or, to put it differently, the

creation of a human time and space", writes Leroi-Gourhan (1993: 313, emphasis in original).

Maybe rituals of rhythmic and embodied alignment (the biface is pointing to) let emerge the need for adequate and appropriate places, for instance, for marked areas in the first place? We have argued that fireplaces already represent the interaction architectural counterpart of Kendon's F-formation (1976) – the prototypical configuration, that is, in and through which people today maintain focused interaction over an extended period of time. The architecturally designed creation of spaces for (focused) communication that can be distinguished clearly from an outdoor area represents an ideal prerequisite – if not condition – for the establishment and elaboration of deictic conceptual pairs such as here-there, we-they, now-then. "The wall is the basis of our coexistence", the architectural theorist, Cache (1995: 23), writes.

Creating inner spheres of heightened sociality went along with more elaborate forms of structuring of what can be called the outside world. At Göbekli Tepe, nomads built a monumental architecture, presumably a sort of temple, which antecedes buildings that represent power, authority and social inequality in later cities around the globe. The circular structures of Göbekli Tepe, whose pillars are reminiscent of a face-to-face conversation in front of an audience, were built at a time when Neolithic humans were trying out forms of longer-term dwelling (Section 5). The most striking experiment in this respect is Çatalhöyük – a Neolithic town built some 2000 years later after Göbekli Tepe (and 600 kilometers away) on the Çarşamba river in a wetland at that time. In their seminal work on urbanization, Childe (1936) and Leroi-Gourhan (1993) stated that inequalities in architecture and society are hallmarks of urbanization. In Çatalhöyük, or more precisely on its roof, by contrast, we find the archetype of a built public square. Here, for the first time in human history, the inhabitants of a place encountered each other on a square human-built from the ground up. Just like on marketplaces at the gates of Mesopotamian cities, in the Greek agora or later on the boulevards, streets and squares of industrial cities, the roopftop stands for equal city sociality. The principle of urban freedom – expressed in the German adage *Stadtluft macht frei* ('city air makes you free') – shapes sociality in public places in the city just as much as the inequality that is evident in the comparison between buildings of the rich and the poor. In fact, the use of public environments, some of them architecturally foreshadowed, others emergent in the daily use, has been crucial for the creation and negotiation of city-typical forms of public emplacement.

Of course, human sociality has not developed only in cities since the Neolithic age. In our selection of steps in the development of human architecture, we have made a connection between primal forms of copresence on a small scale (in tool-making and around the fire in caves and huts), Neolithic architecture and interaction in the public space of modern cities. In comparison, the relevance of fundamental parameters of the organization of human copresence become visible:

Clarity of material and embodied conduct, rhythmicity of (inter-)action, regulation of (un-)focused communication.

The more we have approached the present time, the more we have pointed out negative forms of sociality in cities – and thus addressed problems that were raised by de Certeau and Sennett (Section 2). Looking from a great distance at the human history of building, practices of dwelling appear to be irrevocably interwoven. In this sense, architecture can indeed be understood as a "medium" of the social (Delitz 2010). The story of the Plaza de la Trinidad, which was suddenly submerged in masses of tourists, however, makes it clear on a micro-social level that spatial unfolding of urban encounters is by no means naturally harmonious. The same is true for material inequality in contemporary cities. The (pre)history therefore illustrates that we humans, in our efforts to create ever new differentiations among each other, must not lose sight of this world as the most fundamental place for encounters with other forms of life. We have learned that the anthropogenic mass exceeds all living biomass (Elhacham et al. 2020: 444). This is due not only to our prosperity, but also to the displacement of the habitat of other living creatures caused by humans. We must not forget that in our millions of years of striving to create human artifacts, there is a danger that one day we will be left all alone – in the midst of human-built space that blocks our view of the former diversity into which we have spread.

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16. The pragmatics of linguistic landscapes

Maria Rosario Yumul-Florendo and Sebastian Muth

Abstract: The aim of this chapter is twofold. We will first discuss current research as well as key theoretical and methodological paradigms to investigate linguistic landscapes and illustrate, how space is conceptualized within a variety of different research contexts and objectives. We will then move on to illustrate the pragmatics of linguistic landscaping by drawing from a case study that investigates the Philippine jeepney as a mobile communicative space that exhibits and constructs a variety of competing discourses embedded within Filipino culture, among them colonialism, nationalism, migration, Christianity, social conservatism, and patriarchy. To conceptualize the jeepney as a mobile space we will draw from Kress and van Leeuwen's (2006) grammar of visual design and Scollon and Scollon's (2003) notion of geosemiotics. In bringing together text, visual design and wider social context, the jeepney becomes an assemblage of material object, (colonial) history, discourse, and affect. It emerges as a site where visual representations of language are indicative of wider political, social and economic processes and further highlights, how those processes and relations are both reaffirmed and challenged.

Keywords: linguistic landscapes, Philippine jeepney, grammar of visual design, multilingualism

1. Signs in context

Since its early beginnings as a lens to investigate the visual representation of multilingualism (Haarmann 1989; Rosenbaum et al. 1977; Spolsky and Cooper 1991), in the past two decades linguistic landscape research has evolved into a methodology and analytical framework. To date, research in linguistic landscapes continues to refer to what is frequently regarded as the seminal text and founding moment of the field, Landry and Bourhis' (1997) paper on establishing a link between ethnolinguistic vitality and the visibility of languages in the public sphere:

> The language of public road signs, advertising billboards, street names, place names, commercial shop signs, and public signs on government buildings combines to form the linguistic landscape of a given territory, region or urban agglomeration. The linguistic landscape of a territory can serve two basic functions: an informational function and a symbolic function. (Landry and Bourhis 1997: 25)

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Landscape (in this view) refers to a specific geographical area and, as such, aims to illustrate how language is purposefully and creatively used within specific contexts. The objectives, methodological frameworks, and analytical tools in linguistic landscape research are varied and while there has been a continuous interest in conceptualizing linguistic landscapes as indicators of linguistic vitality or language change (Blackwood 2014; Cenoz and Gorter 2006; Gorter et al. 2012; Muth 2014), the field is characterized by expanding scopes and methodological innovations. To date, key research investigates meaning making through text and other semiotic resources in both physical and virtual worlds (Jones 2010; Keles et al. 2020), bringing together qualitative and quantitative approaches (Blackwood et al. 2016; Shohamy et al. 2010), as well as diachronic perspectives to linguistic landscape (Pavlenko and Mullen 2015). Within this context, linguistic landscape research increasingly transcends disciplinary boundaries and evolves into a methodological tool for sociolinguists, anthropologists, and historians to make sense of semiotic representations, adopting socially situated approaches (Jaworski and Thurlow 2010; Leeman and Modan 2009; Papen 2012; Pietikäinen et al. 2011; Stroud and Mpendukana 2009; Wee 2016), or make use of linguistic landscapes as educational tools (Burwell and Lenters 2015; Li and Marshall 2020; Sayer 2010).

Indeed, since Landry and Bourhis defined linguistic landscape, it has evolved into a productive subfield of sociolinguistics, advancing its scope and research objectives. Barni and Bagna (2015) discuss three important developments in the field of linguistic landscape: the shift from largely quantitative to qualitative research methods; an expansion in scope from purely linguistic towards an investigation of semiotic resources; and the analysis of the role of people from merely passive viewers of signs to agents in the discursive construction of space. This "kaleidoscopic nature" of linguistic landscape studies (Van Mensel et al. 2016: 423) is also mirrored in methodological innovation. In this context, Blackwood (2015) highlights three key methodological paradigms that to date still characterize most empirical research in linguistic landscape studies: 1) quantitative methods where the most prominent language in a research area is viewed as an indicator of language vitality; 2) a geosemiotic approach (Scollon and Scollon 2003) that incorporates linguistic data and semiotic resources; and 3) ethnographic approaches that aim at decentering the researcher's perspective towards that of the individuals and communities being investigated. Adding to this, Pennycook (2017) aptly describes what counts as linguistic landscape:

> […] linguistic landscapes (has) moved from being a study of 'the presence, representation, meanings and interpretation of languages displayed in public places' to include 'images, photos, sounds (soundscapes), movements, music, smells (smellscapes), graffiti, clothes, food, buildings, history, as well as people who are immersed and absorbed in spaces by interacting with the linguistic landscape in different ways.' Linguistic landscape research has thus shifted its understanding of language from a focus on enumerable languages on signs in the public domain to include greater contextual (ethnographic)

> and historical understanding of texts in the landscape – who put them there, how they are interpreted, and what role they play in relation to space, migration, and mobility. (Pennycook 2017: 270)

This plurality of approaches (Gorter and Cenoz 2020: 17; Jaworski and Thurlow 2010) has been central in developing the field further, and it sustains its existence. Thurlow and Gonçalves (2019) note that recent research in linguistic landscapes has broken free from studying conceptual binaries in the field citing the following as examples: "playful/professional, innovative/conventional and especially vernacular/official or, more commonly, bottom-up/top-down" (Thurlow and Gonçalves 2019: 112), however, at times at the expense of relevance or theoretical depth (Gottdiener 2012).

To conceptualize linguistic landscapes for our research, we adopt Scollon and Scollon's (2003) framework that argues for an understanding of space as being socially constructed as a repository of social and cultural interaction. Following Blommaert (2013: 3),

> […] physical space is also social, cultural, and political space. A space that offers, enables, triggers, invites, prescribes, proscribes, polices or enforces certain patters of social behavior; a space that is never no-man's-land but always somebody's space; a historical space, therefore, full of codes, expectations, norms and traditions and space of power controlled by, as well as controlling people

Within this understanding of space as socially constructed, it is the absence of a theoretical framework in linguistic landscape research itself that facilitates the departure from conceptual binaries towards an understanding of space informed by context and referential intentions of speakers (Levinson 2006: 103).

To make sense of the chaos and multiplicity of linguistic and semiotic resources, our research applies the assemblage as a theoretical tool. This necessitates an understanding that something is constantly in the process of deterritorialization (change in location and/or form), as well as reterritorialization (temporary stabilization). Assemblage presents an alternative perspective from which to view the world traditionally seen in the context of binaries or dualisms (Pietikäinen 2021: 235). Within this understanding, assemblage "refers to both the act of assembling diverse elements […] and to the arrangements of these elements for a specific purpose […] it is the interaction between the elements that allows the assemblage to become more than the sum of its parts" (Pietikäinen 2021: 236). We see both the jeepney and Baguio City, our research site as assemblages, complementing each other in the production and reproduction of elements in their linguistic landscapes. In the history and descriptions of the present-day jeepney and Baguio City, the elements of an assemblage are present, and these contribute to the construction of a linguistic landscape that is both a product of and process resulting in an assemblage of linguistic and semiotic resources.

In this chapter, we open with an introduction of our approach to the study of linguistic landscape and the concept of space using geosemiotics and grammar of visual design as analytical tools. We contextualize these by describing our research site Baguio City, Philippines and research object, the jeepney as postcolonial assemblage and emblematic form of public transport in the Philippines. This is followed by a description of our data collection method using multi-sited ethnography. We then present sample data in the form of photographs of the Philippine jeepney in Baguio City exemplifying our concept of space in linguistic landscape studies. We conclude by drawing a parallel between the concepts of space in pragmatics and linguistic landscape studies.

2. Languages, signs, and the pragmatics of space

For this research, we understand linguistic landscapes as socially constructed, as a process and site of interaction through texts and images. In doing so, we base our theoretical understanding of linguistic landscapes on Scollon and Scollon's (2003) geosemiotics as well as Kress and van Leeuwen's (2006) grammar of visual design, drawing parallels between the concepts of deixis of place in pragmatics and place semiotics. Here, geosemiotics is defined as "the study of social meaning of the material placement of signs and discourses and of our actions in the material world" (Scollon and Scollon 2003: 2). This approach links placement and location of signs and symbols (whether linguistic or semiotic) in the material world to their interpretation and contextualization within larger discourses. Furthermore, they identify icons (a sign resembling an object), indexes (a sign referring to or that is attached to the object) and symbols (a sign that is arbitrarily or conventionally related to the object) as specific items in the linguistic landscape which enable the signification of meaning (Scollon and Scollon 2003: 25). Within this context, three main systems emerge as analytical frames: interaction order (speech, movement, and gesture), visual semiotics (texts and images), as well as place semiotics (visual resources and non-linguistic elements that represent language (Scollon and Scollon 2003: 13).

Closely related to the concept of place deixis in pragmatics (Lenz 2003; Horn and Ward 2006), indexicality in geosemiotics refers to the "property of the context-dependency of signs, especially language" (Scollon and Scollon 2003: 3). Within this context, indexicality is defined as "the pre-eminent feature of language and of semiotic systems that make reference to the real-time concrete spatial world in which we live" (Scollon and Scollon 2003: 21). Similar with place, person and time deixis, indexicality in the context of geosemiotics focuses on these elements as well; space (*here* and *there*), social relationships (*I*, *you*, and *we*) and time (*now*, *later*, *at 5 o'clock*). Thus, the understanding of signs in linguistic landscapes rely on linguistic and visual resources but equally on its location and placement, its geneal-

ogy, and the audience it addresses. In particular, this concerns "the representation of real-world actions in visual images; the problem of how visual images index the real world in which they are placed; and, the problem of how social actions index these images which are so abundant in our world, constructing on going social performances as part of the social situation front" (Scollon and Scollon 2003: 84). Visual grammar (Kress and van Leeuwen 2006) further adds to a better understanding of linguistic landscapes. It is culture-specific in that it relies on the resources of a particular group, their implicit and explicit knowledge of these resources and their varied uses of the same. The visual grammar proposed by Kress and van Leeuwen is predominantly Western in its orientation, especially in its conceptualization of how space contributes to the meaning of linguistic and semiotic elements in signages. Following this paradigm, ideas are conveyed through both words and images. Just as people compose their thoughts aided by their linguistic repertoire, they also use their knowledge of images and symbols to express ideas through them. Just like language, there is also a system governing the use of images to communicate, a "visual grammar". Visual grammar is culture-specific and relies on the resources of a particular group, their knowledge (explicit and implicit) of these resources and their varied uses of them. However, visual grammar and in particular its conception of space is largely informed by its predominantly Western orientation. This is especially observable in the utilization of space, where the Western schema largely differs from its Asian counterparts, for instance this is most visible in reading and writing. In Huebner's (2009) application of the grammar of visual design for the analysis of signs in the linguistic landscape, he underscores "three signifying systems, all serving to structure the text, to bring the various elements of the page together into a coherent and meaningful whole" (2009: 76). These elements are: (1.) salience which include size, sharpness of focus, tonal and color contrasts, placement and perspective and cultural symbolism associated with the image; (2.) framing devices which refer to frames and boarders between contingent images on a given space; and, (3.) information value to draw distinctions between given and new, ideal and real, and, central and ancillary.

Figure 1 illustrates Kress and van Leeuwen's interpretation of how space utilization contributes to the interpretation of visual space. This representation relies on Western utilization and understanding of space and is also one-dimensional focusing only on the use of space on, for instance, advertising billboards. When applied to linguistic landscape research (Huebner 2009), the triptych proposes a grammar that differentiates the interpretive value between signs or images located in the center and periphery, right or left, top or bottom. Subsequent values are assigned to signs, whether linguistic or visual resources, depending on their placement. Top left is ideal given, while top right is ideal new. Bottom left is given real, while bottom right is given ideal. For the case study of the Philippine jeepney discussed later in this chapter, we propose an adaptation of Kress and van Leeuwen's triptych. Although an intrinsically local Filipino use of space and its ensuing interpre-

tation may draw largely from a Western perspective informed by a colonial past, the adaptation we propose in the case study is to apply Kress and van Leeuwen's model to a three-dimensional element which we use as a linguistic landscape text, the Philippine jeepney itself.

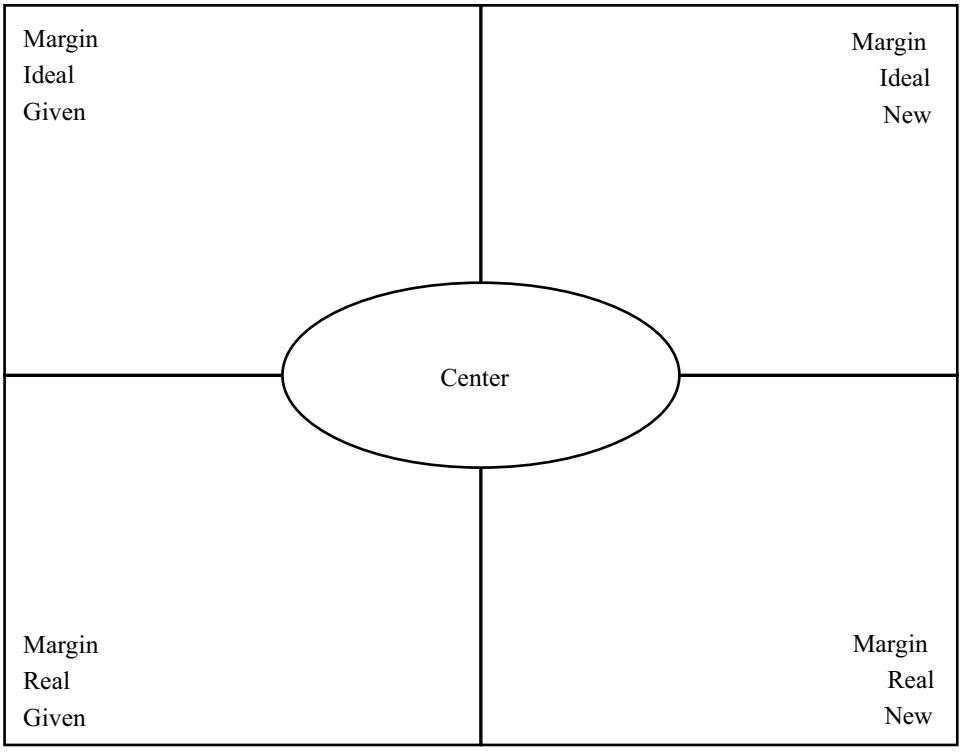

Figure 1: Kress and van Leeuwen's triptych representing the dimensions of visual space

3. Case study: The Philippine jeepney

For this research, we regard both the Philippine jeepney and our research site, Baguio City as assemblage. Both are postcolonial assemblages which discursively offer explanations about, insights into and illuminations on the semiotic and linguistic landscapes. This case study investigates the linguistic landscapes of the jeepney and Baguio City, which share their roots as relics of the American occupation of the Philippines. Furthermore, we analyze how the jeepney as a constantly moving space, bearing linguistic and semiotic landscape, communicates multiple discourses through the use of space. The research site, Baguio City, was founded by the American colonial administration in the early 1900s. Originally inhabited by

indigenous groups generally referred to as Igorots, it was the American colonizers who laid out the city's masterplan and developed it into the original concept of a mountain resort. During WWII, it was occupied by Japanese forces. Following the independence of the Philippines, the city evolved into a mining community, educational center, and commercial hub of the north of the country. Migration flows from other areas of the Philippines define present-day Baguio as a multiethnic, multicultural, and multilingual city. In recent years, Baguio has become a hub for English-language teaching, a service industry that attracts learners from the Arabian Gulf region, East-, and South Asia.

The jeepney bears these influences and contexts. Its materiality (assembled using surplus parts from Japan, China, and Korea), history (originally designed as a service jeep for the US Army), and evolving functionality in present-day Philippines all reflect qualities of an assemblage.

Baguio City is approximately 250 kilometers north of Manila in the Province of Benguet. It has an estimated elevation of 1,400 meters above sea level and, on average, is 8 degrees cooler than the lowlands owing to this elevation. The estimated population as of 2010 is 303,540 with a majority speaking Ilocano (a local language predominantly spoken in the northern Philippines), Filipino (the national language) and English (a lingua franca that is used in education and public administration). The multilingual profile of residents, mostly migrants, also include the use of Cordilleran languages such as Ibaloi, Bontoc, Panganisinese, and Kapampangan. Baguio City as envisioned and designed by American architect Daniel Burnham was to be home to a total population of 25,000 to 30,000. Reed (1976), Delos Reyes (2014) and McKenna (2019) trace the origin of Baguio City as a "colonial hill station", "mountain resort" and "summer resort".

Nestled among the mountains of the Gran Cordilleras, before the 1900s Baguio "was neither a village, nor town, nor city" (Delos Reyes 2014: 75). It was conceived from the idea of establishing a sanitorium for the recuperation of soldiers and foreigners whose recovery relied on cooler climates reminiscent of "home". Four significant events make Baguio City the urban mountain resort it is today: first, the American vision of a colonial hill station; second, the roads built to give access to the otherwise inaccessible mountain city; the gold rush in Benguet in the 1930s, which made Baguio City the rendezvous of prospectors, and the establishment of colleges and universities making it an educational hub north of the country's capital, Manila. When American Architect Daniel Burnham was commissioned to design Baguio City, he had Europe and his native America in mind. Apart from architecture, manifestations of American colonial heritage also surface on the city's popular public transport, the jeepney. American-inspired themes like cowboys and Indians, American landscape, American cartoon characters, products and logos are a favorite. Reed (1976), Delos Reyes (2014) and McKenna (2019) agree that the road access to Baguio City was the most significant in its establishment and development as an urban area. The roads in and out of the city meant

access and greater mobility. This also ushered in more people to visit, work, and live in the city.

Like Baguio, the jeepney itself is a concrete assemblage, a product of colonial history indexing Filipino resilience, resourcefulness, and ingenuity (Torres 1979; Meñez 1988; Gass and Tuason 2008; Pascua 2009; Gustafson 2012 and Blanton 2015). How it has managed to continue its role as a major mover in the transportation industry since the end of WWII is a result of the abstract machine of the assemblage, as illustrated in Figure 2 below.

Figure 2: Jeepney in Baguio City

More than simply a mode of transportation, the jeepney is an example of a moving linguistic landscape with its elaborate display of profane, playful, and prayerful words and images displayed on its body to entertain passengers and passersby and to serve as testament to the humor, worldview, and spirituality of Filipinos. As a communicative space, the jeepney allows for the coming together of semiotic assemblage of material objects, agents (people), and context that result in discourse. Filipino and foreign scholars have written about the Philippine jeepney, its colorful history and equally gaily decked features parading along the streets of Philippine cities. These include Torres (1979), Meñez (1988), Gass and Tuason (2008), Pascua (2009), Gustafson (2012) and Blanton (2015). Blanton (2015) notes that the jeepney in the Philippines operates outside the fixed-route system adopted by buses and trains. He considers the jeepney as a form of "paratransit" which he described as a "creative form of mobility that emerge when the large bureaucracies and their concomitant infrastructures of transportation fail to meet the demands of

the commuting public" (Blanton 2015: 7). This is exactly the history of the Philippine jeepney, which evolved from what remained after WWII. Gustafson (2012) describes the original American Willy's jeep and its transformation into Blanton's paratransit vehicle.

> An American service jeep is made for four people. And its rugged angularity is basically militaristic, even when it is used for leisure. It is an icon of individualism, with a machine gun mounted at each corner for combat and the socius protected/provided by four combatants watching one another's back – always facing away from each other. But a service vehicle in the Philippines is a family vehicle. When something is borrowed in Philippine culture it will inevitably be domesticated. So, when the Americans left surplus jeeps here, they were extended – the back seats were turned sideways so that passengers could scarcely see out, but rather sit facing one another so that they could hold more people. (Gustafson 2012: 91)

Torres (1979) notes how the Willy's jeep was an ideal form of transport for Filipinos after WWII because of its durability, its size (exactly right for the small to medium height of the average Filipino) and "economic virtues" (readily available parts and cheap maintenance). But for the purpose of Filipinos:

> Its form was all wrong. It was too square, too boxy, too matter of fact. It lacked feeling. Something had to be done about it. What had to be done was an overhaul and transform it by (1) reshaping its austere body into Pop Baroque shape with flowing swells and curves and (2) painting it into the colorful gamecock of contemporary folk culture that it is today…an assemblage of signs and symbols, decorative motifs and fetishes…A new word had to be coined for it (from the words "jitney" and "jeep") and it appears in the third edition of Webster's International Dictionary. (Torres 1979: 14–15)

The transformation of the American surplus jeep into a public utility vehicle during the post liberation period in the Philippines ushered in a thriving industry specializing in the customization, decoration, maintenance, and provision of spare parts for the booming industry of public transport. Prominent names in the jeepney industry before 1908s were Anastacio Francisco of Francisco Motors Corporation (located in Las Piñas) and Leonardo Sarao founder of Sarao Group of Companies (also located in Las Piñas). Both companies pioneered the production, painting and maintenance work of Philippine jeepneys. The industry, thus, provided jobs for drivers, craftsmen, artists and entrepreneurs who had enough capital to purchase one or several units of jeepney and lease them for a fixed daily rate to drivers. The system has not changed much since the post-liberation period except that Filipinos now have Grab and Uber aside from buses, trains, taxis and jeepney. Until the late 1990s, jeepneys served as the cheapest and most convenient way to get around the city (especially in Manila, Philippines). A common jeepney can seat sixteen passengers (eight on each side) and two passengers plus the driver in the front cab. However, this can go for twenty or more during peak hours (before 8:00 A.M. and after 5:00 P.M.) with people hanging on to a thin metal bar on the entrance of the

jeepney and extra passengers squeezed in on the seats. Torres (1979: 8–9) praises the jeepney as a tribute to Filipino "ingenuity" as "tacit tribute to the masses who developed its basic design as well as the masses who drive it daily for a livelihood and display a *modus vivendi* of improvisation and making do, and sheer spunk".

Among local scholars, Torres (1979) and Meñez (1988) were first to write about the decorative art on the Philippine jeepney. It was Torres who coined the term *horror vacui* 'fear of empty space' to refer to the jeepney's decorative elements and style. The goal, he notes is to leave no space empty or vacant in and on the jeepney whether with passengers or works of art. He proposes that this profusion of visual arts can be related to the gregariousness of the Filipino, "[…] it is his way of coping perhaps with his usual material shortcomings, transcending, and sublimating these with exuberant images meant to edify through delight not ponderous sobriety. In this matter, *horror vacui*, is really a fear of being found wanting" (Torres 1979: 60). Meñez' (1988) work builds upon Torres' (1979) and focuses on the important role of the jeepney driver in the creation of the jeepney's linguistic landscape. Meñez claims that the jeepney drivers are a class of their own, "lower class, urban male, occupational subculture" (Meñez 1988: 39). Meñez attributes the jeepney décor directly to the drivers, claiming that the popular motifs she observed: love and sex, driving speed, economic success, religion, and family, directly reflect their major concerns (Meñez 1988: 40). The profusion of jeepney décor is attributed to the idea that the jeepney is the extension of the driver's personality according to Meñez, in her observation, Torres' concept of *horror vacui* is still in place a decade after Torres' work came out. In Meñez' study, she concludes that the jeepney drivers saw the jeepney as a status symbol and directly correlate their prosperity to the elaborateness and profusion of both linguistic and visual décor.

3.1. Linguistic landscape and postcolonial assemblage

Drawing from a plurality of approaches in linguistic landscape research that take a qualitative perspective (Jaworski and Thurlow 2010; Pennycook 2017; Stroud and Mpendukana 2009), we understand landscape as an assemblage of linguistic and semiotic resources that contributes to the construction and reconstruction of space and place. Our approach to investigate the jeepney is informed by research that brings together the study of semiotic assemblages with situated multilingual practice, in particular from the perspective of the global south. Exemplarily, Stroud and Mpendukana (2009) approached the linguistic landscape of a South African township as "semiotic moments in the circulation of discourses" (2009: 363). Multilingualism, materiality, and scaling of linguistic and semiotic resources in signs and the reader's gaze contribute on the assemblage of the linguistic landscape that is indicative of transnational multilingual mobility. The use of a local variety of English together with local languages reflect post-colonial influences on linguistic practices in sign making. Makoni (2014) illustrates post-colonial assemblages in

his sociohistorical perspective of taxi inscriptions in Ghana. The data of his poetic ethnography highlights an assemblage of local multilingualism and English as the former colonial language. Underscoring this shift in understanding linguistic landscapes towards an assemblage of linguistic and semiotic resources, Pennycook (2017) highlights the role semiotic assemblages play in discourse and interaction in his study of the linguistic landscape of a Bangladeshi-owned shop in Sydney, Australia. In a similar vein, Sharma (2019) examines the interaction of linguistic and non-linguistic resources within the context of tourism in late capitalism. In line with Canagarajah (2018) and Kell (2015), this research, material objects become semiotic resources that "[serve] to reconstruct cultural practices, human relations, and interactional competencies" (Sharma 2021: 68).

3.2. Data and Methodology: Investigating the jeepney as postcolonial assemblage

The data for this case study is comprised of 1) signs and symbols displayed on and inside jeepneys, 2) interviews and informal conversations with stakeholders, as well as 3) observational data. The data was surveyed in Baguio City over the course of twelve months and is part of a larger research project that investigates the jeepney as a cultural icon within the Philippine linguistic landscape. Our methodological framework is guided by Marcus' (1995) multi-sited ethnography within a critical sociolinguistic framework (Heller et al. 2017: 7) that describes research as experience and immersion. Guided by this approach, informal interviews with jeepney manufacturers, owners, artists, drivers, "barkers" (people in charge of queuing the jeepneys and managing passenger flows), as well as passengers themselves provide valuable, authentic data. By casually talking to target participants and following them in their daily routine and activities around the jeepney, this study takes on a fuller dimension of the linguistic landscape.

Here, Marcus' (1995) concept of multi-sited ethnography lays out a clear path for collecting data, he gives the following instructions:

1. Follow the people: follow the movement of your initial subjects
2. Follow the thing: follow the movement of your object of study
3. Follow the plot, story, or allegory: following the narrative behind the object/people
4. Follow the life or biography: following a life history
5. Follow the conflict: follow the characters involved and the various challenges they encounter (Marcus 1995: 106–110).

Marcus' approach carefully considers the central role of people in the data collected and as such, this approach adds analytical depth and a better understanding of linguistic landscapes as a socially situated practice.

By adopting a methodological framework that allows for a triangulation of visual, interview, and observational data, we also aim to address critique in and of the field. Exemplarily, Papen (2012) highlights a potential disconnect between the interpretation of signs by researchers with their actual meaning while Spolsky (2020) critiques the frequent failure to consider the agents responsible for producing the signs being studied. Reh (2004) notes that multilingual texts are made meaningful by understanding them in the context of also understanding the social layering of individual reader factors that are at play in the process of making signs and the interpretation of these signs. Malinowski (2009) also stresses the importance of authorship in shaping as well as making sense of the linguistic landscape. Furthermore, Jaworski and Thurlow (2010) and Blommaert (2013) underscore the importance to further investigate the conditions of production of space. Jaworski and Thurlow note that linguistic resources always interact with other elements surrounding it including semiotic resources, architecture, and the built environment. All these elements construct space and make possible the interpretation of space. In their view, linguistic resources are significant but do not by themselves make meaning-making possible nor accurate. Meaning is "an act of socio-cultural interpretation" (Jaworski and Thurlow 2010: 2). Here, our methodological framework allows us to investigate sign-producer's linguistic and thematic choices, acknowledging that signs are often idiosyncratic, and where any interpretation must take the heterogeneity and subjective trajectories of sign producers into account (Makoni 2014: 79).

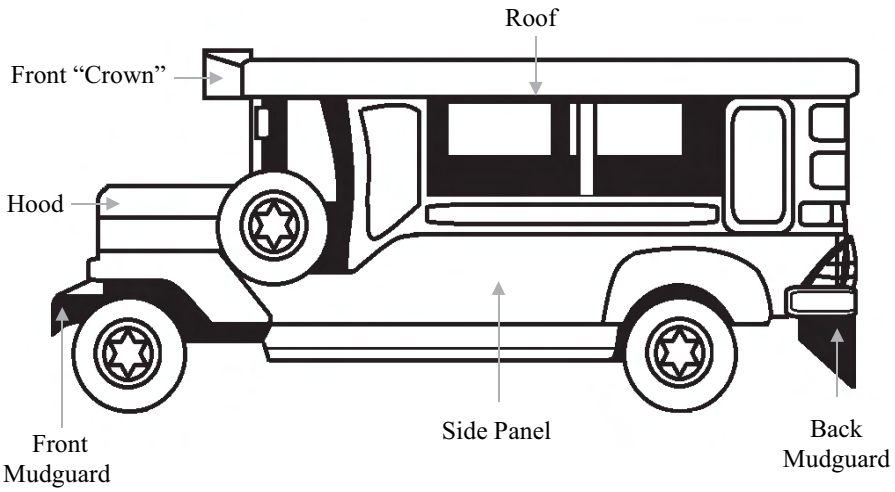

Figure 3: Illustration of a jeepney as LL space and text (an adaptation of Kress and van Leeuwen's triptych)

Exemplarily, Figure 3 illustrates an appropriation of Kress and Leeuwen's visual grammar and highlights how the exterior space of the jeepney can serve as a com-

municative space as it marks parts of the jeepney that are commonly printed and painted on. Because of its three-dimensional quality, more space on the jeepney is used as canvass to display linguistic and visual resources. The front parts which may be equated to Kress and van Leeuwen's top left and top right, include the crown, hood and front mudguard. In the original triptych, the top parts are equated to the "ideal given" and "ideal new". The crown and front mud guards usually display a combination of linguistic and visual resources. While the hood, which may also be equated to the triptych's center almost always only displays visual resources. The "hood" typically showcases visual artifacts such as metal horses as a reminder of the horse drawn carriages of the past, the jeepney's predecessor as a mode of public transportation. The "crown" showcases phrases or words that name the jeepney itself or the manufacturer. The right and left side panels and back mudguard on the jeepney correspond to the bottom right and left of Kress and van Leeuwen's triptych. The "back mudguard" commonly made of rubber flap is often printed on with witty words, phrases, and quotes. The "side panel" usually contains standard information like the route of the jeepney but because it provides a more spacious canvas, it is often the space where more elaborate visual/semiotic resources are located. More detailed examples of how these spaces are used on the jeepney are presented and discussed in the succeeding sections of this work, using data in the form of photographs collected from actual jeepneys in Baguio City.

In the previous section, an adaptation of Kress and van Leeuwen's triptych to the jeepney as space was presented. We have assigned values that re-appropriate spaces on the jeepney used as communicative spaces. The upper right and left portions of the triptych are assigned as spaces that give "ideal given" and "ideal new" information on a one-dimensional space as in a billboard. On the jeepney, these values are re-assigned to the "crown" as "ideal given" and the "front mudflap" as "ideal new". The side panels are the "real given" and the back mudguard as the "real new". Semiotic resources are usually found on side panels which are spacious canvasses for creative expression. Crowns, mudguards, and mudflaps display linguistic resources. The jeepney's "hood" is likewise used as communicative space and can be considered as taking a central positioning in Kress and van Leeuwen's triptych. The hood of the jeepney becomes a space for displaying artifacts like the iconic horse, horns, lights, and mirrors. Following Kress and van Leeuwen's interpretation of space as a meaning-making tool, the understanding and interpretation of space is not universal. This understanding of spaces as a communicative resource consists of the implicit and explicit knowledge and practices surrounding the use of this resource of a particular group (Kress and van Leeuwen 2006: 3). In short, this means that how people derive meaning from the communicative use of space is largely culture specific. What is also noteworthy in the understanding of the jeepney as space is the significant influence of the country's American colonial experience. This has largely influenced the way space is used, understood, and interpreted in the Philippines, contrary to its Asian neighbors whose use of

space (as evidenced in their writing, for instance) has remained indigenous. The American influence is also visible in the liberal use of English and the predominant recurrence of visual resources suggestive of strong Western themes like the "wild west" (cowboys and horses), American flag (and colors) and the eagle.

3.3. The Philippine jeepney as communicative space

This section is organized following the concept of the Philippine jeepney as a communicative space in the linguistic landscape. First, we briefly discuss the jeepney within the context of Baguio as our research site, focusing on processes of the design and production of artwork. For this we incorporate an ethnographic perspective, focusing on the processes of production and circulation of images and text displayed on jeepneys. We then discuss visual data surveyed throughout Baguio, Kress and van Leeuwen's triptych on the three-dimensional, mobile space of the jeepney. In doing so, we outline recurring topics and themes that are displayed on jeepneys in Baguio and that reflect assemblages of a collective post-colonial identity.

Much of our data was collected during a visit to CHARSM Motors just outside of Baguio City. CHARSM Motors is one among several small-scale enterprises where jeepneys are manufactured, painted, and decorated. Design and artwork are all done here as well, with each jeepney being unique. Workers at the garage also specialize in different tasks. Gerald, our informant, is the head artist. His main task to is to execute the requested design for a particular jeepney unit. The day of our visit, he was working on one almost ready to be released to the owner. The workers, the parts as well as the décor that make the finishing touches of the jeepney are assemblages that make possible the production of jeepney units. The product may be the same jeepney but hardly any two jeepneys look exactly alike. In terms of utility, the jeepney is also an assemblage of several multipurpose vehicles: it serves as a private, family transport to service extended families out-of-town travels; it serves public utility vehicle conveying passengers along a fixed route; and it serves as transport for farm produce hauling fruits and vegetables (sometimes even construction materials) from farm to market.

Figure 4 below depicts the jeepney unit Gerald was working on at the time of research. The jeepney's side panels are the largest canvass for Gerald, and for this unit he painted a familiar scenery, a picturesque and idealized interpretation of Ambuklao Dam. He shared that the owner of this unit requested for this design on the side panels because of its sentimental significance for him. The owner used to work as a mechanic for an Australian who was then one of the contractors for the building of the dam. His superior, impressed with the quality of his work, diligence, and perseverance when he was able to make a discarded truck work again, offered him a job in Australia. For many Filipinos, working abroad is an aspiration and a way to avoid financial hardships. He took up employment in Australia and worked there until he had saved enough to be able to live comfortably in Baguio

Figure 4: Side panel with depiction of Ambuklao Dam

City. His savings enabled him to purchase this jeepney, which according to Mang Samuel costs about 1.2 million pesos the same cost of an average brand-new SUV. The farmer-laborers who work for Mang Samuel in between planting and harvesting in the lowlands, Gerald, an architecture undergraduate who apprenticed under his uncle until he mastered his craft and took over, Mang Samuel himself who is a farmer but found another lucrative enterprise in manufacturing custom-built jeepney, and finally, the customer who is a retired overseas Filipino worker (OFW) who has now invested in a jeepney unit for passive income now that he has come home for good.

The side panels are the largest areas to be designed and painted, the windows and doors are also illustrated with stickers (which Gerald also designs and prints himself for the customers to choose from). One of the fixed glass windows on Figure 4 displays a sticker of a stylized head of a Native American together with a blazing sun in the background. The windows too are decorated with stickers which serve as borders. Multi-colored lights are also placed on the stainless-steel panel above the windows and dominant colors of orange, red, yellow, and blue cover most of the side panel surrounding the airbrush painted image of the Ambuklao Dam. The image of the scenic Ambuklao Dam on Figure 4 can be regarded an icon as well. Ambuklao may look different today, but the image shown on the jeepney's side panel is an idealized view of this famous tourist spot. In a sense, the image is a recreation of the view from the artist's memory. Ambuklao Dam itself is located outside of Baguio City but is recreated as a nostalgic image as part of a jeepney's linguistic landscape. It too is an assemblage and intersection of a specific geographic location, a memory/experience of it and an artistic execution of the two rendered by the artist. De Sousa Bastos (2008) compares the jeepney's linguistic landscape to tattoos. "Using them for transportation, Filipinos print on the jeepneys, literally, their own souls and many symbols about which they care"

(De Sousa Bastos 2008: 238). Stroud and Mpendukana (2009) note that signs on sites of necessity are usually personalized, produced manually using cheap materials aiming to attract potential customers. These signages are made up of predominantly informative linguistic and semiotic resources and the periphery of these signages are what Stroud and Mpendukana (2009) referred to as "ludic spaces" which showcase creativity of the sign makers. In the jeepney's space, however, 80 % of the space is ludic space and 20 % are conventionally used for signages that are official and informative in function.

Figure 5: Hood, crown, and windshield

Figure 5 is an up-close look at the jeepney's hood, crown and windshield. This view is the most visible to the gaze of potential passengers on the streets. The hood displays two horses which are iconic symbols of the history of transportation in the Philippines, a homage to the horse-drawn carriages which are predecessors of motorized vehicles. The image of the horse is one of the original designs on the jeepney. Mostly decorative, the horse also indexes discourses of sexuality, masculinity, and patriarchy. Mimicking the positioning of the horse in the front of horse-drawn carriages, Figure 2 also locates the horse on the hood covering the figurative "horsepower" of the modern carriage, the jeepney. According to informants, these metal horse statuettes are sold from 1,500–2,500 Philippine Pesos[1] and function as a status setting symbol for the jeepney. Because of the cost, our informant noted that the number of horses on the hood correlate with the affluence of the owner of the jeepney. The red and green lights as well as the yellow horn shaped ornaments are purely decorative. Moriarty (2014), Pennycook (2010) and Jaworski and Thurlow (2010) all argue that semiotic resources are valuable elements in the linguistic

[1] At the time of research, US$1.00 was worth approximately 50 Philippine Pesos

landscape and contribute as much as linguistic resources in the making of communicative spaces. In the context of the jeepney's linguistic landscape, the hood as a ludic space must not have an empty spot as previously observed by Torres (1979) and Meñez (1988) following the principle of *horror vacui*.

The linguistic resources are used to brand the jeepney, commonly seen on mud guards/mud flaps and crown bearing quotes, phrases, or names. These are ludic spaces dominant on the jeepney's space. Linguistic resources also have informative functions making up of the 20% of the jeepney's space which display the jeepney's route like the long thin space below the windshield, and the side panel just below the windows. Other uses of the linguistic elements are signage on the jeepney which are mandated to be officially displayed by the government's regulatory body. Signs like: NO SMOKING, 20% DISCOUNT for students, seniors and PWD (persons with disability), and now these signs include, NO MASK, NO FACE SHIELD, NO RIDE. Figures 3, 4, 5 display linguistic resources on mudguards or mudflaps.

Figure 6 "D'Harvesters" below highlights Philippine English, a variety of English that commonly features a shortening of the article *the* to *d*. Strategically placed on Kress and van Leeuwen's space identified as containing information or message that is "ideal new", on the jeepney the front mudflap also serves as a space for displaying a name or a phrase. It is a ludic space where the creativity of sign producers or authors are visible. Figure 7 "Kisses are sweeter than wine" and central to understanding the use of space on the jeepney is an understanding of its communicative function. Certainly, the linguistic landscape of the jeepney is designed to attract passengers, appealing to aesthetics, humor, identity, and other elements shared by both the sign producer and the target audience. De Leon (2015) notes the value of linguistic signs on the jeepney as a reflection of the Filipino's psyche and suggests that a better understanding of these can be achieved by "reading between the signs". De Leon echoes the idea that the jeepney's linguistic landscape "encapsulates many Filipino characteristics, even values and norms" (De Leon 2015: 257). On the other hand, the challenge presented by De Leon's idea about interpreting the meaning of the jeepney's linguistic landscape is ascertaining the intentions of the sign producers and the multiple and diverse audience that they communicate with. In this case, we highlight the value of our methodology which operationalizes the critical sociolinguistic approach by applying Marcus' (1995) multi-sited ethnography, taking to heart his mantra of "following" or "shadowing" things, people, plot, story, and conflict. An appreciation, reading and interpretation of the linguistic resources on mudguards and mudflaps by passengers is also parallel to their position (literal and figuratively) vis-à-vis the jeepney. In Figures 6, 7 and 8, two of three linguistic signages use English. Observation of the choice of language used in signs also affirm that there is a preference for English over local languages. The examples in these figures all make use of the same space, front, and back mud flaps. Mud flaps located at the rear portion may be considered equivalent to Kress

and van Leeuwen's space for the "real new" whose location makes the sign clearly visible to passengers getting on the jeepney or passengers who did not get on the jeepney but are reading it from the sidewalk. Either way, the sign is clearly visible even to people who just happen to see the jeepney drive by the road.

Figure 6: Mud flap "D'Harvesters"

Figure 6 whose front mud flap displays the phrase "D'Harvesters" with an obvious shortening of *the* to *d* is an example of the use of Philippine English in the jeepney's linguistic landscape. This is a common practice and a deliberate choice among the sign producers for shortening the phrase to be printed on a limited space and indexes the predominant use of Philippine English and the sign producer's confidence in using the local variety of English on a space that is also an adaptation of something originally American. The term "harvesters" indexes farmers and farming which is a common occupation (especially) of males in the area. Baguio City is the center of the Cordillera region which is best known for supplying highland vegetables to the rest of the country. At the same time, the term may also refer to the alternative function of the jeepney, as earlier gathered from our informant Mang Samuel, as transport for produce harvested from the farms in the mountainous areas surrounding Baguio City to the market where they are sold. On a more personal level, it could also be a reference to the financial success of a farmer who has been able to earn enough surplus capital to be able to invest in a new business venture which is the jeepney as public transportation. Meñez (1988: 40) describes the stereotype of a jeepney driver as "a migrant from a village or small town where he more likely was a farmer, a fisherman, or a market vendor". Following this theme, "D'Harvesters" iconically represent the financial success that owning (or driving) a jeepney suggests as opposed to being a farmer, a fisherman or a market vendor. It is a significant step up the economic ladder. The sign being located at what Kress and van Leeuwen would consider as the "real given", the message

appears to be directed to all who are within the reading vector of the sign. The sign itself describes the jeepney and becomes one of its identifying marks, especially to passengers who are its main audience.

Figure 7: Mud guard "Kisses are sweeter than wine"

Figure 7 "Kisses are sweeter than wine" indexes the title of the 1957 song by Jimmie Rodgers describing how a man wooed, married, built a family, and raised daughters with a woman whose "kisses are sweeter than wine". In the lyrics of the song, the persona was also a farmer who made a living by planting corn. The profile of the man referred to in the song fits the stereotype of the jeepney owner or driver, which is possibly one reason why the song's title resonated and became significant enough to be printed as a signage on the jeepney's back mudguard. The space where the sign is located is identified as the space for the "real new" and the target audience are passengers getting on the jeepney or those on the sidewalk having a clear reading vector of the sign while the jeepney is loading or unloading passengers. The phrase also indexes the male dominated transportation industry in the Philippines. Jeepney drivers are predominantly male. Gass and Tuason (2008) describe the characteristics of Filipinos observed from the jeepney drivers who participated in their study, among which is "high masculinity", which they related to "a preference for values such as assertiveness and performance over those of warm personal relationships and service" (Gass and Tuason 2008: 212). However, the quote on the signage being the title of a song released in 1957 is something most jeepney passengers today may be oblivious to. The phrase may as well be interpreted as being anchored on or indexing the patriarchal character of the jeep-

ney and the jeepney driver. Wine and women are common vices associated with jeepney drivers. The phrase signals a stereotype among jeepney drivers as being drawn to these vices after what is perceived as a long, hard day on the road.

Figure 8: "The cool climate of Baguio"

Figure 8 "Lamig ng Baguio" translated to English meaning 'the cool climate of Baguio City' uses Filipino, the national language. Notably, local languages including the national language are not commonly visible in the linguistic landscape of the jeepneys in Baguio City. In addition, Filipino is not the local lingua franca but a local variety of Ilocano, a local language commonly used by people in the northern part of the Philippines where Baguio City is located. The choice to use Filipino may be explained by the fact that Baguio City is a tourist destination, and its primary appeal is its cool climate. The addressee of this message are not locals but the non-residents who may not understand the local language. But why Filipino and not English? In this case, using Filipino is more economical in terms of space occupied by the message. The Filipino term *lamig* also means both 'cool' and 'cold' and here, used as an adjective to describe Baguio directly. The phrase may be interpreted as a declarative statement of fact, that 'Baguio City has a cool climate' or as a playful reference to the jeepney as what makes Baguio City "cool" (meaning colloquially as hip, modern or in fashion). Its local anchor is clear, the message on the sign is meaningful because of the jeepney itself is plying the streets of Baguio City and the message references the city's climate as its selling point to tourists. It associates itself and identifies with its location by advertising and attesting to its fame as the Philippine's "Summer Capital" and other monikers for which it has been known since the 1900s.

4. Conclusion

How is space conceived in linguistic landscape research and how does this intersect with understandings of space in pragmatics? Scollon and Scollon (2003), Jaworski and Thurlow (2010), and Blommaert (2013) all agree in defining the concept of space as a product of human interaction. For Scollon and Scollon (2003) space is constructed not only through conceiving of the objects and boundaries surrounding it but also through the constant interaction of people in that same space. For Blommaert (2013: 3),

> physical space is also social, cultural and political space. A space that offers, enables, triggers, invites, prescribes, proscribes, polices or enforces certain patterns of social behavior; a space that is never no-man's land but always somebody's space; a historical space, therefore, full of codes, expectations, norms and traditions and a space of power controlled by, as well, as controlling people.

Adopting this view of space as socially constructed foregrounds the value of likewise adapting socially situated approaches to data collection and analysis. This is because linguistic and semiotic resources in the linguistic landscape are only interpretable and made genuinely meaningful with the help of the knowledge about the surrounding cultural, historical, political, and ideological influences in their production. More directly, we achieved this in this research by actively engaging our participants and immersing in our research site. These methods are consistent with Marcus' multi-sited ethnography and Heller et al.'s critical ethnographic sociolinguistics approach. However, this approach also relies heavily on the intimate knowledge of the semiotic and linguistic resources, what they mean and refer to in the community where they are used. As our research of the Philippine jeepney demonstrates, context and situated knowledge are integral to a holistic understanding of how space is used as a communicative tool.

This conceptualization of space is also echoed in pragmatics. Lussault and Stock (2010: 11) note that pragmatics of space also contends with the question, "[…] how practices are constructed through space, or how the different ways of practicing places are informed by different aspects of spatial dimension". This preoccupation with the centrality of space in human interaction, language use and communication are also shared by pragmatics. Levinson's (2006) concept of indexicality closely hews with those of Scollon and Scollon (2003). He points out that meaning making is made more holistic by paying attention to contexts, and "speakers' referential intentions given clues in the environment" (Levinson 2006: 103). In that sense, "[…] meaning is relational, the meaning of an indexical characterized as the relation between utterance/resource situations and described situations" (Levinson 2006: 104). Definitions and conceptualizations of pragmatics intersect with the social situatedness of meaning in linguistic landscape. Bublitz and Norrick (2011: 24) synthesized the definitions of pragmatics to mean, "the

science of language use, the study of context-dependent meaning and the study of speaker-intended meaning, presupposing the existence of language, language user and context on the one hand and context-independent meaning on the other". Both linguistic landscape and pragmatics view space as socially constructed. Space being the object of investigation in linguistic landscape study also takes the position that linguistic and semiotic resources making up a certain space, in our case the jeepney, only allows for a full understanding when language, language user and context are all taken together. Our research also proposes to adopt assemblage as an alternative theoretical frame in understanding the nature of space and place and the constant construction and re-construction of these as reflections of larger social, cultural, and political events that surround them. This research is an example of how linguistic landscape analysis can expand its scope and move beyond sociolinguistic paradigms concerned with linguistic structure, language vitality, or prominence towards an investigation of linguistic landscapes as an assemblage of semiotic resources. Previous research – in particular, from the Global South – has illustrated this (Barbaza 2019; Makoni 2014; Reh 2004; Stroud and Mpendukana 2009), highlighting how historical, political and cultural contexts enrich the analysis and interpretation of semiotic and linguistic resources. While the concept of space has traditionally referred to a fixed location, it is now understood as being "semiotically imagined" (Stroud and Mpenudkana 2009: 372). This reconceptualization of space in linguistic landscape studies illustrates how communication and meaning-making do not solely rely on linguistic factors but on the contexts surrounding the use of linguistic and semiotic resources.

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17. The pragmatics of written texts in space

Wolfgang Kesselheim and Christoph Hottiger

Abstract: This chapter investigates the relationship between written texts and space. It asks how the spatial surroundings of texts can become relevant for their interpretation and how, in turn, texts can contribute to the construction of the space they are in. We provide a comprehensive overview of previous research on the relationship between texts and space from research areas such as multimodal text linguistics, geosemiotics, and linguistic landscape research. In particular, we introduce the various formal and functional categories that have been proposed to describe the relationship between texts and space. In addition, we provide a case study of texts in a science center which demonstrates that the study of both individual texts and "ensembles" of texts can yield more detailed results if we go beyond the mere classification of the text-space relationship and ask how exactly a text signals the relevance of a particular space for its interpretation or how the meaning of a space is shaped by the texts in it. In particular, we suggest that the communicative function of the texts at the science center does not exhaust itself in a specific mental response as a reaction to reading a particular text, but rather that the texts are geared towards inducing physical actions from their readers that go far beyond the act of reading. Consequently, the science center and its texts provide a perspicuous setting for exploring the pragmatics of written texts in space.

Keywords: text and context, space, text linguistics, geosemiotics, linguistic landscapes, museum, reading

1. Introduction

Written language distinguishes itself from unrecorded spoken language in its capacity to transgress ties to a specific time and place of communication.[1] In Luhmann's conception, interaction is limited to the co-presence of at least two parties who can interactively negotiate what counts as being co-present and what does not (Luhmann 1987: 560, an idea that is strongly influenced by Goffman's take on the issue, see Goffman 1963: 24). The communicating parties must be co-present and not only perceive each other but perceive that they are being perceived by each

[1] In certain settings, this relationship can be much more complex, cf. Ong's concept of "secondary orality" (Ong 1982).

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other in order for spoken language to work. Written language, in contrast, is not tied to these preconditions. As long as readers are familiar with a particular writing system and the particular language or historical variety of a language, they can read something that was written thousands of years ago in an unknown place by a long-dead author (cf. Hausendorf et al.'s 2017 concept of "readability" ("Lesbarkeit"), which is inspired by Luhmann's theory).

The independence of a text from a particular time and place has often been described as one of the defining characteristics of textuality. However, the absoluteness of this assertion has begun to crumble in recent years and linguistic research has begun to draw attention to the fact that, at the very least, some texts are closely related to a specific spatial environment. The goal of this chapter is to elaborate on the different forms and functions of this relationship between written texts and their spatial environment. We will do this in two main parts.

First, we give an overview of some typological approaches to the relations between texts and space and outline the main formal and functional categories that have been proposed to describe these relations (Section 2). These suggestions come from different research traditions. One important approach is provided by a multimodal strand of text linguistics and semiotics whose focus on non-linguistic modes of communication such as images (Kress and Van Leeuwen 1996; Stöckl 2004a) and typography (Spitzmüller 2006; Stöckl 2004b) led to an interest in exploring the role of space as a relevant context for the understanding of written texts (e. g. Sandig 2006 or Fix 2008). In addition, a strand of research known as "geosemiotics" (a term coined in the pivotal work by Scollon and Scollon 2003) has also proved to be important. Research in this tradition has, in turn, inspired sociolinguistic research on the presence of written texts in space under the label of "linguistic landscape research" (Backhaus 2007; Shohamy and Gorter 2009).

Second, we carry out an exemplary analysis of texts in a particular spatial setting, namely a modern hands-on science museum. Through this case study, we explore how a text (including its specific materiality) indicates the exact spatial context that is needed to understand it and how this spatial context is to be used to realize the communicative function of the text (Section 3). Subsequently, we explore how texts can construct the meaning of their surrounding space. We show how the texts at the Technorama turn an open, ill-defined exhibition space into a space of public engagement with science, and how they even prefigure the role of their readers as active, self-guided users of both the exhibits and the exhibition space as a whole (Section 4).

Before we begin, however, a few remarks about our understanding of the core notions "text" and "space" are in order. When we explore the relations between text and space, we understand texts as individual readable objects (cf. Hausendorf and Kesselheim 2008: 23; Hausendorf et al. 2017: 24) with a specific materiality, located in, and delimited against, a surrounding spatial environment. At the same time, we understand space as the specific part of the material environment that can

be perceived with the senses while (or immediately before or after) reading a text. This is to say that our chapter does not cover the question of how the meaning of a certain place, e. g. Zurich Paradeplatz, is constructed by a collection of written utterances compiled into a corpus by a researcher (for this aspect, see Danos in this volume on discourse) or how texts construct a space that extends far beyond their readers' sensory perception in the reading situation (e. g. the American West as a space that is ready to be settled). Instead, our analysis focuses on specific written texts and the way they signal a relationship to their spatial environment in relation to the (primarily visual) perceptions of their potential readers.[2]

Finally, while we report on literature that conceives of space as an objective "context factor" whose characteristics are determined independently from text analysis in order to understand how space influences the interpretation of texts, we maintain that in order to explore the "pragmatics of written texts in space", one must conceive of the meaning of texts and the meaning of spaces as mutually elaborating each other. Some texts invite their readers to interpret and use their spatial environments (or objects in this environment) in a specific way, and, at the same time, spaces become relevant backgrounds of understanding for readers of spatially anchored texts. In this chapter, we show that this "reflexive" relation (see Auer 1999 on the theoretical roots of this concept) can be empirically studied by taking seriously the reading situation as the starting point of text analysis. This means that we have to include everything that can be perceived at the very moment a text is read in the analysis of said text.

2. Written texts in space: An overview of the literature

Over the past 25 years or so, research has increasingly drawn attention to the relationship between texts and space. In many cases, this has led authors to develop typologies of text-space-relationships based on the question of whether (and how) the two are related. There have also been attempts to characterize the relationship between texts and space along the lines of form and function. In the following, we provide an overview of the different proposals and draw attention to their similarities and differences.

Even though the impact on a text's meaning through its placement in space had been raised before, it was Ehlich's conceptual distinction between what he

[2] Note that this relationship has to be signaled in a fundamentally different way in texts written in braille which are intended to be read by blind readers. In this case, the model readers' (Eco 2015) perceptional spectrum is structured in a fundamentally different way and more focus will have to be laid on senses other than vision. Exploring this further goes beyond the scope of this chapter, however.

calls "locostatic" and "locomobile" texts (1994: 30, our translation) that sparked more research into this question. With this pair of terms, Ehlich raised the seemingly simple point that although the types of texts we might typically imagine when thinking of the category "text", such as books, newspapers, or letters, can be transported through space and read anywhere without losing their readability (i. e., they are locomobile), there are other texts, such as inscriptions on buildings or tombstones, that cannot be moved under normal circumstances and are meant to be read "on site". Ehlich calls such texts locostatic and emphasizes that for these texts to be read, potential readers must physically move into their geographically fixed spatial surroundings.

Other authors have picked up on this distinction. For instance, drawing on Bühler's discussion of signs that are attached to objects ("symphysic signs", Bühler 1934: 154–168, our translation), Auer (2010: 273 f.) investigates what he calls "stationary" ("ortsfest") writings in public places, i. e. writings which are "essentially linked to the place in which their carriers were erected" (Auer 2009: 33). However, this conception does not imply a binary opposition like locostatic vs. locomobile but rather a continuum between texts that are more closely tied to particular spatial surroundings and texts that are more independent from specific spaces of reading. One researcher who has developed a fairly detailed typology of the ties between texts and their particular spatial surroundings is Christine Domke (cf. Domke 2010, 2013, 2014). Under the general concept of the "locality" of texts ("Ortsgebundenheit"), she distinguishes whether:

– a text is tied to a particular space because of its materiality/mediality, its content, or both (2010: 93),
– a text can exclusively be used in one particular space (e. g. road signs that identify the place one is about to pass) or whether it may be fixed, but can be used in various locations (such as emergency exit signs), and whether
– the tie to the spatial environment is time-bound (as in the case of digital departure boards) or time-independent.

The goal of all these distinctions is to improve current typologies of forms of communication (cf. the title of Domke 2013) by describing the various meanings the concept of locality may include.

The question whether texts are tied to a particular spatial context has also led to attempts to grasp different formal relationships between texts and space. Research on this question largely originates in a strand of research that has come to be known as "geosemiotics", which was initiated by the work of Scollon and Scollon (2003). In this pivotal work, the authors investigate how "a sign makes its meaning by its geophysical placement, its physical characteristics, or its placement together with another sign or object" (2003: 133).

The concept of indexicality lies at the center of Scollon and Scollon's (2003) exploration of the "placement" of signs:

> Indexicality is the property of the context-dependency of signs, especially language; hence the study of those aspects of meaning which depend on the placement of the sign in the material world. (Scollon and Scollon 2003: 3)

In this vein, the authors investigate various concrete examples, such as how shop signs index the respective establishment by telling their readers that "this is the name of this shop". However, Scollon and Scollon's aim is not to develop a grammar of indexicality:

> Our interest here is in the ways in which [the] sign system of language indexes the other semiotic systems in the world around language. That is, we are more interested in the *indexable world* than in the systems of indexicality in language. (Scollon and Scollon 2003: 5, emphasis in the original)

Those "other semiotic systems" Scollon and Scollon are interested in include nationality, ethnicity and ideologies. In this sense, written signs in public spaces can be used as a proxy to study the presence of different ethnic or cultural groups along with their language ideologies, relations of power, and the connection of specific languages to particular discourses (e. g. the administrative or commercial discourse). This has been the foundational idea of linguistic landscape research (see Landry and Bourhis 1997; Backhaus 2007; Shohamy and Gorter 2009; Blommaert and Maly 2016).[3]

The indexicality of signs can come in different combinations and flavors. Often, signs not only have indexical, but also symbolic components. For instance, Scollon and Scollon (2003: 119) argue that a sign in Chinese writing that advertises a restaurant does not just index that a restaurant with this particular name can be found in the house on which the sign is placed, but also symbolizes that this restaurant has a connection to China (be it because it is actually located in China or because the use of the Chinese writing system in another country can imply a connection to China). In addition to these combinations, the indexicality of signs can be subcategorized further. For instance, Auer (2010: 277–279) distinguishes between:

- indexicality that is based on the spatial contiguity between sign and referent, e. g. in the case of a sign that says "caution, wet floor" which is actually placed on a wet floor, vs. signs that refer to distant places (e. g. signposts)
- indexicality that results from the use of conventionalized "pointers", such as arrows, vs. indexicality that does not use such pointers

[3] Scollon and Scollon (2003) analyze the formal ties of signs to their spatial surroundings under the label "emplacement" (s. below). However, later research on linguistic landscapes often focused so heavily on the indexicality of signs and the socio-cultural reality they potentially index that it neglected to investigate empirically *how* these signs are embedded in their spatial context and how they help to construct the latter.

– indexicality that results from a (potentially elliptic) reference to the place of writing as the topic of the text (e. g. a sign that says "exit", which can be read as '*this is* the exit') vs. indexicality that needs a more elaborate activation of knowledge by potential readers. Auer's example of the latter category is a sign that reads "Parking garage cashier: machine is located in the parking deck just before the exit" (Auer 2010: 279, our translation). In this case, readers of the sign must have a certain amount of knowledge about the typical activities of public parking and about the general structure of parking garages in order to make sense of the sign and its placement.

Finally, indexicality can be a matter of degrees, which can be due to a difference in text type. Even though both are prototypically locostatic text types, street signs can be highly indexical (see, e. g., Cook 2013) while graffiti has been shown to be only weakly indexical (Tophinke 2019). However, indexicality can also be influenced by the particular placement of a sign. For instance, the sign saying "caution, wet floor" is only indexical if it is actually placed on a wet floor. If it is being stored in a cupboard, its indexicality is temporarily suspended (see Auer 2010: 276 f. or Scollon and Scollon 2003: 138 f.: "negated indexicality" or "denied inscription").[4]

Apart from raising the fundamental issue of indexicality with respect to the formal connection between texts and the space they are in, Scollon and Scollon (2003: 142 ff.) also develop a terminological framework for what they call different types of "emplacements" of texts and signs in particular spaces. This framework attempts to describe the precise location of a sign in space. They differentiate between "decontextualized", "transgressive", and "situated" geosemiotic practices depending on the sociocultural acceptability of (particular forms of) texts in a given place (Scollon and Scollon 2003: 145). The term "decontextualized semiotics" is used to refer to signs that do not depend on their precise placement in space in order to work, e. g. in the case of corporate logos which are used in identical form on buildings belonging to a particular firm, in advertisements for their products and on the products themselves (2003: 145). "Transgressive semiotics", on the other hand, "includes any sign that is in the 'wrong' place" (2003: 146). This means that it is crucial to consider the emplacement of transgressive signs, because their core characteristic is that their placement is visibly "unauthorized – graffiti, trash, or discarded items are the most common examples" (2003: 146). Finally, the most relevant category for the purposes of this chapter is "situated semiotics". This term subsumes texts or signs for which (part of) their meaning "is predicated on the placement of the sign in the material world" (2003: 146). This category contains a subset which Scollon and Scollon (2003: 153) call "exophoric signs". As the name indicates, such signs index a point in space outside of the text itself, a classic example being exit signs and shop

[4] In addition, Auer (2010: 277) mentions that the indexicality of a sign can also be permanently suspended, which is often the case when it comes to historical inscriptions.

signs. Therefore, one of the fundamental tasks for analysts and readers of exophoric signs is to determine their exact point of reference in their spatial environment.

This issue is addressed in detail by Seargeant and Giaxoglou (2020: 307), who describe the space that is being referenced by an exophoric sign as the "spatial […] scope" of the said sign. By means of the example of a no smoking sign fixed to an entrance door, they argue that such signs "operate in specific, identified spaces, and demarcate such spaces" (Seargeant and Giaxoglou 2020: 311).[5] However, as Auer (2010: 284) observes, the precise boundaries of the spatial scope of such signs can often be fuzzy.[6]

All our previous points about the formal relationship between texts and space addressed the issue from the point of view of individual signs and texts. However, spaces often contain a number of texts and signs that can be perceived almost simultaneously, which means that analyses of texts in such spaces must also consider the formal relationship of texts to other texts that are present in the same environment. In general, meaning is created by a combination of all the signs in a specific place taken together, even though some signs must obviously be weighed more heavily than others, e. g. due to their prominent location in a space or their larger size compared to other signs in that space. Once again, it is Scollon and Scollon (2003: 167) who provide the terminology to address such issues, namely in their analyses of "semiotic aggregates" and the "'interdiscursive dialogicality' [sic]" of signs in a particular space.[7]

A number of different formal relationships between signs at a specific place have been described in the literature. For instance, Auer (2010: 286) coins the term "ensemble" to refer to signs or texts that are a) placed so close to each other in space that they can be perceived together at a glance and b) refer to each other in terms of their content (e. g. several traffic signs on the same signpost). In contrast, the term "sign discourse" (Auer 2010: 286, our translation) captures signs that are not spatially close to each other but rather signal their relationship by their common design (which could hint at a common author or principal in the sense of Goffman 1979). An example of such a sign discourse would be the system of road signs spread along the roads of a country. In cases of "layering" (Scollon and Scollon

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5 The fact that texts in public spaces create a specific area is also highlighted by Domke (2010). However, in her case, this area is defined by the position a reader has to take in order to read a given text whereas Seargeant and Giaxoglou (2020) focus on the area of reference of texts.

6 We show in Section 3 that the text itself (including its materiality) often indicates its spatial scope.

7 However, it is important to note that these terms do not just subsume the ensemble of all written texts and signs in a specific place, but also include elements of what would commonly be addressed under the heading "architecture" and the interaction order of people who are co-present in this space (Scollon and Scollon 2003: 167).

2003: 137, also cf. Auer 2010: 287 f.), "a sign is attached to another sign in such a way that one is clearly more recent and more temporary", which implies a notable rupture between the primary and the secondary sign, e. g. in the case of stickers which are placed on top of road signs or advertising posters. Such layerings can turn a monological sign or medium into one of public dialogue, as has been shown by Schmitz and Ziegler (2016) and by Scarvaglieri and Luginbühl (2020).

In the literature, we also find various descriptions of different functions of texts in space.[8] For instance, Hennig (2010: 84, our translations) distinguishes between the two functions "requesting" and "informing/naming" while Cook (2013: 43) establishes three fundamental functions, namely "locating and attracting", "informing", and "controlling movement and behaviour".[9] However, Auer provides the most comprehensive set of functional categories (2010: 290–294), which he claims comprise an exhaustive list of five functions of locostatic writing in public:

1. naming and characterizing (e. g. of buildings, public places, streets, etc., also in the case of product names),
2. marking affiliation (e. g. between places and people, companies, executive branches, etc. to indicate the possession of a place, e. g. in the case of brand names or logos that are placed on buildings, cars, etc.),
3. suggesting or forbidding ways of usage of a particular space (e. g. in the case of signs, such as the previously mentioned sign saying "caution, wet floor", which warns passers-by against tripping, but also by categorizing a place with a place name that is associated with a particular activity. For instance, the fact that a house is called a restaurant by means of a sign that is placed over its door suggests that one should enter the house in order to eat and/or drink there.),
4. indicating directions (often realized as a combination between place names and forms of distal pointers), and
5. admonishing and commemorating, i. e. the function of locostatic writing in public to commemorate a historical person or event (e. g. in the case of plaques that are placed on statues or historical buildings).

Finally, as with the description of different formal relationships between text and space, we must once again also consider the contribution of relations between texts which are co-present in a given space in terms of their functional role in respect to this space. In this context, Schmitz and Ziegler (2016: 483) identify different functions of intertextual references between "layered" signs, or signs in an "ensem-

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8 In this context, it must be noted that the functionality under investigation has so far primarily been described as operating in one direction only: from text to space. However, as we show in the following analyses, it can also be fruitful to consider the opposite direction.

9 Cook (2013: 43) also mentions a fourth category, namely "service signs". However, this term simply seems to combine aspects of the other three functions.

ble" in public space by using the example of graffiti. The important intertextual functions they identify include "acknowledgement", "critique", and "competition", but also just claiming the sprayers' "presence" in urban space.

The approaches presented so far consider the study of texts in space as a topic that has to be dealt with in its own subdiscipline (geosemiotics, linguistic landscape research) or that needs a specific label to distinguish it from other forms of non-face-to-face communication (such as "meso-communication", i. e. a form of one-to-many communication tied to a specific place, Domke 2014, our translation). For other approaches, however, the relation between a text and its spatial environment is an essential part of any form of text communication and, as such, must always be taken into consideration when analyzing texts. Fix (2008), and even more fervently Sandig (2006), argue that text linguistics and stylistics should consider a text's embedding in a particular spatial setting as one of its fundamental and defining features. This demand becomes indispensable if one does not start the analysis of text communication with the text as a taken-for-granted object, but rather considers it as necessarily embedded into a particular moment and perceptual situation in which reading takes place. Considered from this analytical perspective, each and every text has to delimit itself from its spatial context and answer whether (and how!) this spatial context is relevant for its understanding. In fact, Hausendorf et al. (2017) show that this aspect constitutes an integral part of a text's textuality (or "readability" in the terminology of Hausendorf et al. 2017, our translation). If every text has to answer the question of how its readers should understand its embedding in its spatial context, the study of texts in space is no longer a research area of its own, but an essential part of the overarching endeavor to understand text communication.

This is the perspective we will adopt in our brief case study, which analyzes texts in a museum setting. Museums are a perspicuous setting to study the interrelation between texts and space because texts are a typical, even emblematic, part of museum exhibitions (often in the form of the notorious exhibit labels, see Serrell 2015)[10] and because the museum space itself is highly semioticized. In fact, this semiotization of the museum space is so prominent that it has been analyzed as a "medium" (Locher et al. 2004) or a "text" (Kesselheim 2017) in its own right.

[10] The presence of written texts in museum exhibitions has been a matter of intensive debate in museology. As early as 1916, Gilman (1916) raised the issue of how texts in exhibitions should be placed in order to be readable for visitors without causing bodily fatigue. Research on texts in exhibitions was conducted with particular verve in the 1980s and early 1990s (see, e. g., Borun and Miller 1980; Korff 1984; Tripps 1987; von Borzyskowski 1991; Bitgood et al. 1992), but the topic remains relevant to the present day (see, e. g., Bradburne and Martinez 2017 or, as a more general contemporary take on museum exhibitions which also includes relevant remarks on the role of texts, Falk and Dierking 2016).

3. Constructing space as a relevant context of a text

In the following section, we study the relationship between texts and space in a particular location: The exhibition of the Swiss Science Center Technorama, which is located in Winterthur, Switzerland. The Technorama represents a special group of "interactive" natural science museums, known as "science centers". Science centers have a particular approach to the transfer of scientific knowledge (Schwan et al. 2014; Hauan and Kolstø 2014). Most importantly, they do not want to simply tell their visitors about natural phenomena but instead provide them with a large number of experimental stations that allow them to bring about the relevant phenomena in an active and self-determined process, and to experience them with all their senses.

Our case study addresses two main questions. First, we analyze a single text in the Technorama. In particular, we ask how exactly this text is embedded in its spatial context and how it suggests to its readers how they should use its surrounding space (Section 3). Second, we explore the "dialogicality" (Scollon and Scollon 2003: 167) of texts in the Technorama by showing how the meaning of the exhibition space and the role of the "space users" is constructed by the totality of texts in the exhibition (Section 4).

Figures 1a and 1b show the text we analyze in this first analytical section and the exhibition space in which it is placed. This particular text and the corresponding exhibit have been chosen for practical reasons: the text is relatively short, and the relevant phenomenon is not complicated to understand, at least on a basic level (the exhibit illustrates the magnetism of the earth). The text is quite representative of the general textual pattern of exhibit texts at the Technorama.

Already from a certain distance, we can see that this text is locostatic. It is mounted on a text stand which is clearly marked by a spotlight coming from above. Once we zoom in closer (see Figure 1b), we can see that the material connection between the text and the text stand is permanent. The text is glued to a disc made of acrylic glass which, in turn, is attached to the stand by four screws. However, this observation is not only relevant from a classificatory perspective. The fact that the text is materially fixed to a particular position in the exhibition space also tells us that the text is to be read "in place". This indicates that the spatial environment plays an important role for the communicative purpose of this particular text.[11]

[11] In other contexts, the signal that a text is to be read in its specific spatial environment is given by the "scripturality" of the written sign (Hausendorf et al. 2017: 91–94, our translation), e. g. by the fact that a sign is written in engraved or embossed letters, suggesting a particularly strong connection to the spatial environment since such letters materially and lastingly change that environment. This strong connection between text and spatial environment has been artistically exploited by artists such as Jenny Holzer.

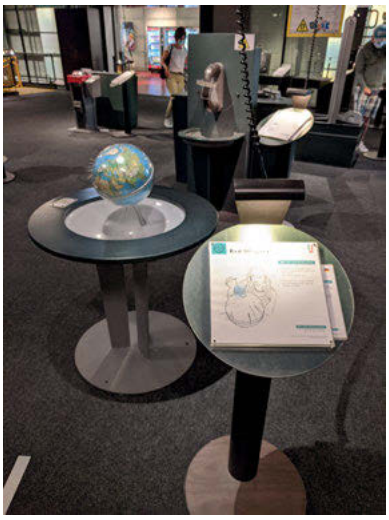

Figure 1a: The exhibit text "The Earth's Magnet" in the context of the exhibition space[12]

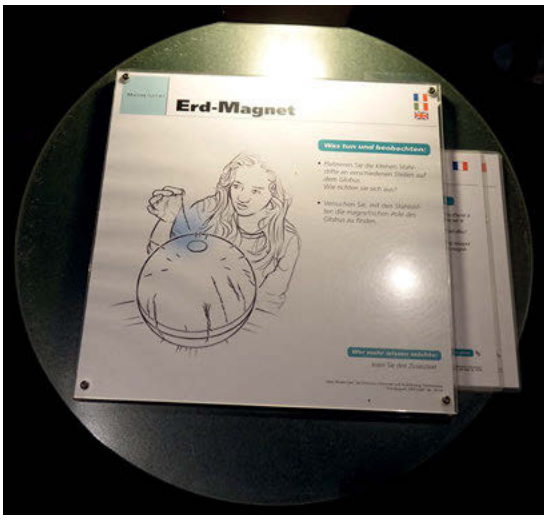

Figure 1b: Close-up of the exhibit text on the text stand[13]

Now, what belongs to this spatial environment? Or in other words: What is the "spatial scope" (Blommaert 2018) of the text?[14]

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12 All pictures used in this article were taken by the two authors.

13 The original text pictured in Figures 1a and 1b is in German. However, the museum also provides a translation of this text on a laminated card, which is visible beneath the fixed text on the right hand-side of Figure 1b. Whenever we quote from the exhibit text in this article, we are referring to this translation. The translated text is entitled "The Earth's Magnet" and contains two main instructions to its readers, which are listed in bullet points under the header "To do and notice:", namely:

– "Place small steel pins at various places on the globe surface. Notice how they arrange themselves.
– See if you can use the pins to locate the magnetic pole of the globe."

In addition, there is another small blue box which reads "Want to know more?". This box is placed above a line that reads "Read the additional text". This refers to a laminated text that can be found alongside the translated texts. This text is identical to the one that is fixed to the text stand on its recto. On its verso, however, it contains additional information about the phenomenon that is illustrated by the exhibit. However, for the purposes of this case study, we focus primarily on the text which is attached to the text stand.

14 In a comprehensive analysis starting from the perceptions the reading situations allow for, one would also ask how the text indicates where it ends and where the context begins. The first "delimitation cue" (Hausendorf et al. 2017: 142–150, our translation) to be considered in order to answer this question would be the materiality of the white

The close proximity of the text stand to the globe model (the closest perceptually salient object) suggests that the relevant spatial context extends at least to this exhibit, a first "linking cue" in Hausendorf et al.'s terminology (2017: 161–187, our translation). However, there are more specific cues: the font size (or the "granularity" of the text, Auer 2010: 280 f., our translation) suggests a reading distance of less than a meter from the text stand and the orientation of the letters makes it easiest to read the text when one stands directly in front of the text stand. What is meant by "in front of" is made clear by the way the text plane is tilted: It is designed for readers who are standing upright and reading with their head tilted forwards. A person who follows all these material indications will end up looking directly at the exhibit once they look up from the text. The fact that the exhibit and the text are present in the same field of vision (forming a multimodal "ensemble", Auer 2010: 286, our translation) can be seen as an additional linking cue indicating that the reader is supposed to connect the text with the exhibit as a central part of its relevant spatial context.

As we have just seen, the materiality of the text and the text stand indicate not only what elements of the spatial environment belong to the text's relevant context, but also the ideal spatial position and bodily orientation of the text's readers in this spatial context. However, the materiality of the text and its stand do even more than this. They also suggest how the text and its context are interrelated. The potential readers' "home position" (Schegloff 1998: 542), implied by the material cues mentioned above, entails an orientation in which they are neither fully oriented to the text nor fully oriented to the exhibit. By adopting such a home position, visitors can easily shift from reading the exhibit text to using the exhibit by means of a "body torque" (Schegloff 1998), that is to say by simply shifting their upper body towards the object of their current attention while keeping their legs and feet in place. Therefore, the home position implied by the combination of the materiality of the text stand and the exhibit suggests that visitors pursue a kind of activity in which reading and paying attention to the exhibit are intimately interwoven, which means that readers should also become (intermittent) exhibit users.[15]

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sheet of paper. An additional cue would be the contrast of the white, well-lit paper sheet to the dark color of the stand, which makes the paper sheet stand out as a "figure" against the "ground" of the stand and indicates that the stand is only to be considered as a carrier structure. The relevance of this boundary is reinforced by an additional contrast, namely the presence of letters on the sheet of paper (which is a strong indication of a communicative intention, see Hausendorf et al. 2017: 91–94) versus their absence in the spatial surroundings. Finally, the large letters of the word "Erd-Magnet" at the top of the paper sheet can be seen as an indication that we are dealing with only one textual unit, subordinated as a whole under an overarching theme, which is indicated in the bold title.

15 Due to limitations of space, we do not analyze the difference in terms of the implied position of reading between the text that is fixed on the text stand and the translations

In addition to these material indicators that point to the connection between the exhibit text and its spatial context, we also find linguistic cues that specify this connection. These are explored below. For reasons of simplicity, we refer to the English translation of the text even though the version fixed on the text stand is in German. A first strong linguistic indicator of the intimate interrelatedness of the text and its immediate spatial context is the definiteness of the articles used in the instructions under "To do and notice:". Here, the text refers to "*the* globe surface" and "*the* magnetic pole of *the* globe" (emphasis added by the authors). These references only make sense if the objects of reference are easily identifiable to readers, that is to say if they can see them somewhere in the spatial environment (i. e. the text is "exophoric", Scollon and Scollon 2003: 153). A similar point also holds for the graphics showing a model visitor using the exhibit, which is placed at the center-left of the text.[16] In this case, the iconic relation between the exhibit and its graphic representation on the text can only be understood if one looks up from reading (standing at the preferred reading position indicated by the text) and discovers the exhibit nearby. In other words, the definite articles and the iconic representation of the exhibit are linking cues which, once again, signal that the text can only be fully understood when its spatial context is taken into account.

Finally, the text even suggests how the double orientation towards reading and acting should be organized in time. With the help of two bullet points and the spacing between the two items on this list ("structuring cues", Hausendorf et al. 2017: 150–158, our translation), the text suggests two reading "packages" which can each be followed by withdrawing from the text and shifting one's attention to the exhibit.

Overall, we can clearly categorize the analyzed text as locostatic (Ehlich 1994: 30) and a case of what Domke (2010, our translation) termed "meso-communication". However, if we explore how the text itself indicates how exactly it is related to the surrounding space (based on its readability cues), we can arrive at a much more precise picture of the interrelation between text, space and the work readers/space users must perform in order to establish this interrelation. Questions that can be answered with such an analysis include the following: How far does the

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of this text which are provided on laminated leaflets placed under the text (see Footnote 14). These leaflets are not materially fixed to the text stand and are therefore not strictly speaking locostatic. However, the fact that there is only one text in each language and that the translations are laminated suggests that they may be taken to the exhibit for temporary use but should be put back afterwards.

16 Interestingly, the graphically represented "model user" (cf. Eco 2015: 44) is not shown as a reader, but only as a person manipulating the exhibit. This provides a first hint at the priority of the visitor as an acting, not reading, subject. As we will see in the following section, this priority also becomes visible in other aspects of exhibition texts at the Technorama.

relevant spatial context of the text extend and which objects are part of it? Where are readers supposed to be located within this spatial context? And, what elements of the spatial surroundings should they pay special attention to in order be able to understand the text properly?

We now turn to the question of how the overall meaning of the museum space is defined by the ensemble of texts in the entire museum. To do so, we revisit the text entitled "The Earth's Magnet" and consider it as a representative example of the types of text we find next to most of the exhibits at the Technorama. In doing so, we show how texts at the Technorama construct the museum space as a space related to knowledge and entertainment and presuppose readers who are also active, self-confident space users.

4. Constructing the meaning of space through texts

When Scollon and Scollon (2003: 12) define geosemiotics as "an integrative view of these multiple semiotic systems which together form the meanings which we call place", they put the idea of space[17] as being constructed by signs center stage. However, later work in the field of geosemiotics and linguistic landscapes research has often narrowed this idea of the construction of space through signs to study how signs index aspects of social reality. For instance, researchers have asked how signs mark the presence of particular ethnic groups in a certain area, and how they make visible relations of power between these groups, etc. The question of how written signs actually give a spatial unit its unique meaning as this or that specific place (cf. Domke 2010: 88), however, has been largely neglected.

In this second part of our case study, we therefore want to renew Scollon and Scollon's (2003) idea of place construction through signs. In particular, we want to reconstruct how the texts at the Technorama turn the warehouse-like building into a space connected to science in which people act freely and learn about natural phenomena in a joyful way. Technically, one would have to analyze the totality of written texts in the building and their "dialogicality" (Scollon and Scollon 2003: 167) in order to do this. However, for practical reasons, we decided to focus our analysis on a sample of typical representatives of different text types in the science center, including exhibit texts, section headers, orientation plans, and information screens. In order to start on familiar territory, we begin this analysis with the

[17] As elsewhere in the literature, Scollon and Scollon (2003) distinguish the concept of "space" from the one of "place". Following Tuan (1977), they use the latter term to denote a particular space which is invested with social meanings, attitudes, connections to group identities, etc.

text introduced in Section 3, the text accompanying the exhibit "Earth's Magnet", which is a typical representative of the text type "exhibit text".

As we already elucidated in Section 3, the text accompanying the exhibit "The Earth's Magnet" invites its readers to split their attention between the text and the exhibit. This means that if readers simply looked at either the text or the exhibit, they would not have fully understood the communicative purpose of the text. While the text also informs its readers about the name of the exhibit (cf. Auer's function of "naming and characterizing", 2010: 290 f., our translation), its main function is to construct the surrounding space as a space for action. This text clearly indicates that, in contrast to e. g. newspaper articles or literary texts, its readers are supposed to do something in the surrounding space and they are supposed to do this under the guidance of the text.

This becomes clear by means of the many imperatives that instruct the readers to act upon elements in their spatial environment: "Place small steel pins at various places on the globe surface. Notice […] See […]". Importantly, an appropriate reaction to these imperatives cannot be limited to a mental change-of-state. Readers need to do more than "just" understand something about the "The Earth's Magnet" or even simply understand what the instructions mean. Indeed, the appropriate reaction to reading the text is to stop reading the text at an adequate point and to use the surrounding space to carry out the instructed actions. Finally, the exhibit texts contain a blue box that says "To do and notice:", which works as a "thematic cue" (Hausendorf et al. 2017: 189–227, our translation). It signals that the bulk of the linguistic content of the text (at least its recto) is about the way the space next to the text is to be used for action. Readers are supposed to manipulate the exhibits ("To do") and observe the consequences of this manipulation ("and notice:").[18]

At this point, it is important to add that in spite of the abundance of imperative forms, this text is not an operating instruction in the strict sense of the word (an observation which holds for exhibit texts at the Technorama in general). This is due to two main factors: the relatively weak and often imprecise ("See if you can use […]") directive character of the imperative constructions, and the fact that the communicative goal of the text goes beyond the instructed actions. In the following, we explore these two differences one by one, again starting with the text we have just analyzed. Afterwards, we extend the analysis stepwise to include broader and broader spatial contexts until we have reached the museum as a whole.

The first difference between the exhibit texts at the Technorama and typical operating instructions is that the actions made relevant in the text do not end with the simple execution of the instructed actions. The ultimate goal of the text is to allow visitors to construct knowledge based on, but not limited to, the active manipulation of objects in the surrounding space. In order to demonstrate this, we

[18] The closing colon marks cataphoric reference.

now explore how knowledge and science are made relevant first in the exhibit text, and then in the exhibition space as a whole.

A first indication of the relevance of the category of "knowledge" for the text at hand is the blue box at the bottom right of the text (see Figure 1b again). By telling readers that an "additional text" provides more information for those who "want to know more", the blue box implies that readers have already acquired a certain amount of knowledge by following the instructions on the recto. It quickly becomes clear that the knowledge made relevant by the text is related to science. This is indicated by words and phrases such as "Magneticity" (the name of the exhibition section, which is placed prominently in a blue box in the upper left corner (see Figure 1b)), the bold title "The Earth's Magnet", or "magnetic north pole", which can be found in one of the bullet points. All of these words and phrases can be seen as pertaining to an everyday scientific vocabulary.[19] However, we are also clearly not dealing with a text that is representative of communication within the science community. While there is a clear orientation towards precision of expression, we can observe typical patterns of expert-layperson communication and science popularization (cf. Niederhauser 1999), for example in explanations of terminology ("the angle … is called the declination", "the so called polar wind"), comparisons with every-day objects ("like small compass needles"), and explicit markings of imprecisions and approximations ("about 11.5° away from the geographical axis", "is mainly caused", "relatively weak", etc.). In addition, there are also cues that the acquisition of knowledge is not the only communicative function pursued by these texts. Indeed, it seems that amazement is at least a secondary communicative function in these texts. This is demonstrated particularly nicely by a phrase which can be found on the recto of the additional text, which reads "except that it's a thousand times stronger!"

If we broaden our view and extend this analysis to different types of texts at the Technorama, we can see that all these text types contribute to constructing the exhibition space as one related to science. At a second glance, we can see that in all these texts, the topic of science is pervasively intertwined with the communicative "function of entertainment" (Hausendorf et al. 2017, our translation).

We structure our discussion of this aspect by following potential visitors' paths from the outside of the Technorama building to the exhibit we have been discussing so far and analyze the texts they encounter on the way. We start with a photo that shows the science center building from the outside (Figure 2):

[19] The references to knowledge in the context of science are even more abundant on the verso of the additional text, which contains terminology such as "magnetic field lines", "conventional magnetic north pole" and "geographical axis".

Figure 2: Park facade of the Technorama

Already before entering the building, we can find a number of hints that suggest the relevance of "science" to whatever might be located inside. The huge letters on one of the main facades of the building indicate (as a kind "label" for the building) what can be found inside: not a mall, not a church, but an institution related in some way to science and/or technology. This is suggested not only by the word "science" and the confix "techno-" in "Technorama", but also by the presence of Latin and Greek elements of word formation. In addition, the logo located to the left of the name on the building, which represents a Möbius strip, is also a visual cue hinting at the relevance of science for the institution housed in the building. What is more, it can perhaps even be seen as a first hint at an approach to science that emphasizes amazement and wonder.

Once one enters the building, the link between science and entertainment is a pervasive element of the signs. The visitor orientation panel in the entrance area (s. Figure 3) illustrates this. Once again, we find Latin names using patterns of word-formation known from scientific language ("Mechanikum", "Orbitarium"). However, we also find section names that can clearly be seen as indications of the communicative "function of entertainment" (Hausendorf and Kesselheim 2008: 158–160, our translation), which lets us expect a communicative orientation that goes beyond the factual representation of science facts. We can even find the combination of science and entertainment compressed into single words, e. g. in the names of some of the topic areas we find on the orientation maps: "Mathemagie" ('Maths magics' (our translation), a word play on "Mathematik", the German name of the discipline) or "Gas-Arena" and "Blitz-Arena". In the two latter cases, the connotations of the word "Arena" lead us to imagine gas and lightning as protago-

Figure 3: Main orientation panel

nists in a kind of gladiator fight. In other cases, such as with "Kopfwelten" (literally 'head worlds', an exhibition section on perceptual illusions), the combination of science and entertainment is evoked performatively on the sign marking the entrance to this section (s. Figure 4).

Figure 4: Section header "Kopfwelten"

Here, some of the letters that form the "official" section title, "Kopfwelten" (roughly translated: 'head worlds'), have been replaced with other letters to form the resembling nonsense word "Kqbewfitfn". At first sight, this seems to be a misprint, but

it is in fact a playful way of demonstrating how our mind actively transforms perceptual input and corrects "Kqbewfitfn" to "Kopfwelten". Therefore, the core topic addressed by this section of the exhibition is performatively demonstrated in this "misspelled" section heading. Instead of just naming the relevant section of the exhibition (one of the core functions of signs in public space, see, e. g., Scollon and Scollon 2003 and Auer 2010), this heading is an exhibit in its own right. Interestingly, this is made explicit by an instruction text placed on a standardized text stand in front of the inscription (see the very bottom right of Figure 4).

A similar claim can also be made for many of the exhibit titles. They construct the exhibits as objects that are related to science, and also often highlight the entertaining or wonder-provoking aspects of them. This is easily seen in the following examples: "Elektromagnetische Spielereien" ('electromagnetic knick-knacks'), "Ferrofluid-Igel" ('ferrofluid hedgehog', using an animal metaphor to describe the shape the liquid adopts when it is magnetized), or "Tanzende Eisenpartikel" ('dancing iron particles').

The pervasiveness of this combination of science and entertainment is such that even signs in the building that do not belong to the exhibition proper follow this topical pattern. In Figure 5a, one can see a "list" of sponsors which is constructed in a way that creates the illusion of 3D cubes, which become distorted when one moves past them: The accompanying text (on its standard text stand) marks the entire thing as an exhibit (with the German title "Wunderliche Würfel", 'curious cubes'). As a last example, Figure 5b shows the door of a toilet that is out of order. The sign on the door shows by means of "layering", covering the greater part of the gentlemen pictogram in white, that the indexicality of the toilet sign is only temporarily "denied" (Scollon and Scollon 2003: 138 f.). Instead of neutrally informing the visitors that the toilets are closed, the sign invites its readers to use other "'phenomenal' toilets" (our translation) on the premises, thereby alluding to the institutional motto "simply phenomenal". In other words, the topical pattern which is constitutive for the exhibition is even extended to signs which primarily realize other communicative functions, such as informing about the institution's financial partners or about renovation activities.

In the preceding paragraphs, we have identified an important difference between prototypical instructional texts, such as construction manuals (Juhl 2015), and texts at the Technorama, namely that the latter invite their readers to construct knowledge that goes beyond the actions described in the text. Another difference between exhibit texts at the Technorama, such as the one entitled "The Earth's Magnet" analyzed above, and typical everyday instructional texts is that the former generally do not prescribe to their readers what to do with the exhibits, but merely suggest uses. Often, these suggestions are achieved by formulating actions as challenges for the visitors, such as "See if you can …" in "The Earth's Magnet". Furthermore, the analyzed text does not specify a correct order of actions; we do not find adverbials

Figure 5a: Sponsor board

Figure 5b: Toilet door

or conjunctions that organize the mentioned actions on a time axis. However, the bullet points also imply a sequential order in that readers can be expected to follow the traditional western reading path from top left to bottom right, but they link the two actions without specifying whether this link is a mere addition ("do a and b"), an alternative ("do either a or b") or a temporal order ("do a, then b"). In short, this means that the text constructs its readers as people who decide on their activities in the exhibition space autonomously even if they actively use a text which is placed next to an exhibit.

If we broaden our scope beyond individual exhibit texts, we can see that the signage in the Technorama goes in the same direction. It constructs the exhibition space as one which guides its users only to a minimal extent and does not limit their activities. Below, we briefly explore the world of these signs at the Technorama and the way they relate to the questions regarding instruction, science and entertainment we have just addressed.

It has often been said that orientation signs in public space are typically directed at people who are not familiar with the space in question and instruct them how to use the space (Domke 2010: 86–88, 95 f.). In the Technorama, we only find signs like this in a few pivotal places, such as in the entrance hall (see Figure 3, above) and in the staircases. In the exhibition space proper, there is no signage related to wayfinding apart from the section titles. However, these work as thematic cues rather than as functional cues, which would instruct people where to go or what to do. In fact, signs which "suggest or forbid ways of usage" (Auer 2010: 290, our translation) are almost completely absent in the Technorama. The two only signs

we found that serve this function are depicted in Figures 6a and 6b. While the sign pictured in Figure 6a warns visitors about strong magnetic currents that could damage watches, mobile phones and other devices and instructs them to keep a distance of at least 30cm, the sign represented in 6b is already less direct and more of a suggestion than an instruction.

Figure 6a: Magnetism warning

Figure 6b: Suggesting usage

The absence of orienting and prohibition signs in the exhibition space is not accidental. This becomes clear upon consultation of a new information leaflet by the Technorama entitled "The Territory of Curiosity" (Technorama 2021). In it, a father and his little son are depicted engaging with an exhibit at the Technorama. In a speech bubble, the father asks: "Did you notice? There are no prohibition signs at the Technorama" (our translation). This is to say that the absence of prohibition signs in the Technorama is the result of a deliberate decision by the museum staff. What is more, by putting the question in the father's voice, the fact that there are no prohibition signs in the Technorama receives the status of something to be learned as a typical and distinctive feature of the Technorama, in contrast to other museums.

We have already observed in passing that the texts at the Technorama not only construct the meaning of the exhibition space itself, but that they also construct (or "prefigure", Bradburne 2000) the users of this space. The analysis in Section 3 revealed how texts can make users' specific positions and bodily orientations expectable. What is more, this section showed how the readers are addressed as people who act in, and freely move through, the exhibition space in order to learn something about phenomena related to science in an entertaining way. We want to

use the remainder of this section to address how the texts at the Technorama relate the social categorization of space users and science.

A good point to start investigating this question is the information screen placed on a wall visitors encounter just after passing the ticket desk (Figure 7).

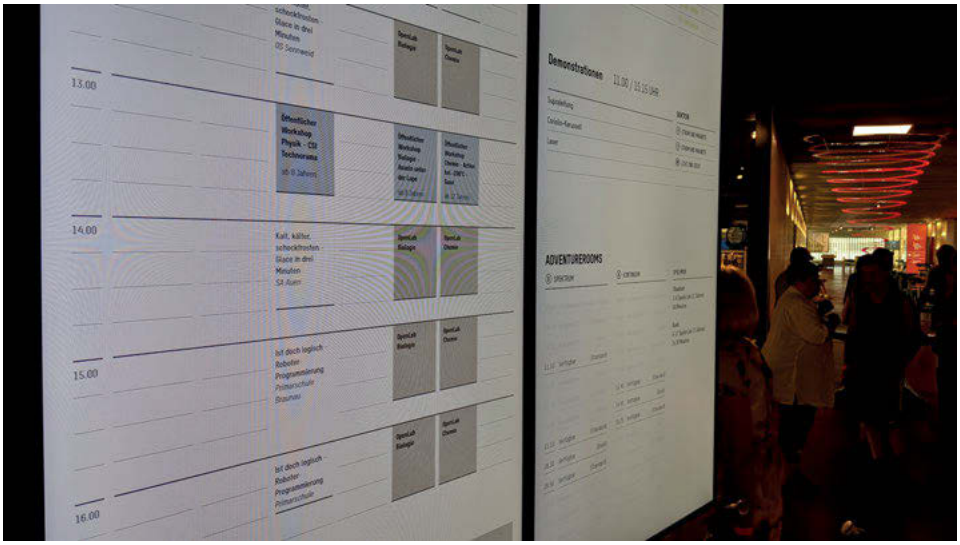

Figure 7: Information screen

Here, various events taking place at the Technorama during the day are advertised. The fact that it includes several words denoting scientific disciplines, such as biology or chemistry, indicates that these events are also related to science. However, there are also several indications that they are not aimed at scientists. In fact, the "model reader" (Eco 2015) of this board is also not a scientist, but a member of the general public with an interest in science. This becomes clear when we consider that on this screen, "Lab" is part of the expression "OpenLab", which does not refer to a scientist's workspace but rather to a public event directed at lay people. Something similar holds for "Öffentlicher Workshop" ('public workshop'). While "Workshop" could refer to a scientific event, too, "Öffentlicher Workshop" directly indicates that what is being referred to is a popularization event. In fact, it seems that readers are never addressed based on categories related to disciplinary knowledge in the entirety of all texts at the Technorama. Rather than addressing the readers as experts, learners, physics enthusiasts, pupils, etc., we only find social categories related to pricing ("adults", "retirees", etc.) or age-related categories that convey the message that the advertised events are directed at (almost) everyone, as in the information screen in Figure 7. The contiguity of the age-related (and not knowledge- or discipline-related) categorization of the reader and the use

of entertainment cues (e. g. "CSI Technorama" linking the physics workshop to a popular television crime series) demonstrates, once again, the pervasiveness of the combination of science and entertainment as a strategy of science communication at the Technorama.

If we compare the information screen with the exhibit text in Figure 1b, we can see, however, that the kind of science learning that might take place during these science communication events differs from the way science learning is envisaged in the exhibit texts. In the latter case, learning is strongly linked to actions the reader can perform. We have already observed that carrying out the actions suggested on the recto of the "Earth's Magnet" text is referred to as an activity leading to the construction of knowledge (cf. "Want to know more" in the blue box following the instructions). Hence, the action of reading the explanatory text on the verso, which is written in a popularizing style, is presented as a secondary option of knowledge construction in the exhibit text template used by the Technorama. This also becomes clear when we consider the graphics to the left of the bullet points, which do not show the model reader in the "body torque" (Schegloff 1998) posture suggested by the text and its materiality. Instead, the depicted visitor devotes her full attention to the exhibit and manipulates it. This clearly illustrates the overall priority of an active and playful kind of knowledge construction (versus one that is based on reading texts) in the science center.

5. Conclusion: Texts, space and space users in science centers

In our case study, we have explored how texts and space are related in a particular setting, here the exhibition space of a science center. In Section 3, we analyzed a typical text accompanying an exhibit and tried to show how exactly the text signals what its relevant spatial context is. We showed how the text (including its materiality and the materiality of its carrier):

- indicates how far (and in which direction) its relevant spatial context extends and what the relevant objects in this context are;
- signals how this spatial context is to be used to fully realize the text's communicative function (constructing the space as one for action);
- indicates where its readers are supposed to be located and in which direction they are supposed to be oriented. In this case, we could even show how the text suggests a bodily posture indicating a "double orientation" (Deppermann et al. 2010: 1701 and 1715) towards both the text and its relevant context.

In Section 4, we used a broad selection of different text types that can be found in the science center to study how the sum of these texts constructs the surrounding space as an exhibition space. Our analyses have revealed that (and how):

- the texts construct their spatial environment as a space where science plays a central role and is closely linked to entertainment;
- the texts construct their spatial environment as a space that does not limit users' freedom of movement;
- the space and its objects (the exhibits) are to be used actively by visitors with the intention of learning something about science and to have fun;
- the texts prefigure their readers as active, self-empowered users that make their own decisions (where to go, which exhibits to manipulate, etc.) and learn about science by means of engaging with the exhibits and, to a lesser degree, by reading the verso of the exhibit texts.

Whereas most of the findings we summarized above specifically apply to the case of a particular science center, there are a number of conclusions from our case study which we would like to highlight for the study of written texts in space more generally. First, our case study has shown that a reconstruction of the ways texts and a particular spatial setting are interrelated can yield interesting findings that go beyond the fundamental issue of categorizing the different types of relationships that exist between space and texts (e. g., locostatic versus locomobile texts). We have shown some of the resources texts can employ to construct their relevant spatial context, project certain actions as expectable in this spatial context, and to construct their readers up to the roles they may adopt as space users. In addition to this perspective, which focuses on the analysis of an individual text, we also introduced an approach for tackling the role the totality of texts in a given space can play in constructing a meaning for the space. In our case, we have shown how the totality of texts at the Technorama can give this building its specific meaning: a space of active, self-guided engagement with experimental stations geared towards learning about science in an entertaining way. In doing so, we were able to describe in detail what the Technorama is in light of its text. On the one hand, such an analysis can be seen as an empirical contribution to the longstanding debate in German museology of whether museums should be considered as a place for learning ("Lernort", Klingler 2019; Spickernagel and Walbe 1976). On the other hand, analyses such as the one above can fill a research gap in ethnomethodological research on texts (cf., e. g., Garfinkel 1967; Smith 1990; Watson 2016) in that they explore the role of texts in constructing spaces which, in turn, serve as resources for interaction (cf., e. g., the concept of "architecture-for-interaction" in Hausendorf and Schmitt 2016; Jucker et al. 2018). However, such an endeavor should be developed in greater theoretical detail in the future as we largely focused on the role of texts and their readability cues without taking into account the role of architecture and the way it makes a particular bodily behavior expectable (via so-called "usability cues", Hausendorf and Kesselheim 2016, our translation). Nonetheless, studying the relationship between readability and usability cues has the potential to allow for an even better understanding of the relation between texts and space.

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18. Co-presence and beyond: Spatial configurations of communication in virtual environments

Nathalie Meyer and Andreas H. Jucker

Abstract: Users of electronic communication tools in the form of stationary computers, laptops, mobile phones or similar devices interact both in physical and in virtual spaces, and the two worlds are often not clearly separated. The electronic device is part of the physical surrounding, and the physical surrounding impacts in multiple ways on the communicative activities on these devices. The virtual communicative spaces themselves are multi-layered and provide levels of constructed (interactional) spaces. In this contribution, we survey a large range of research that has been carried out on spatial configurations of communication in virtual environments with a special focus on immersive virtual worlds such as *World of Warcraft*, *Minecraft* or *Second Life*.

On the basis of the existing research, we develop both a model for the spatial configurations of virtual game worlds displayed on a computer screen that is situated in a physical environment and a model that accounts for the interactive doing of space. Users sitting in front of their (physical) computers interact with each other via characters and their avatars in virtual worlds. This poses specific problems for establishing co-presence through co-orientation, which is a prerequisite of co-ordination and co-operation in the game world.

As an illustrative case study, we analyze a *Minecraft* UHC teamplayer game as an example of a collaborative video game play in which players have to co-ordinate their actions. They use their avatars and virtual objects within the spatial configuration of the shared virtual environment to establish a quasi-physical and virtual co-presence, which allows them to co-operate successfully and to jointly perform the tasks set by the game.

Keywords: co-presence, virtual environment, doing space, *Minecraft*, *Twitch*

1. Introduction

Language and space are intimately connected in many different ways. Language provides the means to talk about space, spatiality and spatial relations. Social interactions are enacted within spatial configurations. And the spaces around us, and in particular the constructed spaces, provide communicative resources that enable, structure and/or facilitate social interactions. In this contribution, we are primarily concerned with spatial configurations of communication in virtual environments

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in all its complexity. In a very general sense, the term "virtual environments" refers to computer platforms or computer applications that allow users to interact both with the computer platform itself and with other users. This includes not only email, social media applications and video conferencing tools but also web-based document sharing applications, interactive learning and teaching applications and video games. In a more restricted sense, it refers to what Blascovich (2002: 129) calls "immersive virtual environment" to refer to situations in which the virtual environment "creates a psychological state in which the individual perceives himself or herself as existing within the virtual environment" (see also Singh and Lee 2008: 318). This contribution will be mainly concerned with such immersive virtual environments, which include video games, such as *World of Warcraft*, *Minecraft* or *Second Life*, and live streaming platforms, such as *Twitch*, in which such an environment is embedded but which in themselves also constitute such an immersive virtual environment.

In such contexts, the communicative affordances of the game world and the spatial configurations of communication taking place there cannot be analyzed in isolation. We need to account for the spatial dimensions and representations of the virtual world, the level of freedom users are given to explore and interact with objects and other participants within the affordances of the game world, and the way in which the physical world of the users interacts with the virtual game world. These are especially important when we want to make sense of how users in virtual worlds make use of and refer to the virtual space and the objects in it. Since users are not physically present in the virtual world but are represented by avatars, we must also question whether concepts regarding space and face-to-face interaction in the physical world can be directly applied to virtual world contexts.

Kendon (2010), for instance, investigated spacing and orientation in physical face-to-face interactions. He focused on the spatial configuration of people in their interactions and – for the purpose of the analysis – ignored the surrounding context. He assumed that the interactions took place in some generic context, which could be in a hallway, a lounge, outside or in some other place that offers the chance for an encounter and enough space for easy positioning of the interactants. The affordances and resources of the spatial context of the interaction did not play a significant part in the analysis. Hausendorf and Schmitt (2013), who like Kendon analyze interaction in physical environments, focus their attention on the communicative affordances of architecture, as for instance in a church or a lecture theatre. Their investigations necessarily include aspects of possible interactions that might be enacted in these contexts, but the analysis focuses mostly on the communicative resources themselves.

In the case of interactions in virtual environments, such abstractions, which either ignore the affordances of the spatial context or the actual communicative exchanges taking place there, are not possible. The spatial organization of interactions can only be described and investigated against the background of the com-

municative resources provided by the virtual worlds, and vice versa: the communicative resources can only be described and investigated on the basis of actual interactions that unfold in this context. Our overview of relevant literature in this particular field of research focuses on the spatial properties and communicative affordances of virtual worlds and how they are positioned in and related to the physical world. But this can only be done by carefully considering the spatiality of the actual interactions that are enacted in such contexts. The linguistic resources that the interactants use to talk about space and spatial configurations, finally, are an important analytical tool in the analysis. Interactants regularly use deictic expressions to refer to the different spaces in which they operate, from their physical position in front of a computer screen, to the computer screen itself and the various layers of virtual reality depicted on the screen. This allows us to disentangle these levels and at the same time we can demonstrate the communicative reality of these levels. They are not only theoretical constructs but levels of reality that the interactants are fully aware of and between which they switch and navigate with remarkable ease.

In Section 2, we will start by disentangling the different spatial levels in which virtual worlds are embedded, from the physical world in which the users sit in front of their computers to the intricacies of the depicted virtual worlds on their computer screens and the configurations of objects and characters and their spatial configurations within these worlds. At this level, our description will try to be platform independent in order to draw together the relevant research efforts, which often focus on specific video games and platforms, such as *World of Warcraft*, *Second Life* or *Twitch*. In Section 3, we will introduce the concept of "doing space" as developed by Jucker et al. (2018) in order to describe in more detail the ways in which interactants create space as a social construct, not only in physical life but also in virtual environments. Section 4 will present a case study of co-presence in collaborative online video game play. We will analyze a short extract from a *Minecraft* game play embedded in the live streaming platform *Twitch*. In the final section, Section 5, we will draw together the different elements of this contribution and explore some ideas for future research.

2. Virtual environments and levels of spatial configurations

As pointed out above, the term "virtual environment" can also be used in a narrow sense in which it may refer to a simulation of an environment that is run on "interactive, head-referenced computer displays that give users the illusion of displacement to another location" (Ellis 1994: 17). Here, the term virtual environment is interchangeable with virtual reality. In a broader sense, the term may encompass so-called virtual worlds, which Bell (2008: 2) defines as "a synchronous, persistent network of people, represented as avatars, facilitated by networked computers".

Schroeder (2008: 2) provides an even broader definition, which is based on the social aspects of virtual environments, stating that virtual worlds are places where users "experience others as being there with them- and where they can interact with them". In this contribution, we follow a combination of Bell and Schroeder's definitions and will be interested in virtual environments representing immersive virtual worlds in which users perceive one another and interact with each other in real time to fulfill game-based tasks and/or socialize. Thus, we use the terms virtual environments and virtual worlds synonymously.

The multi-layered nature of immersive virtual environments makes it necessary to distinguish clearly between the different roles individuals play on the different layers. We will use the term "users" or "gamers" to refer to human beings who in physical life are sitting in front of their computers and interact via software applications installed on their computers with other users or gamers. In the virtual environments of a computer application, the users may perform specific "characters" who interact with each other within this particular virtual world. And often these characters assume specific visual shapes or embodiments within these worlds. For these representations, we use the term "avatars". Some virtual environments assign more specific names in particular for the level of characters. They may be called "contestants", "players", "residents" and so on. Figure 1 shows how users interact with each other via their characters visually embodied as avatars.

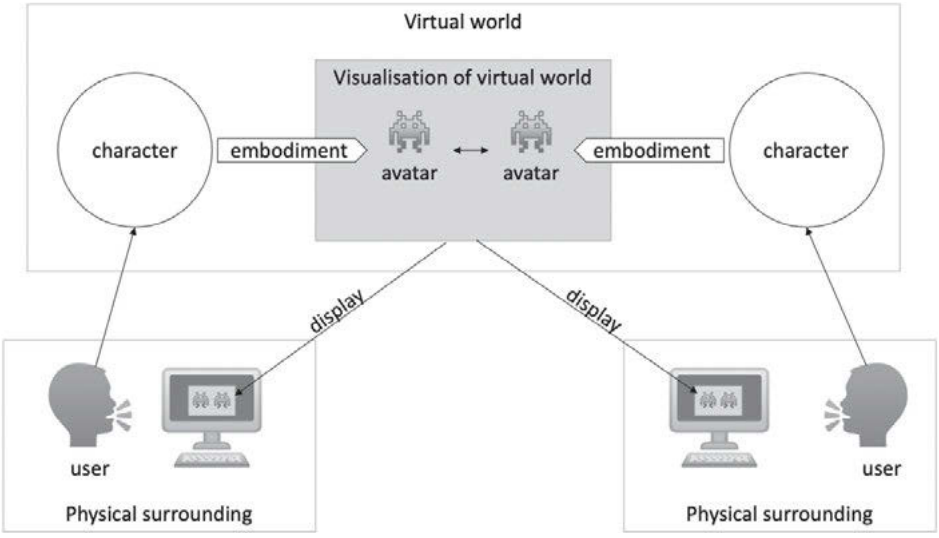

Figure 1: Basic levels of virtual worlds (Icons from https://emojipedia.org/)

There are huge differences in the way in which different virtual worlds are arranged and how spatial levels interact, and new virtual worlds continue to become available. Our model as represented in Figure 1, therefore, aims at a moderate level of

granularity where it can show elements that are common to many, perhaps even most, virtual worlds, without, however, reducing the complexity to such an extent that it ceases to be helpful.

On the most basic level, research in virtual environments distinguishes between a) the three-dimensional, physical surrounding of the computer users with their computer monitor or other technical device; b) the two-dimensional computer screen with graphic displays of written language, still and animated images; and c) the quasi-three-dimensional space of the virtual world depicted on the two-dimensional computer screen. This basic model, which we shall expand in some detail below, has been adapted and modified in many ways to account for the specificities of specific computer applications and their complexities.

In the context of written chat communication, for instance, Storrer (2001) distinguished between the physical space of the computer user, the metaphorical space of the chatroom and the two-dimensional space of the chat protocol as it appears on the computer screen. In her model, therefore, one of the levels is a metaphorical level evoked through the language used in the chat protocols. Locher et al. (2015) as well as Jucker et al. (2018: 93) in their analysis of *Second Life* distinguish the same three levels as our basic model: the physical surroundings in which the users sit in front of their computers, the two-dimensional computer screen and the depicted quasi-three-dimensional virtual environment. Meyer (in prep) develops a model at a higher level of granularity. In her expanded analysis of space on the livestreaming platform *Twitch*, she distinguishes seven distinct layers of spatial orientation. In addition to the physical space of the user, the two-dimensional computer screen, and the content depicted on that screen, she adds four more layers, taking into account that the depicted content of a video game livestream is multi-layered in itself. On the one hand, apart from the static content of the website, the streaming platform offers a chat room, which users can choose to enter to communicate with each other during a livestreaming event (see also Hamilton et al. 2014; Ford et al. 2017; Recktenwald 2018; Graham 2019). This chat room is considered the fourth spatial layer. On the other hand, the content depicting the virtual world of a game is embedded in the livestreaming platform via a streaming window. This embedded representation of the 3D world is considered the fifth spatial layer. Two optional but widely used elements that are part of the content depicted in the streaming window represent the sixth and seventh spatial layers, namely third-party content and a webcam feed. Third-party content in relation to video game livestreaming refers to all optional dynamic or static elements such as decorative frames around the virtual world content, pop-up notifications, and other virtual items that are shown as so-called overlays (i. e. visually represented on top of the virtual world content) in the streaming window. The webcam feed is widely used by channel owners on *Twitch* and usually displays a partial representation of their physical selves (i. e. head and part of the upper body) during their video game play sessions (see also Taylor 2015, 2018; Anderson 2016; Gandolfi

2016; Spilker et al. 2020). In that way, the physical space of those users becomes part of the virtual environment of the livestream itself (see Figures 4, 5, and 6 in Section 4).

Our more generic model retains the first three of the levels proposed by Meyer. The first level is the three-dimensional physical surrounding of the user including the physical computer and the physical computer monitor. Whatever users do in the context of the virtual world on the computer or on some other electronic device, they are always situated within a three-dimensional physical surrounding. It may appear that the physical and the virtual worlds are very clearly separated, but Rosenbaun et al. (2016a, b) have shown how the domestic and the digital, as they call the physical and the virtual world, become increasingly blurry. They analyze video-mediated communication (VMC) in private and public *Google Hangouts*, and describe situations in which one of the participants of the VMC interaction starts to talk to a non-ratified person in the physical surrounding (2016b). Thus, the physical surrounding of the user becomes part of the virtual world displayed on the computer screen. The levels increasingly shade into one another with blurred boundaries and seepage from one level to the next. In the wake of the 2020/2021 covid pandemic, video conferencing tools, such as *Google Hangouts*, have become popular on an unprecedented scale. Business meetings, schooling and countless leisure activities moved from their traditional face-to-face meetings to meetings on *Google Hangouts*, *Webex*, *Zoom*, *MS Teams* and similar applications. In these situations, an extract of the three-dimensional physical surrounding of the users receives a two-dimensional representation in one of the windows on the computer screen of their interactants. Such video-conferencing techniques have also made their appearance in the gaming world, for instance in the case of live streaming platforms, such as *Twitch*. In our model, the computer monitor as a physical object is included in this level of the three-dimensional physical surrounding of the computer user (see Figure 1).

The second level is constituted by the computer screen as the two-dimensional, dynamic image that is electronically generated and displayed on the physical computer monitor or on some other technical device that can display an electronically generated dynamic screen, such as a laptop, a mobile phone or another handheld device. The screen is two-dimensional and may display a large range of different elements: windows, icons, pictures. It is a spatial world that may be co-extensive with the application window if the application runs in full-screen mode and covers the entire screen. But in other cases, the application window is just one of a series of elements on the computer screen, which, therefore, at least potentially provides an additional frame of spatial reference. The application window that appears on the computer screen may consist of many different visual and textual elements, such as lists of commands, names or items relevant for the game, two-dimensional maps, chat windows, logos, still images, dynamic images of the one or several of the users possibly with their surroundings and the gaming world.

The third level, finally, is constituted by the virtual worlds that are part of specific applications. They consist of three-dimensional representations (images) of quasi physical worlds which may be relatively realistic, entirely fantastic or anything between the two extremes. In the early days of online game worlds, space was created linguistically (see Carlstrom 1992; Deuel 1996; Cherny 1999). In these contexts, a user would move a character by typing a command, such as "west", which would trigger the computer system to display a verbal description of a new room and change the spatial affordances to the new situation. These were early developments of what were basically chat interactions in the form of "MUDs" ("multi user dimensions" or "multi user dungeons") or "MOOs" ("MUD object-oriented") (Paolillo and Zelenkauskaite 2013: 112). But with the vastly improving graphic capacities of computer displays, such linguistically created worlds were increasingly replaced by visual depictions of three-dimensional environments.

In their analysis of this third spatial level, Jucker et al. (2018) introduced the notions of heavily structured, moderately structured and weakly structured surroundings. According to them, heavily structured settings in the physical world are purpose-built environments for usually very specific communicative events. Lecture theatres, assembly halls and churches are relevant examples. They provide the relevant affordances for specific types of lectures, council meetings and religious services. Special places are reserved for speakers, seats are provided for the audience who can see and hear the speakers, and so on. But they also describe a ticket counter in a railway station as a heavily structured setting because it is purpose build for a specific type of communicative interaction. Moderately structured settings are settings in which communicative interaction regularly occurs and is provided for in the form of relevant affordances but in which communication is not in the same way essential as in the heavily structured settings. Typical examples are the rooms in a private home, in which furniture is regularly arranged in a way that facilitates interaction – chairs around a table, a couch and armchairs in front of a television set – but verbal interaction is less essential than in a lecture theatre, for instance. Weakly structured settings are environments that do not impose any specific expectations about verbal interactions, as for instance public squares in an urban setting. Jucker et al. (2018) extend these distinctions from physical to virtual environments, where they are regularly visually recreated. Lecture rooms are equipped with chairs and a rostrum, cafés are provided with tables and benches, and so on, in spite of the fact that such affordances are not needed for comfortable sitting during the interaction. Instead, these affordances inherited from physical life settings become flags, that is to say they conjure up the physical life context with its communicative expectations.

Virtual worlds are populated by objects and characters, jointly referred to as assets by computer programmers. Objects can be dynamic or static, that is to say they can remain in one position within the virtual world, or they can move around,

either on their own or through the action of one of the characters, but they are not interactive. In contrast to objects, characters are interactive. They can either be playable or non-playable characters. Playable characters are controlled by users while non-playable characters are programmed as part of the virtual world. Non-playable characters can be very simple. They may, for instance, react with a simple greeting, whenever a playable character moves within a certain range of their position in the virtual world. Or they may be highly complex characters in a fighting game in which they are programmed as obstacles for the playable characters and a lot of strategic skill and determination on part of the users controlling the playable characters is required to solve the challenges and to overpower and destroy the non-playable character.

The playable characters are controlled by users, and they are endowed with a complex set of attributes (appearance, communicative affordances, various skills of movement and action, etc.). Some game worlds distinguish, for instance, between characters with fighting powers, defensive powers or healing powers in order to provide interesting challenges in how these characters are best deployed in a complex quest. The game worlds also differ widely in respect to the communicative affordances they provide for playable characters. One of the most basic affordances allows characters to use typed chat communications, that is to say the users type messages on their keyboards and these messages are displayed in appropriate ways so that they can be perceived by the other users. Other affordances are often implemented, too. Users may lend their own voice to their characters or the computer may generate spoken messages out of typed messages. We will come back to these affordances in the context of the next section, in which we turn to the spatial configurations and challenges of interactions between characters within these virtual worlds.

3. Doing (virtual) space

In the physical world, speakers who want to enter into an interaction with each other first of all have to become aware of each other. “Interaction begins when people perceive that they are being perceived”, as Hausendorf (2012: 45, our translation) put it (see also D’Antoni et al. this volume). In the virtual reality of a computer game, this is more complex because it is the users who must become aware of each other and their mutual awareness is necessarily mediated through the technology of the computer application. In the following, we briefly present Hausendorf’s (2003) model of “perceived perception” as a backdrop to an outline of some of the complexities of doing space in virtual environments. Once again, this description must operate at a very general level of abstraction because of the many differences in the actual instantiations of how perceived perception becomes possible in specific virtual worlds. In Section 4, we will provide one specific illustration.

Hausendorf (2013) argues that space is interactively achieved. In Jucker et al. (2018) this is called "doing space". It consists, in the words of Hausendorf (2013: 277), in the problem of situational anchoring, that is to say the interactants have to align their perception (co-orientation), their movement (co-ordination) and their action (co-operation) (see Figure 2).

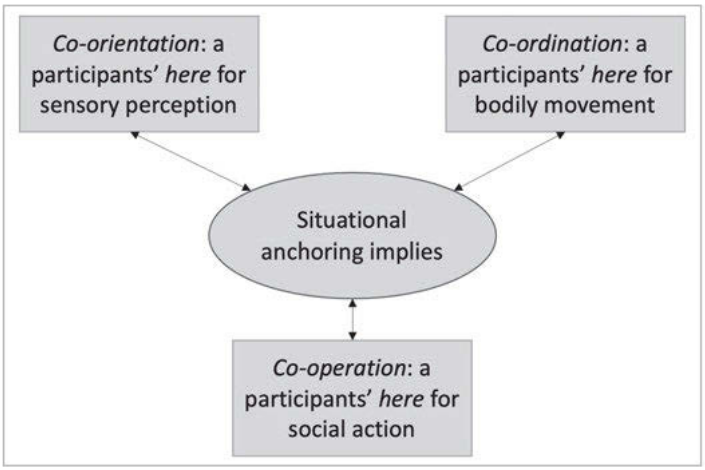

Figure 2: Problems of situation (Hausendorf 2013: 288)

According to this model, perceived perception starts with co-orientation. The interactants interactively become aware of each other and they become aware of each other's awareness. In the words of Hausendorf (2013: 283), "co-presence is not a condition that exists externally or preceding the social situation, but is achieved through the perception of being perceived by others" (see also Hausendorf 2003). Hausendorf mentions eye contact as the most obvious manifestation of interactants' awareness of each other. As soon as eye contact is established "beyond the fleeting fragments of seconds of random gaze", interaction starts and can no longer be ignored, whatever the continuation of this "perceived perception" might be. Interactants are also aware of the spatial arrangement and its consequences for interaction. If they are too far away from each other, it might not be possible to communicate with spoken words. If they are close enough for spoken words, i. e. within earshot, visual perception might be less essential for perceived perception. Telephone conversations without an accompanying video link are a special case in which perceived perception relies entirely on audio perception. Co-orientation is basic. It can occur without co-ordination or even co-operation, as for instance, in the case of a fleeting exchange of glances by strangers who pass each other on the street (Kendon 1990: 153; Hausendorf 2013: 290), but even in this case, there may be a minimal level of co-ordination of movements in order for the two strangers not to bump into each other. Co-ordination always relies on co-orientation. Participants

who co-ordinate their movements must be aware of each other's awareness. This is true for motorists who negotiate their turns at a traffic junction, for ball-room dancers who co-ordinate their intricate movements across the dance floor, for the musicians of a marching band, as well as for hikers who simply walk together in the same direction. Co-operation, finally, relies both on co-orientation and on co-ordination. Joint social actions are only possible if the interactants are aware of each other and aware of each other's awareness and if they co-ordinate their movements in such a way that joint action becomes possible.

In virtual worlds, situational anchoring becomes significantly more complex because the situational anchoring must be achieved simultaneously on different levels. Each of the participants operates in their own physical world, which may or may not become relevant throughout their interactions. And they share the common environment of the game world. Many virtual environments require highly elaborate forms of co-operation of characters in a team in order to succeed in the tasks set by the game. Figure 3 represents this in a simplified way for just two game players, A and B. In the reality of specific games, the situation is regularly more complex because some games require entire teams of characters to cooperate successfully. We also assume that the gamers do not share the same physical environment. They participate in the game from their different homes sitting in front of their own computers or other devices. In reality, it is also possible that gamers share not only the game world of their avatars but also their physical world. Piirainen-Marsh (2012), for instance, analyzes video game play from a multimodal perspective, focusing on the gaming activities of two young Finns playing the console-operated video game *Final Fantasy* while sitting next to each other on a sofa and watching the same video screen. And Mondada (2012) studies the "interplay between interactional space and the organization of collective activities" (232) based on video recordings of two French teenagers playing the video game *FIFA* on a console, while also sitting next to each other and sharing one screen visible to both at the same time.

Users operating their characters in virtual environments occasionally refer to their own physical surroundings, and to that extent the interactants need a certain level of co-orientation across their separate physical worlds. This is comparable to video-free telephone interaction. In certain cases, the physical world of one (or several) of the users is integrated into the screen of the other users via a video link. But at this point, we will ignore the problems that the gamers encounter in negotiating their own separate physical worlds when they refer to things that are happening not in the game world but around them in their physical worlds. Instead, we will focus on the three elements of situational anchoring in the virtual worlds (for an alternative version see Berger et al. 2016: 86, who distinguish five levels of spatial interaction in *Second Life*).

The first problem concerns co-orientation. The users have to become aware of each other. The users controlling the characters have to become aware of the whereabouts of other characters (playable or nonplayable) and how to commu-

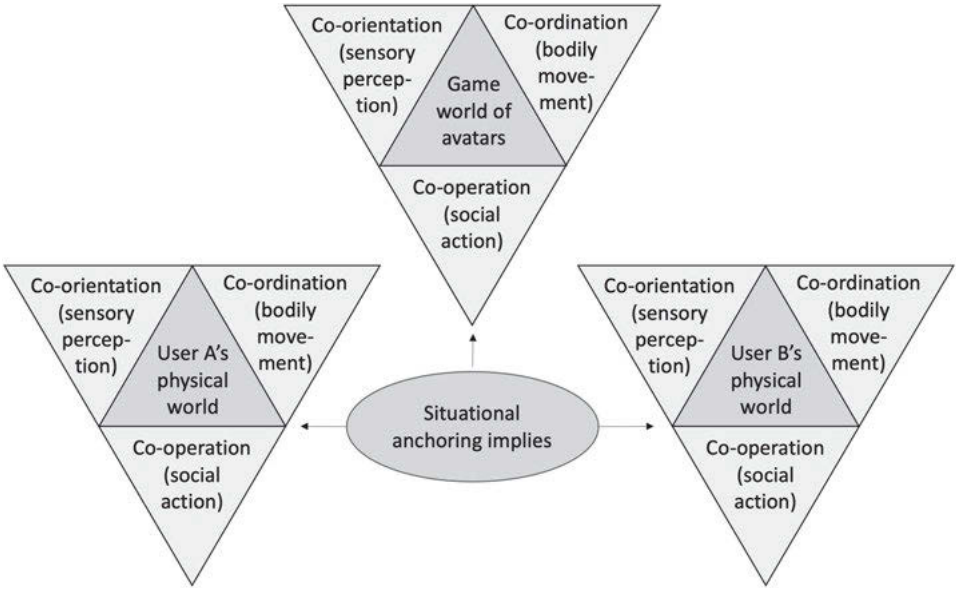

Figure 3: Situational anchoring in virtual environments (based on Hausendorf 2013: 288)

nicate with them. They need to first establish co-orientation through the use of particular verbal and embodied communicative strategies within the virtual space of the video game. Zhao (2003: 450) calls this "sense of copresence", which refers to "an individual's subjective experience of being together with others under a copresence condition". This sense of copresence is facilitated by different modes of copresence, which refer to the physical conditions of two or more individuals while they are engaged in some form of interaction.

Zhao (2003: 447) proposes a taxonomy consisting of six different modes of copresence: corporeal, virtual, and hypervirtual copresence, as well as corporeal, virtual, and hypervirtual telecopresence. Table 1 shows that, on the one hand, he distinguishes between modes of copresence where the involved parties either deal with physical or electronic proximity. Physical proximity (or copresence), in this sense, means that individuals must be able to perceive others with what Zhao (2003: 446) calls "naked or normal sense perceptions", whereas electronic proximity (or telecopresence) refers to a situation in which individuals can only perceive each other by "extended sense perceptions" facilitated through an electronic communications network. On the other hand, he accounts for whether one, both or none of the participants are corporeally present at a specific site during an interaction. The term corporeal refers to actual human bodies being present at a physical location. However, this physical location does not necessarily need to be the same location for both participants.

Table 1: Zhao's (2003: 447) taxonomy consisting of six modes of human copresence

Corporeal Presence on	**Distance Between Two Sides**	
	Physical Proximity	**Electronic Proximity**
Both sides	Corporeal copresence	Corporeal telecopresence
One side	Virtual copresence	Virtual telecopresence
Neither side	Hypervirtual copresence	Hypervirtual telecopresence

In this taxonomy, corporeal copresence designates a situation in which two or more parties are physically present at the same location and they perceive each other directly through sight, sound, touch, and possibly smell. Corporeal telecopresence describes a situation where the participants are each located in their own physical worlds in which they cannot perceive each other directly, while they are also located in the same electronic communications network (e. g. a video conferencing tool or a IRC chat room) where they may perceive each other via extended sense perceptions (e. g. sight via screen and sound via speakers during a video conference). Virtual copresence refers to a situation in which only one individual is corporeally present on site while the other is represented by a device (e. g. an ATM which stands in for a bank employee or a responsive toy which simulates parts of human interaction during money transfer). Virtual telecopresence is given when "both individuals are in each other's electronic proximity, but one is present in person at the site and the other is present through a digital representation" (Zhao 2003: 448). An example for such a situation is a tourist using a digital map on a smart phone to find their way around the area or a computer user chatting to a chat bot on the internet. While a tourist or a computer user is present at a specific physical location and is also engaging with the digital content of the map or the chat bot, interactive computer programs such as Google Maps or "social bots" are only digital representations of the human programmer(s) who created their source code. Programmers are usually not present in a physical location at the same time as the user of their program. In our context, these digital representations could be represented by responsive non-playable characters in video game worlds. Further, hypervirtual copresence describes a situation in which physical representations in a specific location stand in for virtually present individuals. An example for such a situation is a remote robot fight. In such a situation, two individuals are each located in their own physical space and two robots are located in another physical space. While watching the robots on a screen, the participants each remotely control their robot and instruct them to fight the other. Finally, hypervirtual telecopresence refers to a situation in which virtually present individuals are represented by "digital representations that are located in each other's electronic proximity" (Zhao 2003: 499). As examples, Zhao (2003) mentions intelligent web agents in the Internet that collaborate to fulfill certain tasks for their human programmers, which they essentially represent.

It is important to note that Zhao developed this taxonomy at a time when users were restricted by technological limitations such as slow computers and internet speed or limited access to broadband services. For example, A PEW research report found that in 2003, only 31 % of US Internet users had access to a high-speed connection at home (Horrigan 2003). Thus, 3D virtual worlds and dynamic avatars who would inhabit those worlds were still in their infancy and only users with good-enough equipment and fast broadband speeds could successfully take part. Consequently, Zhao's taxonomy does not yet fully account for situations in which two users meet via their avatars in a 3D virtual world such as, for example, *Second Life*, which launched in June 2003. Nevertheless, Zhao (2003: 449) remarks that there exist what he calls "hybrid" or "mixed modes" of copresence. For example, in a "synthetic environment" such as real time video game play between two users who are located in their own physical environment while they interact via avatars as their representations in the game world, users engage in a combination of corporeal telecopresence (electronic proximity in the same communication network, visibility of avatars representing the users) and virtual telecopresence (interaction with NPC avatars that are digital representatives of the programmers).

Baldassar (2008) also refers to the establishment of co-orientation as co-presence, but distinguishes four different types: the physical, virtual, proxy, and imagined. Physical co-presence refers to the visually represented virtual reality of the game world. We prefer to call this type quasi-physical co-presence in order to distinguish this level from the physical realities of the gamers sitting at their computers. This level of co-presence is established when two or more avatars are located in the same (virtual) place of the game world at the same time. Secondly, virtual co-presence refers to a shared presence that is constructed through forms of communication technology, because interactants do not share the same physical location. The third type, called proxy or "embodied internalized" (2008: 256) co-presence, is established when objects or people serve as embodied representatives for other absent people, objects, or places. Imagined co-presence represents the fourth type of co-presence and includes acts such as praying for a distant relative to keep them in one's thoughts when physical or virtual co-presence are impossible.

In the context of a collaborative video game play, the quasi-physical and virtual can be combined if we think of an avatar as a virtual embodiment of the user who exists and is located in the physical world. Avatars can be directed to share a mutual location within the virtual environment of the game while users employ communication technology to establish a virtual co-presence at the same time. Of course, an avatar could also be considered a proxy representing the absent user in the virtual world. However, the physicality is still relevant as well, which is why we consider avatars that are located in the same place in the digital world as quasi-physically co-present.

Furthermore, by understanding users and their avatars as distinct entities, we integrate Baldassar's notions of physical (i. e. quasi-physical) and virtual co-pres-

ence and define three distinct types of co-presence in collaborative video game play:

1. Full co-presence: Avatars are quasi-physically located in the same virtual place in visible range, while the users actively establish virtual co-presence (or "virtual telecopresence", according to Zhao (2003)) through speech via either an integrated or third-party voice chat option. Users who are fully co-present may or may not work on a joint project.
   – Example: Two or more avatars are standing in front of the same object with their virtual bodies and head position (and if possible, gaze) focused on the object at the same time, while the users are talking about how to handle the object to achieve a set common goal.
2. Temporary co-presence: Avatars are temporarily quasi-physically located in the same virtual place in visible range, while the users actively establish virtual co-presence (or "virtual telecopresence", according to Zhao (2003)) through speech via either an integrated or third-party voice chat option. Users who are temporary co-present may or may not work on a joint project.
   – Example: Two or more avatars standing in front of an object, their virtual bodies and head position (and if possible, gaze) focused on the object at the same time for a temporary amount of time before one of the avatars takes off. All the while the users are talking to each other about what to do with the object, but only one player is doing the action needed to complete the set goal.
3. Non-spatial co-presence: Avatars are not quasi-physically located, while the users still actively establish virtual co-presence (or "virtual telecopresence", according to Zhao 2003) through speech via either an integrated or third-party voice chat option. Users who are non-spatially co-present may or may not work on a joint project.
   – Example: Two or more avatars are located in different places in the virtual environment and are not focused on the same object, while the users are still talking about a specific object known to at least one of them and about how to handle it to achieve their common goal.

Once perceived perception is established, that is to say two gamers are aware that their characters in the game world are in a position to interact, the next problem concerns co-ordination. In a complex battle game, for instance, it may be crucial for two characters to point out objects in the vicinity, and it often takes extra effort to establish mutual understanding of the intended objects. Game worlds differ in the kind of perspective they offer to the gamers. Most commonly these are a first-person perspective in which the gamers share the field of vision of their avatars or a third-person perspective in which the gamers view their avatars from a slightly elevated position behind the avatar.

The restricted field of vision on the two-dimensional screen may also make it more difficult for the gamers to trace the movements of other characters. "Let's go there" requires joint understanding of where "there" is and it requires an awareness of the direction in which the other avatars/characters are moving. It may not be clear that characters are moving in different directions because of the lack of auditory cues that the space between characters is increasing when they are moving in different directions. Co-operation, i. e. the working together on a specific task, requires a high level of co-orientation and co-ordination. The gamers have to be aware of how their own characters can co-operate with other characters in order to solve the often complex and difficult challenges posed by specific game worlds.

It is not surprising, therefore, that such skills have to be learnt. Everyday interactional skills are only of limited help. Spatial literacies in virtual worlds have to be acquired. They are often not intuitive.

> Even from their earliest, most primordial instantiations, video games have struggled with the representation of space on the two-dimensional, albeit dynamic, plane of the screen, requiring players to develop a sense of spatial literacy, that is, a mode of conventions for 'reading' game space. (Pearce 2008: 1) (see also Locher et al. 2015: 34)

As a result of these difficulties, there is often a clear difference between newbies and regulars in game worlds. Newbies take time and effort to learn the specificities of how perceived perception works in a specific game world and how they can acquire the necessary skills to use their characters to communicate and co-operate with other characters and – ultimately – their users (Locher et al. 2015; see also our case study in Section 4).

4. Doing space in a video game play: The case of *Minecraft*

This case study deals with a *Minecraft* game play, which was embedded in the livestreaming platform *Twitch*. The data stems from a larger data set collected in 2015 (Meyer "in prep"). Over the course of one month, eight different Minecraft live streaming sessions from two *Twitch* streamers were recorded via a simple screen recording tool called *Screencastify*. A time-stamped transcript of the platform chat was created during each live stream via the chat-log software *Chatty*. Before recording the live broadcasts and the chat, the streamers were contacted via email and *Skype*, and informed consent was obtained. The written consent form included, among other aspects, a confirmation that the researcher may use screenshots and excerpts of speech/chat transcripts in academic publications, research, and teaching. Since the number of additional participants who opted in and out of a live streaming session ranged from 50 to 300 and their contact information was not generally available via their Twitch profile page, obtaining informed consent from every single one of them was not feasible. Instead, the channel owners

informed viewers during their broadcasts that recordings by a researcher were possible during June and July 2015, and that the data might be used for research, academic publications, and teaching. Thus, the real names of the two users in our case study are not provided, but they call their characters and avatars thethiliacraft and cjsherrer. Thethiliacraft is the owner and host of the *Twitch* channel. As such, she streams her own video game play and decides which game mode is played and who is allowed to join the game.

Our case study is concerned with an instance of what we have called full co-presence in Section 3 above. We will illustrate how the establishment of this type of co-presence requires co-orientation, co-ordination, and co-operation. For example, in collaborative game play, users need to perceive each other and achieve mutual co-orientation in the physical world through their communication and in the virtual world via their avatars, before they can co-ordinate the avatars' movements to co-operate in actions to fulfill the necessary game tasks. This can be achieved by means of different communicative and spatial affordances. First, the users located in their respective physical environments avail themselves of the communicative affordances provided by the video game or the platform in which the game play is embedded in order to communicate with each other. *Minecraft* and *Twitch* both offer written chat functions through which users can discuss steps and strategies. Additionally, because users usually need their hands to control their avatars via the keyboard and the mouse and do not have the capacity to deliver extensive written strategy inputs in chat at the same time, the users in our case study applied the third-party video conferencing application *Teamspeak* to allow for additional spoken communication. Furthermore, the written chats on the platform and in the game world can be read by all other users, and hence also the enemy teams in a UHC game, which is why a more private voice chat tool makes sense for team vs team game modes. Of course, members of other teams could, potentially, also listen in to the interaction on *Teamspeak* by watching the livestream, but it is assumed that all users adhere to the unwritten code of honor and do not cheat that way. Second, the users' avatars allow for the common use of spatial information and sharing of tools and artefacts in the shared virtual environment (see also Benford et al. 2001; Goel et al. 2013; Nowak and Biocca 2003). In other words, avatars can be employed to make use of the spatial affordances of a virtual environment by directing them to refer to objects within the game world (e. g. via gesturing, positioning, movement), which play a crucial part in the fulfillment of a certain goal.

Before we discuss our excerpt in detail, we need to provide some contextual information. The virtual world of *Minecraft* is an abstract representation of our known physical world. It is built with big square blocks representing different materials such as wood, stone, dirt, leaves, water etc. The blocks are originally arranged to form trees, hills, mountains, rivers and so on. Users can direct their avatars to interact with these blocks, either directly with the avatar's arms or with tools built from resources found by smashing certain types of blocks. Wood and

stone blocks, for instance, can be gathered and then used to build tools such as pickaxes or swords. The avatars representing the users in this virtual world are also made up of smaller blocks and represent a simplified humanoid figure with a head, a simple face consisting of eyes and a mouth, a torso, two arms and two legs (see Figures 4, 5, and 6). Avatars only have limited movement capabilities. They can move to each side on the horizontal axis, they can jump and crouch, they can move their arms up and down (but not to the side away from the torso), and they can move their heads in each direction (left, right, up, down), which allows users to look around the virtual environments via their avatar's perspective. Furthermore, the *Minecraft* excerpt chosen for this case study stems from a so-called UHC (ultra hard core) game. This is a game mode in which teams consisting of two users each have one hour to gather as many materials (i. e. blocks of wood, stone, ore, etc.) as possible to craft high-level weapons, armor and life potions before they are sent to the final battle arena where the teams have to fight against each other until only one player is left. This kind of collaborative video game play can be considered a joint activity among two or more players who have to master a number of big or small joint projects involving individual goals and challenges within a certain amount of time (Piirainen-Marsh 2012: 199).

As mentioned above, the excerpt is part of a game play that was embedded in the livestreaming platform *Twitch*. For the purpose of this contribution, we mainly focus on the video game part and only discuss matters regarding the livestreaming platform and its spatial and communicative affordances in their entirety where necessary. While we only account for the streamer's spoken contributions via *Teamspeak* and do not put a focus on the webcam feed, the image is still visible in our screenshots. Most streamers use a real-time webcam feed to present their physical selves to their viewers while they are engaged in a live stream. This image is usually integrated as an overlay in a corner of the streaming window, which shows the video game play in real time. The webcam feed can be seen by anyone who watches the livestream. As mentioned above, opponents could also be watching and listening in on the livestream to use information for cheating, but usually do not engage in such behavior. Team members sometimes also watch the livestream while playing the game, because they want to keep being engaged in the livestream platform's separate chat, where viewers discuss the game play, talk about strategy and socialize. Thus, the streamer's webcam feed may or may not influence the establishment of co-presence between team members.

Extracts (1) to (3) provide the transcription of the spoken interaction (through the voice chat tool *Teamspeak*) between thethiliacraft, the host of the *Twitch* channel and a seasoned gamer of *Minecraft*, and cjsherrer, who is familiar with the creative *Minecraft* mode but is relatively new and inexperienced in the UHC game mode. The three extracts are all consecutive parts of a sequence that lasts four minutes and 16 seconds. The first extract begins at 8 minutes and 36 seconds into the game round, after a setup phase during which the game server and *Teamspeak*

were set up and team memberships were negotiated. This is 12 seconds before the avatars are visible in the game world, because the game is still loading.

(1) "Minecraft UHC": Full co-presence (00:08:36–00:12:02)

1	thethiliacraft:	okay where's cj
2		where is he
3		oh wait wait wait
4		there you are
5		wait let me turn up the volume
6	cjsherrer:	hello
7	thethiliacraft:	hey
8	cjsherrer:	how you doing
9	thethiliacraft:	ow
10		good how are you
11	cjsherrer:	pretty good
12		been looking forward to this all week
13	thethiliacraft:	oh nice uhm
14		oh okay regen good
15		I don't have all my hearts
16		oh never mind
17		there we go
18		all right are you ready to whup some butts
		[11.0 of transcription omitted]
19	cjsherrer:	yep
		[2:32.0 of transcription omitted]

In extract (1), thethiliacraft is first trying to establish where her team member and co-player cjsherrer is by asking *okay where's cj*, using an abbreviation of his nickname *cj* (line 1) and the third-person pronoun *he* (line 2). It is important to notice, however, that thethiliacraft is neither looking for him in her physical surrounding nor in the game world. Rather, she is trying to find his nickname on a user list in the voice chat tool *Teamspeak* for the purpose of establishing an auditory connection with him. As soon as she can see his nickname, she invites him to join the voice chat and directly acknowledges him by switching to the second-person pronoun *you* (line 4) before she lets him know that she needs to adapt the volume of her speakers in her physical surroundings in order to hear him better (line 5). This is followed by mutual greetings between the users (lines 6 and 7), which establishes virtual telecopresence (Zhao 2003) or simply virtual co-presence (Baldassar 2008) of the users via spoken communication through *Teamspeak*. The two users also engage in a short instance of small talk in lines 8 to 13. By becoming aware of each other through the communicative affordance of the voice chat tool, the two

users engage in a first step to achieve co-orientation within the virtual environment as well.

As soon as the game is loaded and the avatars appear in a random position in the game world, thethiliacraft refers to a pop-up on her screen that shows the health status of her avatar and says *I don't have all my hearts* (line 15). Here, hearts refer to the number of lives that an avatar has during one game round. These lives are represented on the screen by red heart icons. Usually, all the icons are red at the start of each new UHC round and they can be lost during the game when the avatar is attacked or injured, which result in the heart icons becoming transparent. Even though thetiliacraft uses the first-person pronoun *I*, this utterance clearly does not refer to the user but to the avatar in the virtual world. The use of the first-person pronoun to talk about one's avatar is quite common in video game play, because avatars can be defined as "representations of 'real' people in computer-generated environments" (Goldberg 1997: 161). As such, avatars function as "a virtual, surrogate self" that acts "as a 'stand-in' for our real-space selves" (Wilson 2003: 2), and it is not surprising that users blend their physical self with that of their virtual avatars when they talk about them and their actions in the game world (see also Waggoner 2009).

In line 17, thethiliacraft finally acknowledges the start of the game (*there we go*) and asks whether her teammate is *ready to whup some butts* (line 18). After an 11-second pause, during which thethiliacraft talks to her viewers and comments on their chat messages (not included in the transcript for reasons of space and relevance to the current case study), cjsherrer confirms that he is ready, and the two users begin to play the game. With this, the users acknowledge that they are ready to establish the quasi-physical co-presence and co-ordinate their avatars' movements to co-operate their actions to fulfill the ultimate goal of defeating the enemy teams.

(2) “Minecraft UHC”: Full co-presence (00:12:02–00:12:16)

20	thethiliacraft:	yeah have you played many uhcs before
21		(1.1)
22	cjsherrer:	uh no I a:m (.) new to the eh uhc part of it
23	thethiliacraft:	okay um so the best thing to d[o is probably:]
24	creeper:	[((growls))]
25	thethiliacraft:	oh my (#1) goodness
26	cjsherrer:	I’ll wait behind you
27		(1.8)
28	thethiliacraft:	holy cow
29		(0.5)

Figure 4: Screenshot from *Minecraft* UHC (see transcript #1, line 25); cjsherrer’s avatar on the left; thethiliacraft’s avatar in the center

Extract (2) begins about three minutes into the game after a two-and-a-half-minute sequence in which thethiliacraft talks to her viewers and comments on the chat messages left in the platform chat. She asks cjsherrer whether he had played many UHCs before (line 20), which he negates (line 22). Thethiliacraft then begins to help him, trying to outline the strategy for the game that has to unfold within the next few minutes of game play (line 23). This explanation is suddenly interrupted when an unexpected event happens in the virtual world of the game and thethiliacraft acknowledges this with a response cry (line 24). A non-playable character (NPC), in this instance a so-called creeper (a zombie-like monster), is suddenly appearing within the proximity of the two players’ avatars in the virtual world (see Figure 4 and excerpt (2) line 24). The NPC is visible to the users on their computer screens

and its growling can be heard via the game's audio output, as such drawing the attention of the users toward it (line 24). Consequently, thethiliacraft and cjsherrer both co-ordinate their avatars to turn around and face the creeper. Figure 4 illustrates this co-ordination of the two avatars. The visible section of the game world is represented via the perspective of thethiliacraft's avatar. Through this perspective, her teammate's avatar and its position within the virtual world is visible as well and we see that his perspective is also focused on the NPC. Of course, since the avatars in Minecraft are relatively rudimentary, a user seeing a teammate's avatar on their screen can only guess their perspective from their avatar's body and head position. It is not possible, though, to figure out an avatar's specific gaze, because they do not have dynamic eye movement that would be visible in detail via screen for the other user. Even if an avatar is more realistic and more dynamic than the ones we find in Minecraft, the technology to translate a user's eye gaze to an avatar's eye gaze is still in its early stages and requires a form of eye tracking built into a Virtual Reality headset, which is quite complex and not yet available for the mainstream market (see Pastel et al. 2020; Mathis et al. 2021). Thus, in 3D virtual worlds, the use of the avatar body and its head, together with voice-based expressions, become even more important for successful communication (see Ventrella 2014).

Auer and Stukenbrock (this volume) also illustrate this problem of a lack of shared gaze for Virtual Reality (VR) game settings that offer a simulated embodied experience in which two users need to fulfill certain tasks. In their case study, the authors show that even when a user assumes that their co-player can roughly interpret their deictic pointing in the game (e. g. the lifting of one's avatar's arm to point to an enemy NPC), they are nonetheless aware of the changed circumstances in virtual game worlds as compared to the physical space. In their example, the user who leads the in-game mission accounts for the possible lack of access to a shared gaze by offering additional non-deictic spatial descriptions, which help the co-player make sense of the next steps in the game. Taking this into account for our case study, this means that while thetiliacraft may deduct from cjsherrer's avatar's head perspective that the user behind his character can see the creeper on his own screen, the gaze and perspective of the user itself is unknown to her, because she does not see cjsherrer in front of his screen. Consequently, because of this doubling of perspective, he also needs to confirm his perception of the NPC via speech.

Cjsherrer does so at the start of the creeper attack by commenting on his avatar's movements, informing thethiliacraft that he directs his avatar to wait behind hers (line 26), most probably to keep it safe from harm. Again, the first-person pronoun *I* is used to refer to an avatar, blending the physical and virtual spaces. Additionally, he uses the second-person pronoun *you* to refer to thethiliacraft's avatar. She does not comment on this statement but proceeds to direct her avatar to fight against the creeper. After her avatar defeats the creeper, thethiliacraft utters another response cry (line 28), acknowledging that the interruption is over and that they can continue with the game play.

(3) “Minecraft UHC”: Full co-presence (00:12:17–00:12:52)

30		okay um here’s an ax and a shovel and a pick
31		and I’ll make you a swo:rd as well:
32		(1.0)
33		There’s a sword there if you wanna (.) grab (#2) that
34		just around the side
35		(0.7)

Figure 5: Screenshot from *Minecraft* UHC (see transcript #2, line 33); visual perspective of thethiliacraft’s avater, cjsherrer’s avatar center right

36		um we’ll chop down as many trees as we can before it turns to night
37		and then when it turns to night we will [hide]
38	cjsherrer:	[I didn’t get] the pick
39	thethiliacraft:	oh you didn’t okay um that should be it there if you can grab (#3) that
40		(3.4)
41	cjsherrer:	alright
42		(0.7)
43	thethiliacraft:	so chop down as many trees as we can (.)
44		um in a few minutes we’ll head as close to zero zero as we can
45		and we’re just going to get a bunch of apples
46		and then we’re going to start digging

Figure 6: Screenshot from *Minecraft* UHC (see transcript #3, line 39); visual perspective of thethiliacraft's avatar, cjsherrer's avatar center right

Extract (3) shows that thethiliacraft does not pick up the strategy explanation again, but instead chooses to provide cjsherrer's avatar with the tools needed to achieve the next tasks in the game (lines 30–31). This is an interesting sequence, because it shows how the users need to co-orientate their avatars to co-ordinate their movements to successfully co-operate in sharing virtual objects in the game world. Thethiliacraft uses her computer mouse and her keyboard to control the game interface and drops an ax, a shovel, and a pick (line 30) in front of her own avatar, so that cjsherrer's avatar can be directed to pick those up. She comments on what she is instructing the game to do. She also informs him that she crafts a virtual sword (line 31). The use of the first-person pronoun *I* is quite interesting here. On the one hand, thethiliacraft as a user in front of her screen controls the keyboard and the mouse with her own hands and thereby commands the game to do certain things. In this case, she instructs the game to open a pop-up window showing the crafting menu and uses her mouse to drag and drop items into a crafting matrix. A combination of one wooden stick and two cobblestone blocks result in a stone sword that can be used by an avatar to fight monsters or enemy avatars. On the other hand, when we look at the crafting process from the perspective of cjsherrer, it seems as if thethiliacraft's avatar walks up to the crafting table, stands there for a few seconds, and eventually drops a sword to the virtual floor. Thus, the *I* could stand for both the user and the avatar, depending on the perspective of each user/avatar.

In her communication with cjsherrer, she also uses deictic terms like *here* (line 30), *there* (line 33), and *that* (line 33) to refer to the spatial location of specific objects in the virtual world. While thethiliacraft did not provide spatial information for cjsherrer's avatar to pick up the first three tools, she states that the sword is *just*

around the side (line 34), offering an additional spatial description in addition to the deictic term *that* (see also Auer and Stukenbrock, this volume). Figure 5 shows the spatial positioning of the avatars at that time. While thethiliacraft's avatar was located to the right of cjsherrer's when she dropped the first three items, she later moved her avatar to the left of his. This caused the two avatars to be positioned in front of two different sides of an in-game object called a crafting table. Thus, when thethiliacraft drops the sword, it does not end up in front of cjsherrer's avatar but in front of the box when we consider her avatar's perspective. From the perspective of cjsherrer's avatar, the sword is not visible, because the crafting table blocks his view. Thethiliacraft recognizes this and directs him to move his avatar around the side of the object to find the sword.

After the successful transfer of the sword, thethiliacraft starts a second attempt to explain the further steps in their game play (lines 36 and 37). She is interrupted by her teammate, who informs her that his avatar did not receive the pick (line 38). Thethiliacraft commands the game to drop another pick next to the crafting table and instructs him that it is *there*, expecting his avatar to provide the right perspective for the user to see the pick on his screen. Indeed, this can be expected, because thethiliacraft's avatar perspective shows that her teammate's avatar is standing next to the crafting table on the same side as the location of the tool (see Figure 6). While thethiliacraft cannot know about the focus of the other user's gaze on his own screen, she can deduct what is most likely visible on his screen from his avatar's body and head position. Thus, she can assume that the tool is visible for him. Once cjsherrer acknowledges the instructions with an *alright* (line 41), thethiliacraft attempts for a third time to explain the further steps in their strategy (lines 43–46).

Thus, extracts (1) to (3) illustrate the skillful management of the different spatialities as outlined in Section 3 above. The two gamers need to establish their auditory co-presence in the physical world as much as the co-presence of their avatars in the quasi-physical game world in order to co-ordinate their movements and to co-operate on the intricate game tasks.

5. Discussion and conclusion: Co-presence and beyond

In the context of virtual environments, the notion of co-presence assumes a significantly increased complexity. In this article we have reviewed a range of relevant investigations, and we have shown how the models originally developed for face-to-face interaction can be adapted to account for the additional spatial layers provided in interactions that are mediated through virtual worlds. Our main point of reference has been Hausendorf's (2013) fine-grained and detailed analysis of how interactants actively and interactively achieve perceived perception. His model relies on the three notions of co-orientation, co-ordination and co-operation. As a first step, two interactants need to establish a mutual awareness of their

co-presence. This is a prerequisite for a co-ordination of their movements, even on such a basic level as two passers-by in a busy street who minimally modify their movements in order to avoid bumping into each other. And only a sufficient level of co-ordination allows the interactants to co-operate and perhaps work together on a joint task.

For virtual environments, this model needs to be extended. The situational anchoring of co-orientation, co-ordination and co-operation applies to the (usually independent) physical worlds of the interactants and to the shared world of the virtual environment. As our case study has shown, the virtual environments pose considerable additional challenges to the perceived perception of the interactants. Each virtual environment provides its own and specific affordances that help the interactants to keep track of each other. They can take forms that are modeled on specific physical life affordances or that are idiosyncratic to virtual environments in general or to one specific virtual environment in particular. Characters operate in a quasi-physical world and the gamers become aware how their avatars approach each other in the game world, or they become aware that another character must be within earshot of their own character through some auditory signal or the appearance of a new name on a list of nearby characters. In spite of these additional affordances, perceived perception is often more difficult in virtual environments than in the physical world because the inherent differences between the two-dimensional reality of a quasi-physical world and the impact this has on the auditory and visual senses of the interactants. In the physical world, humans are very good at locating entities in their surrounding space according to auditory and visual cues. Such sense perceptions are severely limited on the two-dimensional computer screen and the attached audio speakers (or headsets). Moreover, humans can generally read and interpret the line of vision of people in their vicinity quite easily. If somebody talks about "this building", I can easily check which building they are looking at. Avatars generally lack this sophistication in the display of their focus of attention. This turns co-orientation, and by implication co-ordination and co-operation, into more serious challenges.

These additional challenges of "doing space" in virtual environments are even more of a challenge for newbies (see in particular Locher et al. 2015). Our case study has shown how the newbie cjsherrer struggled to find his bearings in the specific virtual environment of *Minecraft*. He needed the help and support of the experienced and seasoned user thethiliacraft, who also had to grant him access to the game server and to the *Teamspeak* client in order to establish the necessary co-orientation via speech and the avatars as representations of the users in the game world. Only then could they also establish co-ordination and co-operation and become successful in fulfilling specific tasks in the virtual world of the game.

The survey of literature on the spatiality of interactions in virtual environments has shown that our understanding of these complex issues is still limited. On the one hand, we depend on sufficiently detailed models of how doing space works in

physical environments. And, in addition, we need a way to extend these models to the complexities of the multi-layered interactions of users who are embedded in their respective physical environments but who interact in and through virtual environments. These models still lack the necessary sophistication and detailed granularity, and one reason for this is the fact that generalizations across different virtual worlds are very difficult. Virtual environments, especially in their form as quasi-physical three-dimensional worlds depicted on a two-dimensional computer screen, suffer from some serious (and unavoidable) shortcomings in the way they imitate the spatiality of physical worlds. Each individual environment takes its own decisions on what kind of affordances the system provides in order to enhance the ease of doing space in its own context. It is unlikely – and probably also undesirable – that these affordances will be standardized across platforms, which means that descriptive models cannot wait for a unified system to emerge. What is needed is a model that is both sufficiently general to account for the commonalities across platforms and sufficiently sophisticated to account for the diversity and intricacies of individual systems.

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IV. Pragmatics across space and cultures

19. Pragmatic variation across geographical and social space

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Abstract: This chapter examines how pragmatic variation interfaces with several dimensions of space, not only geographical space but also social space. We approach space from a variational pragmatics perspective and conceive it as a layered phenomenon with local, regional, and national levels that are intertwined with one another as well as with social dimensions of space. We present an empirical study of greeting behavior in Swedish service encounters to illustrate how these layers of space interact and are relevant for pragmatic variation. Qualitative observations of greeting sequences combined with statistical analyses of several co-variables are used to unravel connections between the choice of a greeting form and spatial and social factors. We show that the levels of nation and region (i. e., data from a certain country and town) can account for a certain degree of variation in the choice of greeting forms, but the local levels of space (i. e., interactions in specific venues) and social variables like the speaker's age and gender also have an explanatory force. Spaces can also bear recognizable cultural meanings to the people who interact in them, triggering certain kinds of social behavior that is symbolically represented in language use.

Keywords: pragmatic variation, geographical space, social space, interactional analysis, statistical analysis, variational pragmatics

1. Introduction

Language variation across geographical space is a foundational notion for many branches of linguistics, not least dialectology and sociolinguistics. Studies in these traditions have been devoted to establishing the scope and conditions of linguistic variation between places (i. e., demarcated geographical locations) and their inhabitants. Until quite recently, however, research on regional variation in the use and accomplishment of pragmatic routines has been very limited. The growing field of variational pragmatics, situated at the interface between pragmatics and variational linguistics, was launched to address this issue (Schneider and Barron 2008a, 2008b: 1; Schneider and Félix-Brasdefer this volume), essentially to "dialectologize" pragmatics and "pragmaticize" dialectology (Schneider 2010). So far, this framework has mostly (with the exception of e. g. Placencia 2008) been concerned

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with the top level of regional variation, that is, the national level, by investigating differences in pragmatic routines in varieties of pluricentric languages (i. e., languages that exist as national or official languages in more than one country, see Clyne 1992). Meanwhile, the framework of variational pragmatics is very well suited to investigate variation in pragmatic routines on several levels of space. In this chapter, we will discuss pragmatic variation that is sensitive to different levels – or granularities – of space: the local, regional, and national levels of language use. However, while considering aspects of geographical space, the question arises to what extent other variables (such as gender and age) influence pragmatic variation. Is geographical space really the decisive factor for understanding pragmatic choices in interaction, or do other variables in reality play a more important part? And can we really think of geographical space as places void of social meaning? When addressing these questions, we want to draw attention to the fact that language variation always depends on a complex set of factors and that we must be careful when determining the role of geographical space in that variation. Another aim of this chapter is to illustrate how such questions can be answered through a mixed-method approach within the variational pragmatics paradigm. To make the conditions for pragmatic variation in space visible we need to both understand the pragmatic routines in question (where a qualitative interactional method is of great use), as well as whether these observed routines are dependent on and co-variant with other factors (where a quantitative, statistical, analysis is helpful).

In the first part of this chapter (Section 2), we outline how linguistic research concerned with regional and local language variation has evolved: from traditional dialectology to variational pragmatics and, more recently, to interactional perspectives on pragmatic variation. We also give a brief orientation to the scope of geographical and social space in studies of pragmatic variation. In the second part (Section 3), we highlight the complexities of analyzing variation in relation to space with the help of a case study on greeting routines in Swedish service encounters, using interactional linguistic and statistical methods.

2. Spatial variation in pragmatics: From traditional dialectology to variational pragmatics

Linguistics has been concerned with spatiality for a long time, starting with the tradition of dialectology. Early studies in the field investigated how language systems varied across geographical space. Traditional dialectologists were not primarily interested in social variation, or any variation other than that between geographical locations on a map. Basically, any other space than the demarcated geographical location represented by one or a handful speakers' language system was more or less ignored. Furthermore, the geographical locations of interest were situated in rural areas, which resulted in limited documentation of urban language use before

the 1960s. When William Labov (1966, 1972) presented his groundbreaking studies on social linguistic variation, dialectology took a turn towards social space, and in the process, turned its focus away from rural towards urban areas. As David Britain puts it, researchers of the time threw "the rural baby out with the traditional dialectological bathwater" (Britain 2008: 607). Where traditional dialectology described the linguistic traits of single speakers in rural geographical spaces, sociolinguistics investigated how groups of urban speakers (based on social variables as class, age, and gender) varied linguistically (see e. g. Britain 2008; Schneider and Barron 2008a; Bockgård and Nilsson 2011). In the past decade, there has been a spatial turn in the humanities in general, with a booming interest in how meaning making manifests itself across different spaces. In this new era of spatial studies in linguistics, both geographical and social space is considered in rural as well as urban areas.

Space is dynamic with several layers, is interpreted differently by different individuals, and is constantly changeable over time (Massey 1994). There are no clear objective borders that define a space, and when we investigate, for example, the local levels of space (like a certain school, service venue, medical station, etc.), such dimension of space is always nested within other dimensions of space (like a region and a nation), and we cannot separate one dimension from another (see Figure 1). These spatial dimensions are further related to other contextual and social factors affecting language use.

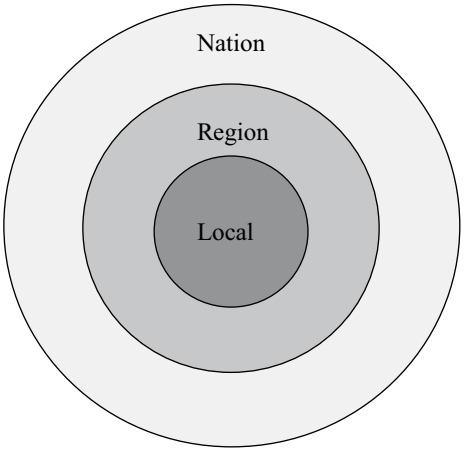

Figure 1: Dimensions of local, regional, and national space nested in one another.

Research on space often assumes that there is a connection between places and the people who inhabit these places (see e. g. Massey 1994; Taylor [2010] 2012). The relationship between individuals and space is dialectic, that is, we create our inter-

pretation of space at the same time as space creates us. In this way, the relationship between individuals and space is a process. This means that the geographical spaces that we discuss here are social spaces at the same time. National, regional, and local levels of space are all made up of the people who interact in these spaces and the social activities taking place in them.

When it comes to pragmatic behavior, the spaces that we interact in have the potential to affect the way we use parts of our pragmatic repertoires. Adopting the language or a pragmatic behavior characteristic of a place or of a certain group may create a feeling of belongingness. Belongingness is originally a concept from psychology (Baumeister and Leary 1995) describing the state of being an important part of something, such as a family, a group, or a place (Prins 2006: 288). Using certain linguistic forms may also create and maintain belongingness (see also Taylor [2010] 2012: 22, 117; Nilsson and Nylund Skog 2019). This suggests a connection between identity and space/place, a question we return to in Section 4. In the meantime, we note that the conception of space has been investigated from many angles in different branches of linguistics (alongside other disciplines within the humanities and social sciences). For a more comprehensive overview of the notion of space in linguistics and human geography, see Britain (2008). In this chapter, we delimit the analytic scope to linguistics by looking at the concept of space through the lens of variational pragmatics.

Variational pragmatics was first introduced by Anne Barron and Klaus P. Schneider in the mid-2000s (Schneider and Barron 2008a, 2008b; Schneider 2010). The framework has one leg in the traditions of dialectology and language variation and the other in pragmatics. Studies within this field typically focus on how different pragmatic routines and speech acts vary between varieties of a language (see e. g. Schneider and Barron 2008a and the contributions therein). In many ways, it is similar to intercultural and cross-cultural pragmatics, but rather than investigating pragmatic differences between languages, variational pragmatics focuses on pragmatic variation within the same (pluricentric) language. Moreover, within intercultural and cross-cultural pragmatics, speakers of a national variety have often been considered a homogenous group, and little attention has been given to inter-individual variation between speakers of a variety. In reaction to this, variational pragmatics aims to "redress a traditional bias in cross-cultural and intercultural pragmatics which viewed languages implicitly as homogeneous wholes with macro-social variation largely abstracted away" (Barron 2015: 450).

Early work within variational pragmatics was predominantly concerned with regional (mostly national) variation rather than with social variation (see e. g. Schneider and Barron 2008a and the contributions therein). However, macro-social factors, such as age, gender, socio-economic status, and ethnic identity, are important for understanding pragmatic variation, and variational pragmatics therefore includes both geographical and social variables in its scope of inquiry (see e. g. Schneider 2012, 2019). The framework can thus accommodate a systematic inves-

tigation of the interrelationship between macro-pragmatic variation at the societal level, referring to different socio-historical developments between nations, and micro-pragmatic features of language interaction and use (cf. Muhr 2008). Studies in this vein illustrate how the notion of nation should be problematized. For example, a study on address practices in the pluricentric languages English, German, and Swedish (Clyne et al. 2009) showed how the use of address forms is not only sensitive to the variable of nation, but also to other factors such as social distance, age, speaker status, domains, and medium. Norrby et al. (2019) compared reported preferred introduction routines in first encounters at international conferences among speakers of American, Australian, and British English. There was indeed some national variation: the American respondents favored the most formal, and the Australians the most informal introductions with the British respondents somewhere in between. However, all nationalities reported similar situational sensitivities, suggesting that they preferred the least formal style when introducing oneself, and the most formal when introducing others. In addition, age/seniority and hierarchy also played an important role when deciding what style of introduction to use. Such examples show that "nation" is only one variable among several others that determine pragmatic variation.

Studies in variational pragmatics are based on empirical data, both experimental (such as discourse completion tasks, e. g. Blum-Kulka et al. 1989) and naturally occurring discourse. Much research in the field has adopted quantitative methods using large electronic corpora of spoken discourse to analyze speech acts such as apologies, thanking, and requesting in varieties of pluricentric languages (Barron 2017). More recent studies have taken a more pronounced interactional perspective and explored the sequential organization of talk in recordings of face-to face interactions in different contexts. Félix-Brasdefer (2015), for instance, investigated the organization of interaction (e. g. the opening and closing of exchanges, requests, and responses) between the staff and customers in service encounters in Mexico and the USA (see also Schneider 2019; Placencia 2008; Félix-Brasdefer and Placencia 2019 and contributions therein). Lindström et al. (2019) also studied service encounters, conducted in Swedish in Sweden and Finland, and documented how they were organized around task sequences that were completed with an assessment term (e. g. "brilliant") in the third turn.

Moreover, there is a growing body of research that has extended the study of pluricentric languages by adopting an interactional perspective on pragmatic variation. Studies in this interactional vein suggest that varieties may differ in the way actions are sequenced. For example, Lindström and Wide (2017) compared Finland-Swedish and Sweden-Swedish service encounters and found differences in the sequencing of requests. Flöck's (2016) study of requests in British and American English also suggests differences of this kind, as the British speakers in her data displayed a slightly higher preference for preparatory request strategies. There are also several studies concerned with interactional style. For example, Haugh

(2017) compared mockery and (non-)seriousness in conversations between previously unacquainted Australians and Americans and found some differences in what is considered appropriate objects of jocular mockery.

These kinds of studies show that systematic analyses of interactional routines in varieties of the same language that are used in separate cultural settings can yield new insights into what is possibly universal and what is culture-specific in communicative patterns. Such an interactional perspective also draws our attention to the fact that the speakers of different language varieties associated with certain places (say, nations at the macro level) create and re-create pragmatic patterns together in interaction. Interactional analyses contribute to discovering regularities in participants' micro-social conduct in real-world encounters, revealing underlying norms that regulate action formation. However, when we are dealing with micro-social variation, we are faced with the challenge of coming to terms with the essence of such variation: How much of it is "particularized", dependent on immediate interactional contingencies, and what has to do with a "generalized" interactional pattern typical of a certain sociocultural context? One answer to this problem could be the recognition of space as a layered entity (see Figure 1 above): By starting from an investigation of a series of individual, highly local interactions, we gain a cumulative understanding of recurring interactional practices at a meso-level (i. e. ways of being a competent member of a group), which eventually, when we have several sub-groups to compare, enables us to say something about the macro-level social norms of communication in a wider geographic or cultural region. Hence, considering different layers of space and how they are related to one another gives us a better understanding of the breadth of linguistic and (sub)cultural variation. This may make continua across regional and top-level varieties more visible than what is the case if we relate language variation only to politically drawn borders. Accounts of spatial linguistic variation that stress continua and regions instead of nations and their borders have accordingly been called pluriareal, rather than pluricentric (see Norrby et al. 2020).

3. An empirical illustration: Greetings in Swedish service encounters

To discuss variation in geographical and social space further we need to investigate a phenomenon that is common and recurrent, and we need to observe it in a large dataset of naturally occurring interaction. Greetings constitute a frequent pragmatic routine, and in this section, we present results from our own previous studies of initial greetings in Swedish service encounters (Nilsson et al. 2017, 2018, 2020). These studies investigated similarities and differences in greeting behavior in the two national varieties of Swedish, Finland Swedish and Sweden Swedish, by examining a corpus of 1003 interactions between customers and staff members. Based on these studies we present how different geographical and social factors

affect the participants' greeting behavior.[1] We begin with a brief background on regional variation of Swedish in general (3.1) and on greetings as a social practice (3.2). We then introduce the data (3.3) and methods (3.4) before presenting the results (3.5).

3.1. Regional variation of Swedish

Swedish is a pluricentric language with speakers in two countries, Sweden and Finland. It is the principal language of Sweden: approximately 85 % of its population (10.3 million in 2020) speak Swedish as their first language (Statistics Sweden 2020; Parkvall 2009). In Finland, Swedish has the status of a national language alongside Finnish. Speakers of Swedish represent only 5.2 % of the Finnish population (approx. 5.5 million, Statistics Finland 2020), but the language still holds a strong legal position, which is explained by Finland's common past with Sweden (Liebkind et al. 2007). Within Sweden and the Swedish-speaking parts of Finland there has traditionally been significant regional linguistic variation that is well-documented. Even though dialects of both nations have undergone extensive standardization since the middle of the twentieth century, considerable linguistic variation persists. Research on language variation across space in these varieties has not been very concerned with pragmatic differences until very recently (but see Bockgård and Nilsson 2011 and contributions therein for a notable exception). However, from a pluricentric linguistic comparison of Sweden Swedish and Finland Swedish communicative patterns we have discovered that there are certain "national" pragmatic differences. In general, Finland Swedes[2] tend to more often orient towards larger social distance and respect for the interlocutor's integrity than Sweden Swedes do. This is manifested in patterns of address (Wide et al. 2019; Norrby et al. 2018) and greetings (Nilsson et al. 2018, 2020), more neutral positive assessments (Lindström et al. 2019), and less small talk (resulting in shorter interactions in service encounters: on average 1.84 minutes in Finland and 2.76 in Sweden). Some of this variation is possibly attributable to more formal patterns of communication in the public sphere and to language contact with Finnish among speakers of Finland Swedish.

[1] This research was supported financially by Riksbankens Jubileumsfond (RJ) and carried out within the research program *Interaction and Variation in Pluricentric Languages* (IVIP); grant no. M12-0137:1.

[2] The term *Swedish-speaking Finns* is also used in the literature for the established nationality label *finlandssvensk* (lit. 'Finland's Swede')

3.2. A brief background on greetings

Greetings are a type of social action that are regularly organized in adjacency pairs, that is, the first greeting makes a specific type of second turn, a return greeting, relevant, but the actual phrases used in greetings may vary in form (e. g., *hello*, *hi, how are you*; see Schegloff 2007: 22). In our data from service encounters, most interactions are opened with reciprocal conventional verbal greetings between the staff member and the customer. This robust sequential pattern makes verbal greetings suitable for our investigation: they offer us a phenomenon that recurs in almost all interactions but still has some variation in form and production, thereby lending itself for a study of pragmatic variation in relation to space. It has been suggested that the greeting ritual is an essential communicative skill in all cultures (see e. g. Duranti 1997), and greetings therefore have the potential to shed new light on which pragmatic patterns are universal and which are culture-specific (Kendon 1990; Duranti 1997).

Greetings make it possible for soon-to-be interlocutors to move from physical co-presence into social co-presence (Pillet-Shore 2008). They may thus be defined as a "unit of social interaction often observed when people come into another's presence, which includes a distinctive exchange of gestures or utterances in which each person appears to signal to the other, directly and explicitly, that he has been seen" (Kendon 1990: 153). Greetings also have the potential to carry social meaning and reveal information about the speaker as well as how the speaker perceives the interlocutor (Hudson 1996; Duranti 1997; Kendon 1990; Pillet-Shore 2008; Nilsson et al. 2018, 2020).

Spatial variation in greeting behavior has been accounted for in some previous studies. For example, Wierzbicka (1985) concluded that greetings are both language- and culture-specific in a comparison of Polish and Australian English. Pinto (2008) compared and found several differences in politeness strategies in Spanish and US English greeting routines, as did Schüpbach (2014) in Swiss German and German German. Félix-Brasdefer (2015) compared service interactions at supermarket delicatessens in Mexico and the USA and found reciprocal conventional greetings to be quite rare in both settings. Moreover, Wolfram and Schilling-Estes (2006) showed that greeting behavior (in the US) varies not only with geographical space but also with ethnic, gender, and status factors. Furthermore, some variables have a stronger impact on greeting practices in some places than others: Moradi (2017) compared how age and gender affect the greeting behavior in Persian and English and found that the age of the interlocutors affects this social action in similar ways in both languages, while gender influences greetings more in Persian than in English. Greeting behavior is thus affected by both geographical and social factors.

3.3. Data

Our case study analyzes the use of greetings in 1003 Swedish-language service encounters where customers request information or buy tickets at event booking venues (sports and cultural events, four in Sweden and five in Finland), theater box offices (three in Sweden and four in Finland) and library information desks (two in each nation). These venues were situated in seven regions in Finland and six regions in Sweden representing the capitals (Helsinki and Stockholm), larger regional centers (Turku and Vasa in Finland; Gothenburg, Karlstad, Luleå, and Umeå in Sweden) as well as smaller towns (Jakobstad, Karleby, and Raseborg in Finland and Osby in Sweden).

Figure 2: Map of Sweden and Finland with recording sites.

The number of recordings made at each venue varies: in total 381 (approx. 16 hours) video recordings were made in Sweden, and 622 (approx. 18 hours) in Finland (all from the 2010s). The customers were asked as they entered the venue if they were willing to participate in a research study. They received more information and signed a consent form after the recording or had the opportunity to opt out (in which case the recording was erased); all personal information has been

anonymized in the data.[3] The service encounters are mostly brief interactions that follow a task-oriented agenda, with mutual initial greetings, the customer presenting the reason for the visit, the staff member delivering the requested service, and a closing with mutual farewells. Even though the settings for the interactions are very similar, which was a leading principle for data collection, some of the venues were frequented more by certain groups of customers. Because of this, we have documented more old females buying theater tickets and more young males buying tickets to ice hockey games.

Most of the service encounters involve one staff member and one customer, but there are interactions (118 cases) where two or even three customers are present. In these situations, both customers usually greet the staff member, but in the quantitative analysis of greeting patterns we have only included the first (and principal) customer's greeting. The reason for this is that the greeting of the second customer is not independent of the first customer's greeting and including the second customer's greeting would impose bias to the statistical analysis. In total, 1123 customers participated in the study: 65.4% were female (249 in Sweden and 485 in Finland) and 34.7% male (182 in Sweden and 207 in Finland). Sixty staff members between the age of 18 and 64, equally distributed across Sweden and Finland, participated. Out of these, 23 were female and seven male in Finland, and in Sweden 18 were female and 12 male. Nearly half of the customers were below the age of 50 (529 or 47%, with equal gender distribution).

3.4. Methods

For our study of greeting practices, we have conducted both qualitative and quantitative analyses of the data. First, we have qualitatively investigated how greetings are used in the data; how greeting sequences are organized and managed by participants in interaction (Nilsson et al. 2018, 2020). Second, we have conducted statistical analyses of what precise greeting forms customers use; we also have supported the statistical analyses with qualitative observations of how staff members use greetings (see also Nilsson et al. 2020).

Our analytical point of departure is variational pragmatics with an interactional approach, and the interactional analyses are based on the methodological frameworks of interactional linguistics and conversation analysis (CA). This perspective means that human interaction is seen as an essentially social activity (see Atkinson and Heritage 1984; Sacks 1992; Couper-Kuhlen and Selting 2001, among others). In addition, interactions are sequentially organized: a speaker's turn is produced in relation to a previous contribution and makes a next turn relevant (Sacks, Schegloff

[3] The research conducted in this project follows the Swedish Research Council's guidelines for ethical research.

and Jefferson 1974). Every turn is a social action shaped to display the orientation to the interactional context and co-present speakers. The focus of the analysis is to understand why a certain utterance is used at a given point in a conversation and how this utterance is shaped from the point of interaction. In the interactional analyses of greeting behaviors in section 3.6, the main objective is to establish how and why greetings are organized the way they are, and why a specific greeting form is used at a given moment.

When investigating pragmatic patterns across space, it is desirable to both describe an interactional action (e. g., the action of producing a "greeting") and the methods the participants use to produce such actions (i. e., the actual form of a greeting), as well as to identify the macro-social meanings reflected by recurring forms of actions among the speakers of a variety. In this case, we also want to know what relevance national, regional, and local space has for pragmatic variation, and if other variables such as age and gender of the participants play a part. Therefore, we have combined the qualitative, interactional study of greeting behavior with statistical analyses that take into account different co-occurring variables across the datasets.

For the statistical analyses, we first used a multilevel logistic regression analysis, where we estimated how individual and contextual characteristics associate with the odds that a person uses a certain greeting. The results are presented as odds ratios, showing for example the odds for women divided by the odds for men. This allows for testing several variables at the same time and it is possible to determine the propensity that a greeting type is used by and to certain groups. For example, suppose that the female customers on average are older than the male customers, and that the female customers use a certain greeting form more frequently than the male customers do. With this analysis, we can separate the effects and see if the use of a certain greeting form is associated with age or gender. Furthermore, the logistic regression analysis shows if a perceived connection between a specific greeting and a characteristic (such as age, gender, or nation) is statistically significant, that is, that we can be at least 95 % sure that a difference spotted in the data reflects a true difference in the population. In the results section below, we generally do not discuss precise numbers as there is a limited number of tokens of the different greeting forms investigated. Instead, we focus on whether the differences found in the data reflect differences in the population. This is shown as p-values, and we discuss our statistical analyses in terms of statistical significance.[4]

[4] A statistically significant association is an association that can be generalized to the population. Following conventional procedures, we consider p-values below 0.05 as statistically significant results (and we report three different levels of significance: p-values below 0.05, 0.01, and 0.001).

Since one staff member's different greetings cannot be seen as independent observations, they cannot be part of the statistical analyses, and the quantitative analysis only concerns the customers' greetings. However, since the staff person most likely affects the greeting used by the customer, analyses have been done using a mixed effects multilevel approach. Multilevel modelling is used when the data have a strict hierarchical structure. In this case, the two nations (Sweden, Finland) consist of regions (different towns), which in turn consist of venues (e. g., box offices), which in turn consist of different staff members, and each staff member serves several customers. It is a main concern that each staff member participates in several interactions and may thus affect several respondents' greetings. To counteract such unwanted effects, *staff* is used as a level in the multilevel analysis. This way, we can control for the effect that each individual staff member's personal greeting style may have. Just like we suspect certain greetings to be affected by staff members' personal style, we assume that certain greetings may be used more in some regions, and we use region as a level in the model as well. For each type of greeting, we employ a logistic analysis with random intercepts for each staff member and for each region. As we only investigate two nations, we can measure the effect of nation directly with fixed instead of random effects for each nation.[5]

Some greeting forms are present in only one of the investigated varieties. Therefore, the variable *nation* could not be included in the logistic regression analysis. Instead, we have conducted ancova-tests to investigate the difference between nations, regions and venues, with control for other independent variables (an ancova analysis is the same thing as an anova analysis but with control for other independent variables).[6] In the ancova-tests differences in use of the greetings are tested one at a time and can reveal statistically significant relations when

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[5] The model used is defined as:

$$L_i = \alpha + \beta X_{ijk} + \beta X_{jk} + \beta X_k + e_{ijk} + u_{jk} + v_k$$

where X_{ijk} are the individual values of an individual i served by staff j in region k. The term X_{jk} is the characteristics of staff j in region k and the term X_k signifies that the model holds variables that vary on the regional level; this specific variable is nation. e_{ijk} is the individual (served by staff j at region k) random error term, u_{jk} is the additional error term for each staff member j, and v_k are the error terms for each region. This is thus the definition of a random intercept model with three levels. L shows that the model as such is a logistic model, which uses the logit link function defined as:

$$\ln\left(\frac{P}{1-P}\right)$$

where P is the probability for the analyzed greeting.

[6] Note, however, that *region* is also used as a random intercept variable in the regression model.

controlling for other independent variables, but since the hierarchical structure of the data is ignored, the results of the ancova analyses are much less robust than the results of the multilevel analysis.

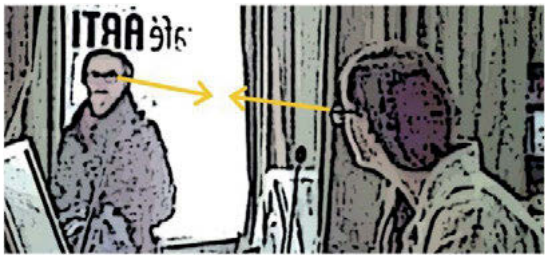
The advantage of combining interactional (qualitative) and statistical methods when investigating pragmatic routines is that we may examine several aspects of the relation between space and pragmatics. The interactional perspective shows how greetings are used in practice and gives us an understanding of the phenomenon, while the statistical analyses reveal connections between greeting forms and geographical and social variables.

3.5. Results

To understand the overall organization of greetings, we have conducted several interactional studies on the sequential unfolding of greeting behavior and why a certain form of greeting is produced at a given point in time (see Nilsson et al. 2017, 2018, 2020). These studies reveal the following general patterns of greeting behavior in Swedish-language service encounters:

1. In most greeting sequences, staff and customer produce reciprocal initial verbal greetings (76.5 %).
2. Greetings are typically produced in a sequence following one another, one at the time (66 %).
3. Verbal greetings that are produced in overlap with one another are not very common (10 %) and are usually caused by one of the participants being occupied with something else during the greeting; such simultaneous activities block participants' mutual gaze before the verbal greeting and thus affect the sequential coordination.
4. Non-reciprocal greetings do occur (23.5 %) when the customer presents the reason for the visit in the second turn after the staff member's greeting (e. g., Staff: *Hi,* Customer: *I would like some tickets to*…) or when the staff member uses another summons than a greeting at the beginning of the interaction (e. g., Staff: *Number sixty-four?,* Customer: *It's here yes*).

As regards the particular forms of verbal greetings, we could observe that their use displayed variation that was related to sequential factors, certain groups of speakers, specific venues, and regions (with "nation" at the top level). The following extract illustrates a typical initial greeting sequence in the studied service encounters (for transcription conventions, see Appendix).



Extract 1: Reciprocal *hej*, Finnish box office.

01 C: *hej*
hi
02 S: *hej*
hi
03 C: *vi ska ha eh en guidning här kvart i me nån Förnamn h*
we're having a guided tour here quarter to with a FIRSTNAME h
04 S: *me Förnamn* (.) *okej*
with FIRSTNAME okay

Hej 'hi, hello' is clearly the most typical greeting form in the data, regardless of nation, region, local venue, the speaker's age, gender, or participant role. This finding concurs with prior research suggesting that *hej* is the neutral, or default, greeting in Swedish (Clyne et al. 2009). Only in 237 cases do customers and staff use other greeting forms (i. e., non-*hej* forms). These other forms show, nonetheless, that there is variability in the verbal expression of a greeting, and this variation is clearly meaningful for the participants.

The 237 non-*hej* greetings, of which 138 were produced by the customers, are distributed over 25 forms of greetings in the data. For ease of exposition, we grouped these together in five categories of greetings (according to etymological and lexical similarities) (see Table 1).[7]

[7] Since translating the stylistic nuances of all the different variants of the greetings in Swedish into English is difficult (or even impossible), we only present the forms in Swedish in the table. See, however, footnotes 8–11 for a brief etymological background of the main categories.

Table 1: Tokens of greeting forms other than *hej* in the data in descending order (see also Nilsson et al. 2020).

Greeting form	Total tokens customers	Total tokens staff	Variations (total number of tokens, both customers and staff)
Hejsan	73	24	*hejsan (91), hejsan hejsan (4), hej hejsan (1), hejsan svejsan (1)*
Tjena	26	39	*tjena (44), tjenare (11), tja (5), tjena tjena (3), tjabba (2)*
God dag	16	16	*god dag (16), god dag god dag (6), päivää god dag (5), hej god dag (2), men god dag på dig (1), god morgon (1), morgon (1)*
Hallå	10	12	*hallå (14), hallå hallå (7), hello (1)*
Moi(n)	13	8	*moi(n) (17), morjens (2), moi moi (1)*
TOTAL	**138**	**99**	

According to previous studies, including our own (Nilsson et al. 2017, where we also conducted focus group interviews), *tjena*[8], *moi(n)*[9], *hallå*[10] and *hejsan*[11] are more informal, *hej* (not included in this comparison) is neutral, and *god dag* (lit. 'good day') is considered formal. The statistical analyses were conducted on the non-*hej* greetings produced by the customers (N=138), that is, the propensity that a customer (depending on social and situational variables) use a certain non-*hej* greeting with special attention to what extent the variables nation, region, and venue impact the greeting choice.

To begin with, there are differences in the use of non-*hej* greetings on the national level: non-*hej* greetings are used more in the Sweden-Swedish data (17 % of customers) than in the Finland-Swedish data (10 % of the customers). We have calculated the customers' odds of using each greeting form depending on age, gender, nation, and the age and gender of the interlocutor (staff member) by using a multilevel logistic regression analysis (Table 2).

8 *Tjena* /ˈɕeːna/, or *tjänare* in a fuller form, originates historically from the formula *eder ödmjuka tjänare* 'your humble servant', cf. German *servus*.

9 The etymology of *moi(n)* is probably Low German.

10 *Hallå* is originally an attention-getter (cf. French *allô*) and is also used as a channel opener on the telephone.

11 *Hejsan*, apart from the use as a greeting, is connected to expressions of joy and swift movements and it originates probably from Low German.

Table 2: Multilevel logistic regression on different forms of greetings, odds ratios.

	Model/Greeting				
	Hejsan	*Tjena*	*God dag*[b]	*Hallå*[c]	*Moi(n)*[b]
Age	0.996	0.933***	1.057**	1.015	0.976
Female (male reference)	1.091	0.031***	0.672	0.225	0.264*
Age of staff person	0.989	0.931*	0.978	1.016	0.976
Staff person is a female	1.405	0.512	--[d]	3.604	0.884
Sweden (Finland reference)	0.434	22.500**	--	--	--
Constant[a]	0.074***	1.518**	0.002**	0.002***	0.379
Random intercept variances (std. err):					
Region variance	0.092 (0.185)	0.000 (0.000)	0.000 (0.000)	1.925 (3.131)	0.000 (0.000)
Staff variance	0.000 (0.000)	0.000 (0.000)	1.681 (1.614)	0.000 (0.000)	0.024 (0.582)

* p<0.05, **p<0.01, ***p<0.001
a: The constant is the estimated baseline odds, conditional on zero random effects.
b: No occurrences of *god dag* or *moi(n)* in Sweden, model only based on data from Finland.
c: No occurrences of *hallå* in Finland, model only based on data from Sweden.
d: This greeting is not said to any male staff, model only based on interactions with female staff.

Table 2 shows the odds for different types of non-*hej* greetings. All types of greetings except *hejsan* show a clear difference between Finland and Sweden (our qualitative analysis suggests that this holds true for the staff members as well). The odds for saying *tjena* is considerably higher in Sweden than in Finland. The greetings *god dag* and *moi(n)* are only found in Finland and *hallå* in Sweden. To get an indication whether the differences attested between nations are significant for greetings used in only one nation, we have made additional ancova-analyses. In these tests, we have ignored the hierarchical structure of the data and have controlled for age and gender of both speaker and interlocutor. The results are presented in Table 3.

Table 3: Percent of each greeting said in different regions, divided by nations. Difference tested with ancova.[a]

		Greeting				
Country	**Region**	*Hejsan*	*Tjena*	*God dag*	*Hallå*	*Moi(n)*
Finland	**Helsinki**	4.10 %	0.00 %	3.69 %		3.69 %
Finland	**Jakobstad**	0.00 %	0.00 %	0.00 %		0.00 %
Finland	**Karleby**	0.00 %	0.00 %	0.00 %		0.00 %
Finland	**Raseborg**	3.85 %	0.00 %	0.00 %		1.92 %
Finland	**Vasa**	10.20 %	0.00 %	2.04 %		0.00 %
Finland	**Turku**	4.19 %	0.47 %	1.40 %		1.40 %
Sweden	**Gothenburg**	0.67 %	12.08 %		4.70 %	
Sweden	**Karlstad**	4.26 %	6.38 %		0.00 %	
Sweden	**Luleå**	0.00 %	0.00 %		5.26 %	
Sweden	**Osby**	7.69 %	0.00 %		0.00 %	
Sweden	**Stockholm**	4.21 %	1.05 %		0.00 %	
Sweden	**Umeå**	0.00 %	4.76 %		0.00 %	
Total		**3.84 %**	**2.56 %**	**2.23 %**	**2.07 %**	**2.07 %**
Significance of difference (with control variables):[b]						
National level			***	*	***	**
Regional level			***	**		
Venue level			***	***		

* p<0.05, **p<0.01, ***p<0.001

a: Empty cells denotes that the greeting was not said in the corresponding country. Empty cells are not used when calculating the total row nor in testing difference between regions.
b: Differences on each level is tested with controls for age of customer, gender of customer, age of staff, and gender of staff. Hierarchical structure of data is ignored.

These further tests indeed suggest that there are significant differences between nations for all greetings except *hejsan*. If we consider the regional level, there also seems to be a significant difference in where customers use *tjena* (mostly used in Gothenburg in Sweden) and *god dag* (used in Helsinki, Turku, and Vasa in Finland). Staff members use *god dag* also in other regions (Karleby and Jakobstad in Finland). *Moi(n)* is only used in the southern parts of Finland, that is, Helsinki, Turku, and Raseborg, but not in Vasa, Karleby, or Jakobstad (on the Finnish north-western coast). In Sweden, the qualitative analysis shows that *hallå* is almost exclusively used in Gothenburg; this regional pattern is not statistically significant, but close to significant (p=0.087).

However, depending on how we interpret the statistics, we might come to a different conclusion. Some additional statistical analyses (not shown here) indi-

cate that the national differences in the use of *tjena* (used mainly in Sweden) and *god dag* (used only in Finland) are not general differences between nations, but rather exist because the phrases are used in specific venues in the specific nations. In other words, whether these greetings are nation-specific or venue-specific is to some extent a matter of interpretation. However, we must keep in mind that the venues are not unattached spaces but are always situated in the spatial context of a region and a nation as well. We can never single out one spatial dimension; every spatial layer has traces of the other layers.

Furthermore, we need to ask if it is only the geographical space that affects the use of these greeting forms. There are also other factors that influence pragmatic behavior. The statistical analyses (see Table 2) tell us that *tjena* is used more often by men and younger (below 50) customers, and more often to men and younger staff persons. In addition, the qualitative analyses reveal that *tjena* is mostly used when a young man greets another young man at an event booking office in Gothenburg. For example, one young male staff member greets all female and most of the older male customers with *hej* but greets other young men with *tjena* (13 cases). Another young male staff member uses *hej* in most interactions, but in five cases where he greets other young men, he greets with *tjena*. At the other end of the formality scale we find *god dag*, which is clearly affected by age: it is almost only used by older customers. It therefore seems that both age and gender affect greeting behavior together with venue, region, and nation, especially when it comes to the informal *tjena* and the formal *god dag*.

If we take a closer look at how *tjena* and *god dag* are used in the actual service encounters, we gain further insights into the social meanings they carry. In Extract 2 we have an example where the customer, after having reciprocated the staff member's first greeting *hej*, opts for *god dag*, the more formal greeting form.

Extract 2: Box office Helsinki, S = 25 y.o. female, C = 60 y.o. male

S: **hej**
C: **hej god dag** ( )
S: **god dag**
C: .h ja hörde i radion om en eh sånhän stand up
.h I heard on the radio about a uh kind of stand up

In this sequence, the 25-year-old female staff member first greets the 60-year-old male customer with *hej*. The customer responds with a reciprocal *hej* but continues directly with *god dag* 'good day'. In this case, then, the customer both aligns (with *hej*) and disaligns (through *god dag*) with the staff, signaling a preference for the more formal greeting form. The staff then accommodates to the customer and produces *god dag* as a return greeting to the customer's *god dag*. The change of greeting form suggests that *god dag* marks social categories and relationships relevant to the participants. The staff member's sensitivity to this becomes visible through

her reuse of the customer's *god dag* even though she has already produced another greeting and in principle managed the initiation of the exchange. It is possible that *god dag* is used as a resource to mark a greater level of formality and sensitivity to the interlocutors' age: in Extract 2, the staff member is a young female person, whereas the customer is an older male person.

We also have examples where a shift from a more neutral greeting to an informal one occurs. This is the case in Extract 3 where the customer initiates the greeting sequence with *hej*, but the staff member uses *tjena* in his return greeting. As in (2) above, the first greeter aligns by reusing the second, altered greeting form.

Extract 3: Box office Gothenburg, S = 30 y.o. male, C = 51 y.o. male

C: **hej**
S: **tjena**
C: **tjena** ja har ett bokningsnummer som heter fjorton tjugoett (.) nollfem nitton tjena
I have a booking reference that is fourteen twenty-one (.) zero five nineteen
S: °fjorton tjugiett nollfem nitton°
°*fourteen twenty-one zero five nineteen*°

Apparently, the participants in these examples are sensitive to their interlocutors' greeting forms by shifting to an alternative form and then accommodating to the alternative form. This suggests that the form of greeting is important and that it may index something specific to those present in these interactions.

Turning to statistics again, the venue effect persists even when we control for the gender and the age of the participants. The use of greeting forms differs between local venues, and not only because some venues attract customers of a certain age or gender. Rather, the greetings that are used, for example, when someone buys a ticket to a sports event are different from the greetings used at a library service desk or a theater box office. Our qualitative analysis suggests that *tjena* is used more often in the former type of context and *god dag* in the latter. In other words, the venues seem to constitute local linguistic cultures where a certain greeting repertoire is used. We will return to this in the discussion in the next section.

4. Discussion and conclusion

In this chapter, we have looked at variation in pragmatic routines across local, regional, and national space. We have also problematized to what extent these layers of space play a decisive part in pragmatic behavior by including other variables. As an example of the complexities of pragmatic variation we presented an illustrative study of how greeting behavior varies in Swedish service encounters. Greetings, as a recurrent form of social action, lend themselves to a multi-layered investigation of spatial influence on pragmatic behavior. They show intriguing but

complex patterns of spatial variation when we focus on other greeting forms than the generic, socially neutral *hej* in Swedish.

Indeed, we could establish that geographical variables matter for pragmatic variation. At the (necessarily abstract) level of nation, we observed that non-*hej* greetings are used more in the encounters in Sweden than in Finland. Informal greetings, in particular *tjena,* are almost exclusively used in Sweden, while the more formal *god dag* only appears in the data from Finland. Furthermore, the regional distribution of these greetings varies below the level of "nation", with *tjena* having a strong association with the town of Gothenburg and *god dag* with the larger towns in Finland. If we focus further on the local level, that is, the contexts where the interactions take place, these greetings recur at specific venues: *tjena* at an event booking office to ice hockey games and *god dag* at theater box offices.

However, as we have seen, not only geographical variables affect pragmatic routines: also social variables such as age and gender influence greeting behavior. It seems, then, that the speakers' age and gender interact with geographical variables in the choice of pragmatic realizations (bearing in mind that we here focus on other greetings than the neutral *hej*). The results suggest that the informal *tjena* and the formal *god dag* are more semiotically significant, attested not least in the examples above where participants alter the greeting form they have initially used in the opening sequence. We have indications that *tjena* is used by young males interacting with other young males, especially at an event booking office selling tickets to hockey games in Gothenburg, Sweden. *God dag* is used by and to older customers, especially at a theater box office in the Finnish capital. Still, the fact that these pragmatic patterns are typical of certain groups in certain contexts does not necessarily mean that they have an apparent indexical meaning to every speaker in every context (such as 'young Swedish hockey male' and 'older Finnish theater visitor'), or that everyone has the same intentions when using them. Instead, the occurrence of certain pragmatic routines in different (social and geographical) spaces should be seen as recurring cultural patterns, the effect of a cultural conditioning, or a first-order indexicality (Johnstone and Kiesling 2008; see also Silverstein 2003). In other words, *tjena* and *god dag* seemingly have social meanings to the participants and as such can be a resource to perform social distance or belongingness (Baumeister and Leary 1995; Prins 2006).

Social and geographical spatial dimensions hence interact, and the different dimensions are always related to other contextual dimensions. It is also important to keep in mind that each venue is situated in a region, situated further in a nation, and that these spatial layers are intertwined with one another and always present. The lower spatial levels such as the local venue also generate parts of the variation that can be associated with the higher levels.

Furthermore, there is a dialectic relationship between people and spaces. People create and shape spaces, but certain spaces may also influence people to act in certain ways (see e. g. Ronström 2016). This was revealed by the statistical analyses in

our study: there is a venue-effect, meaning that the use of greetings varies between different venues, and not only because customers of a certain age or gender visit these venues. One interpretation is that the activity context (e. g., orienting to an ice hockey game vs. a Shakespeare drama) plays an important part in pragmatic behavior. It is also possible that the investigated venues attract customers with a certain language use – not only associated with age and gender, but with subcultures of certain kinds. In addition, a space, with all its characteristics and different actors present, may have recognizable cultural meanings to those present. From our analyses, it seems that some of the local contexts (here measured as venues) have the potential to *do* something to the customers visiting them, making certain parts of Swedish speakers' pragmatic repertoires more relevant than others. Again, using a certain greeting form may create a feeling of belongingness with a space, as well as with the people who inhabit those spaces. As space is not only a fixed geographical location, but also a feeling or experience, the venue-effect that is observable in our analyses could be a result of the visitors' interpretation of mutual and shared cultural references, but also of their own individual interpretation of a space based on earlier experiences, attitudes, and feelings (see also Massey 1994).

When considering pragmatics and spatial variation, our study hence suggests that it is difficult to single out geographical space as a decisive or even a one-dimensional factor for linguistic variation. Rather, space is a layered concept. There are different granularities of geographical and social spaces, and certain individuals or groups typically inhabit certain spaces and are socialized into the communicative subcultures associated with them. This should be considered carefully in attempts to map out pragmatic variation to spatial parameters.

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20. Pragmatic variation across national varieties of pluricentric languages

Klaus P. Schneider and J. César Félix-Brasdefer

Abstract: This chapter examines pragmatic variation at the level of national varieties of pluricentric languages, i. e. languages with several interacting centers and norms of their own (Kloss 1978; Clyne 1992). In particular, key aspects of pragmatic variation are described as they occur across national varieties of languages such as Arabic, Chinese, Dutch, English, French, German, Spanish, and Swedish. An overview is given of relevant studies, specifying the varieties examined and contrasted (e. g. Peninsular Spanish and Mexican Spanish) and the phenomena analyzed and compared (e. g. speech acts, discourse markers, prosody). Methodological choices are also discussed, specifically data types and data collection instruments (e. g. role plays or corpus searches), and also methodological principles. The framework adopted in the type of work surveyed in this chapter is, as a rule, variational pragmatics, which is an approach concerned with pragmatic variation within a single language and focused on the impact of macrosocial factors on language use in (mostly spoken) interaction (for a recent summary of the field, cf. Schneider 2021). Region is one such macrosocial factor, along with age, gender and a few others. In this context, region has been theorized as a multifaceted concept pertaining to different dimensions in geographical space, among them the national, subnational, and local level. Region is, in other words, "an umbrella term for a hierarchy of spatial entities" (Schneider 2010: 248). To date, most research on regional pragmatic variation has, however, been carried out at the national level of pluricentric languages.

Keywords: pragmatic variation, pluricentricity, region, national variety, identity, language use conventions

1. Introduction

Space is a key concept in dialectology, which is one of the oldest disciplines in linguistics, dating back to the early nineteenth century (Romaine 1998). More particularly, linguistic variation in geographical space is central to dialect geography, i. e. the traditional type of dialectology, starting in the second half of the nineteenth century. Research in this prototype of traditional dialectology is aimed at studying the distribution of linguistic features across regions usually within one country, and at producing maps and entire atlases showing dialect areas and the bounda-

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ries between them (Chambers and Trudgill 1998: 13–31). The first linguistic atlas ever was Wenker's *Sprachatlas des Deutschen Reiches* ('Linguistic Atlas of the German Empire', 1889–1890), a recent example is *The Atlas of North American English* (Labov et al. 2006), illustrating that this tradition has also been continued in sociolinguistics, albeit with a focus of urban rather than rural populations (e. g. Schneider 2005b; Wolfram and Schilling 2016). Research in dialectology has focused predominantly on differences in pronunciation and vocabulary, and also in grammar, although to a more limited extent. For instance, the atlas by Labov et al. (2006) deals with phonetic and phonological differences exclusively, whereas older work in dialect geography was more interested in onomasiological and semasiological differences (e. g. Kurath et al. 1939–1943). An early call for integrating pragmatic analysis into dialectology (Schlieben-Lange and Weydt 1978) went unnoticed for a long time. Twenty years later, Wolfram and Schilling-Estes (1998: 93–101) included a short and episodical section on "Language use and pragmatics" in their textbook on dialects and variation in American English, yet systematic work on pragmatic variation in geographical space, and specifically across regions within a country, started years later.

In the field of pragmatics, on the other hand, there was no interest in linguistic variation, let alone in the distribution of pragmatic features in geographical space, at least in the initial stages of its comparatively short history. The language philosophers whose speech act theory gave rise to linguistic pragmatics (Austin 1962; Searle 1969), while focused on their native English, were interested, like Grice (1975), in the foundations of human communication. It was not before the mid-1980s that they were criticized for ethnocentrism, "mistaking Anglo-Saxon conversational conventions for 'human behaviour' in general" (Wierzbicka 1985: 146). Wierzbicka's call for a comparison of different languages gave rise to contrastive pragmatics, yet her remarks on pragmatic variation across national and social varieties of the same language (1985: 146) did not spark any interest for many years, until in 2008 a framework was formulated for the study of these types of variation in the article "Where pragmatics and dialectology meet" (Schneider and Barron 2008), giving rise to variational pragmatics. So the "global perspective" on variation across different languages adopted in contrastive pragmatics (i. e. inter-lingual variation) is complemented by a "local perspective" (Fried 2010) on variation within a single language (i. e. intra-lingual variation).

Intralingual variation can be effected by a range of different macrosocial factors, including gender, age, and region. According to Schneider and Barron (2008: 17), "regional variation is an umbrella term for different types of language variation in geographical space, including not only the national and the sub-national levels, but also the local and sub-local levels." Additionally, a level of supra-national cultural space has been postulated (Schneider 2021; also Schneider and Placencia 2017). In this chapter, we focus on the first perspective, pragmatic variation across national varieties of pluricentric languages, that is, two or more varieties of the

same language that may share a geographical space (e. g. Canadian English and American English or varieties of Spanish in Latin America) and are often spoken in different nation states, including languages such as Arabic, Chinese, Dutch, English, French, German, Greek, Spanish, Portuguese, Swedish, or Swahili.

This chapter focuses on the pragmatic dimension of pluricentric languages across geographical space. We take a pragmatic variation perspective (Schneider 2010, K.P. Schneider 2020; Schneider and Barron 2008) to examine regional pragmatic differences across national varieties. The organization of the chapter is as follows: after an overview of key concepts of linguistic pluricentrism and of variational pragmatics, we describe the scope of pragmatic variation across national varieties of representative pluricentric languages that have been investigated to date. Next, we review key studies that have analyzed different aspects of pragmatics across national varieties of pluricentric languages such as English and Spanish, two languages that have received the most attention. We will also examine research in other languages where research is scant, such as Arabic, Chinese, French, German, and Swedish (for Swedish see the chapter by Nilsson et al. this volume). The next section presents a case study of three national varieties of Spanish (Argentina, Mexico, and Spain). It looks at variation at the actional and stylistic levels in the context of service encounters (sale transactions) in small shops. We then address methodological issues related to an analysis of pragmatic variation of national varieties, followed by a conclusion and future directions.

2. Linguistic pluricentrism as language-internal variation

Research on linguistic pluricentrism has received considerable attention among national varieties of a language, as well as among dominant and non-dominant varieties. Pluricentric languages, such as English, German, French, Swahili, Dutch, Chinese, Arabic, Portuguese, and Spanish, have been generally defined as languages having different national varieties, each with a standard codified register. According to Clyne (1992), following Kloss's original mention of the term (1978: 66–67) and Stewart's (1968: 534) notion of polycentric, "pluri-centric" refers to languages with "several interacting centers, each providing a national variety with at least some of its own (codified) norms" (Clyne 1992: 1). Ammon (2005) elaborates on the notion of pluricentric languages with the distinction between center (linguistic community) and language-variety community (a subset of the entire language community), as well as the distinction between high- and low-varieties of the same language. The author goes on to say that pluricentric languages have many centers and many standard varieties. Furthermore, pluricentric languages function as unifiers and dividers (Clyne 1992): they unite in the sense that speakers of that language use the same language in different regional spaces, but also reflect differences in national identity, and show variation through defined linguis-

tic-specific markers and language use in the lexicon, phonology, morphosyntax, and pragmatics.

Pluricentric languages can also be separated through the relation between language and identity and language and power (Clyne 2004). According to this definition, Spanish is a pluricentric language (spoken in more than twenty nations as an official language, including Spain, Equatorial Guinea, and 19 countries in Latin America [see below for more information]). Other pluricentric languages include Portuguese (spoken in Portugal, Brazil, East Timor, Angola, Mozambique, Guinea Bissau, Cape Verde, and Sao Tomé) and Quechua (an indigenous language spoken in regions of Bolivia, Ecuador, and Peru). However, as noted by Kristiansen (2013), and in more detail by Auer (2013), the definition of pluricentrism as national varieties spoken in one nation has been revised to include internal-language variation within the frontiers of a nation state with dominant and non-dominant varieties, such as the pluricentricity of German spoken in Germany, Austria, Belgium, and Switzerland, as well as standard varieties that occur in one geographical space, such as the case of High-German and Low-German (Clyne 1992: 459 uses the term Dominant nations; Auer 2013).

For a language to be pluricentric, it must meet several conditions which should be seen as a continuum to deem a language more or less pluricentric. The following are based on Clyne (1992: 1) and Muhr (2012a: 29–35):[1]

1. Occurrence: A certain language occurs in at least two nations that function as "interacting centres" (Clyne 1992: 1).
2. Linguistic distance: The variety must have enough linguistic (and/or pragmatic) characteristics that distinguish it from other varieties, and [because of that, it can] serve as a symbol for expressing identity and social uniqueness.
3. Status: The language must have an official status in at least two nations either as (a) state-language (e. g. German in Austria and Germany), or (b) co-state language (e. g. German, French and Italian in Switzerland), or at least as (c) regional language (e. g. German in Italy: South Tyrol, Catalan in France: Department Pyrénées-Orientales, etc.). The language, therefore, must have official recognition that exceeds the status of a minority language as it otherwise cannot function as a norm setting center.
4. Acceptance of pluricentricity: The language community must accept the status of its language as a pluricentric variety and consider it as part of its social/national identity.
5. Relevance for identity: The national norm has to be relevant to social identity and lead "to at least some of its own (codified) norms" (Clyne 1992: 1).

[1] These criteria are also cited on the site of pluricentric languages: http://www.pluricentriclanguages.org/pluricentricity/what-is-a-pluricentric-language

6. Codification in progress or done and, on that basis, there is deliberate use of the national norm by model speakers and state institutions.
7. Taught in schools and brought to the awareness to the language community – promoted and disseminated.

Thus, the more conditions a language meets, the higher degree of pluricentricity it will have. These are the criteria Edelmann (2015) used to determine that Catalan is considered a pluricentric language, spoken in four nations (Spain, Andorra, France, and Italy), as well as in different autonomous communities in Spain (Catalonia, Valencia, and the Balearic Islands).

Research on linguistic pluricentricity has been conducted in many languages of national varieties and in geographical spaces where high- and low-varieties of a language coexist with other languages, such as Catalan (Edelmann 2015) and Serbo-Croatian, a unique situation marked by the "coexistence of several national varieties within what was an attempt at a unified nation" (Clyne 1992: 457). Clyne (1992) shows a collection of seventeen pluricentric languages of different families, based on issues of asymmetry, power, and identity. Muhr (2012b) represents an edited collection of articles that address issues related to non-dominant varieties of pluricentric languages; Soares da Silva (2013) edited a volume that addresses current issues of pluricentricity, language variation, and socioeconomic dimensions; and Muhr and Marley (2015) advance our understanding of other pluricentric languages that had not been investigated such as Bengali and Catalan, other standard and non-dominant varieties, as well as pluricentric languages with diglossia and multidiglossia. Overall, most of these studies focus on issues of pluricentrism related to issues of identity, language and power, low- and high-varieties of a language in geographical spaces where two or more varieties coexist, as well as linguistic variation with a primary focus on the lexical, phonological, and morphosyntactic levels.

3. Pragmatic variation: A focus on regional varieties of pluricentric languages

Intra-lingual pragmatic variation, as mentioned in Section 1, is systematically studied in variational pragmatics. This approach is focused on the intersection of pragmatics and dialectology and examines differences which can be correlated with macrosocial and microsocial factors that influence communicative language use. Relevant macrosocial factors include region, gender, age, ethnicity, and socioeconomic status, while microsocial factors include social distance/degree of familiarity, social power, and situational variation. Region, whose impact on language use has received more attention in research than any of the other factors mentioned here, has been theorized as a multifaceted concept pertaining to five levels

in geographical space: supranational, national, subnational, local, and sublocal (Schneider and Barron 2008). Region is, therefore, not limited to the traditional understanding in dialectology, but used here as "an umbrella term for a hierarchy of spatial entities" (Schneider 2010: 248). To date, however, most research has been carried out at the national level. Early work on regional pragmatic variation, is surveyed in Placencia (2011), with special focus on national varieties of Spanish and English.

Schneider and Placencia (2017) offer a comprehensive review of studies on pragmatic variation in im/politeness across national and sub-national varieties of some pluricentric languages prior to 2017, and Félix-Brasdefer (2021) provides a critical review of regional pragmatic variation across varieties of Spanish (2009–2019), including two or more varieties from the same national variety.

In this chapter we look at pragmatic aspects of pluricentric languages according to eight levels that have been described in the literature on pragmatic variation. The first five levels, proposed by Schneider and Barron (2008, [formal, actional, interactional, topic, organizational]), focus on synchronic pragmatic regional variation across national varieties of the same language (pluricentric languages) and sub-national or local variation contrasting two or more regions within the same country. The next three levels are described in Félix-Brasdefer (2015, 2021) based on previous models: stylistic, non-verbal, and prosodic.

We briefly describe the eight levels of analysis that will be used to examine different aspects of pragmatic variation across pluricentric languages:

– The *formal level* concerns the formal analysis of linguistic expressions with regard to form, function, and force in specific contexts. It includes the analysis of discourse markers, mitigators, epistemic expressions, and backchannels. For example, previous studies have considered this level by analyzing regional variation of the discourse marker *pues* 'well' in Spain, Ecuador, and Chile (Fuentes-Rodríguez, Placencia and Palma-Fahey 2016) or the use of *would* as a hedging device (Farr and O'Keeffe 2002).
– The *actional level* examines the pragmalinguistic strategies used in speech acts (e. g. requests, offers, greetings). For example, Félix-Brasdefer and Yates (2020) identified intralinguistic variation in the use of requests for service in Mexico City, Buenos Aires, and Seville, and Barron (2008) examined regional variation of requests in Irish English and British English.
– The *interactional level* centers on the analysis of speech act sequences and joint-social actions (e. g. compliment-response, invitation-acceptance/refusal). It highlights the organization and sequencing of information, such as conversational openings and closings. For example, Félix-Brasdefer (2015: Chapters 4–5) examined the sequential organization of service-encounter interactions in different regions of Mexican Spanish, and Schneider (2008) compared the sequential patterns during the negotiation of small talk in Irish English, British English, and American varieties of English.

- The *topic level* is concerned with discourse content throughout the interaction, as it includes topic selection, topic management, topic abandonment, topic shift, and the reintroduction of topics. For instance, Schneider (1987) examined topic selection in (British) small talk. In the context of service encounters in supermarkets and information centers, Félix-Brasdefer (2015: Chapter 7) looked at the management of topic choice and topic development during the negotiation of service.
- The *organizational level* analyzes the organization of turn-taking in conversation and is influenced by conversation analysis (e. g. Sacks, Schegloff and Jefferson 1974; Schegloff 2007). It addresses aspects of turn-taking, overlap, interruption, silence, and preference organization. Studies conducted on this level are concerned with turn-taking procedures in openings, closings, and request-response sequences, such as the organizational analysis of service encounter interactions in Mexico and the United States (Félix-Brasdefer 2015) or contrasting response tokens in British and American conversations (McCarthy 2002).
- The *stylistic level* (Spencer-Oatey 2000) includes choice of tone (e. g. serious or joking), shifting from business talk (e. g. buying and selling) to a friendly tone (e. g. joking or small talk), and the appropriate selection of address forms to open, close, and negotiate a colloquial or business transaction. For instance, the tone of the sales transaction based on the participants' use of formal and informal address forms, greetings, and politeness formulas has been analyzed in two varieties of Ecuadorian Spanish (Placencia 2008) and in three other varieties of Spanish (Félix-Brasdefer and Yates 2020).
- The *non-verbal level* (Spencer-Oatey 2000) consists of social actions performed through gesture, such as body movement, hand movement, or gaze direction, as studied by Dorai and Webster (2015), who offered a conceptual model of non-verbal communication in service-encounter contexts. The authors showed that both verbal and non-verbal elements between the service provider and the service seeker influence the service seeker's affect or subjective feelings, which, at the same time, impact the evaluation of the service encounter.
- Finally, the *prosodic level* (Félix-Brasdefer 2015, 2021) focuses on pragmatic meaning conveyed through prosodic information: intonation (i. e. low or high pitch), stress, volume, duration, and timing (i. e. rhythm and rate of speech). For example, Félix-Brasdefer (2015: Chapter 6) examined prosodic resources utilized during the realization of requests for service with a falling tone or rising intonation that signaled polite requests. The interpretation of social action (e. g. requests for service, offers, greetings, clarification requests, payment sequence, or closing, etc.) is frequently contingent upon the interlocutor's understanding of the prosodic cues that accompany the utterances.

The levels of pragmatic analysis presented here attempt to provide a comprehensive examination of pragmatic variation of national varieties of pluricentric languages. It should be noted that K.P. Schneider (2020) proposed modifications and extensions of the two components of variational pragmatics, namely, the variational and the pragmatic, with a particular focus on the levels of pragmatic analysis. The author advocates for the interdependence of all levels of analysis, i. e., formal, actional, interactional, topic, and organizational. Finally, a top-down approach is promoted for considering the discourse position of speech acts in a communicative event, the respective subtype of this act with its specific realization, along with the discourse history, such as previous events, and the relationship between interlocutors. K.P. Schneider (2020, 2021) calls for a more systematic inclusion of written discourse in variational pragmatics, which has so far been largely neglected. Some studies of pragmatic variation in written English discourse are discussed below.

4. Pragmatic variation in pluricentric languages

This section offers a selective account of pragmatic variation across national varieties of English and Spanish. Further languages investigated include French and German, and less frequently Arabic, Chinese, Dutch, and Swedish. The current literature exhibits a clear bias for Indo-European families, specifically Romance and Germanic languages. However, Chinese too has received attention, as seen in the conference on "1st East Asian Pragmatics Symposium: Variational Pragmatics in East Asian Languages" held in September 2019 (cf. LINGUIST List: Vol-29-4912, 10 December 2018), and there is also recent work on pragmatic variation across national varieties of Arabic.

Among the macrosocial factors, region clearly dominates. Most studies of regional variation compare two or more national varieties. For Spanish, these include the varieties spoken in Latin America, specifically in Argentina, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Mexico, Nicaragua, Panama, Peru, El Salvador, and Venezuela. These varieties are compared to each other or to Peninsular Spanish. As a rule, the data for these comparisons were collected in one location in each of the countries involved and are therefore not representative of language use across the respective country. Examples include Félix-Brasdefer (2009) on requests in San José (Costa Rica), Santiago (Dominican Republic), and Mexico City, and Placencia et al. (2015) on nominal address in Santiago (Chile), Quito (Ecuador), and Seville (Spain). Less frequently, locations within the same country are contrasted, e. g. in Lázaro Ruiz and Ramajo Cuesta (2015) on compliments in five regions of Spain (Andalusia, Castile-Leon, Catalonia, Madrid, and Valencia). For English, the national varieties studied are American, Australian, British/English, Canadian, Irish, and New Zealand English, and also Cameroonian, Ghanaian, and Namibian English. As a rule, two native-language varieties are

compared, rarely three or more. Examples include Barron (2005, 2008) comparing English and Irish English, Jautz (2013) comparing British and New Zealand English, Anchimbe (2018) comparing Cameroonian and Ghanaian English, Schneider (2005a) comparing English, Irish and American English, and Schröder and Schneider (2018) comparing English, Irish, American and Namibian English. Finally, work on other languages includes comparisons of French French and Canadian French (e. g. Schölmberger 2008), German German and Austrian German (e. g. Muhr 2008), German German and Swiss German (e. g. Schüpbach 2014), Netherlandic Dutch and Belgian Dutch (e. g. Plevoets et al. 2008), Swedish Swedish and Finnish Swedish (e. g. Nilsson et al. 2020; also Nilsson et al. this volume), Mainland Chinese and Taiwanese Chinese (e. g. Ren 2015), Saudi Arabian and Jordanian Arabic (Al-Shorman 2016). In this section, we showcase selected studies of pluricentric languages that contrast two or more national varieties of a language at different levels of pragmatic analysis.

4.1. English as a pluricentric language

While there can be no doubt that English is a pluricentric language, the notion of pluricentricity has not played a significant role in the study of national varieties of the English language. National varieties of English around the globe have been, and are being, studied in the World Englishes community (cf. the journal *English World-Wide: A Journal of Varieties of English*, since 1980, and the book series *Varieties of English Around the World*, since 1982). In this community, national varieties of English are traditionally classified according to Kachru's (1985) famous model of concentric circles. In this model, three types of national varieties are distinguished: (1) inner-circle varieties, (2) outer-circle varieties, and (3) expanding-circle varieties. Inner-circle varieties of English are spoken natively, i. e. as a first language, in countries such as the United Kingdom, the United States, and Australia. Outer-circle varieties are spoken as a second language in postcolonial societies, in such countries as Kenya, Ghana, and India, where English is an official language. Next, expanding-circle varieties are spoken in such countries as Germany, Russia, and China, where English has no official status, is learnt as a foreign language in institutional contexts (e. g. school, college), and used in public life and the media to only a limited extent. Apart from British, American and Australian English, inner-circle varieties include the Englishes spoken in Ireland, Canada and New Zealand, while there is a large number of outer-circle varieties world-wide, notably in sub-Saharan Africa, Asia, and the Caribbean, spoken overwhelmingly in former British colonies.

Research in the World Englishes community has concentrated on these inner-circle and especially outer-circle varieties, with a focus on the lexical, phonological, and morphosyntactic levels (for overviews, cf. e. g. Kortmann and Schneider 2004; Kirkpatrick 2010; Trudgill and Hannah 2017; Filppula et al. 2017). At

present, the World Englishes community is only beginning to consider the level of pragmatics (cf. E.W. Schneider 2020: 26, 44). Researchers in variational pragmatics, on the other hand, are only beginning to study outer-circle varieties of English. Most research in this paradigm dealing with the English language has concentrated on inner-circle varieties, yet there are also examples of research on outer-circle varieties, e. g. Mulo Farenkia (2013), Schröder and Schneider (2018) and Haselow (2021).

The systematic study of pragmatic variation across national varieties of English in variational pragmatics is predated by a few scattered studies, including Creese (1991), Tottie (1991), Leech (1999), Schneider (1999), and McCarthy (2002). While Creese (1991) and Schneider (1999) focus on the actional level, the remaining three studies are focused on phenomena related to turn-taking, i. e. the organizational level, which in variational pragmatics is still understudied. In their corpus-based studies, Tottie (1991) examines variation in backchannelling behavior, McCarthy (2002) variation in non-minimal listener responses (e. g. *absolutely*, *wonderful*), and Leech (1999) variation in the use of vocatives. In either case, they examine differences between British and American English. Creese (1991), who is also interested in differences between these two inner-circle varieties, analyzed speech act variation, focusing on five acts: requesting, thanking, apologizing, complimenting, and greeting. These are studied by interviewing speakers of the two varieties under inspection; in a second part of her study, she analyzes ethnographically collected compliment data. Compliment responses are the focus of Schneider (1999), who partially replicates Chen's (1993) contrastive study involving a production questionnaire with four discourse completion tasks (DCTs), comparing Chen's American English data to his own Irish English data. Even older than these studies is Holmes's seminal work on speech acts in sociolinguistics. Her articles on apologies and on compliments date back to the 1980s and are summarized in Holmes (1995). While this work is focused essentially on gender variation in New Zealand English, she also compares her compliment data to the American English compliments collected by Manes and Wolfson (1981). This comparison reveals that New Zealand compliments are less formulaic and less emphatic than American compliments.

In variational pragmatics, work studying pragmatic differences between national varieties of English has concentrated first and foremost on the actional level, and secondarily, on the formal level of analysis (for summaries, cf. Schneider 2012; Schneider and Placencia 2017; Schneider 2021). An early example is Schneider (2005a) comparing responses to gratitude thanks in British English (specifically English English), Irish English and American English, showing clear variety-specific preferences. Speakers from England favored OKAY (e. g. *Okay*/*It's okay*/*That's okay*) at 51.2 %, whereas WELCOME (e. g. *Welcome*/*You are welcome*/*You're very welcome*) was favored by speakers from the United States (53.5 %), and also speakers from Ireland (34.2 %). To these findings, data from Canada were

compared, showing a preference for NO PROBLEM at 44.2 % (Schneider 2017), and also data from Namibia, showing a preference for PLEASURE (e. g. *It's a pleasure*/*It was a pleasure*/*My pleasure*) at 61.1 % (Schröder and Schneider 2018). The data material for all of these studies was elicited from the same age group (adolescents) by using the exact same DCTs. Responses to gratitude were furthermore examined by Bieswanger (2015), who collected his data ethnographically in participant observation, asking for directions, in New York City and in Vancouver. He also found that Americans prefer WELCOME, yet at a lower frequency (37.1 %). His Canadians, however, preferred YEAH (28.6 %) and also WELCOME (27.1 %), but not NO PROBLEM, which they used at only 11.4 %. Bieswanger attributed all divergences from Schneider's (2005a) American English findings to the different data collection methods employed, i. e. his field notes and Schneider's DCTs, emphasizing that his results reflect natural behavior, while Schneider's reflect prototypical behavior. However, Bieswanger's respondents were considerably older and lived in New York City, while Schneider's younger respondents lived in small towns in the south of the USA; also the favors thanked for differed (directions versus a coffee and a lift in a car), rendering immediate comparison problematic (Staley 2018: 256; Dinkin 2018: 193–194).

Further speech acts which have been studied across national varieties of English include expressions of gratitude, requests, responses to requests, offers, responses to offers, compliments, and apologies. Thanking was studied by Jautz (2013) comparing formulaic realizations in British English and New Zealand English using the British National Corpus and the Wellington Corpus of Spoken New Zealand English, with a special focus on radio phone-ins and broadcast interviews. Her book-length treatment is full of valuable observations concerning a range of differences pertaining to forms and functions of thanking formulae. Overall, she finds that more, and more different, expressions are used in British English, while the phatic function of thanking formulae is more frequent in New Zealand English. Furthermore, New Zealand English realizations are generally more informal.

Requests were investigated by Barron (2008) in Irish English and English English using a DCT questionnaire. She found that in both varieties query preparatory was the dominant realization strategy (e. g. *Can you…?*). Notable differences were found, on the other hand, in the use of modificational devices. For instance, the number of external mitigators in standard query preparatory requests was higher in Irish English than in English English. Requests were also studied by Flöck (2016), who focuses on British and American English. In her monograph-length treatment, Flöck provides a detailed analysis of request realization and modification and compares DCT data to corpus data from the British component of the International Corpus of English (ICE-GB) and the Santa Barbara Corpus of Spoken American English. As a result, Flöck challenges the validity of DCTs.

Responses to requests were investigated in Flöck and Geluykens (2018). Using British and American corpus data, they analyze this speech act in terms of prefer-

ence organization, i. e. whether or not responses comply with the initial request. In both varieties, responses were more frequently preferred than dispreferred second pair parts. A difference which emerged in the analysis was, however, the higher number of implicit compliance in American English.

Offers have been studied by Barron (2005), comparing data from a free DCT administered in Ireland and England. Despite general similarities between the two varieties regarding offer realization, noteworthy differences also occurred. For example, the realization strategy "predication of a future act" is used significantly more often in Irish English than in English English (33.8 % versus 4.3 %). The strategy "question future act of speaker" (e. g. *Will I...?*) is exclusively used by Barron's Irish informants, and not used at all by her informants from England.

In a more recent study, Anchimbe (2018) contrasted offers and responses to offers, specifically offer refusals, across two outer-circle varieties of the English language: Ghanaian English and Cameroon English. By and large, in the quantitative DCT-based analyses hardly any differences emerge between the two data sets, suggesting that at least these two postcolonial communities are essentially similar in their use of English in general and their offer behavior in particular, e. g. in showing respect to the elderly or in their use of kinship terms when addressing people other than family members.

Mulo Farenkia (2013) also focuses on language use in Cameroonian English, but examines compliments and compares them to compliments in Canadian English. In his DCT-based study, he finds that the Cameroonians prefer single head compliments, whereas the Canadians prefer more complex compliments, involving a number of supportive moves. Furthermore, he finds that Cameroonian compliments were much more indirect than Canadian compliments.

Additionally, Barron (2009) is a rare study of pragmatic differences across regions within the same country. The author analyzes apologies in two southern states in the USA, namely Tennessee and Virginia. Her DCT data show that both groups of informants favor the illocutionary force indicating device (IFID) *sorry*, but for speakers from Tennessee explanations/accounts play also a significant role. They occurred in 26.9 % of their apologies, while they were not used at all by the speakers from Virginia. This study is a reminder that pragmatic differences exist not only between, but also within national varieties of pluricentric languages.

Apart from the actional level of analysis, the formal level has received much attention in the study of pragmatic variation across national varieties of English. For instance, Aijmer (2013) is a book-length corpus-based study of pragmatic markers such as e. g. *well*, *in fact*, and *actually*, which are examined in a wide range of text types in British English. Her book also includes one chapter (chapter 4) in which pragmatic markers are compared across national varieties. In this chapter, the focus is on "general extenders" such as *and things* and *or stuff like that*, which occur at the end of utterances. This type of marker is analyzed and compared across the Englishes spoken in the United Kingdom, the United States, Canada, Australia,

New Zealand, and Singapore, searching the respective components of the International Corpus of English (ICE). Among a host of findings, one example is that the extender *and all that*, described as a positive politeness marker signaling solidarity, is clearly favored in Singaporean English (over 600 occurrences), while it is very infrequent (distinctly fewer than 100 occurrences) in all other varieties considered.

Pragmatic markers and question tags have been examined in different varieties of the English language. Pragmatic markers are analyzed by Kallen (2005), specifically the markers *I mean, I say, I'd say,* and *you know*. Using ICE-GB and ICE-Ireland, the author finds that the first two markers are preferred in British English, and the last two in Irish English. As he considers *I'd say* and *you know* less direct than *I mean* and *I say*, he concludes that his findings are in keeping with results from other studies suggesting that indirectness is a general feature of language use in Irish English. Question tags have also received a certain amount of attention in variational pragmatics. Barron et al. (2015), for instance, is a corpus-based study of variant tags (e. g. *isn't it?, have you?*) in Irish English and English English. While there are many similarities between the two varieties in the formal and functional aspects of tag use, tag questions are found to be less frequent in Irish English (cf. also Tottie and Hoffmann 2006 on tag questions in British and American English). Columbus (2010), on the other hand, centers on invariant tags (e. g. *eh?*, *right?*) in British, New Zealand and Indian English, using the respective ICE corpora. This study shows that there are variety-specific preferences for particular tags. For example, *eh?* is clearly preferred in New Zealand, and *no?* in India. This general finding on variety-specific preferences is supported by results from Schneider (2011). In the specific syntactic frame of party assessments (e. g. *Great party, isn't it?*) speakers from Ireland and also the United Kingdom highly favored *isn't it?*, whereas speakers from the US used exclusively *huh*? Overall, the finding on English, Irish and American question tags is part of one of the few investigations of regional pragmatic variation on the interactional level of analysis. In this particular project, data were collected on party small talk between strangers by employing a dialogue production task, in which informants were requested to individually write an entire dialogue. One of the major results was that the opening turns in the dialogues varied distinctly across the three national varieties. More than half of the dialogues produced by speakers from England opened with a bare greeting, whereas almost two thirds of the American dialogues opened with a self-introduction, and three quarters of the Irish dialogues with a party assessment (e. g. *Great party, isn't it?*).

Two further studies of the interactional level are also concerned with initial encounters between strangers. One is Goddard (2012), adopting an ethnopragmatic framework and analyzing the cultural scripts underlying such encounters in England, the United States and Australia. The other study is Haugh and Carbaugh (2015), who analyze self-disclosure practices in American and Australian elicited conversations. A major difference observed is that Americans provide information

about themselves without being prompted and respond to self-disclosures with positive assessments more frequently and with a higher degree of intensity than speakers from Australia.

Mention must also be made of studies investigating pragmatic variation across national varieties of English in written language. For example, Merrison et al. (2012) is a comparison of requestive student-to-staff emails written at universities in the United Kingdom and Australia. It is found that cross-varietal differences exist regarding the construction of student identities in these emails. Specifically, British students "orient to deferential DEPENDENCE whereas the Australian data exhibit interdependent EGALITARIANISM" (Merrison et al. 2012: 1077, orig. emphasis). Burmeister (2013) is a comparison of death notices published in newspapers in Scotland, Wales and Ireland. The analysis focused on textual features and discursive practices. One of the findings was that death notices from Ireland, while more uniform than Scottish and Welsh death notices, contained much more information, e. g. about the circumstances of the death or the funeral, and often ended with a religious saying. Further studies on regional variation in written discourse are included in Schubert and Sanchez-Stockhammer (2016), e. g. Neumann and Fest (2016) on cohesive devices in five discourse genres (or "registers": academic writing, administrative writing, broadcast discussions, conversations and exams) compared across six national varieties (Singapore, Hong Kong, India, Canada, Jamaica and New Zealand) by searching the respective components of the International Corpus of English (ICE).

Finally, research on other levels of analysis is comparatively rare. Examples of studies on the organizational level, dealing with turn-taking and related phenomena, are McCarthy (2015) on turn openers in British and Irish English, and Haselow (2021) on repair in British, East African, Indian, Jamaican, Philippine, and Singapore English.

4.2. Spanish as a pluricentric language

Thompson (1992) offers a comprehensive description of Spanish as a pluricentric language with regard to geographical regions where Spanish is spoken, history of the Spanish language, and major epicenters. Spanish is spoken in 21 countries as an official language, including 19 in Latin American (e. g. Mexico, the Caribbean, Central America, and South America), as well as Spain and Equatorial Guinea, where Spanish is an official (national) language along with Portuguese and French. The Association of Academies of the Spanish Language (*Asociación de Academias de la Lengua Española*, ASALE), initiated by the Spanish Royal Academy created in Madrid in 1713, is a group of academies that ensure that the linguistic characteristics of each variety of Spanish, including the creation of dictionaries and grammars, reflects the variation and current use in each region. These grammars and dictionaries show instances of linguistic variation and commonalities across varieties of

Spanish with regard to lexis, phonology, morphosyntax, such as standard determination of linguistic variants across varieties of Spanish (Amorós Negre 2015).

Most research has been generally conducted at the formal, actional, interactional, stylistic, and organizational levels, and less at the prosodic level. In his analysis of regional pragmatic variation across national varieties of Spanish from 2009 to 2019, Félix-Brasdefer (2021) noted that regional variation at the national level predominated in most of the studies (14 of 20). Most researchers contrasted speech acts in two or three Latin American national varieties of Spanish such as Costa Rican, Dominican, and Mexican Spanish (Félix-Brasdefer 2009), Costa Rican and Mexican Spanish (Félix-Brasdefer 2010), Peruvian, Venezuelan, and Argentine Spanish (García 2009), Ecuadorian and Venezuelan Spanish (Placencia and García 2020). Other studies contrasted a Peninsular variety with various varieties of Latin American Spanish, such as Buenos Aires, Mexico City, and Seville, Spain (e. g. Félix-Brasdefer and Yates 2020). At the formal level, Fuentes-Rodríguez, Placencia, and Palma-Fahey (2016) examined regional variation of the discourse marker *pues* 'well' across three national varieties from (Quito) Ecuador, (Santiago) Chile, and (Seville) Spain. The authors found regional differences of the distribution of *pues* with regard to its form (variants), sequential and organizational level (e. g. turn-initial and turn-medial), and function. At the actional level, Placencia (2005) examined the negotiation of service in small stores in Quito and Madrid. She found that customer requests reflected an overall preference for direct requests in both regions; Quiteño participants showed a preference for imperatives (60%), Madrileño customers displayed a preference for ellipticals (*una barra de pan* 'a baguette'), followed by imperatives (*Deme una barra de pan* 'Give^{V2} me a baguette') and assertions (e. g., *Me da…* 'You^{V} give me…'). In a different service context, Márquez Reiter and Placencia (2004) analyzed sales interactions (clothing and accessory shops) in Montevideo and in Quito. They observed differences regarding closeness or directness (Montevideans) and respect strategies (Quiteños). Contrasting three regions using roleplay interactions, García (2009) examined the speech act of reprimanding (actional level) across three national varieties of Spanish from Peru, Venezuela, and Argentina. Results showed that Peruvians and Venezuelans demonstrated a rapport-challenging orientation (coercing the interlocutor and emphasizing power differentials between boss and employee), while Argentineans preferred a rapport maintenance orientation (i. e. a desire for involvement). Using ethnographic field-note data, Wagner and Roebuck (2010) examined the realization of apologies in Mexico (Cuernavaca) and Panama (Panama City). Although both groups used similar patterns to express an apology, a preference

[2] The superscript ^{V} stands for formal pronouns used to convey respect, formality, and social distance and power, while ^{T} refers to informal pronouns usually used to express informality or solidarity.

for negative politeness (*perdón* 'sorry', *perdone* 'forgive^{V} me', *perdona* 'forgive^{T} me', *disculpe* 'excuse^{V}', *disculpa* 'excuse^{T}', *le pido perdón* 'please forgive^{V} me'), differences were found regarding the formal form with a speaker-orientation, *disculpe* 'I apologize^{V}', with a higher degree of formality among the Panamanians (23 %) than the Mexicans (14 %). Further, in an online service encounter setting, Placencia and García (2020) analyzed sellers' refusals to offers made by buyers using data from the *Mercado Libre* (online marketplace in Latin America) among Ecuadorians and Venezuelans. The data were mainly analyzed at the actional and interactional level during the bargaining sequence: overall, Ecuadorian sellers demonstrated a preference for explicit (e. g. a direct refusal using *no* or negative ability) over implicit refusals (e. g. (re)stating the norm/conditions/price, providing explanations/reasons/justifications). In contrast, Venezuelan buyers used more aggravators, in particular through the strategy of admonishing/accusing/warning. Regarding similarities, the online medium emphasizes informality, brief refusals, and the predominance of zero nominal address to express anonymity.

At the prosodic level, using roleplay interactions, Félix-Brasdefer (2011) examined the prosodic resources (e. g. intonation, duration) used to produce head act requests among university-level students from Mexico (Oaxaca) and the Dominican Republic (Santiago), in two situations with different degrees of familiarity, +D and –D.[3] Results showed that the Mexican participants showed a preference for final rising intonation (↑), longer duration (measured on seconds or fractions of a second, coded with ::), and longer internal pauses in both direct and conventionally indirect requests, while the Dominicans ended their requests with a low-final intonation and shorter or brief internal pauses. These prosodic resources among the Mexicans were used to express higher levels of politeness, deference, and mitigation, as in the request to help clean the bathroom: *y*:: (0.1) *no sé si* (0.28) *puedas echarme* (0.63) *la mano* ↑ 'and I don't know if you can give me a hand'. The Dominican requests were brief and often ended in low-final intonation, as in the request to borrow the notes from a classmate: "*tú no me lo puedeø preøtar*↓" (ø = deletion of 's') 'you can't lend me it'. Among the Dominicans, the low-final intonation is used with an expectation of compliance and confidence on the part of the speaker that the request will be accepted by the hearer.

Overall, most research across national varieties of Spanish has been conducted at the formal or actional levels using elicited data (e. g. role plays), and little has been done at the interactional, organizational, and prosodic levels using authentic or elicited interactive data. Other national varieties that have not been contrasted include varieties of Central America (Guatemala, El Salvador, Honduras), Paraguay, Bolivia, and the Caribbean (Puerto Rico and the Dominican Republic).

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[3] The following abbreviations are used for presence or absence of social power and distance: social distance (+/- D) and social power (+/- P).

4.3. French as a pluricentric language

French is a pluricentric language that is spoken in more than 30 countries as a national language in larger varieties (e. g. France, Belgium, Canada, Switzerland, Morocco, and in over 20 countries in Africa) and non-dominant varieties (Haiti French, Guiana French, Dominica French, West Indies French, and Saint Lucia French). A few studies have examined different pragmatic dimensions of national varieties of French. Using a DCT in four situations, Schölmberger (2008) examined pragmatic variation at the actional level of apologies realized in French French (Bordeaux) and in Canadian French (Quebec). Both national varieties showed a preference for the expression of regret (*je suis désolé* 'I'm sorry'). With regard to lexical intensifiers (*very, really, tremendously*), the Quebecois participants used these expressions more frequently than the French students. Adopting a corpus-based approach, Beeching (2019) examined pragmatic variation at the actional level, analyzing semantic formulas used to express an apology in varieties of British and American English (Canada and US) and in French French (Paris and Lyons) and Canadian French (Quebec). Results showed that of the four apology variants (*sorry, excuse me, apologies, apologize*), *sorry* was the most frequently used across these varieties of English, followed by *excuse me*, *apologies*, and *apologize*. British English employs *sorry* more frequently than Canadian English, and Canadian *sorry* is more frequent than in US English. Across varieties of French, speakers of Canadian French (Quebec) use *excuse* and *désolé* more than French speakers in France, while *pardon* and *regrette* predominate among speakers of French in France.

In addition to these studies contrasting L1 varieties, there are also studies involving second-language varieties of French, i. e. French spoken in postcolonial societies. In his monograph-length treatment, Mulo Farenkia (2014) examines patterns of compliments and compliment responses in Canadian and Cameroonian French. In a further publication, he contrasts refusals of invitations in French French and Cameroonian French (Mulo Farenkia 2015).

4.4. German as a pluricentric language

German is a pluricentric language spoken predominantly in Germany and Austria. It is also one of four official languages in Switzerland, where it is spoken by two thirds of all inhabitants and three quarters of the native population. It is also an official language in Belgium, Luxemburg, and Liechtenstein. Most studies of pragmatic variation across national varieties of German contrast the varieties spoken in Germany and Austria. Groundbreaking work, predating variational pragmatics, was carried out by Muhr, who examined pragmatic markers (Muhr 1987). His 2008 article is a summary of earlier work against the background of general aspects such as national identity and cultural values (Muhr 2008, also 1994, 1995). It also

includes analyses of apologies and directives (requests, demands) in various types of situations. Warga (2008) is also a study of requests in Austrian and German German. In her DCT-based analysis she observes many similarities regarding realization strategies. Differences were, however, found in the use of modificational devices. Austrians used more conditionals in internal modification, and their external modifiers were longer and less formulaic.

More recent work has concentrated on forms of address and some formulaic routines. For instance, Schüpbach (2014) analyzes pronominal and nominal address in Swiss German and German German and also greeting and leave-taking routines. Another example is Norrby and Kretzenbacher (2014), who focus on address in German and Swedish as pluricentric languages (on regional variation on the national level also cf. below).

4.5. Swedish as a pluricentric language

Swedish is a language with an official status in two countries, in Sweden as the main (dominant) language and Finland as Finland-Swedish, as the non-dominant variety. Different pragmatic dimensions of these varieties have been examined at various levels of analysis. For example, Norrby et al. (2012) review a few studies that contrast different aspects of pragmatics such as pronominal forms and conversational greetings in these two national varieties since the mid 1990s (e. g. Clyne, Norrby and Warren 2009; Saari 1995). Findings show that speakers of Finland Swedish show an orientation towards indirectness and formality (V form, formal greetings *god dag* 'good day') (negative politeness), while speakers of Swedish Swedish show an orientation towards directness and informality (T form and informal greetings such as *hej* 'hi'). The variational pragmatics approach has been used to examine instances of pragmatic variation at the stylistic, actional, and interactional levels. In a different study, Norrby et al. (2015) examined variation of interpersonal relationships through address practices in doctor-patient interactions using video-recorded medical consultations in Finland (University of Helsinki) and Sweden (Uppsala University). Results showed that in the Swedish-Swedish doctor-patient interactions there was an orientation towards informality through direct address and the T pronoun (*du*), while in the Finland-Swedish interactions formality and V pronoun (*ni*) predominated.

Following the variational pragmatics framework and the conversation-analytic framework (Sacks et al. 1974; Schegloff 2007), Henricson and Nelson (2017) examined advice-giving interactions between supervisors and students in higher education in Swedish Swedish and in Finland Swedish in a variety of academic supervision meetings. The natural interactions were collected through video and audio recordings in different universities in each country. The results show that the Swedish-Swedish interactions show a preference for strong mitigation (a variety of mitigation devices), followed by upgraded acknowledgements. In contrast, the

interactions in Finland Swedish advice-giving are brief, and acknowledgements are often neutral. Overall, in the Swedish-Swedish interactions the supervisor puts a lot of interactional work downplaying the directness of the advice, while among the Finland-Swedish interactions advice-giving does not need to be mitigated. The results highlight different interactional patterns regarding perceptions of institutional roles, power, and social distance in Sweden and Finland.

Finally, Nilsson et al. (2020) examined greetings at the actional and stylistic levels in a variety of commercial settings in Swedish-Swedish and Finland-Swedish service encounter interactions. The data included video-recorded, face-to-face, and telephone conversations in various regions in each country and were analyzed according to different macrosocial variables. Findings showed similarities and differences: the greeting *Hej* is used regardless of the nation, region, age, gender, participant role, and the medium (face-to-face versus telephone conversations). With regard to national differences, the greeting *tjena* is used more frequently in Sweden than in Finland, where *hejsan* is only used in the Finland Swedish data. The data also show that the selection of the greeting is conditioned by the age and gender of the service-seeker and the service provider. Overall, the results from these two varieties of Swedish highlight the importance of analyzing pragmatic variation at the national level, conditioned by macrosocial (region, age, gender) and microsocial variables (situation and the interlocutor; for additional information on pragmatic routines in varieties of Swedish, see Nilsson et al., this volume).

4.6. Pragmatic variation in other pluricentric languages

What has gradually developed in recent years is at least some work on regional variation in non-Indo-European pluricentric languages. In particular, there are studies contrasting the varieties of Chinese spoken in Mainland China and in Taiwan. For instance, Lin et al. (2012) and Lin (2015) examine different aspects on compliment behavior in these two varieties, and Ren (2015) is a study of refusals as a speech act that may follow various other speech acts, e. g. requests, invitations, offers, or suggestions.

Even more recently, studies have emerged which compare national varieties of Arabic. Arabic as a pluricentric language is spoken in more than 22 countries where it is either the only official language (e. g. Egypt, Syria, and Yemen) or co-official with another language (e. g. Chad [with French], Somalia [with Somali], Sudan [with English]). A few studies have researched pragmatic dimensions across national varieties of Arabic. For example, Al-Shoran (2016) examined complaints among 150 male university-level students in two national varieties of Arabic, spoken in Riyadh, Saudi Arabia (N=75) and Irbid, Jordan (N=75), using a DCT questionnaire (12 situations with different degrees of social status). Differences were found with regard to the position of the complaint, as Saudi participants' complaints come first, while Jordanians' complaints come second. More complaining

strategies were used by Saudi participants than by the Jordanians, who used fewer strategies. The direct complaint followed other strategies such as offensive acts (blaming, criticism, obscenity, threat), calmness and rationality (inquiry, request, justification), and opting-out (irony, dissatisfaction, proverb). The status of the interlocutor influenced the placement of the complaint: the complaint with a fellow student was placed first, in second position with a person in charge, and in third position with a coordinator. El-Dakhs (2018), employing DCTs, analyzed sequences of requests and responses to requests in the varieties spoken in Egypt and in Saudi Arabia. While the refusal strategies were found to be similar, consent strategies were more direct and elaborate in the Egyptian variety than in the Saudi Arabian variety. In a different study using the variational pragmatics framework, El-Dakhs and Ahmed (2021) examined complaints among male and female undergraduate students in Saudi Arabia (Riyadh/Najdis) and Egypt (Alexandria). The authors utilized roleplays to examine the complaint behavior in six different situations, including different degrees of social distance (distant, intimate) and social dominance (high, equal, low). The data were analyzed according to complaint strategies (e. g. directive acts, blame, accusation, expression of disapproval, hint, and opting out) and internal and external modifiers. Although directive acts predominated in both national varieties, the following strategies were more frequent among Saudis: opting out, expressing annoyance, and blaming the interlocutor. Alexandrians, on the other hand, tended to express disapproval and to blame the interlocutor explicitly. Concerning gender differences, overall male Saudis produced more requests than females. In contrast, Alexandrian males produced more direct accusations and fewer hints than females. With regard to social distance, Saudis opted out and produced more direct accusations with an intimate interlocutor, while they expressed annoyance through threats and explicit blame with a distant interlocutor. Conversely, Alexandrians expressed more hints with an intimate interlocutor and more direct accusations and requests for repair with a distant interlocutor. This study underscores the importance of analyzing geographical space (region) and the effect of other macrosocial (gender) and microsocial variables (social distance) that influence the complaint behavior of Arabic speakers of two national varieties, Saudis and Egyptians. It would certainly be desirable to include more national varieties of Arabic in the comparison, and more generally investigate pragmatic variation within many more pluricentric languages.

Overwhelmingly, regional pragmatic variation has been researched across national varieties of pluricentric Indo-European languages, specifically Romance and Germanic languages, and notably Spanish and English. Surprisingly, however, there does not seem to be any research on Portuguese, although it would be intriguing to contrast the national varieties spoken in Portugal and Brazil and elsewhere (e. g. Angola, Mozambique, Guinea-Bissau, and Cape Verde).

5. Case study of Spanish as a pluricentric language

This section showcases an instance of pragmatic variation across three national varieties of Spanish that are geographically distant from each other (Europe, North America, and South America), namely, Spain (Seville), Mexico (Mexico City), Argentina (Buenos Aires) (Félix-Brasdefer and Yates 2020). These varieties have Spanish as the official language, but show linguistic differences (e. g. accent, pronominal address, national identity) as well as different pragmatic realizations of speech acts, (im)politeness, and discourse preferences (Félix-Brasdefer 2019: Chapters 7–9; Márquez Reiter and Placencia 2004; Mugford and Félix-Brasdefer 2021). Each of these national varieties has its own codified grammar documented by the Association of Academies of the Spanish Language (*Asociación de Academias de la Lengua Española*). The population in each country differs: Spain (46,000,000), Argentina (45,000,000), and Mexico (130,000,000); Mexico City has a population of 21,000,000. In Spain, in addition to Spanish as an official language, there are three other co-official languages (Basque, Catalan, and Galician). In Mexico, in addition to Spanish, which is the official language, there are over 60 indigenous languages; of these, Maya, Nahuatl, and Zapotec are spoken in different regions. In this section, we illustrate regional pragmatic variation among three national varieties at the actional and stylistic levels based on Félix-Brasdefer and Yates (2020). Although members of these varieties can understand each other, they use different pronominal forms: Mexicans and Spaniards use the *tú* (T) form ('you' second personal singular), while Argentineans use *vos* (T) with different verb conjugations. Unlike Mexicans and Argentineans, who use *ustedes* ('you' plural formal or informal), Spaniards use the *vosotros* form to address two or more interlocutors of informal status and *ustedes* for formal status.

The face-to-face interactions were collected through audio-recordings at each of the research sites, a total of six corner stores: two in Mexico City, two in Buenos Aires, and two in Seville, Spain. The stores typically had one or two vendors at a time and sold everyday items such as gum, candy, chocolate, hot dogs, ready-made sandwiches, bread, drinks, cigarettes, and recharges for prepaid cell phones. A total of 360 transactions were collected: 130 in Mexico City, 130 in Seville, and 100 in Buenos Aires (audio-recorded interactions). The data were analyzed at the actional (type of request for service) and stylistic level (pronominal variation in the use of T/V alternation during the negotiation of service). As mentioned in Félix-Brasdefer and Yates (2020), the vendors granted permission to gather the data and a small digital recorder was placed on the corner of the counter, along with a sign explaining the purpose of data collection. If the customers asked about the recording device, the vendor explained that it was for a research project. Since the service encounter data are considered public, the customers focus on the transaction with occasional small talk. All transactions were anonymous and the researchers did not have access to the customers' nor the vendors' personal information. The

researchers were not present during any of the recordings and did not take notes on observations.

5.1. Actional level: Regional variation of the request for service

The requests for service were analyzed for direct (performatives, imperatives, want statements, assertions, and ellipticals, implicit, and direct questions) and conventional indirect request (query preparatory). Other elements analyzed included the presence or absence of internal modification in the request for service, including the diminutive, the politeness marker *por favor* 'please' and the conditional and imperfect to express distance and politeness. The analysis includes only the first request for service produced by the customer to initiate the transaction; the subsequent request(s), which completed the negotiation of service, were not included in the present analysis.

Figure 1 shows the results for regional variation in Buenos Aires, Mexico City, and Seville with regard to the type of the request for service (direct and indirect requests)

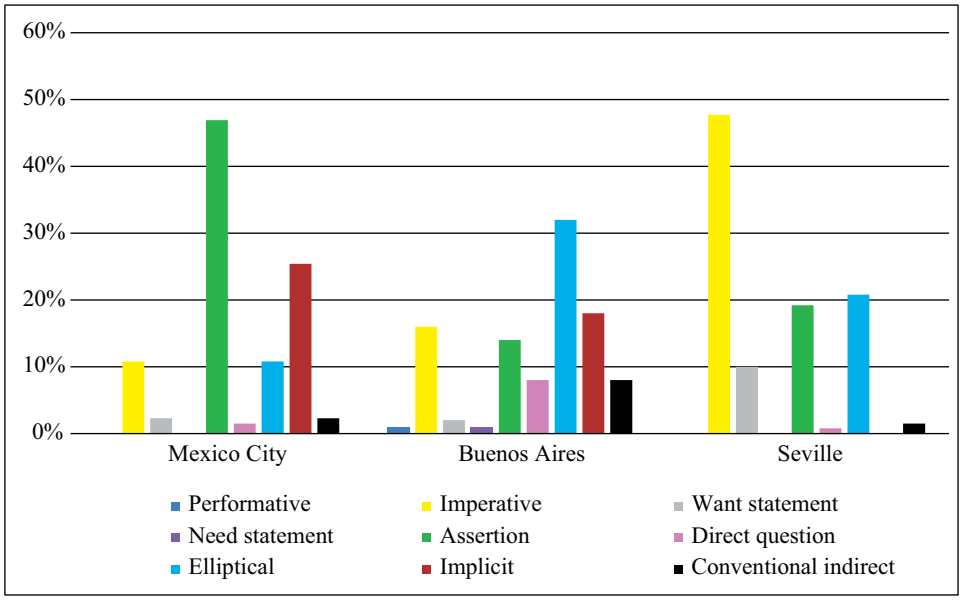

Figure 1: Distribution of the request for service in Mexico (Mexico City), Argentina (Buenos Aires), and Spain (Seville)

The request for service was realized by means of nine request forms, and some of these variants were conditioned by the region. For example, customers from Buenos Aires employed all nine request forms, Mexican customers used seven, and the

Spanish customers employed six. The Mexican customers chose an assertion as the most frequent request (46.9%; 61/130), followed by implicit requests (25.4%; 33/130), elliptical (10.8%; 14/130), and imperatives (10.8%;14/130). In contrast, Spanish customers selected imperatives as the most frequent request type (47.7%; 62/130), followed by elliptical requests (20.8%; 27/130), and assertions ranked third (19.2%; 25/130). Argentine customers selected elliptical requests most frequently (32%; 32/100), followed by implicit requests (18% 18/100), imperatives (16%; 16/100), and assertions (14%; 14/100). Other forms were used less frequently by the groups, such as want statements and direct questions interpreted as the request for service, followed by the vendor's response. Mexican and Argentine customers chose an implicit request more frequently than Spanish customers; an implicit request is realized when the customer chooses the product and initiates payment with the vendor. A direct question was more frequent among the Argentine customers (8%; 8/100) than among the Mexicans and Spaniards, who used it infrequently. The direct question (yes/no interrogatives) is interpreted as a request for service on the part of the interlocutor, as an instance of questions following questions (Merritt 1976) (e. g. Customer: 'Do you have brown sugar?'; Vendor: 'How much do you want?'). Further, indirect requests, realized by means of the query preparatory ('Can I have…'), were almost absent in all three groups, except for the Argentines, who used it more frequently than the other two groups. Thus, pragmatic differences were noted in the requests for service in each region, with Spaniards preferring imperatives, Mexicans assertions, and Argentines elliptical requests. Internal modification of the request for service was absent for the most part in all three regions.

Examples (1–3) show a request for service in Spain (1, imperative), Mexico (2, assertion), and Argentina (3, elliptical):

(1) Seville: Imperative (female customer, female vendor)

1	Customer: →	*Dame uno de estos, ponme uno.*
		'Give^{T} me one of these, put^{T} one for me.'
2	Vendor:	*Venga, llévate los dos, están muy buenos.*
		'Come on, take^{T} them both, they're really good'

(2) Mexico City: Assertion (male customer, male vendor)

1	Customer:	*No tiene Knor Suiza?*
		'Don't you^{V} have Knorr Swiss (chicken bouillon)?'
2	Vendor:	*Sí, aquí está*
		'Yes, here it is
3	Customer: →	*Me da un paquetito por favor.*
		'You^{V} give me a little packet please.'
4	Vendor:	((hands over product))

(3) Buenos Aires: Elliptical (male customer, male vendor)

1	Vendor:	*Hola* 'Hi'
2	Customer: →	*Carga virtual* (Elliptical request) 'Cell phone credit recharge'
3	Vendor:	*Claro* 'Of course'

5.2. Stylistic level: Pronominal variation of T/V forms in sale transactions

As shown in Félix-Brasdefer and Yates (2020), Table 1 shows stylistic variation in the pronominal forms used among customers and vendors during the negotiation of service in Mexico City (México), Buenos Aires (Argentina), and Seville (Spain). It includes the second person singular forms T (informal) and V (formal) forms used by the customer and the vendor:

Table 1: National pragmatic variation of pronominal forms in service encounter interactions (Mexico City, Buenos Aires, Seville)

	Mexico City (*tú*^{T}/*usted*^{V})		Buenos Aires (*vos*^{T}/*usted*^{V})		Seville (*tú*^{T}/*usted*^{V})	
	Customer	Vendor	Customer	Vendor	Customer	Vendor
Zero pronoun	24.6% (32/130)	48.5% (63/130)	22% (22/100)	32% (32/100)	30% (39/130)	89.2% (116/130)
T (tú/vos)	49.2% (64/130)	13.8% (18/130)	75% (75/100)	60% (60/100)	58.5% (76/130)	8.5% (11/130)
V (usted)	26.2% (34/130)	37.7% (49/130)	3% (3/100)	8% (8/100)	11.5% (15/130)	2.3% (3/130)

As shown in Table 1, during the negotiation of service, customers and vendors negotiated the sales transaction using four options: T form *tú* (México and Spain) or *vos* (T) (Argentina), V (*usted*), and zero pronoun; the frequency of these forms was conditioned by region. Customers from Mexico City predominantly used the T form (49.2%; 64/130) over the formal V form (26.2%; 34/130), while the vendor selected the formal form V (37.7%; 49/130) over the T form (13.8%; 18/130) when addressing the customer. In contrast, customers and vendors from Buenos Aires and Seville predominantly used the informal T form (*vos* or *tú*) over the V form. Overall, the Mexican vendors show a preference for deference or respect to address the customer, while the customer chooses informality to address the vendor. In contrast, the Argentine and Spanish data show that both customers and

vendors show an orientation towards affiliation or solidarity over deference during the negotiation of service, as also found in previous studies among Spaniards (Placencia 1998) and Argentines (Ferrer and Sánchez Lanza 2002). Finally, zero pronoun was used more frequently by vendors and less often by customers; this form predominated among Spanish and Mexican vendors. Overall, whereas in Mexico City (Félix-Brasdefer 2015) and Quito, Ecuador (Placencia 2005), vendors and customers show an orientation toward the formal-you (deference), Argentine customers and vendors of the present study are similar to those in other service-encounter contexts such as Argentine boutiques (Ferrer and Sánchez Lanza 2002), where the T form (*vos*) predominated, demonstrating affiliation (solidarity).

6. Methodological issues

As can be seen from the examples discussed in the preceding sections, a wide range of different methods have been employed to study pragmatic variation across national varieties of pluricentric languages. Variational pragmatics in particular is not a mono-method approach. Unlike in some other areas of pragmatics research, there is no methodological dogmatism or commitment to a single methodology (Haugh et al. 2021: 9). Studies have been based either on observational, i. e. naturally occurring, data, or on experimentational, i. e. elicited, data. Methods employed to collect the former data type include video- and audio-recordings, ethnographic note-taking, and corpus searches, whereas discourse completion tasks, role plays, and interviews have been used to gather data of the latter type.

Video-recordings were made e. g. by Norrby et al. (2015) and Nilsson et al. (2020), and audio-recordings e. g. by Placencia (2008) and Haugh and Carbaugh (2015). Ethnographic field notes were taken e. g. by Wagner and Roebuck (2010) and Bieswanger (2015), and corpora were searched e. g. by Aijmer (2013) and Jautz (2013). Strictly speaking, the conversations recorded by Haugh and Carbaugh (2015) and the utterances taken as field notes by Bieswanger (2015), while more authentic than e. g. DCT data, were also elicited, i. e. the occurrence of these data was triggered by the researchers. Yet Bieswanger's interlocutors did not know that they provided material for analysis (i. e. responses to thanks), and the participants in Haugh and Carbaugh's study were given time and free choice of topics to chat with a stranger so that allegedly they did not pay (too much) attention to being recorded.

DCTs were employed e. g. by Schölmberger (2008) and El-Dakhs (2018), and rare variants thereof (free DCT and Dialogue Production Task/DPT) by Barron (2005) and Schneider (2008) respectively. Roleplay data were used e. g. by García (2009) and Félix-Brasdefer (2011), and interviews were used e. g. by Creese (1991).

These methods differ hugely in popularity, and two methods in particular dominate the picture. These are DCTs, as a rule administered in writing, and, perhaps increasingly, corpus searches. DCTs have predominantly been used in studies of

the actional level, i. e. for examining the realization of speech acts (e. g. requests, apologies, responses to offers) across a range of systematically varied situations, usually in a written production questionnaire (Ogiermann 2018). Corpus searches, on the other hand, have predominantly been used in studies of the formal level, i. e. for examining such phenomena as pragmatic markers and question tags. This is hardly surprising since large machine-readable corpora are best suited to form-to-function searches (Aijmer 2018), rather than function-to-form searches required for investigations of the actional level (O'Keeffe 2018), given that pragmatic annotation is still in its infancy (Archer and Culpeper 2018). If corpora were used in examining the actional level, then they were searched manually (e. g. Flöck and Geluykens 2018). While for studying pragmatic variation across national varieties of English a range of different corpora have been deployed, among them the *British National Corpus* (BNC) and the *Santa Barbara Corpus of Spoken American English* (SBCSAE), many studies have used two or more national components of the *International Corpus of English* (ICE). The ICE corpora are particularly suited for analyzing pragmatic variation across national varieties, as they are identical in size and composition. Each corpus comprises approximately one million words and covers the same 32 discourse genres. Currently, corpora of eleven first- or second-language varieties are completed, and of three further corpora the written parts are available (cf. <ice-corpora.net>). Studies based on ICE corpora are e. g. Kallen's (2005) analysis of pragmatic markers, using ICE-Great Britain and ICE-Ireland, and Columbus' (2010) analysis of invariant question tags, using the British, the New Zealand and the Indian ICE corpora. ICE corpora have also been used by Haselow (2021) in his analysis of repair (on the organizational level), specifically the British, East African, Indian, Jamaican, Philippine, and Singapore corpora. Since ICE corpora include not only spoken language (60 %), but also written language (40 %), they can be, and indeed have been, deployed for researching pragmatic variation in written discourse. An example is the study by Neumann and Fest (2016) on cohesive devices in five spoken and written discourse genres across six ICE corpora (Singapore, Hong Kong, India, Canada, Jamaica, and New Zealand).

By comparison to the deployment of existing large machine-readable corpora, self-recorded corpora are scarcely used in studies of regional pragmatic variation, presumably because of the legal, ethical, technical and practical problems involved in the recording procedure and the ensuing transcription work, which can be very time consuming. Examples of work deploying self-recorded video and/or audio material are the studies based on naturally occurring discourse that are mentioned above. A further example is Henricson and Nelson (2017), which is based on both video and audio data. Constructing a corpus of suitable written material is less demanding. Merrison et al. (2012) compiled a corpus of naturally occurring student-to-staff emails, after securing the consent from the senders and the addressees. Burmeister (2013) analyzed death notices published in three newspapers, using both paper versions and digital versions of the notices, the latter facilitating the

process of finding suitable material. Digital sources may more generally facilitate the construction of (more small-scale) purpose-built corpora tailored to the specific needs of a research project (Andersen 2018: 468–469), and regional pragmatic variation in digital communication may of course be considered a research topic in its own right, cf. e. g. Placencia and García's (2020) analysis of Ecuadorian and Venezuelan data from the Latin American online marketplace *Mercado Libre*.

Since all data collection methods have advantages as well as disadvantages, triangulation is recommended, i. e. a comparison of different data types, to enhance the validity of the results (Schneider 2018: 39). Creese (1991), for instance, combines ethnographic note-taking with interviewing, and Schneider (2011) checks some DCT-based findings against evidence from large machine-readable corpora, yet overall triangulation is rare in the study of regional pragmatic variation. Flöck (2016) contrasts DCT data and corpus data with the explicit goal of finding out which method is superior. With a similar aim, Bieswanger (2015) compares his field notes to previously published DCT data. Both studies come to the conclusion that DCT data are inferior to the respective other data type in that they do not represent naturally occurring language.

As is well known, however, there is no best method serving all research purposes. Ideally, choice of method depends on the research questions to be addressed (Schneider 2018: 81). Quite obviously, written DCT data (unlike oral DCT data) cannot be used to study prosodic features, to the same extent that audio recordings (unlike video recordings) cannot be used to examine non-verbal behavior such as gestures, gaze or facial expression. Yet realistically, while suitability is crucial, further factors such as personal training and experience as well as feasibility (e. g. availability of time, human power, financial means or technical equipment) also play a role in the choice of method.

Generally speaking, experimentational methods can be used to study language use conventions, behavioral norms and cultural models underlying actual performance and can thus provide access to pragmatic competence (Schneider 2012, 2017), while observational methods are best suited to investigate actual instantiations of such conventions, norms and models under the accidentalities of real-world situations (Schneider 2021: 673–674). Decock and Spiessens (2017: 87–88) refer to these complementary perspectives as the generic and the interactional perspective. In variational pragmatics, the generic perspective was preferred originally, but the situation seems to be changing.

While there is no commitment to only one data type or collection method, there are three methodological principles which have to be observed in any study in the framework of variational pragmatics, and indeed beyond, in any work on variation in language (Schneider and Schröder 2014). These principles have been termed the principles of empiricity, contrastivity, and comparability (Barron and Schneider 2009; Schneider 2010). Empiricity means that studies of language use across varieties of the same language cannot be based on a researcher's individual intuitions

and fabricated examples but must be based on collections of empirical data, i. e. ready-made collections such as existing corpora or self-constructed collections, including either observational or experimentational data, or in fact both data types. Secondly, contrastivity concerns the comparison of at least two varieties with the same status, e. g. national varieties of pluricentric languages. In the World Englishes community, for example, many studies focus on only one national variety, wishing to determine characteristic features of this particular variety, sometimes implicitly referring to an abstract standard norm. Yet, variety-specific features cannot be identified by focusing on one variety alone, they must be established in explicit comparison. Finally, comparability pertains to whether data sets to be contrasted are actually comparable, i. e. display a sufficient amount of similarities to permit meaningful comparison. If, for the sake of the argument, samples of old males speaking one national variety were compared to samples of female adolescents speaking another national variety, then it would not be clear whether any differences found could be attributed to regional, gender or age variation. Hence, it is important to observe all three methodological principles (for further differentiation, cf. the concluding section).

7. Conclusion and future directions

In this chapter, pragmatic variation in space has been interpreted as pragmatic variation in geographical (as opposed to social) space, and, more specifically, as pragmatic variation at the cross-national level in pluricentric languages, i. e., languages spoken as native or official languages in several nation-states. Examples of such languages would be Spanish and English, which have received a lot of attention in relevant research reported here, but also Portuguese and Arabic, which merit further study in this regard.

Pragmatic variation across national varieties of pluricentric languages has been researched extensively in variational pragmatics. This field of inquiry can be conceptualized as the interface of pragmatics and sociolinguistics (or specifically present-day dialectology), addressing two complementary research gaps. On the one hand, variational pragmatics adds the study of intra-lingual variation to the agenda of pragmatics, although inter-lingual variation has been studied for a long time in contrastive pragmatics. On the other hand, pragmatic analysis is added to the agenda of sociolinguistics/dialectology, which has concentrated predominantly on the analysis of pronunciation, vocabulary and grammar.

Work in variational pragmatics has overwhelmingly concentrated on regional variation and specifically, variation across national varieties of pluricentric languages, most notably national varieties of Spanish and English, as well as some other Indo-European languages such as French, German and Swedish. This does not mean that all national varieties of these languages have already been covered. For

instance, other national varieties of Latin American Spanish should be contrasted such as in Bolivia, Cuba, El Salvador, Guatemala, Honduras, Paraguay, and Belize, where Spanish co-exists with English as the official language. Moreover, it would be desirable to include additional Indo-European languages, in particular Portuguese (e. g., from Portugal, Brazil, East Timor, and several regions in Africa), and, more importantly, typologically unrelated languages. While there are some studies contrasting national varieties of Arabic, more varieties should be covered, and, above all, more languages examined, for instance Malay, spoken e. g., in Malaysia, Indonesia, Singapore and Brunei, and Swahili, spoken e. g., in Kenya, Tansania, Uganda and Burundi. Additionally, where languages are spoken as official second languages, it would be interesting to examine indigenous languages in parallel and their influence on the pragmatics of the second language varieties. While this is a major goal formulated programmatically for postcolonial pragmatics (e. g., Anchimbe 2018), we are not aware of any study systematically pursuing this goal.

The framework proposed in variational pragmatics has been used to examine different levels of pragmatics, i. e. the formal, actional, interactional, topic, organizational, stylistic, prosodic and non-verbal levels (cf. Section 3 above); further levels of analysis are conceivable. Work has been done on all of these levels (with the exception perhaps of the topic level), yet two levels in particular have received most attention: the formal level and, especially, the actional level. A majority of studies concentrate on one level alone; analyses integrating levels (e. g. the actional and the interactional levels) are rare. More specifically, most studies focus on one pragmatic phenomenon alone, for example a particular speech act (e. g., apology, offer or request) or a set of discourse markers (e. g., general extenders); even studies of reactive acts such as responses to thanks or to compliments do not, as a rule, consider the entire adjacency pair of which the act under inspection is the second pair-part. In general, it would be a desideratum to correlate and combine analyses of different levels and phenomena occurring in a national variety of a pluricentric language, or indeed any other variety, to arrive at a fuller picture, or ultimately at a pragmatic profile of a given variety vis-à-vis comparable varieties (cf. Barron and Schneider 2005).

Varieties, like languages, are not homogenous wholes, least of all national varieties. There is, needless to say, intra-varietal pragmatic variation, e. g., across regions within the same country (Félix-Brasdefer 2021; K.P. Schneider 2020; Schneider and Placencia 2017). As data for studies of national varieties in pluricentric languages are, as a rule, collected in one particular area or location (e. g., Mexico City or Buenos Aires), findings cannot be representative of all regions within a country and must therefore be interpreted with care and not be overgeneralized. Furthermore, region – be it on the national, subnational or local level – is not the only macrosocial factor that impacts language use. Other relevant factors are gender, age, socioeconomic class and ethnicity (and possibly others). While these factors can be, and often have to be, separated analytically in empirical stud-

ies and their impact on language use examined individually, provided that comparability of data sets is adequately monitored, it must be remembered that in real life all of these macrosocial factors interact. Much work is still needed to disentangle the complexities of such realities, given in particular that the impact of factors other than region, and particularly region at the national level, has been relatively neglected by comparison. Also, college and university students, often the researchers' own students as a convenience sample, are the one sociological group about whose language use much more is known than that of any other group in society. Clearly, more representative samples are needed.

Furthermore, it must be remembered that language use differs across situations (as is stressed in Staley and Jucker 2021). Contextual factors such as time of day, location and occasion may impact language use in systematic ways just as microsocial factors pertaining to the relationship between the interactants, e. g., power and social distance/familiarity. And finally, it has been found that individuals vary their communicative behavior even in the same type of situation (cf. Haugh and Carbaugh 2015: 488–490). These further complexities have also to be taken into consideration in future research. As regards methodological choices, it would be desirable to see more triangulation, and especially combinations of observational and experimentational data, to make results more valid and robust. As Jay (2009: 160) puts it: "Research and conclusions will be valuable when they are drawn from a combination of naturally observed public behavior in conjunction with laboratory-based studies of those behaviors."

Despite the necessary differentiations made in the preceding paragraphs, it is worth emphasizing that research on regional pragmatic variation in pluricentric languages has shown that national norms and conventions of language use do exist. While speakers of one variety do not behave in uniform ways, there are preferred ways of speaking and dominant patterns which differ from those displayed fairly consistently by speakers of other national varieties.

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21. Mapping perceptions and knowledge of language: Societal multilingualism and its socio-pragmatic grounding

Christoph Purschke and Mirjam Schmalz

Abstract: This chapter outlines different methodological approaches to the visualization of perceptions and their socio-pragmatic grounding, ranging from traditional draw-a-map tasks to white-canvas tasks, language-portrait tasks, and pile-sort tasks. While the methods presented are traditionally used in sociolinguistics, this chapter illustrates their validity for pragmatic research by means of a case study conducted in Luxembourg and Switzerland. There, participants were asked to visualize multilingualism in their respective country, both individually, as well as in a collaborative task. On the one hand, the analysis of their drawings shows several recurring motifs in the individual participant groups, such as a geographical language distribution in Switzerland, or situations of daily routines in Luxembourg. On the other hand, the group tasks furthermore represent rich data, with each individual negotiation presenting a mirror of social practices as a whole.

Keywords: socio-pragmatics, mapping, multilingualism, perceptions, language attitudes, Luxembourg, Switzerland

1. Introduction

People who are part of the same speech community share many aspects of their everyday experience, often voluntarily and intentionally through deliberate interactions (e. g., by exchanging information or working together), sometimes unintentionally and even unconsciously (e. g., when negotiating social positioning in groups). In multilingual societies, such as Luxembourg and Switzerland, this shared socio-pragmatic horizon of experience encompasses different configurations of linguistic diversity and complexity, for example, in terms of individual, group-based or societal forms of multilingualism. In addition to knowledge about the socio-situational conditions of language use, this shared knowledge also includes attitudes toward languages and their speakers, that is, routinized judgments about phenomena that enable orientation in the lifeworld and reduce social complexity in the form of typified mental representations (Albarracín and Johnson 2018).

That and to what extent the perception and evaluation of language has a decisive influence on the organization of social practice has been widely documented

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in sociolinguistics, for example, with regard to the negotiation of everyday practice through language (Purschke 2018) as well as to language change (Coupland 2014). Furthermore, a dedicated branch of research has developed in variationist linguistics, which systematically investigates speakers' individual knowledge and attitudes towards variation and change in language. Influenced by the work of Dennis Preston, a wide range of methods has been established, especially in dialectology, by means of which the linguistic study of language variation was expanded to include the beliefs of the speakers themselves (see Preston 1999a for an overview of early work). Central to many studies in *perceptual dialectology* is the use of mapping tasks to elicit individual language knowledge and language-related stereotypes as part of experiments. For example, participants are asked to mark and name regional varieties that they know on a given map (Preston 1986). The maps produced are informative in a variety of ways, such as in terms of prominent language areas in the participants' language knowledge or regarding salient features and cultural stereotypes attributed to these areas (see the discussion of Figure 1 below).

More recently, the sole focus on dialect mapping has widened to apply mapping tasks also for the study of other areas of social practice. This includes a variety of topics, such as perceptions of borders and *borderscapes* from a migrant perspective (Brambilla 2015), visible multilingualism in urban contexts (Syrjäla 2018), representations of personal multilingual repertoires and mobilities (Robin 2014) or the perception of socio-pragmatic features, such as (im)politeness or other character traits attached to language varieties (Blum-Kulka 2005). Still other approaches work with mental mapping techniques on a white canvas to study graphical representations and visualization strategies in the context of multilingual societies (Hofer 2004), or by dint of so-called *language portraits* (Busch 2018) that map a person's linguistic repertoire onto the silhouette of a manikin.

Against this backdrop, this chapter sets out to provide an overview of mapping tasks in perception studies. First, we discuss different methodological approaches to *mental mapping* and related visualization techniques, including their benefits and shortcomings for different research questions and interests. Subsequently, we introduce a new experiment for eliciting knowledge and perceptions of language that highlights the potential of mapping tasks for the field of pragmatics. Using the example of Luxembourg and Switzerland, we develop a case study on perceptions of multilingualism by dint of a multilevel collaborative mapping task that, in addition to individual visualization strategies, also provides insight into the interactional negotiation of shared representations of multilingualism. Starting from the assumption that both countries are characterized by complex forms of societal multilingualism which, however, are structured very differently, we investigate the question of how people from Luxembourg and Switzerland perceive multilingualism in their country of residence and by which graphical and symbolic means the elicited representations of social practice are visualized. In doing so, the overarching research

interest of our case study is to investigate which individual and shared representations of multilingualism prevail among Luxembourgish and Swiss participants and to what extent these representations provide clues to the socio-pragmatic organization and discursive self-understanding of the respective multilingual society.

2. Methodological approaches to knowledge and perception mapping in linguistics

Mapping has a longstanding tradition in linguistics, with early roots in German and French dialectology (see Lameli, Kehrein and Rabanus 2010 for a comprehensive overview). First large-scale mapping projects were carried out in the late nineteenth century by Georg Wenker for the *Sprachatlas des Deutschen Reichs* (Fleischer 2017) and by Jules Gilliéron and Edmond Edmont for the *Atlas Linguistique de la France* (Lauwers, Simoni-Aurembou and Swiggers 2002). Starting from there, mapping as a technique for the documentation and visualization of variation and change in language quickly spread in linguistics and has been an essential part of the variationist linguistics toolset ever since (Kretzschmar 2018; Penhallurick 2018). In German dialectology, for example, a large number of regional language atlases exist which document comprehensive surveys of the local dialect and its dynamics (see Schmidt and Herrgen 2011: 89–151).

Classical approaches to linguistic mapping of language are characterized by a number of common features that are in fact characteristic for mapping as a cultural technique in general, e. g., in geographic or astronomic maps (Hake, Grünreich and Men 2002). These include the visualization of a specific type of information on a basis that has a number of defined properties, including a represented section of space, a geographic projection, a scale, and symbolically represented landmarks appropriate to the selected section of space and the chosen scale. The type of information displayed in the map depends on the chosen theme and presentation method, i. e., the transformation of a lifeworld phenomenon into a cartographic representation according to visual and informational principles. In it, moreover, cartography is related to diagrammatology (Krämer 2016). A number of visualization types have become established in linguistics, including the *point symbol map*, the *area map*, and the *isogloss map* (Rabanus 2018). In modern language atlases and digital language cartography, complex cartographic representations are also found in which map information can be generated from databases, dynamically overlaid, and enriched with additional information classes, e. g., speech recordings, extra-linguistic information, or bibliographic references (see Schmidt et al. 2008 ff. for a comprehensive linguistic GIS for the German regional languages).

In the second half of the twentieth century, a new type of mapping method has established itself in linguistics, which is less interested in an exact spatial reproduction of natural or cultural features, but rather focuses on the subjective

knowledge and perception of individual speakers. These approaches, mostly summarized under the term *mental mapping*, take their origin in methods from geography and psychology (Lynch 1960; Downs and Stea 1977) and develop new forms of data collection and visualization, both in terms of the mapping base used and the thematic orientation, as well as concerning visualization strategies. Since these approaches are often used in experimental settings in which participants, guided by instructions, are asked to map specific aspects of their language knowledge and perception, the resulting maps can only be compared to a limited extent with linguistic maps produced according to scientific criteria. It can be shown, however, that there are systematic correspondences between the individual perception and evaluation of language variation and traditional dialect mapping, which is why they are used as complementary approaches to visualize and explain language dynamics in current variationist linguistics (Purschke 2011). The main application of mental mapping in linguistics is in the field of perception studies or perceptual dialectology (see Naths 2019 for a discussion).

Against this backdrop, in the following we discuss methodological approaches to mental mapping with a focus on language knowledge and perception. In doing so, we base our discussion on a broad notion of mapping that takes its starting point from the specific translation relationship between individual knowledge grounded in lifeworld experience and the experimental visualization thereof in mapping tasks. Mapping in this sense thus comprises defined procedures for activating, guiding, and visualizing knowledge and perceptions through appropriate methodological means, i. e., a mapping base, instructions, and prepared (graphic, acoustic, or conceptual) stimuli, and can include different forms of visualization, be it the marking and labelling of language areas in geographical base maps or free reflexive drawings of individual aspects of language knowledge and perception.

2.1. Mapping tasks in linguistics

The most commonly used mapping task in linguistic is the so-called *draw-a-map task* as developed in perceptual dialectology (see Montgomery and Beal 2011 for an overview). The rationale behind this subfield of variationist linguistics can be summarized in the following broad questions: “What do non-specialists have to say about variation? Where do they believe it comes from? Where do they believe it exists? What do they believe is its function?” (Preston 1999b: xxv). For this, several methodological methods have been devised making use of traditional maps as a starting point, namely the *little-arrow method*, the *degree-of-difference method*, as well as the above mentioned *draw-a-map* task.

The little-arrow method, devised in the Netherlands by Pieter Willems, was first employed by Weijnen (1946) and can be seen as the first systematic attempt to investigate dialect boundaries from a perceptual point of view. Using this method, participants are asked to indicate areas in which people speak the same dialect as

themselves and to answer follow-up questions on differences in dialects (Preston 1999b: xxvi). The areas that have been identified as similar in speech are then connected by arrows, hence the method's name, that vary in thickness depending on how many participants indicated the two areas to be similar. In turn, areas that are not connected via arrows can be seen as different in the participants' perception (Preston 2010). The degree-of-difference method was designed in the 1950s in Japan and investigates perceptions from a slightly different angle, namely by asking participants to indicate on a scale which dialects they perceive to be different (Mase 1999; Sibata 1999), with the sum of the participants' answers being computationally aggregated afterwards to represent perceptual boundaries. Lastly, the draw-a-map task was designed in which participants are asked to draw dialect areas onto a prepared base map and label them afterwards. Often, these individual maps are then aggregated to receive the approximation of a mental map of the participants (see Lameli, Purschke and Kehrein 2008 for a graphical approach to density aggregation, and Montgomery and Stoeckle 2013 for an overview of the use of GIS tools in perceptual dialectology). In addition to the lines drawn on the maps, participants can also add comments on the variety or their speakers, anecdotes, or linguistic examples, which provides further qualitative information alongside the lines (Preston 2010). This mapping task has been widely applied to different language settings, including larger areas or nation states such as the UK (e. g., Inoue 1996; Montgomery 2007), the US (Preston 1989; Plichta and Preston 2005; Hartley 2005), Trinidad (Stell 2018), South Korea (Jeon and Cukor-Avila 2015) or Germany (see Purschke and Stoeckle 2019 for a survey of perceptual dialectology research in the German-speaking area). In addition, the method has also been used to create perceptual maps of smaller areas, such as, for instance, California (Bucholtz et al. 2007), Texas (Cukor-Avila et al. 2012), the Alemannic areas in the border region of Switzerland, Southern Germany and the Alsace (Stoeckle 2014) or Saxony (Anders 2010).

One crucial methodological aspect in the application of the draw-a-map task in perceptual dialectology revolves around the use of different base maps (e. g., local, regional, national) and combinations of visual stimuli representing different kinds of socio-geographical information (i. e., cities, rivers, national borders). It has been shown that map scale and choice of stimuli largely impact the activation of language-related concepts in participants as well as the level of detail drawn in this task (see Lameli, Purschke and Kehrein 2008 for a detailed comparison of different map configurations).

Out of the abovementioned methods, it is also the draw-a-map task that is arguably most useful for research in the field of pragmatics as the comments provided alongside the maps offer rich insights into the perceptions of the speakers of the indicated dialect areas, and into the mental organization of socio-pragmatic space according to the participants. An illustration of this can be seen in Figure 1, which is a map drawn by a 25-year-old female graduate student from London,

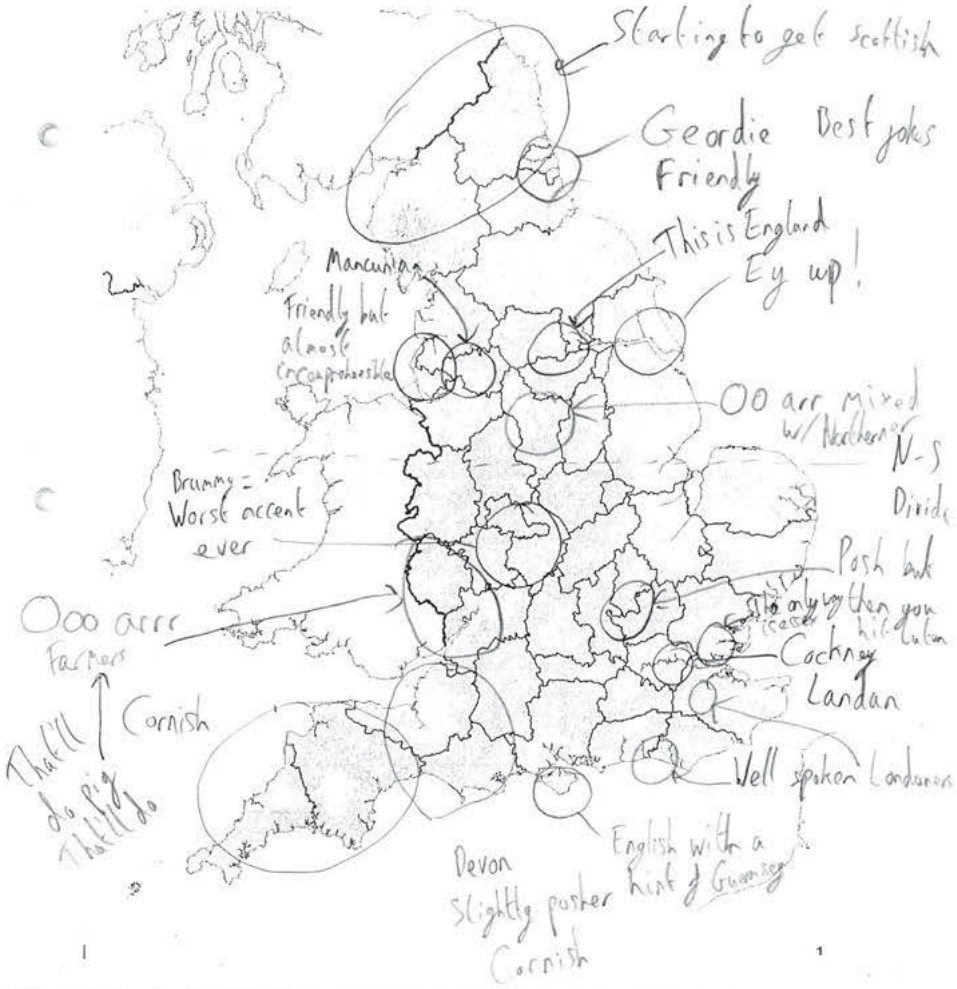

Figure 1: Perceptual map of a female participant from England (Map SE_B12; Schmalz 2017: 100)

who took part in a study on perceptions of different varieties of English along a continuum from Newcastle upon Tyne to London, carried out in different locations in the North and South of England (Schmalz 2017). Apart from the general areas the participant has outlined, it becomes visible that the speakers associated with these areas also trigger evaluations, such as a connection between "friendly" Geordies who make the "best jokes", "slightly posher Cornish" people living in Devon, "well spoken Londoners" living in the area around Brighton, or the area around Bedfordshire and Hertfordshire being "posh but then you hit Luton" (Map SE_B12; Schmalz 2017: 100).

The abovementioned methods all come with advantages and disadvantages. They allow for a strong geographical focus and the tasks are relatively clear and easy to administer. They also, as is true for stimulus-based methods in general, provide the researcher with data that are uniform, comparable and quantifiable (Purschke and Stoeckle 2019: 849 f.). However, due to the map that is provided, participants are primed to focus on a geographical distribution of language (often limited to regional varieties of one particular language), other perceptions might go unnoticed, such as perceptions of different social groups within one geographical area or representations of multilingual practices in the survey area. Furthermore, while these maps do provide a considerable amount of guidance to people, both in terms of the map information that can be used for visualization and through thematic instructions, at the same time they can only be administered with participants who are familiar with cartographic representations of space, and who possess detailed geographical knowledge of the survey area, which may not always be a given, depending on the community and the biography and age group of the participants. In cases like these, other tasks such as free association tasks or label-based sorting may lead to more fruitful results.

2.2. White-canvas tasks

To avoid some of the described methodological shortcomings of the classical mapping tasks, scholars have developed alternative approaches to knowledge and perception mapping. Instead of confronting a participant with a prepared base map that contains a specific combination of geographic stimuli, a white canvas is used to collect perceptions using only verbal instructions to steer the participants' responses. In doing so, the resulting maps give participants the opportunity to render individual representations of language in a graphical format of their own choosing. This additional information provides rich material for pragmatic analysis. At the same time, this method has the disadvantage that the collected data can only be processed manually and are difficult to generalize (but see Dernat et al. 2016 for an analytical grid for typical graphical elements and relations in mental maps).

While this approach has not been very popular in perceptual dialectology up until now, there exist some good examples that demonstrate its potential, also considering the methodological setup for our case study. Hofer (2004) uses the white-canvas task to collect individual perceptions towards linguistic and political boundaries in Switzerland with students from the Basel region (see also Robin 2014). He instructed them to draw a simple map using the linguistic landscape they live in with a special focus on linguistic boundaries. The results of the study reveal a variety of different mapping strategies, e. g., geographic maps as opposed to concept maps (e. g., piles, networks or pie charts of language labels and explanations) or even language-biographical maps, e. g., individual language competen-

cies attached to different plateaus of a mountain relief, in which the plateaus stand for significant phases in the participants biography attached to specific languages. But also individual differences in information focus (e. g., drawing specific boundaries, mentioning specific linguistic features or organizing abstract concepts in circles) and perceptual perspectives on the linguistic landscape (e. g., by mapping it either from a personal perspective or from the bird's eye view) emerge from the data. Thus, the study not only provides evidence for the range of individual representations of language; the variety of annotations to one's own language use in the maps also demonstrates the potential of the method for the pragmatic analysis of perceptions.

Variations of the described setup can be found in studies related to the concept of the *dessin réflexif* (Molinié 2009) that has been used to survey different aspects of students' perceptions of their linguistic surroundings, e. g., in classroom settings, or based on individual mobility patterns or related to expectations regarding a stay abroad (see the contributions in Molinié 2014). Different from Hofer's (2004) approach, in these studies the drawing task is combined with interviews to analyze the rationale behind the individual drawings as well as the experiences feeding into them. For example, Robin (2014) surveys maps of languages and mobility among future primary school teachers in Berne. Participants were asked to draw the course of their multilingual repertoire and their mobility with a special focus on emotions towards these two biographical aspects. Compared to studies with a focus on geographic aspects of language variation and contact, the maps in Robin (2014) are largely drawn from a personal perspective through which the different languages and mobilities are then visualized, often in the form of complex drawings containing many different details, e. g., a river with several tributaries representing the foreign languages learned or a mountain panorama with various manikins moving through the landscape.

In sum, and despite the different task setups and instructions used in the different studies, white-canvas tasks open up a promising new perspective for the analysis of socio-pragmatic aspects related to language use and language biographies. Especially the combination of a free drawing basis with accompanying interviews provides valuable clues to the conceptual representation and perceptual evaluation of language-related experiences. The method's strong focus on visualizations from a personal perspective steers data processing toward individual analyses, as opposed to perceptual dialectology's efforts to aggregate and statistically analyze data collected using the draw-a-map method.

2.3. Language-portrait tasks

Another approach that focuses primarily on the personal perspective of the participants on their individual speech competencies and self-perception makes use of visualizations under the label of *language portrait* (Busch 2021). Similar to the

dessin réflexif, this approach was developed in classroom contexts to survey the organization of multilingual repertoires in children (Neumann 1991; Krumm and Jenkins 2001; Purkarthofer 2017; Melo-Pfeifer 2017). The main idea of this line of work revolves around collecting representations of language competencies and the pragmatic domains attributed to the different languages present in a repertoire using simple manikin forms (Prasad 2008). Participants are instructed to draw their linguistic repertoire, alongside with interviews to gain insight into the rationale behind the drawings, using the manikin as a starting point for a visual representation of the participant's repertoire and self-perception. As such, the drawings are not seen as objective representations in this context but as a product of self-interpretation and self-positioning.

For instance, Busch (2012) discusses the example of a middle-aged teacher who considers himself as bilingual (French, German) while being French by nationality. In his language portrait drawn on the basis of the manikin form, he develops a complex self-representation of his language biography that is deeply intertwined with him having strong ties to both French and German (he divides the manikin form vertically in a blue half for French and a red half for German – where the lower part of this half is labelled as "Saarland dialect"). In addition to this basic structure, there are other languages located laterally on the body, such as English (sides of the torso) and Luxembourgish/Alsatian (ears), to which, moreover, different competencies (active vs. passive) and pertinence in everyday life are attributed. In the combination of drawing and interview, complex representations of a personal language biography – and its internal conflicts and contradictions – emerge, also including pragmatic strategies for social positioning vis-à-vis language-ideological discourses.

Taking the individualization of templates for language portraits further, Prasad (2014) uses digital photographs of students transformed into a coloring book-style outline drawing of the respective participant, which is then to be filled with a linguistic self-portrait. In a subsequent study, Prasad (2018) instructed school children to produce sequential drawings of mono-, bi- and plurilingual persons to analyze different forms of representations attached to those concepts, e. g., references to the persons in the children's direct environment vs. references to real or fictional public characters. For example, one participant drew himself and his siblings as representing bi- and multilingual speakers respectively, while for the monolingual person the cartoon character *SpongeBob SquarePants* was drawn. Besides offering rich insight into the linguistic self-awareness of the children, the study also sheds light on what different perceptions of one's own multilingualism may look like, that is, primarily as an (individual or relational) competence or as a (personal or national) identity.

Embedded in interviews with 12 Anglophone expats in Luxembourg, de Bres and Lovrits (2021) collect reflexive drawings on Luxembourg multilingualism with a focus on self-perception and everyday multilingual practice. Participants were instructed to draw themselves "using languages in Luxembourg", which gives

the experiment an orientation towards the practical organization of one's own linguistic repertoire under the conditions of societal multilingualism. The drawings are analyzed in the context of the interview data from a language ideology point of view and provide rich insight into the perception of multilingual practices in Luxembourg from the outside-in perspective of expats. The participants draw and report different variants of a "monolingual cringe", i. e., attitudes towards and experiences of discomfort with the circumstance of having to find one's way as a (monolingual) speaker of English in a multilingual society.

Similar to the white-canvas tasks, language-portrait tasks offer many methodological opportunities to study the knowledge and perception of multilingual speakers. By offering a personal (manikin) or even individual (photos) basis for the drawings, differentiated and information-rich visualizations of linguistic repertoires and self-perception emerge, which can also be made useful for pragmatics research, especially in combination with interviews. Moreover, by using stylized body images as a basis for mapping one's own multilingualism, physical and multimodal aspects of multilingualism come more into focus, for example, sensory and literacy modalities attached to different languages.

2.4. Pile-sort tasks

The last methodological approach we want to discuss, the *pile-sort task* with roots in anthropology (Burton and Romney 1975; Weller 1983), differs from the previous ones with regard to the experimental setup but nevertheless makes it possible to carve out rich information about individual representations of categories in knowledge and perception. For this task, participants are instructed to sort a variety of stimuli according to certain criteria, for example, by evaluating – and naming – different kinds of containers in terms of their similarity (Malt et al. 1999). In doing so, the pile-sort task avoids some of the challenges related to drawing tasks, such as the dependency on geographical knowledge (draw-a-map task) and the ability to draw (white-canvas task), or the sole focus on personal representations (language portrait). In perception studies, the focus of the task is the evaluation of a given set of stimuli in terms of their linguistic similarity and difference. The stimuli consist of either names of cities printed on small pieces of paper to be sorted on a white canvas (Tamasi 2003; Kennetz 2010) or short speech samples that are to be arranged in a neutral matrix on a computer screen (Clopper 2004; Clopper and Pisoni 2005). In addition to sorting these stimuli into similarity piles, the participants are asked to evaluate the piles as for the categories "pleasantness" and "correctness" thus adding an attitudinal dimension to the data collection.

For example, Tamasi (2003) examines the perception of linguistic variation in the U.S. in her study by presenting the participants with cards carrying the names the 50 states and asking them to sort them into groups according to perceived language similarity. The piles then had to be given identifying labels. Additionally,

the informants had to evaluate the created piles as for linguistic characteristics (such as "correct", "nasal" or "polite"). The results demonstrate a wide variation in individual categorizations (5 to 35 piles), as well as regarding the evaluation of characteristics. The results also suggest that a lack of geographical knowledge influenced the classification accuracy, and that some of the informants sorted the cards based on other than linguistic assessment categories such as prestige or other sociocultural aspects.

Apart from the fact that working with abstract labels like city or state names might run into problems, depending on the geographical expertise of the participants for the survey area, or the fact that different participants might interpret the labels and produced piles differently, this method nevertheless holds a number of interesting approaches, for example, with regard to the spatial arrangement of or the distance between the different stacks, or their designation with different collective names. With regard to pragmatics research, especially the process of sorting and naming labels representing spatially distributed entities into categories offers some potential regarding the individual representation of the socio-pragmatic differentiation of language. To our knowledge, these approaches have not yet been systematically exploited.

3. Case study: Perceptions of multilingualism in Luxembourg and Switzerland

In the following, we present a case study on perceptions of multilingualism in Luxembourg and Switzerland. Both countries are characterized by complex forms of societal multilingualism and are sometimes portrayed as similar in this respect. However, a closer look reveals that the sociolinguistic setup in both countries differs significantly. Against this backdrop, our case study examines the question of whether and how the perception of multilingualism differs in the two locations. For this purpose, we introduce a new variation of the methods discussed in the previous chapter, which is especially aimed at the pragmatic aspects of the perception and negotiation of multilingual everyday practice.

3.1. Language situation in Luxembourg and Switzerland

Luxembourg and Switzerland are traditionally described as prime examples for multilingual countries within Europe. Both countries share several characteristics, including a high proportion of foreign residents, a strong focus on the international financial market and presence of international institutions, a high level of socio-economic mobility, and a strong emphasis on national identity in public discourse. In terms of their respective socio-pragmatic structure of multilingualism, however, the countries differ significantly.

Generally speaking, both countries are examples of complex forms of *societal multilingualism*, that is, communities in which several languages (and varieties) coexist, each with specific practical functions as well as varying social status and symbolic values (see Erhart and Fehlen 2011; Horner and Weber 2008 for Luxembourg and Grünert 2018; Stępkowska 2013 for Switzerland). With regard to the individual and societal anchoring of multilingualism, however, the two countries differ significantly from each other (Androutsopoulos 2017; Coulmas 2018). While in Switzerland the *territorial distribution* of the different official languages and varieties is a central characteristic for the description of multilingualism, the languages of Luxembourg differ mainly with respect to their *functional distribution* in different social domains. In addition, different individual register types and socio-pragmatic configurations of language use have to be considered, for example, regarding individual repertoires and practices (e. g., code-switching), the teaching of languages in schools, but also the language-political development of the respective country's languages and regional varieties. The differences can also be seen in the public inscription of multilingualism in the linguistic landscape of both countries, as evidenced by a comparative study (Moser 2020).

Switzerland has four official languages, French, German, Italian, and Romansh. While all official languages have equal legal status and receive political support, their social anchoring varies from language to language, with a strong territorial attachment of each language to a region of the country. Romansh is the smallest of the four languages and indicated to be the main language by 0.5% of the population and is mainly spoken in the south-eastern canton of Grisons. Italian or a Ticino/Grisons dialect of Italian is indicated to be the main language by 8% of the population and mainly spoken in the southern part of Grisons and the southern canton of Ticino. Out of the 26 cantons of Switzerland, four are French speaking, namely in the western cantons of Geneva, Vaud, Jura, and Neuchâtel. In addition, French is also spoken in the 3 officially bilingual cantons of Fribourg, Berne, and Valais. French is spoken by 22.8% of the population as the main language. German or Swiss German is spoken as the main language of 62.1% in the non-French parts of the bilingual cantons, as well as in the 17 German-dominant cantons (FSO 2021). The relationship between Standard German and Swiss German dialects is characterized by a diglossia, in which Standard German, the traditional H-variety, is used for certain domains such as in the education system and parliament, whereas Swiss German, the traditional L-variety, is used in more informal domains such as in a family context (Ferguson 1959, Rash 1998). However, in many social contexts, Swiss German dialects do not occupy the role of a classical L-variety but possess high social status and symbolic prestige (Chambers 2003). This can be seen, for example, in the strong dominance of Swiss German spellings in digital communication (Purschke and Hovy 2019). The distribution of languages that are most frequently used in everyday communication is slightly different again, with German ranking highest with 75.8%, Swiss German with 65.4%, English with

44.8 %, French with 38.8 %, Italian with 15.4 %, and Ticino/Grisons dialects of Italian with 1.9 % (FSO 2021).

Most Swiss are multilingual and use several languages in everyday life but depending on the region and individual mobility and socialization, there are clear differences between different speaker groups (Durham 2014). Data compiled by the Federal Statistics Office in 2019 outlines that in the population aged above 15, 32.2 % use only one language regularly, 38.4 % employ two languages regularly, 21.3 % use three languages on a regular basis, 6.4 % use four languages regularly, and 1.7 % use five or more languages regularly (FSO 2021). Which languages this statistic comprises, is not mentioned.

The situation in Luxembourg is characterized by a historically grown coexistence of the official languages German, French and Luxembourgish, which are also flanked by strong minority languages (Portuguese, Italian; Horner and Weber 2008). With a total population of 626,100, the Grand Duchy has a very high proportion of foreign residents (47.4 %). In addition, 206,000 cross-border commuters from Germany, France and Belgium enter the country every day (STATEC 2020). Due to its socio-cultural diversity and demographic development (population growth of 42.5 % since 2001), the country's language regime is currently undergoing restructuring. The strong societal anchoring of German and French is diminishing (in favor of English) due to the country's international orientation in tourism and business. Moreover, the structural development of Luxembourgish into a standard language (Gilles 2019) and its current language-political revaluation foster the gradual displacement of German from its traditional domains.

In contrast to Switzerland, societal multilingualism in Luxembourg is not organized by territorial distribution but is strongly related to domains of use as well as individual factors such as language biography and personal migration history (Erhart and Fehlen 2011). For example, while German is the traditional language of print media and literacy, French takes the role of the main language for legislation and jurisprudence; debates in parliament as well as national radio and television, on the other hand, take place in Luxembourgish. Recent data on language competencies in the population impressively prove the anchoring of multilingualism in the entire population (MEN 2018). In a representative survey under the total population (N=1053), 72 % of respondents reported knowing the country's official three languages, and 73 % even reported knowing four or more languages. Official trilingualism is particularly entrenched in the younger population (16–36 years: 92 %). In addition, the study confirms the central role of French as a bridging language: Of all respondents, 98 % claim to speak French, followed by English (80 %), German (78 %) and Luxembourgish (77 %). The territorial distribution of languages is relatively even, with regional concentrations of French (south) and German (east/north), whereas the capital (72 % foreign resident population) is considered the most international due to the presence of several international institutions and the finance industry.

Against the background of these comparable but different complex constellations of societal multilingualism, we will look at individual representations of this multilingualism in the following. In doing so, we introduce a new variant of the white-canvas task which aims at the joint elaboration of shared representations of multilingualism. Thus, the method is also suitable to focus on pragmatic aspects of the negotiation of such representations.

3.2. Methods and participants

The experiment conducted in the two research locations consisted of several tasks. The first two tasks were carried out individually, while the last two tasks were carried out as a team. First, the participants were asked to draw on a blank piece of paper how they "experience multilingualism" in Luxembourg or Switzerland, respectively. In a second step, they could elaborate on their visualizations in a short interview. To prompt these, different questions were asked about their drawings, such as what is in it, what kind of symbols were used, whether there is an ordering principle, or how the drawing reflects their personal impression of multilingualism in the respective country. Next, the collaborative part of the experiment started in which the participants were first asked to compare and discuss their drawings and then to subsequently come up with a collaborative drawing both participants could agree on. In a last step, the group was asked to reflect on their new drawing, again prompted by some questions. These included what differences and/or similarities they found in the drawings they had created individually, whether they found it easy or difficult to agree on a collaborative drawing, whether they encountered any difficulties along the way, whether there was something they could not agree on, or whether they came up with additional elements that neither of them had included in their previous drawings. The data was anonymized and then analyzed for (individual vs. collaborative) visualization strategies and symbolic representations of socio-pragmatic organisations of multilingualism in both subsets.

The part of the experiment that was conducted in Luxembourg was carried out in spring 2019 in the context of a research seminar on multilingualism. The methodological approach was developed together with the students and tested in individual projects. Each participant collected and documented their own data set representing two individual and one collective drawing. In total, the data consist of 28 sets of drawings and interview transcriptions. The participants of the study come from different demographic groups in terms of age, social background, and language competencies, with the majority of respondents not being native Luxembourgers but nevertheless residents. In this way, the data collected represents an inside-in perspective on Luxembourg, that is, from participants in the country's complex multilingualism who are nevertheless often perceived as "foreign" by native Luxembourgers. Students and participants were allowed to conduct their interaction in a language of their choice, with transcripts of the conversations in English.

In Switzerland, a smaller participant group was recruited in 2020 and due to the Covid-19 lockdown in place at the time, the experiment had to be conducted online via zoom. The Swiss participant group consisted of seven female and five male first year students at the University of Zurich, aged between 18 and 28 (mean age 21;1). All of them came from the German-speaking part of Switzerland, with eight from the canton of Zurich, and four from the eastern part of Switzerland. In line with the linguistic diversity of Switzerland outlined above, all of them indicated to speak several languages at different levels of proficiency, either as acquired as L1s or as learnt at school. These languages include Swiss German, German, French, Italian, English, Spanish, Thai, Gujarati, Croatian, Albanian, and Russian. No attention to the code-switching between Swiss German, German, and English will be paid in the analysis of the data as the participants were actively told to use any of those languages, and as the experiment was conducted in a seminar in which English is the normal language of interaction, the usage of English in the recordings should not be overrated.

The present data sets vary in size and demographic background of participants. Therefore, no attempts at generalizations will be made. Instead, we focus on individual representations of multilingualism in the following, as well as common patterns and recurring motifs used in the drawings. However, the two data sets provide evidence for the different socio-pragmatic organization of social multilingualism in Luxembourg and Switzerland. Furthermore, the different analytical foci used for the two subsets serve well as an illustration of the value of mapping tasks for different applications in pragmatics research.

3.3. Perceptions of multilingualism in Luxembourg

In this section, we first discuss the drawings collected in Luxembourg with a focus on the different types of representations we find in the data as well as recurrent symbolic elements therein. Subsequently, some striking examples are analyzed in more detail from a pragmatic point of view. From the total of 84 drawings (56 individual drawings; 28 collective drawings), a number of common structuring strategies can be derived, which are used by the Luxembourg participants (see Rose 2016 for a discussion of interpretation methods for visual material).[1]

The first thing that stands out is the different *types* of drawings according to which the data set can be structured. Three main types are found here, which make up a large part of the drawings, as well as three secondary types, for each of which there is less evidence in the data. In many of the drawings there are representations of everyday situations with a focus on interactions or specific domains of everyday

[1] For pragmatic reasons, we do not distinguish between individual and collaborative tasks, also because the patterns correspond.

Figure 2: Self-portrait; individual drawing

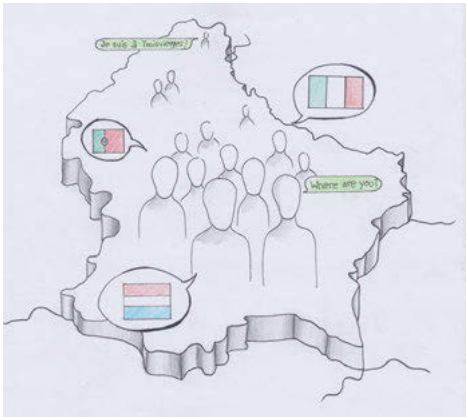

Figure 3: Map with flags and sample phrases; individual drawing

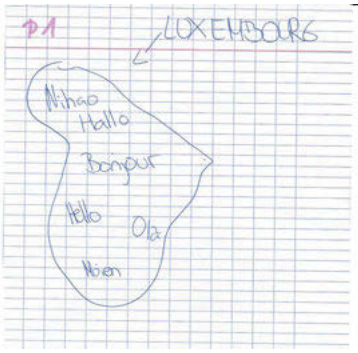

Figure 4: Schematic map with multilingual greetings; individual drawing

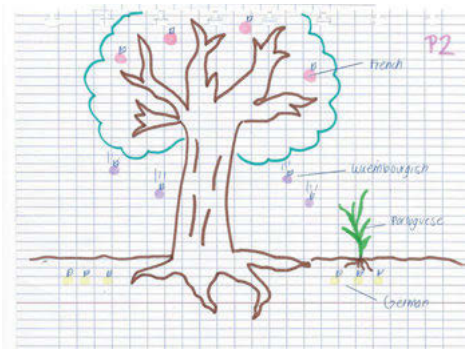

Figure 5: Natural drawing with plants and fruits representing languages; individual drawing

life (e. g., school; Figures 9 and 12). The second main type consists of illustrations of networks or mind maps by means of which concepts are related (Figures 8 and 10). Moreover, many drawings contain geographical elements, i. e., the national borders of Luxembourg (Figures 3 and 4). In contrast, the three secondary types occur much less frequently and include self-portraits (Figure 2), abstract forms or patterns (Figure 7), and individual objects (e. g., a pool table, school building or tree; Figure 5).

A second aspect relates to the different *perspectives* chosen from which multilingualism is represented. A first group of drawings here are illustrations from a personal perspective. This concerns self-portraits (Figure 2) as well as drawings of everyday situations (Figure 9). Then there is a series of images depicting differ-

Figure 6 (left): People with flags and sample dialogues; individual drawing

Figure 7 (right): A Luxembourg turtle moving slowly toward a goal with a multicolored stack on its back that is kept stable by manikins and angels; collective drawing

ent groups of speakers who have a specific connection, whether represented by a personal connection (standing hand in hand; Figure 6), a professional connection (e. g., sharing an office space) or a geographical connection (within the borders of Luxembourg; Figure 3). The third perspective focuses on the country of Luxembourg, often represented by its external borders (Figures 3, 4 and 13), in which different elements are represented (e. g., people, flags, or words). And the last type is characterized by the reference to specific domains of language use, e. g., mobility, shopping or school, which are mostly represented by means of everyday situations (Figures 9 and 12) to which then different languages are attributed.

Also informative in terms of the patterns found in the data are the different *design strategies*. Without attempting a detailed analysis of different design principles (see Dernat et al. 2016) and spatial ordering patterns in mental mapping tasks (see Lameli, Purschke and Kehrein 2008), there are clear differences between the drawings. Strong differences can be found between simple (Figures 4 and 11) and complex drawings (Figures 3, 5 and 7) as well as between detailed (Figures 2 and 13) and reduced (Figures 5 and 8) ones. Also, the data show that the methodical setup is strongly influenced by the individual ability to draw; we find several skillful images (Figures 2, 3 and 13) next to schematic illustrations and rough sketches (Figures 4, 8 and 11).

A wide range of variation becomes apparent upon closer examination of the various *motifs* used in the drawings. Again, a distribution into frequent and infrequent motifs can be seen here, without a clear preference of the participants for a certain motif group. This also has to do with the fact that in many drawings (indi-

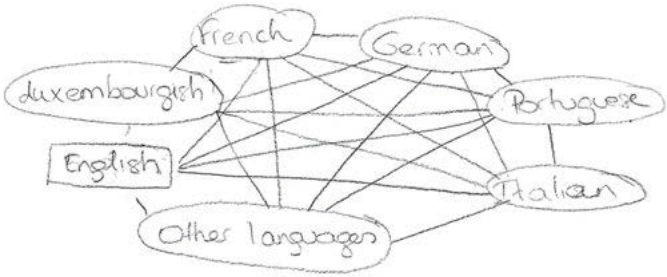

Figure 8: A network of common languages in Luxembourg; individual drawing

vidual as well as collaborative ones) a number of symbols can be found, which are combined in different ways, for example, national flag icons that are spread across a map of Luxembourg together with language labels or arranged within a public bus next to silhouettes of people. Nevertheless, there exists a set of symbols that are characteristic of the Luxembourg data. These include, first of all, direct symbolizations of languages via national flags or words, where the latter appear in different forms, namely as language labels (often in network drawings; Figures 8 and 10), greeting forms (placed next to persons; Figures 2 and 6) or short example sentences (e. g., displayed on mobile devices). A second group of symbols relates to different forms of public or work-related infrastructure, most notably buildings (e. g., school, bakery, castle) or vehicles (e. g., cars, buses, train cars; Figure 9). While buildings often appear in connection with everyday situations, vehicles appear primarily as containers in which different languages (often represented as flags) or speaking people come together. In addition, the drawings repeatedly feature depictions of nature as symbolic representations of multilingualism, for example, as a sea in which a person swims, or as a tree in which the various languages of Luxembourg are arranged as fruits, roots, and branches. For example, in Figure 5, note the difference between French being symbolized by ripening fruit hanging in the tree as opposed to Luxembourgish being represented by fruit falling out of the tree – this can be read as a reflection of the current societal debate about the dynamics of multilingualism in the country, in which the presumed displacement of Luxembourgish by French is a topos (see Purschke 2020). Another group of motifs refers to individual objects that are also symbolic of individual features of multilingualism, including a pool table with balls representing different languages, a bowl with many different ingredients or a mobile phone, on which messages in different languages are displayed. A final group of symbols are abstract representations, such as geometric shapes or color patterns (Figure 7). This group often forms the only symbol in a drawing and can therefore be considered a holistic representation of an individual (or shared) perception of Luxembourg's multilingualism – in accordance with the statements of the participants in the interview.

Figure 9: A train car of the national railroad company "CFL"; individual drawing

A final aspect that is particularly interesting with respect to the interactive negotiation of a common representation concerns the different *conversion types* in the drawings. Most of the collaborative drawings show either a combination of the previous drawings or the (modified) repetition of one of the motifs from the first task. In contrast, it is rather rare that the two participants jointly agree on a completely new motif. It is noticeable that in most cases the participant who has the better drawing skills executes the joint drawing. On the other hand, it is relatively rare for both participants to actively co-draw the common representation.

From a pragmatic point of view, especially the last aspect of the drawing task presented here is interesting. We therefore analyze two sets of images in more detail with respect to this. The first example shows how a common motif is created from two different types of drawings in the collaborative task. The abstract network structure from Figure 8 and the drawing of a train car (Figure 9) are combined here into a network structure whose connections are represented by railroad tracks (Figure 10). While the first individual drawing projects the interconnection of the country's different languages onto an abstract network form – also distinguishing between the main languages (Luxembourgish, German, French, English, Portuguese, Italian) and other languages, all of which are deeply interconnected – participant 2 (Figure 9) draws an example of a typical multilingual situation from everyday life, the use of the state railroad company CFL. In the collaborative task (Figure 10), the participants then combine their individual representations to a "railroad network of languages", thus highlighting the strong connection between mobility and languages in the country (e. g., in the context of work commuting). It

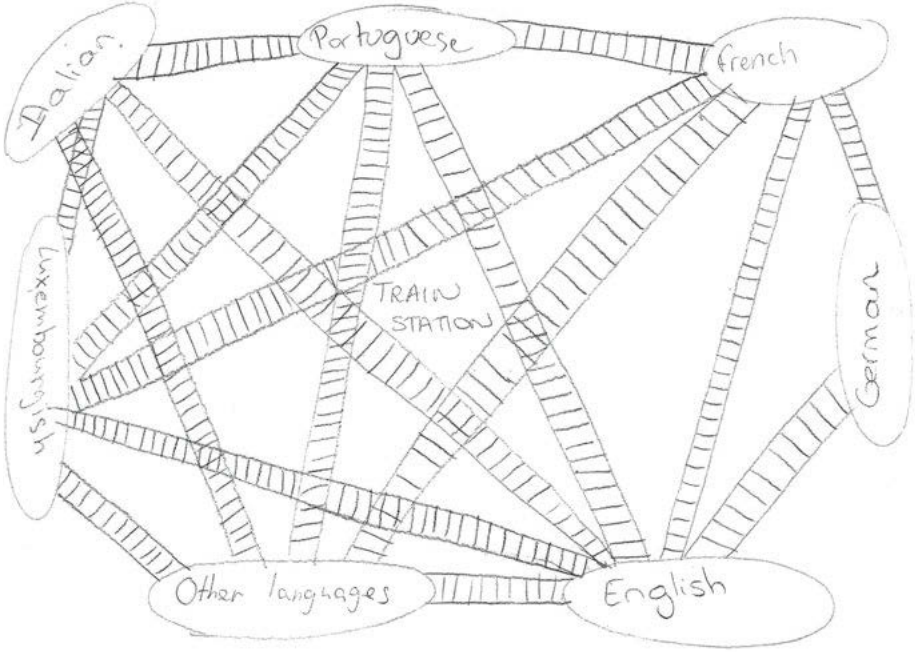

Figure 10: A railroad network of languages; collective drawing

is noticeable, though, that German (on the right in the drawing) has significantly fewer connections to the other languages than in the individual network representation (Figure 8). This reflects two things according to the participants discussion: a) the relatively poor train connections to Germany compared to France and Belgium; b) the relatively marginal position of German in everyday practice.

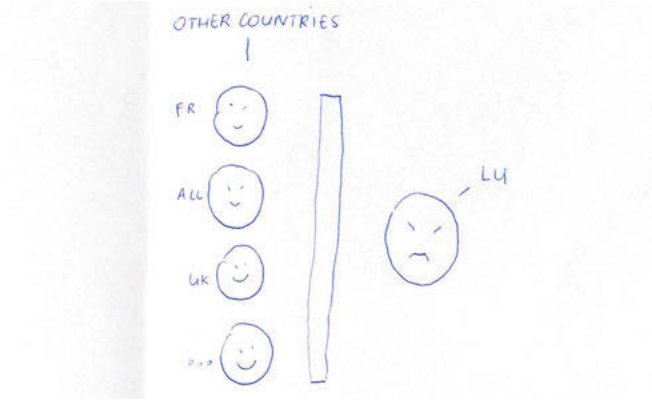

Figure 11: A border between happy countries and Luxembourg (not so happy); individual drawing

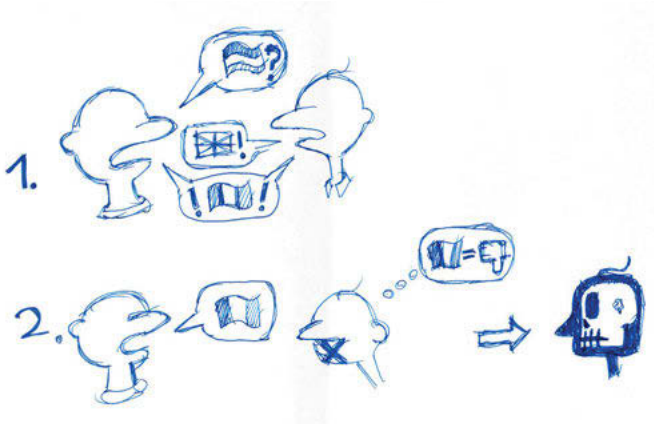

Figure 12: Micro-negotiation about the choice of language and its emotional consequences in a conversation; individual drawing

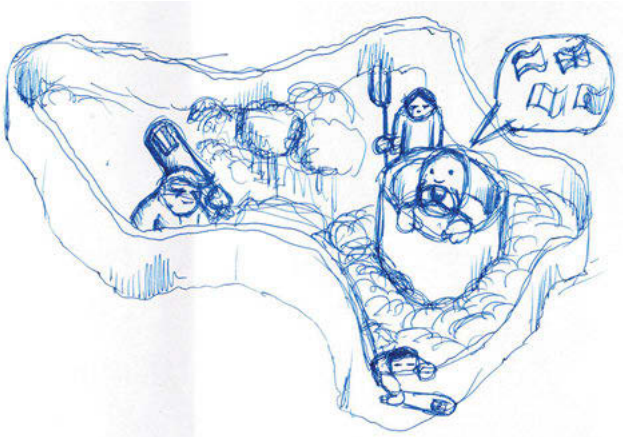

Figure 13: Luxembourg protected by walls and grim Luxembourgers, with a happy multilingual capital; collective drawing

The second example, on the other hand, evidences a different type of negotiation for a shared representation. While the chosen motifs vary, an attitudinal component is evident in all three drawings, which is coded via representations of people. The set also illustrates the dominant role of the better sketcher for the collaborative drawing. The first image (Figure 11) contains a simple schematic representation of several happy faces and one bad-tempered face, representing – according to the interview – the general level of happiness in different countries, with a solid border between bad-tempered Luxembourg and the other countries (Germany, France, UK, other). Individual drawing 2 (Figure 12), on the other hand, is well-drawn,

detailed, complex and represents a very common situation in Luxembourg at the outset of a conversation between strangers, a micro-negotiation about the language to be spoken. From a pragmatic point of view, the two phases of the conversation demonstrate the difference between the actual negotiation that settles on French after the two persons propose Luxembourgish and English respectively, and the evaluation of said negotiation, that is, first, a negative attitude of the right speaker toward French being activated, symbolized by a thought bubble with a thumbs down symbol next to the French flag, second, an inhibition to use the language represented by a symbol "x" over the mouth; and, third, a schematic representation of the speaker's emotional position in the situation, that is, a shrunken brain in a skull shown in cross section, which, according to the participant, relates to the widespread inhibition to speak French in many Luxembourgers, for simple fear of giving the impression of linguistic incompetence. This aspect of the complex societal multilingualism in Luxembourg – the implicit competence pressure on speakers which may lead to negative attitudes toward some languages – has hardly been addressed in research so far, although it is a long-standing topos in the public discourse on multilingualism often referred to as a "linguistic inferiority complex" (Purschke 2019: 65).

When developing their collaborative drawing (Figure 13), the two participants discuss the communalities in their drawings, most notably the attitudinal components, and settle on a different visualization that keeps the emotional grounding alive, and the separation between Luxembourgers and other nationalities, but changes the drawing type to a map of Luxembourg, whose borders are drawn up in the air like walls. The entire country is guarded by grim-looking figures with clubs and pitchforks – the Luxembourgers. Only in the capital, which is also surrounded by walls and marked as explicitly multilingual via a speech bubble with four flag symbols in it, sits a cheerful person. According to the participants, this reflects the perceived disparity between the capital, which is inhabited by a majority of multilingual foreigners, and the surrounding area, which is home to a majority of Luxembourgers – who are also multilingual but some of which are skeptical about the increasing internationalization of the country and the pressure this puts on the language regime. Thus, this drawing also reflects the current discourse on multilingualism in the country, in which language ideological motives are mixed with demographic and economic ones (Purschke 2019).

3.4. Perceptions of multilingualism in Switzerland

In the analysis of the Luxembourg data, we have looked at different semiotic and pragmatic factors that contribute to the individual representations of multilingualism and result in a characteristic picture of how societal multilingualism is organized socio-pragmatically. While this is possible for a larger data set, such as the present one from Luxembourg, a smaller data set lends itself better for a differ-

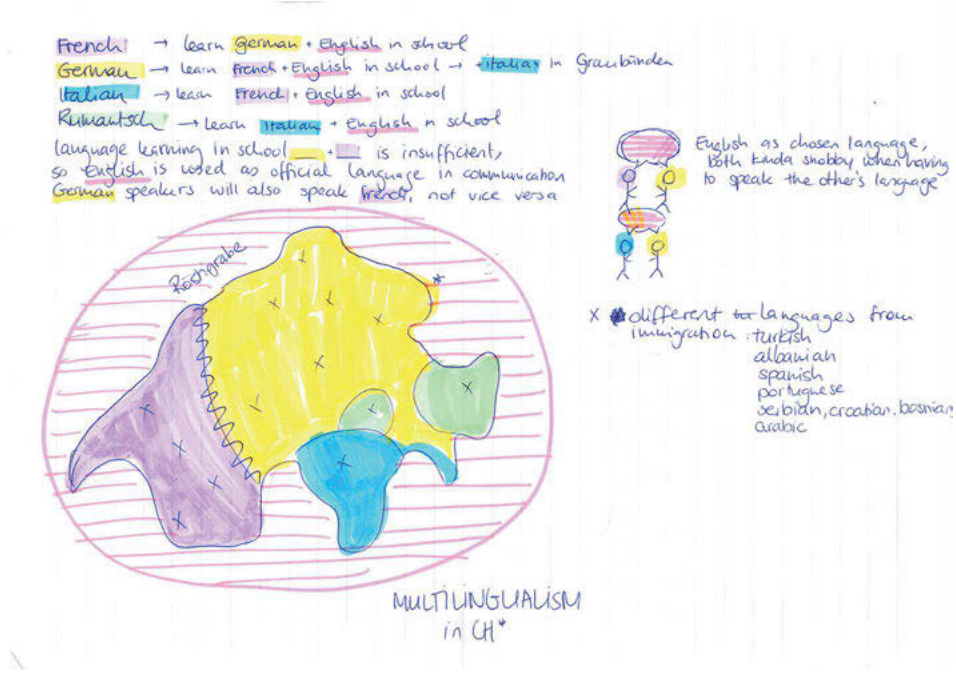

Figure 14: Geographical representation of the national languages and Xs for various heritage languages, surrounded by a bubble of English; individual drawing

ent kind of analysis. Thus, for the Swiss data, we will focus more strongly on a close-up analysis of individual strategies and pragmatic negotiations between the participants. Owing to the strong presence of maps amongst the Swiss drawings, this analysis will be split into an analysis of the drawings employing maps and an analysis of drawings employing other images.

Out of the fourteen individual drawings of the participants, six images consisted of maps of some kind and eight consisted of other strategies, such as specific domains of everyday life (e. g., school, family conversations or a football game) or individual objects (e. g., a kebab). In the collective drawings, four of the seven visualizations consisted of a map, while only three drawings employed other visualization techniques. Before turning to the drawings not employing maps, we will turn to the ones that do include maps.

All of the drawings employing maps exhibit the geographical distribution of the areas associated with each of the four national languages, illustrating the strong presence of the connection of German, French, Italian and Romansch with individual geographical loci. As can be seen exemplarily in Figure 14, the different geographical locations are frequently set apart by lines. While the lines setting the Romansch- (green), Italian- (blue), and German-speaking areas apart are likely to

be explained by the drawing process in which the colors were potentially added in a second step, the line separating the French- (purple), and German-speaking (yellow) part of the country was explicitly highlighted and the term "Röstigrabe" ('Rösti rift', alluding to the Western border of the area where a traditional potato pancake dish is common) added, which is widely used to refer to the "cultural border" separating these two areas of the country (Büchi 2000). This geographical separation of the different areas was frequently reinforced, both in the drawings as well as in the interviews (Excerpt 1). The geographical separation (Figure 14) furthermore suggests a limited level of everyday interaction between the different language groups divided by geography.

As mentioned above, this perceived geographical separation was again outlined in the discussion tasks in several ways. On the one hand, Excerpt 1 below, outlines the perception of limited interaction across speakers of different national languages, while the interaction with heritage languages of different immigrant groups seems to be of greater importance on an everyday basis:

(1)[2] RES1: Chunt villich au druffaa so i was für Chraise du dich bewegsch, nööd?
RES2: Jo, Uni halt. Aber mee Kebabständ als Wälschi.
RES1: Jo, jo ich mein es isch scho soo. Diä sprochä wod in Züri um dich umä häsch sind jo nöd Italienisch, Französisch und Rumantsch. I mein es isch jo aifach -- ebe -- es isch Türkisch und s isch Albanisch und s isch Serbisch und s isch --

SD_2020_group 6[3]

[2] English translation:
RES1: Maybe it's also about the kind of people you interact with, isn't it?
RES2: Yeah, I mean, university. But more kebab shops than people from the French-speaking part of Switzerland.
RES1: Yeah, but I mean that's what it's like. The languages you've got around you in Zurich are not Italian, French, and Romansch. I mean, that's just what it's like, they are Turkish, and Albanian, and Serbian, and

[3] In the speaker code of the excerpts, *SD* stands for *Swiss data set*, *2020* for the year in which the study was conducted, and *group 6* is the number assigned to the group negotiation.

A further illustration of this internal geographical division based on languages was also frequently commented on with respect to the level of proficiency, or the lack thereof, in the remaining national languages (Excerpt 2), and the fact that in these cases often English is used to bridge the divide – visualized in Figure 14 as a pink bubble surrounding all of Switzerland. The perceived importance of English in the Swiss multilingual context is in line with other research stating its growing significance amongst the population (cf. Stępkowska 2013).

(2)[4] RES2: Will wenn du dich mit öpperem underhaltisch, usem Wälschä zum Biispil und du chasch nöd so guet Französisch und sii chönd jo ee huärä schlecht Tütsch denn retsch
RES1: Story of my life {laughter}
RES2: Jo ich mein was retsch denn, denn retsch jo Änglisch
SD_2020_group 6

In the drawings relying on maps, the national languages frequently served as a basis to which in a second step different heritage languages of immigrant communities were added. In Figure 14, this was visualized via neutral Xs. In other maps, those languages and their speakers were visualized via cultural symbols, such as national flags of the respective heritage country or typical food items. On the one hand, this can be seen as an expression of awareness of the cultural value brought into Switzerland, while at the same time still outlining a certain level of "foreignness" attached to those languages and their speakers.

Whereas the national languages took center stage in many drawings, some of the participants also focused on everyday situations and interactions, or individual items. This was mainly the case for the visualizations that did not employ maps, such as the one provided in Figure 15 below:

[4] English translation:
RES2: Because for example, if you talk to someone, for example someone from the French-speaking part and you don't know French that well and they are really not good at German anyways, then you
RES1: Story of my life {laughter}
RES2: Yeah, I mean, what language do you speak in that case – then you speak English

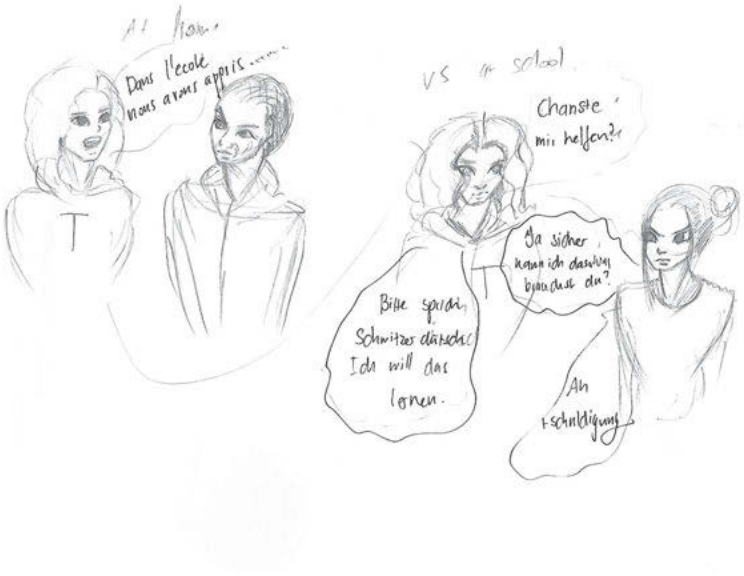

Figure 15: Representation of different language situations (home vs. school) and the role of Swiss German within the community; collective drawing

Two short interactions are portrayed, one at home (left) and one in school (right). While the interaction on the left is in French, the home language of the teenager (commented on in the interview as standing for any immigrant language but due to a lack of proficiency in any other, French was chosen), the conversation on the right is in German and Swiss German. Interestingly, the teenager on the right is shown to first accommodate to the French-native speaker by answering her question in Standard German, to which the latter replies "Bitte sprich Schwitzerdütsch. Ich will das lernen" ('Please speak Swiss German. I want to learn this.'). This situation hints at the diglossic language situation present in the German-speaking part of Switzerland, more specifically the functional distribution of Swiss German dialects and Standard German in everyday life. The conversation of Figure 15 furthermore implies the perceived importance of the ability to speak Swiss German in order to be or become part of the community. However, even though Swiss German is frequently seen as an important part of the identity of the German-speaking part of Switzerland, both in public as well as in academic discourse (see e. g., Ruoss and Schröter 2020), the highly complex relationship between Swiss German and German was only visualized in one individual drawing (Figure 15) and picked up again in the collective drawing of that person's group. In that collective drawing, the focus was slightly shifted and lay on the school and the homes of two speakers. At school, they both spoke German, while at home one teenager spoke Swiss German and one teenager spoke French. In addition to the individual drawing's

focus on heritage languages, the domain specificity of German and Swiss German is outlined as well. On the one hand, this could potentially mean that for the current participants, the varieties of Swiss German and German are not a pertinent part of what makes up multilingualism in Switzerland. On the other hand, it could also be an indication that the two varieties are not clearly separated in the participants' representations but may represent one complex language concept, also in light of the complementary domain distribution of the varieties in everyday life (cf. Oberholzer 2017). To verify this, however, further research is needed.

Differences between the public and the private sphere were nevertheless mentioned, even though not in relation with the difference between Swiss German and Standard German. These were rather perceived in the difference between the four official languages of the country and different heritage languages. This is also reflected in the national statistics on language use, in which heritage languages are more widely used "at home" than "at work". Even though the languages represented in both those categories are the same, the part of the population indicating to use for example Portuguese or Albanian at home is considerably bigger than the population indicating to use these languages at work (FSO 2021).

4. Synthesis

The case studies in Luxembourg and Switzerland have produced a number of insightful results. From a methodological point of view, first of all the new variant of the blank-canvas task proves to be valuable with regard to the elicitation of individual representations of multilingualism. This is evidenced by the different types and perspectives for drawings as well as the wide range of motifs used by the participants to shape their individual perceptions. In particular, the sequential arrangement of the tasks and the interviews conducted illustrate the potential of the method for the analysis of socio-pragmatic aspects, both with regard to the development of a shared representation (e. g., the "railroad network of languages" in Luxembourg; Figure 10) and with regard to the discussion of important symbols (the "Röstigraben" in Switzerland; Figure 14).

Despite the different size of the samples, it is striking that the representations and visualization strategies of the participants differ significantly from country to country. In our Swiss data, geographic representations of multilingualism dominate more strongly, in which, moreover, separating or distinguishing elements often make up the perception of multilingualism. More than the negotiation of a common language, the territorial attribution of the respective language seems to be guiding the visualizations for the Swiss participants. In contrast, in the Luxembourg data there are many symbols and types of drawings that show the intermingling of different languages and the interconnectedness of different nationalities, e. g., via network drawings or the national borders of Luxembourg as a container in which

different languages, people and practices mix. Divisive symbols such as borders or negative assessments of multilingualism, on the other hand, are rare.

More generally speaking, the case study sheds light on the strong connection between language practice and the perception thereof in two ways: first, the participant drawings offer insight into personal perceptions of the practical organization of societal multilingualism as well as into the attitudinal evaluations of the concerned groups of speakers and languages. Second, the participant negotiations to establish a common visual representation of multilingualism serve as an experimental mirror for the constant negotiation of social practice in multilingual societies with different individual and group-based language competencies and competing language ideologies. This allows us to draw conclusions concerning the social anchoring of individual representations and the pertinence of characteristic motifs for the practical organization of public discourse on multilingualism. The present chapter thus illustrates the usefulness of perception studies and mapping techniques for the field of pragmatics and pragmatic analysis.

Regarding their different forms of societal multilingualism, the results of the case study suggest that multilingualism in Switzerland and Luxembourg is indeed pragmatically organized differently, at least in the perception of their inhabitants. In the drawings, characteristic motifs can be found that have played a central role for the cultural self-understanding in both countries for quite some time – and apparently still do according to the drawings of our participants. In Switzerland, the image of the "Röstigraben" seems to be a central part of the language knowledge – and sociocultural orientation in general – of many Swiss, thus reflecting the territorial organization of multilingualism in the country. In addition, the example also points to the importance of cultural stereotypes for the structure of individual language knowledge. Similarly, in Luxembourg, Batty Weber's concept of "Mischkultur" ('mixed culture'; Kmec 2014) has long occupied a central position in the country's self-perception throughout the twentieth century, that is, specifically in the context of the country's nation building process and the discursive negotiation of a "national identity". Even today, in many literary texts and public contributions, images related to "cultural in-betweenness and mixity" (Glesener 2014: 153) are a dominant motif to characterize the language situation in Luxembourg.

Taken together, the methodological survey and the case study illustrate the potential of perceptual linguistic methods and mapping tasks in particular for the pragmatic analysis of languages and their socio-pragmatic grounding. On the one hand, the proposed method makes it possible to gain detailed insights into individual representations of, in our case, societal multilingualism, which reveal a lot about pragmatic peculiarities of social interaction in a speech community. This can be seen, for example, in the frequent drawings of everyday situations and the language constellations found in them. Moreover, the multilevel procedure seems well suited for an in-depth analysis of the practical negotiation of shared representations, both with regard to the reconciliation of different perceptions (Figures 8–10)

and to supra-individually shared attitudes towards specific aspects of the language situation (Figures 11–13). In this way, perceptual-linguistic methods, especially when combined with interviews or as part of more extensive test batteries, open up new and promising alleys for research on the sociolinguistic organization of multilingual societies from a pragmatic point of view.

Acknowledgments

The initial idea for the case study discussed in this paper arose in the context of a seminar on multilingualism at the University of Luxembourg, which Christoph Purschke took over from Julia de Bres (see de Bres and Lovrits 2021). With a view to comparing two multilingual societies and making the method fruitful for the field pragmatics, the approach was then extended and adapted from the original setup.

The transcriptions of the Swiss German passages are based on the transcription guidelines for the ArchiMob-Korpus (Lehrstuhl Glaser 2017), which, in turn, is based on the "Schwyzertütschi Dialäktschrift" devised by Eugen Dieth (1986).

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