

Figurative Thought and Language

Figurative Language – Intersubjectivity and Usage

EDITED BY
Augusto Soares da Silva

11

John Benjamins Publishing Company

Figurative Language – Intersubjectivity and Usage

Figurative Thought and Language (FTL)

ISSN 2405-6944

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Volume 11

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Universidade Católica Portuguesa

John Benjamins Publishing Company

Amsterdam / Philadelphia



The paper used in this publication meets the minimum requirements of the American National Standard for Information Sciences – Permanence of Paper for Printed Library Materials, ANSI Z39.48-1984.

DOI 10.1075/fl.11

Cataloging-in-Publication Data available from Library of Congress:
LCCN 2021003376 (PRINT) / 2021003377 (E-BOOK)

ISBN 978 90 272 0855 2 (HB)

ISBN 978 90 272 6003 1 (E-BOOK)

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Acknowledgements

The idea for this volume originated at the 4th International Conference on Figurative Thought and Language held by the Center for Philosophical and Humanistic Studies of the Faculty of Philosophy and Social Sciences at the Universidade Católica Portuguesa in Braga, Portugal in October of 2018, at which the present contributions were originally presented. I would like to express my gratitude to all the contributors for their insights and comprehensive cooperation and for responding with professionalism to all the requests that have been made of them, including extensive reviewing and lengthy processes of refereeing.

I am also deeply grateful to the editors of the *Figurative Thought and Language* series, for their generous and unwavering support from the very beginning. My sincere thanks go especially to Angeliki Athanasiadou, for her continuous encouragement and guidance.

Finally, I wish to thank the staff at John Benjamins for handling the manuscript in a most efficient way. Warm thanks go specifically to Esther Roth, for her interest in this project and her professional expertise and support, and to Ineke Elskamp who guided me through the production process in a very meticulous way.

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INTRODUCTION

Figurative language

Intersubjectivity and usage

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1. Figurative language, intersubjectivity and usage

There is a substantial body of linguistic and multidisciplinary research that provides strong evidence of the significance of figurative thinking in human cognition and its reflection in linguistic structure and actual language use. Much of this research has been developed in the theoretical framework of Cognitive Linguistics and has primarily focused on metaphor and metonymy, their conceptual structures, their pragmatic functions, their interactions, and their impacts on the lexicon, grammatical constructions, discourse types and communication processes. The thirteen studies brought together in the present volume came from presentations at the 4th International Conference on Figurative Thought and Language held by the Faculty of Philosophy and Social Sciences at the Universidade Católica Portuguesa in Braga, Portugal in October 2018.

Forty years ago, George Lakoff and Mark Johnson started a *revolution* in metaphor studies with the publication of *Metaphors We Live By* (Lakoff and Johnson, 1980), a book that triggered a considerable amount of research on metaphor, metonymy, image schemas and blending and that fed the emergence of Cognitive Linguistics itself. The so-called Conceptual Metaphor Theory showed how metaphor is a cognitive phenomenon that shapes the way we think; that should be analyzed as a mapping between two different domains, taking the form of structural alignments between the source and target domains; and that is experientially grounded, especially in bodily experience. The same theory also showed the cognitive nature and the experiential motivation of metonymy. However, despite its popularity, the standard version of the Conceptual Metaphor Theory has been the object of much criticism – including philosophical, psychological and, naturally, linguistic criticism – in the last decade (e.g. Rakova, 2002, 2003; Haser, 2005; Glucksberg, 2008; Geeraerts and Grondelaers, 1995; Geeraerts, 2010). More recently, this criticism has intensified to the point that the founding notion of *conceptual metaphor* is

being challenged. Gibbs (2017) addresses this heated debate in terms of *metaphor wars* and provides an evaluation of the arguments and empirical evidence for and against conceptual metaphors.

The *new* Contemporary Metaphor Theory (in the words of Steen, 2011) and the current studies about other processes of figurativity provide important developments. In a nutshell, the focus has shifted from figurative words to the metaphorical and metonymical potential of constructions; from the language system to the actual language use in real discourse, to other semiotic systems, and to combinations of these in multimodal communication; from a psychological and universalist view to a sociocognitive, sociohistorical approach; from an introspective, decontextualized perspective to a quantitative and multivariate empirical methodology; and also from metaphor and metonymy to less studied figures such as irony, hyperbole, and simile. Metaphor and other figures must therefore be studied as involving the relationship between cognition, society and discourse and adopting an empirical methodology relying on advanced multivariate techniques.

Intersubjectivity and usage play central roles in figurative language and are pivotal notions for a cognitively realistic research on figures of thought, speech, and communication. What matters is intersubjectivity as part of a growing acknowledgment that cognitive linguistics needs to incorporate an interactional, social conception of language (Geeraerts, 2016), rather than intersubjectivity as a linguistic mechanism for coding speaker-hearer relations and for monitoring the interaction between them. Importantly, the notion of intersubjectivity is associated with that of common ground, which accounts for the fact that successful linguistic interaction requires mutual attention to the situational context and a joint set of signs and beliefs; in other words, it requires a *shared mind* (see Verhagen, 2005, 2007, 2015; Zlatev et al., 2008; Geeraerts, this volume). Figures of speech, as any other linguistic phenomenon, can only be adequately described and explained in the context of current language use, as it appears in corpora or in experimental settings. Although cognitive linguistics has defined itself from the beginning as a *usage-based* model (Langacker, 1990), the empirical aspects and methods of usage-based linguistics still often remain programmatic. Figures should therefore be studied as cognitive and communicative processes grounded in intersubjective interaction using usage-based empirical methodology.

2. Social and empirical turn in figurativity research

Three main and complementary developments are being explored in current research on metaphor, metonymy and figurative language at large, primarily in the framework of Cognitive Linguistics and related sociocognitive models of language:

the discourse approach or the study of figurative language in its actual context of use and investigating the way in which figurative thinking appears in different types of discourse; the sociocultural, sociohistorical, and sociosemiotic theoretical and descriptive perspective; and the corpus-based and experimental empirical methodology necessary to employ the usage-based model. These three developments are a consequence of the descriptive *social turn* in Cognitive Linguistics and its methodological *empirical* (and *quantitative*) *turn*. The developments are not a complete novelty but rather a deliberate strengthening and foregrounding of what were originally considered as secondary interests.

One of the most stimulating and productive developments of the new contemporary metaphor theory is the study of metaphor and other figures in real discourse, both verbal and nonverbal; in multimodal discourse and in different types and genres of discourse (for an overview, see Semino, 2008; Musolff and Zinken, 2009; Gola and Ervas, 2016). In line with the growing interest in multimodal discourse, metaphor studies are also developing an important and very productive line of research on multimodal metaphors that make use of more than one mode (verbal, visual, and/or aural) in order to create meaning (Forceville, 2009, 2010; Forceville and Urios-Aparisi, 2009). There are several advantages to the discursive approach of metaphor and figurative language in general. First, it is clear that metaphor and other figures can only emerge in specific contexts of the use of language or other forms of communication, in certain communicative situations and in social interaction. Consequently, it should be understood that metaphor is not only a phenomenon of thought and language but also a phenomenon of communication and therefore of *intersubjective interaction*. Second, the study of figures in discourse allows one to answer both the identificational question (how to identify objectively, by intersubjective agreement or by automated techniques, a figure in the texts) and the functional question (what are the functions (persuasive, emotional, and/or ideological) of a particular figure in a given discourse and how similar/different the use of a figure is in different discourse genres). In line with the tradition of Critical Discourse Analysis, the ideological analysis of metaphor has undergone great development (e.g. Lakoff, 1996; Koller, 2004; Musolff, 2004; Charteris-Black, 2005). Finally, the study of figures in discourse allows us to determine the psychological processes of using metaphors in understanding text (e.g. Gibbs, 2011), how metaphors are socially shared among members of a community (e.g. Cameron, 2007), and the evolution of metaphor and metonymy over time (e.g. Allan, 2008; Díaz-Vera, 2015). All the studies gathered in this volume use the discourse or cognitive-discourse approach, and Vereza's and Ruiz de Mendoza and Lozano-Palacio's chapters further describe discourse analysis.

Another complementary and no less important development has challenged the neurophysiological and universalistic perspective of the standard Conceptual

Metaphor Theory based on the principle of individual *embodiment*, showing that metaphor has historically and culturally specific origins, is very sensitive to cultural variation and should therefore be understood as a *socioculturally situated* cognitive phenomenon. Illuminating this redefinition of metaphor, Bernárdez (2008b) relates metaphorical creativity with Bourdieu's (1994) *habitus*, thus showing how metaphor is a social and cultural product that is transmitted individually from one generation to another and that is cognitively integrated in the community in an unconscious way. This social and cultural – in other words, interpersonal – perspective of metaphor and other figures corresponds to the *sociosemiotic commitment* described by Geeraerts (2016) as a necessary complement to the foundational *cognitive commitment* in the cognitive linguistics framework. Three domains of analysis are being developed: a diachronic analysis showing how the experiential grounding of metaphors and other figures is related to specific historical developments (e.g. Geeraerts and Grondelaers, 1995; Allan, 2008; Winters, Tissari and Allan, 2010; Díaz-Vera, 2015); a cross-cultural analysis showing how metaphor and other figures do vary among languages and cultures and how the experiential grounding of figures is closely related to cultural specificities (e.g. Palmer, 1996; Kövecses, 2005, 2015; Bernárdez, 2008a; Sharifian, 2011, 2017); and a variationist approach showing how metaphor and other figures may vary within the same language and how their experiential grounding is inscribed within a particular linguistic community. This last development is still relatively minor, but it has received full theoretical and methodological support in the burgeoning cognitive sociolinguistics (e.g. Kristiansen and Dirven, 2008; Geeraerts, Kristiansen and Peirsman, 2010). The diachronic, variationist and cross-cultural approaches are represented in this volume primarily in the studies of Allan, Soares da Silva and Zlatev, Jacobsson and Paju, respectively.

A final development is the empirical demonstration of the existence of conceptual metaphor, conceptual metonymy and other figurative processes in thought and language. The goal is to develop an empirical methodology that yields descriptions of metaphor and other figures that account for synchronic, diachronic, social and cultural variation and that can be falsified. The usage-based empirical studies of figurative language use a multivariate quantitative methodology, including both advanced corpus linguistics techniques, such as the behavioral profile approach (e.g. Deignan, 2005; Stefanowitsch and Gries, 2006; Glynn and Fischer, 2010; Gries, 2010; Glynn, 2018), and various experimental methods, such as cross-modal priming and eye-tracking (e.g. Gibbs, 2006; Coulson, 2008; Gibbs and Colston, 2012; Brône and Oben, 2018; Carrol and Littlemore, 2019). In this volume, Soares da Silva illustrates the corpus-based behavioral profile approach; while eye-tracking, cross-modal priming and other experimental methods are applied and discussed in the studies of Brône, Carrol, Colston, and Givoni, Bergerbest and Giora.

There is yet another important development in current research on figurative language, which is a descriptive expansion from the considerably more studied and popular figures, such as metaphor and metonymy, to other figures, such as irony, puns, hyperbole, synesthesia, and simile. Six of the thirteen contributions in this volume analyze irony and humor, namely, the studies by Barnden, Brône, Ruiz de Mendoza and Lozano-Palacio, Winter-Froemel and, as part of other linguistic phenomena, Geeraerts, and Givoni, Bergerbest and Giora. The descriptive expansion in figurativity research also includes studies on the interaction of figures beyond the well-known metaphonymy (Goossens, 1990), such as the interaction between metaphor and irony (Barnden, this volume), metonymy and metalepsis (Brdar-Szabó and Brdar, this volume), and metaphor and simile (Colston, this volume).

3. Overview of the sections and contributions

This volume is thematically structured into three main sections. The first section comprises chapters addressing the notions of intersubjectivity and interaction in figurative language (namely, metaphor, irony, and empathy) from a predominantly theoretical and/or descriptive perspective in different ways. Section two gathers contributions exploring the mechanisms and processes of figurative language, both the most studied, such as metaphor and metonymy, and the least studied, such as irony and metalepsis, and dealing with demarcational and definitional problems. The third section comprises studies that showcase usage-based analyses of figures dealing with the inevitable dimension of synchronic and diachronic variation and that apply a solid empirical methodology in the form of advanced corpus-based techniques and experimental methods. These three research topics are, however, not restricted to their respective section but may also be found in other contributions.

Altogether, the 13 studies gathered in this volume focus on interactional and usage-based perspectives on figures, adding new and original insights to our understanding of figurative thought and language. These studies explore the impact of figurativity on areas of lexicon and grammar; on real discourse and interaction, including various types of discourse; and across different semiotic systems. While some papers focus on the psychological processes of the comprehension of figurativity, others address the ways in which figures of thought are socially shared as well as their variation through time and space. Moreover, some contributions are established on firm empirical and statistical bases in the form of advanced corpus-based techniques and experimental methods. There are studies about metaphor, metonymy, irony and puns; about related processes, such as humor, empathy and ambiguity; and about the interaction between figures. Overall, this volume

presents the advantages and the opportunities of a sociocognitive perspective of figurativity, embracing both the psychological and the intersubjective reality of figurative thought and language and empirically emphasizing the multidimensional character of figurativity, its central function in thought, and its impact on everyday communication.

3.1 Part one. Intersubjectivity and interaction

This section presents four chapters that examine metaphor, irony, humor and empathy from the perspective of intersubjectivity and interaction or intersubjective interaction. First, regarding “Second-order empathy and pragmatic ambiguity”, **Dirk Geeraerts** argues that *second-order empathy* is a reflexive type of cognitive empathy, specifically the ability of the Self to take into account the Other’s point of view as including a view of the Self, and a systematic source of communicative ambiguity. This pervasive indeterminacy in speaker-hearer interactions is illustrated with examples of referential ambiguity, speech-act-related ambiguity, and sociocommunicative ambiguity. Specifically, in the case of representative speech acts, it gives rise to a systematic pattern of intersubjective propositional attitudes, particularly assertion, mistakes, agreement, disagreement, irony, and deception. In this vein, irony (and, more broadly, all pretense-based figures of speech) finds a systematic position within a broader calculus of intersubjective interaction. Situating these findings within a broader epistemological and philosophical context, Geeraerts claims that the ambiguity potential of the Other’s ability to conceptualize the Self’s point of view is relevant both for the psychological theory of mind paradigm, since it may broaden the empirical range of experimental mind-reading research; and for the cognitive linguistic interest in intersubjectivity, since it adds the principle of pragmatic underdetermination to the notion of common ground. Crucially, Geeraerts points to a stimulating convergence of phenomenology and cognitive linguistics, namely the idea that the *empathic potential for ambiguity* is the communicative correlate of Levinas’s notion of *irreducible alterity*.

In the second chapter of this section, entitled “Desiderata for metaphor theory, the Motivation & Sedimentation Model and motion-emotion metaphoremes”, **Jordan Zlatev**, **Göran Jacobsson** and **Liina Paju** challenge many of the findings of metaphor research and propose a set of desiderata for a comprehensive modern theory of metaphor. The aim is to develop an integrated and unified theory of metaphor in the current context of diversified and even opposing perspectives on metaphor, addressing metaphor as a phenomenon of both cognition and communication, of both language and other semiotic systems, such as gesture and depiction, and of both universal and culturally specific dimensions. Furthermore, metaphors are balanced between stable structures and dynamic contextual processes and described

by clear theoretical and operational definitions. Zlatev, Jacobsson and Paju argue that the recent cognitive-semiotic Motivation & Sedimentation Model (MSM) is capable of fulfilling these desiderata. Inscribed in the philosophical tradition of phenomenology (in particular the work of Merleau-Ponty) and in the integral linguistics emanating from Eugenio Coseriu, MSM distinguishes three fundamental levels of meaning making, namely the *embodied* level of meaning, which consists of nonlinguistic cognitive and experiential processes and structures; the *situated* level, which is that of actual live social interaction, spontaneous language use, and artistic improvisation; and the *sedimented* level of historically derived, relatively stable linguistic and other social norms. The proposed MSM is applied to previous research on “motion-emotion metaphors”, supplying new data as well as a more systematic methodology; and six differentially related European languages – English, Swedish, Spanish, Bulgarian, Finnish and Estonian – are compared. The authors show how the embodied level of the model accounts for the fundamental role of the lived bodily experience in metaphor, and how the sedimental level can accommodate the need for a sociohistorical perspective on metaphor.

Arguing that the most prominent pragmatic effect of metaphor is *meaning enhancement*, **Herbert L. Colston** evaluates changes in pragmatic effect performance when metaphors are assembled in different ways by altering their source and target domains, as a means of evaluating metaphor comprehension accounts. The paper, titled “Evaluating metaphor accounts via their pragmatic effects”, describes four experiments testing the perceived pragmatic effects in varyingly structured metaphors. The metaphors were altered in terms of using relatively weak versus strong source domains, using mixed versus unmixed source domains, using single versus double instantiations of source domains, and using standard metaphor versus simile constructions. Experiments revealed that both single and double metaphors enhanced meaning relative to nonmetaphorical utterances, unmixed metaphors enhanced meaning relative to mixed metaphors, and both simile and metaphorical constructions enhanced meaning relative to nonmetaphorical utterances. Colston concludes that the results support the idea that metaphor understandings arise at least in part due to embodied simulations undertaken on the source domain content, enabling enriched insights into target domain structures.

The last chapter in this section, “The multimodal negotiation of irony and humor in interaction. On the role of eye gaze in joint pretense”, authored by **Geert Brône**, addresses the question of how speakers *interactionally* monitor sequences of joint pretense, particularly humor and irony. To gain an empirically sound insight into this complex negotiation process and to fill a gap in the research on the multimodal construal of irony and humor in interaction, Brône focuses on the role of eye gaze as a mechanism for reaction monitoring by speakers and hearers engaged in interaction, especially in establishing and negotiating humorous

or ironic utterances. In a first part of the chapter, the author provides an outline of the research on irony and humor in interaction, with a particular focus on cognitive-interactional accounts; and discusses some of the functions of eye gaze in interaction, especially those that are relevant to the study of humor and irony in interaction. In a second part of the paper, Brône presents a multimodal microanalysis of a selection of sequences, showing the tight interaction of the gaze behavior of speakers and their addressees, as well as between addressees, contributing to the success of the humorous/ironic exchanges. Specifically, the multimodal analysis shows how the participants' gaze behavior may be strongly synchronized at key points of an ironic sequence, whereas in other cases, a gaze shift by one participant triggers (non)verbal behavior in others that is of essential importance for the success of the ironic sequence.

3.2 Part two. Mechanisms and processes

Section two includes four contributions that more or less describe well-known mechanisms and processes of figurativity such as metaphor, metonymy, metalepsis, and irony, as well as the interactions between them. In “Metaphor and irony: Messy when mixed”, **John Barnden** addresses metaphor/irony mixing and discusses previous research which had claimed that the ironical and metaphorical meanings of utterances, such as “This train’s a real rocket!”, ironically rests on a metaphorical nonironic meaning, rather than metaphorically resting on an ironic nonmetaphorical meaning. Although an *irony-upon-metaphor* dependence direction seems more plausible than a *metaphor-upon-irony* dependence direction, Barnden argues that the preference is less clear-cut than previously implied in the literature, and that a somewhat messy, mixed-up ordering is desirable. Specifically, the chapter shows that it is often desirable for the hearer first to detect that the speaker is being ironic – hence, the processing is *ironicity-first*. Barnden also argues that the metaphorical relationship established by the irony-affected metaphor-handling can sometimes benefit from being *contrast-imbued*, i.e., from including source/target correspondences bearing contrasts, rather than merely consisting of correspondences that are regarded as bearing similarities. Crucially, contrast-imbuedness allows the particular nature of the target to guide the metaphor analysis without misguiding it. The chapter also addresses some relatively neglected issues, namely, the possibility of ironic-*cum*-metaphorical processing; the metaphor-upon-irony dependence direction as an important type of irony/metaphor mixing; and parallel mixing, occurring where there is both an ironic nonmetaphorical meaning and a metaphorical nonironic meaning as final outcomes.

Exploring other ways of interaction of figurative processes, **Rita Brdar-Szabó** and **Mario Brdar** show how metonymies can also be mixed and massed, i.e., they can interact in a number of interesting but not very conspicuous, undetected ways. The chapter, entitled “Metonymic indeterminacy and metalepsis: Getting two (or more) targets for the price of one vehicle”, focuses on metonymic interactions producing indeterminacy. Three subcases of metonymic indeterminacy are analyzed, namely the alternation between the nonmetonymic and the metonymically extended senses; the virtual interaction between two related but different conceptual metonymies; and the genuine metonymic indeterminacy, where a single expression is simultaneously compatible with two or more metonymic interpretations. Particularly, this last situation is described under the classical rhetoric notion of *metalepsis* or transgression in narratology, in the sense of tiered metonymy or other figures of speech related to each other by a metonymic link. Metaleptic cases of interaction are scrutinized, especially the metaleptic indeterminacy of metonymies, a situation in which a single metonymic source can simultaneously have two metonymic targets. The authors argue that metaleptic indeterminacy may increase the second-order type of anisomorphy (i.e., a lack of one-to-one correspondence between meaning and expression), but ultimately leaves space for dynamic and fluid meaning construal, making texts more cohesive. To accommodate metalepsis, they also argue for an approach to metonymy not based on mappings, but rather on the activation of the conceptual source that opens up a related mental space.

Returning to irony, **Francisco José Ruiz de Mendoza Ibáñez** and **Inés Lozano-Palacio** offer a comprehensive and unified approach to verbal and situational irony, claiming that ironic meaning involves a clash between an *epistemic scenario* or a speaker’s knowledge and an *observable scenario* or reality. The paper, entitled “On verbal and situational irony: towards a unified approach”, applies this cognitive and pragmatic scenario-based approach (especially the notion of *clashing scenarios* rooted in Ruiz de Mendoza and Galera’s (2014) cognitive modeling framework) to cases of verbal irony and situational irony, including fictional cases. In the case of the more communicatively sophisticated verbal irony, the epistemic scenario is based on a pretended agreement with someone’s beliefs, which can be materialized in various kinds of agreement expressions including *echoic* mentions, of the kind postulated by Wilson and Sperber’s relevance theory. In situational irony, the epistemic scenario contains a solid assumption about the nature of a state of affairs, which clashes with what is observably the case. The authors further elaborate on the pragmatic notion of reasoning schema to account for the reasoning mechanisms behind the construction of irony. They also provide a typology of ironies that overrides the traditional verbal/situational irony dichotomy. It is argued that *communicated irony*, either verbally, visually or multimodally, requires a

communicative context with an ironist and an interpreter, while *noncommunicated* (or situational) *irony* does not. Only when noncommunicated irony is inserted into a communicative context, including narrated or performed irony as part of a fictional context, can it involve an ironist.

In the last chapter of this section, entitled “On figurative ambiguity, marking, and low-salience meanings”, **Shir Givoni, Dafna Bergerbest and Rachel Giora** discuss the understudied processing of marked *simultaneous ambiguity* or *ambiguation* (i.e. when more than one meaning of an ambiguity is simultaneously applicable, which goes beyond humor and punning) and outline a psycholinguistic account for such marking within the low-salience marking hypothesis. This hypothesis predicts that marking ambiguity (e.g., *double entendre, in the full sense of the word*) boosts less-salient meanings, i.e., meanings that are less frequent, less familiar, less prototypical, and less conventional, in line with the graded salience hypothesis proposed by Giora (2003). Two experiments conducted in Hebrew support the hypothesis as well as a graded view of lexical access, showing that low-salience markers boost low-salience meanings. Specifically, when the figurative utterance is a familiar metaphor, as in polysemy, the marker will draw attention to its literal meaning, at times resulting in a pun. The results of these experiments show that marking figurative polysemy results in higher preference and faster response times for less-salient meanings, challenging modular, literal-first, and underspecification accounts of lexical access.

3.3 Part three. Usage and variation

In the first chapter of the third section, entitled “Metaphor, metonymy and polysemy: A historical perspective”, **Kathryn Allan** provides the reader with a historical perspective on metaphor and metonymy as two of the most common mechanisms of meaning change and polysemy. The paper presents a case study of the adjective *dull* in English, which developed multiple meanings that do not appear to represent the kind of straightforward concrete > abstract metaphorical mapping that might be assumed. Rather, the diachronic analysis shows that the complex semantic history of the lexeme reveals gradual shifts in meaning involving metonymy and change motivated by analogy. Allan argues that paying attention to polysemy across the history of a word and the histories of related words has the potential to establish the right relationships between senses and to solve semantic puzzles. There are examples, such as *dull*, that show complex and sometimes counterintuitive semantic changes. On a more general level, Allan argues that semantic changes involving metaphor and metonymy take place within a historical context and within the linguistic system, and attention to both can inform and enrich our understanding of figures.

In “Psycholinguistic approaches to figuration”, **Gareth Carrol** gives a thorough and insightful survey of psycholinguistic research on figurative language use, focusing on cross-modal priming and eye tracking, which represent two key experimental techniques used in this context. The cross-modal priming method helps to provide a direct way of measuring meaning activation. Eye tracking is an essential tool in the study of how language is processed, focusing on reading as a window into the unconscious mind. The significant number of experiments described and discussed is consistent with the multitude of factors that seem to contribute to figurative language processing. The importance of predictability, speaker variables, competition with the literal meaning, concreteness, the semantic neighborhood, familiarity and conventionality are some of such factors discussed in this chapter. In the concluding section of the paper, Carrol shows how the results of the different experiments can be interpreted against competing theories and models about how figurative language is processed. In this way, the author demonstrates how all figurative language researchers can potentially benefit from the application of psycholinguistic techniques.

In the third paper of the section, entitled “The fabric of metaphor in discourse. Interweaving cognition and discourse in figurative language”, **Solange Vereza** addresses the interplay of high-order, *offline* and *online*, context-dependent representations in metaphor in language use. In the context of the existing controversies about the importance of these levels and of competing approaches to metaphor, especially Conceptual Metaphor Theory and discourse-based approaches and particularly the controversy of what might be approached as a conceptual or a local/situated metaphor, Vereza argues for a cognitive-discursive approach that integrates both dimensions and systematic and situated metaphors. The paper illustrates this comprehensive integrated approach to metaphor with an analysis of an extended situated metaphor explored in an argumentative text. Vereza shows that a *metaphor niche*, which explores and develops a particular point of view through a number of local mappings, reveals the way in which the two levels of metaphor meaning production are articulated. Specifically, Vereza argued that a crucial aspect involved in this articulation is the way in which local mappings highlight specific features of the source domain and hide others, thereby helping to construct a point of view.

In “Sources of verbal humor in the lexicon: A usage-based perspective on incongruity”, **Esme Winter-Froemel** analyses potential sources of humor in the French and Italian lexicon and investigates to what extent the notion of *incongruity* can serve to explain the humorous effects and ludic usage of lexical items. Exploring verbal humor from a semiotic and interactional perspective, the author reinterprets incongruity from a usage-based perspective and proposes a typology of relevant subtypes of incongruity, which is able to explain the *potential* for humor that exists

in lexical items such as E. *au reservoir*, *bumpology*, *elbow-grease*, F. *coolos*, *flémिंगite*, and *trotte-menu* and is only actualized as part of an interaction. Analyzing empirically numerous examples identified in renowned dictionaries of French and Italian and including a section on nominal compounds and the humorousness of metaphor, Winter-Froemel shows how semantic and pragmatic/interactional aspects interplay, and thus how cognition and communication are included in a comprehensive approach to verbal humor in the lexicon, in particular the humorous potential of lexical items and figurative language.

Finally, in the last chapter of the volume, entitled “Measuring the impact of (non)figurativity in the cultural conceptualization of emotions in the two main national varieties of Portuguese”, **Augusto Soares da Silva** presents a corpus-based multivariate quantitative analysis of the impact of conceptual metaphor on the cultural variation of ANGER and PRIDE in European and Brazilian Portuguese. Applying a *profile-based* methodology, the study combines a multifactorial usage-feature and metaphorical profile analysis of 1,100 examples of these two emotions with their subsequent multivariate statistical modeling. Soares da Silva shows that Brazilian Portuguese is more connected with the complaining kind of anger, with the metaphorically unrestrained and overt manifestation of anger, with self-centered pride and with the metaphorically visible manifestation of pride. In contrast, European Portuguese seems closer to the violent and interpersonal anger, the metaphorically profiled somatization of anger, other-directed pride and the metaphorical personification of pride as an honored person. These statistically significant associations are consistent with the more individualistic, indulgent, and emotionally expressive culture of Brazil and the more collectivistic, restrained, and impulse-controlled culture of Portugal. It is argued that these empirical results on the intralinguistic cultural variation of figurative and literal emotions support the usage-based and *variationist* approach to metaphor and other processes of figurative language.

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PART I

Intersubjectivity and interaction

Second-order empathy, pragmatic ambiguity, and irony

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If first-order empathy is the ability of Self to take into account Other's point of view, second-order empathy may be defined as the ability of Self to take into account Other's point of view as including a view of Self. The paper argues that the possibility for the hearer to choose between a first-order empathic and a second-order empathic interpretation of speaker utterances introduces a principled and pervasive indeterminacy in speaker-hearer interactions, illustrated with examples of referential ambiguity, speech-act-related ambiguity, and socio-communicative ambiguity. With representative speech acts, the interaction of degree of empathy and convergence/divergence of beliefs yields six interpretative configurations: assertion, mistake, agreement, disagreement, irony, deception. Thus, irony finds a systematic position within a broader calculus of intersubjective interaction.

Keywords: empathy, irony, ambiguity, assertion, mistake, agreement, disagreement, deception, phenomenology, theory of mind

1. Introduction

If (first-order) empathy is the ability of Self to take into account Other's point of view, then second-order empathy may be defined as the ability of Self to take into account Other's point of view as including a view of Self. A literary example may serve as an introductory illustration. In the title story of George Saunders' widely acclaimed collection *Tenth of December*, Eber is a terminally ill man who goes out into the cold to, literally, freeze to death. A boy out on a stroll sees the coat Eber has left behind, and in trying to catch up and hand over the coat (which he considers to be accidentally forgotten), crosses a frozen pond, falls through the ice, screams and screams, and is rescued by the suicidal man. Later, while waiting for his relatives at the boy's place, the main character experiences an empathic epiphany (Saunders,

2013, p. 249): ‘He’d been afraid to be lessened by the lifting and bending and feeding and wiping, and was still afraid of that, and yet, at the same time, now saw that there could still be many – many drops of goodness, is how it came to him – many drops of happy – of good fellowship – ahead, and those drops of fellowship were not – had never been – his to withhold. Withhold.’ The self-correction in the final words of this passage is symbolic for the narrative progression of the character’s point of view: from a zero empathy position in which he only thinks about himself as not wanting to go through a degrading terminal illness, he shifts to a first-order empathy experience when he recognizes the drowning boy’s fear and acts compassionately, which subsequently triggers the second-order empathic insight that he himself is the focus of others’ empathy and that he should not thwart the love of his environment by taking his own life.

This paper argues that second-order empathy is a systematic source of communicative ambiguity. As an initial (and again, literary) example of that potential for ambiguity, consider the domestic friction at the Levin-Sjtsjerbatski’s in part 5, chapter 6 of *Anna Karenina*. When Levin announces that he needs to go to Moscow because his brother is dying, his wife Kitty expresses the intention to accompany him. Assuming that she does so to escape the boredom of staying alone in the countryside, Levin reproaches her, but Kitty retorts that it is her duty to be with her husband in times of trouble. Levin’s interpretation is a first-order one, based on an understanding of Kitty’s position in which he does not play a particular role but in which she only thinks of herself. Kitty however makes clear that he should adopt a second-order perspective, in which her point of view includes an empathic concern for her husband. The paper, then, argues that such vacillation between first-order and second-order empathic interpretations is a widespread characteristic of verbal communication, and that specifically in the case of representative speech acts, it gives rise to a systematic pattern of intersubjective propositional attitudes.

The perspective of the paper is one of conceptual analysis, not one of observational or experimental hypothesis testing: it aims at a better understanding of a variety of common communicative phenomena that do not seem to have received a lot of linguistic attention, in spite of their experiential familiarity. But precisely because it is merely a first step onto relatively uncharted domain, it does not claim to be a final or exhaustive treatment of the topic, and possibilities for empirical work should become clear in the course of the paper. In terms of theory formation in Cognitive Linguistics, the paper lies at the intersection of two well-established research lines: the study of intersubjectivity (to which we turn in Section 2), and the study of semantic flexibility and polyinterpretability. With respect to the latter, the paper continues the thread of my long-standing interest in interpretative underdetermination at the level of the lexicon (Geeraerts, 1993), but shifts the focus to the domain of pragmatic ambiguity.

The paper unfolds in three stages. First, an initial demarcation of the notion of second-order empathy situates it against the background of the notions of intersubjectivity and theory of mind. Second, a number of examples at different levels of linguistic structure then demonstrate the pervasiveness of second-order empathy as an ambiguity-generating mechanism. Third, zooming in on the truth-functional aspects of utterances and the veracity of speakers, this ambiguity-generating mechanism is generalized in a template of basic interpretative configurations for representative speech acts that covers assertion, mistake, agreement, disagreement, irony, deception. The concluding section briefly situates the findings in a broader philosophical context.

2. Demarcations

The focus of the paper lies on second-order empathy as a cognitive phenomenon in verbal interactions. Both aspects of this demarcation require a few words of explanation. To begin with, empathy is not only a cognitive phenomenon, and in its most common usage, it is not even primarily one: the everyday meaning of the word *empathy* highlights an affective dimension more than a purely cognitive one; empathy is then the ability to understand and share the feelings of other people, and even more, the ability to react altruistically to those feelings. This affective perspective, needless to say, is also prominent in both Saunders' and Tolstoy's text. In a more technical approach, as for instance in Theory of Mind research, the term *empathy* is however used more broadly: recognizing the inner life of the other person is not restricted to feelings, but includes his or her cognitive, not necessarily affective point of view. (See a.o. Preston and De Waal, 2002 for the distinction.) Terminologically, these distinctions could be clarified by differentiating between cognitive empathy (understanding Other's point of view), affective empathy (recognizing Other's animical state) and sympathetic empathy (reacting appropriately to Other's animical state, where 'appropriate' involves the best interest of Other). The often neglected difference between the second and third type may be illustrated by a situation in which you recognize your companion's sudden change of facial expression as fear, i.e. as a sign of present danger. That recognition is a case of affective empathy, while sympathetic empathy – compassion – only sets in when you go to his or her help rather than run for safety yourself. The communicative ambiguities investigated here pertain to cognitive empathy, but this is in no way meant to monopolize the term *empathy* for the cognitive dimension alone.

In addition, the linguistic perspective of the paper does not imply that second-order empathy is only relevant for the interpretation of verbal messages. As an example, think of the various interpretative layers that may play a role in

looking at Velázquez' *Las Meninas*. At first glance, we may only see a group of people, and in particular the central figure of the Infanta Margarita Teresa. Empathy sets in when we recognize that her gaze is directed at something. She is watching, she has an inner life, she is a mind, she takes a point of view. Imagining what her viewing position could reveal, we may then come to realize that in the virtual space defined by the picture, we occupy the position of her focus of attention, and that she is not just looking at us, but looking at us looking at her. If we thus think of her as making contact with the person whose virtual position we occupy, we reach a second-order empathic interpretation: we identify her point of view as including a view of us looking back. To be sure, the dynamics of the painting does not end there. The mirror at the back adds reflective depth to the extent that the virtual viewer we identify with is looking at him- or herself (and may so be identified as the royal pair). And in his lengthy analysis of *Las Meninas* in the introductory part of *Les Mots et les Choses*, Foucault (1966) applies the same second-order interpretation that we have used for the Infanta, to interpret the way in which Velázquez depicts himself, the painter in the painting, as looking at the virtual viewer: in Foucault's philosophical reading, it signals the advent of a new epistemological era, in which the representing subject recognizes itself as a constitutive part of the representation – an era of increased subjectivity, in other words.

But second-order empathy implies intersubjectivity rather than just subjectivity, and we should therefore, as a second demarcational step, situate the present approach against the linguistic study of intersubjectivity and ground, on the one hand, and the psychological literature on mind-reading on the other. Typologically oriented linguistic research into so-called 'empathy hierarchies' is not directly relevant for the present paper and will not be covered. Scales ordering entities according to their closeness to human speakers (as in Silverstein, 1976 or DeLancey, 1981) have proven their value for explaining how different types of constructions are typologically distributed according to the levels of such hierarchies, but play no role in the cognitive phenomena that are at stake here.

In the psychologically oriented literature, *mind-reading* refers to the ability to attribute a mental state to others, and to have a representation of that state. Synonyms abound: citing some of the earliest attestations of the terms, next to *mind-reading* (Krebs and Dawkins, 1984), we find *theory of mind* (Premack and Woodruff, 1978), *metarepresentation* (Pylyshyn, 1978), and *mentalising* (Morton, 1986). The capacity to have a mental representation of others' mental representations with further levels of embedding can then be referred to by such terms as *higher-order theory of mind* or *recursive mind-reading* (Dunbar, 2000). Mind-reading in this sense is studied predominantly from two perspectives. An evolutionary perspective (as in Sperber, 2000; Tomasello, 2008; Tomasello, 2014; Corballis, 2014) tackles the question whether metarepresentation is unique for the human species, and how the

evolutionary emergence of metacognitive abilities relates to the birth of language. A developmental perspective (as in Wirmer and Perner, 1983; Baron-Cohen, Leslie and Frith, 1985; Wellman, Cross and Watson, 2001; Miller, 2012) studies the effects of age, impairments, or other speaker characteristics on metacognitive abilities and their neural correlates. While there is a rich tradition of experimental studies on first-level theory of mind, recursive mind-reading is much less studied. Three experimental paradigms play a role. In an Imposed Memory Task (see for instance Kinderman, Dunbar and Bentall, 1998; O'Grady et al., 2015), stories are read to the participants that require them to understand the perspective and intentions of actors involved in complex social situations. In a false-belief task (see for instance Valle et al., 2015; Arslan, Taatgen and Verbrugge, 2017), participants must infer that another person – typically a character in a narrative or an acted-out scene – does not possess knowledge that the participants possess. In a gaming task (see for instance Meijering et al., 2011; Grueneisen, Wyman and Tomasello, 2015), the participants play a strategic or coordination game that requires them to reason about the decisions of an opponent whose action reciprocally depends on the participant's behavior.

Characteristically, these designs focus on what characters are assumed to know or do, rather than on what their utterances would mean (which is what interests us here). Also, except in the game-based experiments, they typically exclude the participant from the embedded belief structure: whereas a first-order study would look at what A (the experimental subject) believes about what B believes, a higher-order design would be looking at what A believes about what B believes about what C believes. That is to say, in these experimental paradigms the beliefs of the respondent are not part of the recursive embedding. By contrast, second-order empathy as meant in the present paper involves what A believes about what B believes about what A believes. So, if the already abundant terminology of metacognition studies allows for the addition of yet another term, what we have introduced as 'second-order empathy' could also appropriately be called 'reflexive recursive mind-reading'. The present paper, then, should be seen as a suggestion to expand the study of theory of mind to the communicative ambiguities that reflexive recursive mind-reading may give rise to.

In the linguistically oriented literature, intersubjectivity is studied from two angles. On the one hand, there is descriptive research into the mechanisms that languages have at their disposal for coding speaker-hearer relations (as for instance with honorifics) and for monitoring the interaction between both (as for instance with discourse particles); see Brems, Ghesquière and Van de Velde (2012) for a general overview, and Dancygier, Lu and Verhagen (2016) for the specific application to narrative viewpoint. On the other hand, together with cognitive sociolinguistics (see Kristiansen and Dirven, 2006), the study of intersubjectivity is part of

a growing recognition that cognitive linguistics needs to incorporate an interactional, social conception of language (Geeraerts, 2016). In particular, the notion of intersubjectivity is associated with that of common ground (Clark, 1996, and see Verhagen, 2015), which captures the recognition that successful linguistic interaction requires a shared basis: mutual attention to the situational context, and a joint set of signs and beliefs. Intersubjectivity in this sense is relevant for second-order empathy in a fundamental and in a practical way. Fundamentally, second-order empathy is closely connected with common ground (Zlatev, 2008; Verhagen, 2015). Ideally, if A and B are paying attention to Z, the common ground is maximal if both A and B believe that the other focuses on Z, and if A and B both believe that the other is aware of the fact that they focus on Z. This does not necessarily mean that recursive mind-reading is a prerequisite for common ground: even if common ground is seen as arising from social interaction rather than individual recursive mind-reading (Bohn and Köymen, 2018), common ground will correlate with a high degree of mutual metarepresentation.

More practically, intersubjectivity research of this kind yields a useful template for graphically representing the difference between first-order and second-order empathy. The standard configuration for describing intersubjective grounding as introduced by Verhagen (2005) takes the form as in the first panel of Figure 1. Two interlocutors, represented in the lower half of the picture, jointly direct their attention (represented by the arrow) to the objective situation represented by the two circles in the top part of the picture. In the cases that interest us, the two subjects involved are not seen from a third person perspective, but we zoom in on how one of them sees not only the objective situation but also the presence of the other participant. In the second panel, this is expressed by identifying one participant as Self and one participant as Other. The third panel pictures a first-order empathic perspective: Self pays attention to how Other views the objective situation. (Although this is not made explicit in the picture, it is understood that Self simultaneously directs his attention to the objective situation.) The fourth panel captures a second-order empathic point of view: Self's attention includes not just

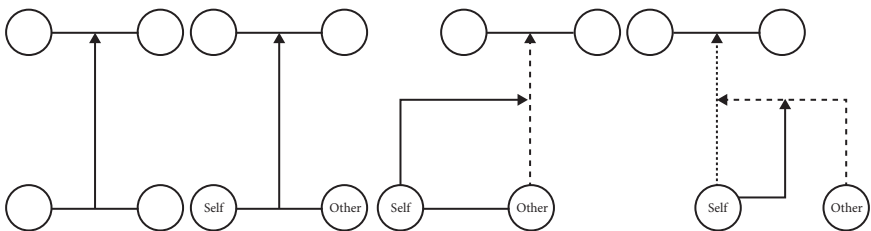


Figure 1.

Other's point of view, but Other's point of view as including a first-order empathic attention to Self. Ambiguity will then arise for Self when the interpretative outcome of choosing a first-order or a second-order perspective differs. This ambiguity has however not been thoroughly investigated. In that perspective, the present paper intends to add a cautionary footnote to the theory of linguistic intersubjectivity: if recursive mind-reading is, if not a prerequisite then at least a correlate of common ground (and hence of successful communication), then it should also be recognized as introducing a structural potential for misinterpretation.

3. Ambiguities

If there is no contextual disambiguation, Self as hearer faces the possibility of a systematic interpretative ambiguity: does Other as speaker construe the objective situation in a non-empathic or in an empathic way? If the hearer's interpretation is 'first-order empathic', the speaker's construal is taken to be non-empathic, and if the hearer's interpretation is 'second-order empathic', the speaker's construal is taken to be (first-order) empathic by the hearer. An exploratory overview of communicative contexts in which the choice between first-order and second-order empathy plays a role can be based on three case types, depending on the type of ambiguity activated by an interpretative switch between a first-order and a second-order perspective: referential ambiguity (3.1), speech-act-related ambiguity (3.2), and sociocommunicative ambiguity (3.3). Subsection 3.4 completes this initial survey with two case types at the periphery of language use as such: non-verbal communication and silence.

3.1 Referential ambiguity

In the study of spatial and temporal deixis, it is well known that deictic centers may be shifted, specifically also to the addressee. Although not all languages allow deictic shifts, in a language like English, a person in Amsterdam may say to a friend in Paris: *I will come next week*, where *come* is licensed by the Parisian point of view rather than the Amsterdam one (see a.o. Di Meola, 1994; Verhagen, 2007). This phenomenon, sometimes referred to as 'sympathetic deixis' (Ruthrof, 2015), may introduce an indeterminacy for the listener. If no disambiguating cues are present, an utterance like (1) may refer to either of the configurations in Figure 2, depending on whether the speaker effectuates a deictic shift towards the listener or not. (It is assumed that the addressee in the picture does not directly see the ball. It is also assumed that the hearer considers the utterance to be directed at him, i.e. does not suppose that the speaker is addressing a third person or is just talking to himself. The landmark is a cube because it is a geometrical form without an inherent

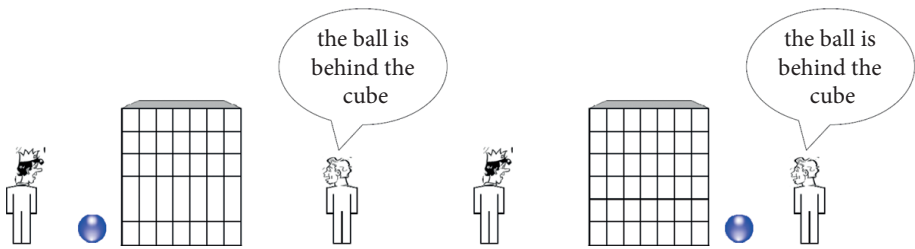


Figure 2.

orientation, thus avoiding interference between a ‘relative’ and an ‘intrinsic’ spatial frame of reference in the sense of Levinson, 2003.) From the hearer’s perspective, the choice between both possibilities corresponds to the choice between a first-order and a second-order take on the speaker’s utterance: was Other taking Self’s point of view into account or not? Unsurprisingly, the phenomenon also applies to temporal deixis, as illustrated by (2).

- (1) The ball is behind the cube
- (2) *transatlantic Other*: I will call you tomorrow morning
Self: My morning or your morning?
- (3) Mary remembered Lisa’s story about herself

A further extension to anaphoric coreference is found in (3), which features a standard example of so-called ‘picture noun phrases’ (a.o. Kaiser et al., 2009). The coreferential ambiguity can be insightfully described in terms of the empathic framework. If the ambiguity is resolved as *Mary remembered Lisa_i’s story about herself_p*, there is first-order empathy on Mary’s side: Mary imagines Lisa’s world, but doesn’t see herself as featuring prominently in that world. Conversely, if the ambiguity is resolved as *Mary_i remembered Lisa’s story about herself_p*, Mary mind-reads Lisa and recognizes herself as part of Lisa’s view of the world.

3.2 Speech-act-related ambiguity

If the familiar ambiguities arising from a possible shift of the deictic center are interpreted in empathic terms, they turn out to form part of a wider set of interpretative indeterminacies. A second broad class, speech act ambiguities, characteristically involves the indirect speech act value of an utterance. In the Tolstoy example, if we simplify Kitty’s question to *Can I come with you?*, Levin interprets it as a direct request inspired by Kitty’s assumed wish to escape the tedium of country life and to participate in the thrill of the big city. Kitty by contrast makes clear that she

intended it as an offer of support for her distressed husband. Similar examples can be easily construed. (In each of the following examples, *Self_a* replies in a first-order empathic mode, *Self_b* in a second-order mode.)

- (4) *Other*: Isn't there a bit of a draft in here?
Self_a: Let me close the window for you.
Self_b: I am fine, thank you.
- (5) *Other*: I'm off to the bakery. I am not sure what bread to bring, though.
Self_a: I thought you were a fan of rye bread.
Self_b: Just choose, I am fine.
- (6) *Other*: What a pity you cannot make it to the conference.
Self_a: I'm sure the other participants will make it a success.
Self_b: But you will allow me to send in my manuscript?
- (7) *Other*: Thank you for the invitation. I'm afraid my sister is getting married that day.
Self_a: Don't you like the groom then?
Self_b: I understand of course. Enjoy the wedding!
- (8) *Other*: The degradation will be difficult to bear.
Self_a: I will be there to support you, you know that.
Self_b: But honey, we'll always have Paris.

In (4) Self may either (in a first-order empathic mode) think of Other as expressing discomfort, or (in a second-order empathic mode) as indirectly enquiring about Self's discomfort. In (5), Other is seen as uncertain and without resolve in their own right, from a first-order empathic perspective, or Other is seen, from a second-order empathic perspective, as indirectly asking for Self's preferences. In (6), Self first-orderly sees Other as expressing regret about something that is unpleasant from Other's own point of view, or Self second-orderly sees Other as showing sympathy about an event that is unpleasant from Self's point of view. In (7), the silly joke in the first reply is based on a first-order perspective whereas circumstantially the second-order interpretation is preferred. The awkwardness of feeling unhappy with one's sister's wedding primes for a second-order interpretation and thus resolves the empathic ambiguity: in a first-order interpretation, the wedding is unfortunate for Other, in a second-order interpretation, it is disappointing for Self, because Other won't be able to accept Self's invitation. (A systematic analysis of such mechanisms of empathic ambiguity resolution is beyond the scope of the present paper, but clearly, they constitute a major topic for further research.) In the final example, which is a transformation of the Saunders example with which we opened the paper, Other is either expressing fear about their own deteriorating

image, or Other is expressing concerns about the effect of the illness on Self: in one reading, the illness is primarily horrible for Other; in the other, the suggestion is that the illness will be difficult to experience for Self. In the first case, Self replies with a message intended to help Other to come to terms with their decline. In the second case, Self replies with a message (quoting the iconic line from the movie *Casablanca*) making clear that their love for Other will not be diminished by Other's predicament.

Except perhaps in the final example, all of these cases illustrate familiar, everyday situations and exchanges, which testifies to the communicative relevance of the distinction between first-order and second-order empathy. From the point of view of speech act ambiguity (a well-researched topic in its own right), two remarks are due. First, characterizing these ambiguities in terms of speech acts does not imply that the ambiguity necessarily involves one customary speech act type versus another, or a direct versus an indirect speech act. In the first example, the distinction between the statement of discomfort and an enquiry is indeed a distinction between high-level speech act types, but in the final example, the difference between expressing fear on one's own behalf and fear on behalf of the interlocutor is situated within one and the same broad speech act type. Labelling the observed ambiguities as speech act ambiguity is not narrowing them down to speech act ambiguities in the usual sense, but merely profiles their pragmatic interactional nature. Second, neither is it suggested that all classical speech acts ambiguities boil down to a distinction between empathic perspectives. Kempson (1977, p. 59) gives the example *There are four large bulls in that field*, which may be used as a warning, a statement, a boast, or a threat depending on whether the interlocutor is a hiker ready to climb the fence, a newly hired farmhand, a fellow farmer, or a badly behaving boy. It would clearly be impossible to attribute this poly-interpretability to just the binary distinction between empathic levels.

3.3 Sociocommunicative ambiguity

The third broad class of empathy-induced ambiguities comprises cases in which Self wonders about the significance of Other's linguistic choices, i.e. the actual selection made by Other from a set of alternative expressions. Take the use of difficult words instead of a more mundane vocabulary: why does Other use *abscond* instead of *run away*, *maudlin* or *mawkish* instead of *sentimental*, *vociferous* instead of *loud*? In a first-order interpretation, Self may assume that this is how Other is, i.e. that it is so natural to him that he doesn't consider whether the audience understands, or otherwise that Other considers the occasion to be suited for a more elaborate register. In a second-order empathic interpretation, Self may judge that Other, assuming

that Self does not know the word, is trying to impress Self, or alternatively, that Other assumes that Self does indeed know the word and by using it signals that he includes Self in the circle of *cognoscenti*. (And now stop to consider why this paper uses the word *cognoscenti*...)

In this example, the debated meaning is of a sociolinguistic kind: does Other's use of a specific register (or more generally, any other socially meaningful form of language variation) communicate a specific social relationship – either ingroup or outgroup – with Self, or were Other's choices made without an accommodating or distancing intention? The relevant meaning can also be of a more denotational type, though. Consider the variation that exists in Dutch in the names for pork chops: in Netherlandic Dutch the standard terms are *karbonade* and *kotelet*, while in Belgian Dutch, only *kotelet* is used. But *karbonade*, specifically in the plural, is the Belgian Dutch name for a veal or beef stew. Then, what would it mean if one of the partners in a mixed marriage expressed a preference for *karbonaden* for dinner? In a first-order interpretative mode, the interpreting Self would assume that the word is used according to Other's linguistic habits, i.e. in a different sense from Self's habitual vocabulary. In a second-order perspective, conversely, Self assumes that Other adapts to the known differences and uses the word in Self's sense. But how to choose between the perspectives?

3.4 Non-verbal empathic ambiguity

To complete this initial exploration of empathy-induced ambiguity, two case types may be mentioned that lie outside language use as such: non-verbal communication and silence. These cases serve to further illustrate how thinking in terms of first-order and second-order ambiguity sheds a unifying explanatory light on a number of superficially unconnected phenomena.

First, imagine Self and Other as roommates, or office mates, or spouses, with Other of the clean and orderly type while Self is at ease with a more cluttered and chaotic environment. When Other then tidies up behind Self's back, perhaps even including some of the mess left by Self, Self has two ways of interpreting Other's behavior. Self can think, in a first-order empathic mode, that Other is merely following his or her natural inclination, i.e. that Other is acting in line with his or her clean and orderly temperament. But Self can also conclude that Other's conduct is an intentional reaction to Self's sloppiness, i.e. that Other is making a suggestion that Self should be more organized. In one case, Other is just trying to get the room, office, kitchen in the shape he or she prefers. In the other, Self is being indirectly summoned to contribute. The distinction is not without consequences. If there is a message and Self ignores it, Self will be deemed inconsiderate and uncooperative.

Or if there is no message but Self acts as if there is, for instance by a defensive reaction, Other may feel compelled to explain that his/her actions were not meant as criticism of Self.

Second, consider silence – not the absence of communication as such, but the non-appearance of expected communication: the protracted delay of a reply, the unannounced interruption of a conversational flow, the turn not taken by, in particular, a significant Other. In the absence of further information, such silences seem to derive their often painful nature from their empathic ambiguity. Thinking of Other's silence in a first-order empathic mode assumes that Other is in some form too busy to engage in conversation, perhaps even, in the extremest of cases, prevented from doing so by a major misadventure or a phenomenal fluke. But in a second-order empathic mode of interpretation, Other's perception of Self would play a role in Other's silence, as when Self's previous intervention would have been in some way offensive or inappropriate. More specifically, if Self assumes that Self's expectation of a reply is part of Other's construal of the conversational situation, Other's silence would signal a deliberate withdrawal, a refusal of interaction, a dismissal. Semiotically, then, Other's silence is an index – a causal side-effect – when considered from a first-order empathic point of view, while from a second-order empathic point of view, it could be a message. But how could Self know? How could Self know if Other is trying to say something by not saying anything?

4. Representatives

By and large, the recognition of an empathic ambiguity potential as a pervasive phenomenon may stimulate two strands of research. On the one hand, linking up with the existing intersubjectivity and viewpoint research that we referred to earlier, what are the mechanisms that languages offer to disambiguate messages (as in the simplest case, making point of view explicit with expressions like *to your left/right* instead of just *to the left/right*)? And how – for which functions, under which circumstances, with which preferences – do language users apply these mechanisms? On the other hand, in the absence of resolving cues, which factors influence the detection of empathic ambiguity? What are the objective or subjective factors that trigger a recognition of the ambiguity, or conversely, that let it pass unnoticed? And if the possibility of multiple interpretations is not perceived, which reading takes the upper hand? While the former type of research is primarily of an observational, descriptive linguistic kind, the latter predominantly ties in with the experimental work done in psycholinguistic and psychological investigations into social cognition as surveyed in Section 2.

At the same time, these necessary elaborations should not obscure the fact that even at the conceptual level, a closer look may be useful. To get a better idea of the intricacies of interpretation that second-order empathy may trigger, we will now narrow down the focus to the truth-functional aspects of the message, i.e. to representative speech acts in the classification of Searle (1976). To see what is going on in such speech acts, we need to add a factor besides the level of empathy. Consider the following two cases.

- (9) *Self*: How do you like my new { haircut, car, paper... }?
Other: Perfect!
Self: Are you serious or are you just trying to please me?
- (10) *Self*: How do you like my new { haircut, car, paper... }?
Other: Awful!
Self: Are you serious or are you just trying to tease me?

In both exchanges, *Self* hesitates between a first-order interpretation in which *Other* expresses his/her honest opinion without taking into account *Self*, and a second-order interpretation in which *Other*'s reply is interpreted as addressing *Self*'s state of mind. In (9), the second-order interpretation suspects *Other* of catering to *Self*'s insecurity, i.e. *Other* is suspected of a white lie meant to comfort, satisfy, delight *Self*. In (10), the second-order interpretation suspects *Other* of sending out an ironic warning to an overconfident, self-infatuated *Self*. The crucial difference between both second-order interpretations resides in *Self*'s belief about *Other*'s beliefs, and specifically, whether *Self* believes that *Other* believes that *Other*'s beliefs and *Self*'s beliefs are convergent. Regardless of *Self*'s actual beliefs, *Self* needs to gauge the relationship between what *Other* believes and what *Other* believes *Self* believes.

When *Self* believes there is a divergence between what *Other* believes and what *Other* believes *Self* believes, a statement of *Other* contrary to his/her assumed belief is a lie. Whether it is a benevolent white lie or a maliciously deceptive lie depends on *Self*'s assessment of *Other*'s affective stance, but regardless, it is a case of *Other* not telling the truth: according to *Self*'s reading of *Other*'s mind (including *Self*'s reading of *Other*'s reading of *Self*'s mind), *Other* is saying something that he/she does not adhere to. Surely, such an utterance could be a straightforward mistake on *Other*'s behalf, but that is only the case if *Self*'s beliefs play no role in *Other*'s utterance, that is to say, when *Self* assumes that *Other*'s utterance contrary to *Other*'s belief is not addressing *Self*'s convictions and assumptions. That would then be a first-order reading on *Self*'s side. But in a second-order reading, *Other* is perceived as telling an untruth under the assumption that *Self* shares, or might be convinced to share, the untruth.

Conversely, when Self believes there is a convergence between what Other believes and what Other believes Self believes, a statement of Other contrary to that belief may be interpreted as irony. Again, in a first-order reading the utterance could be a straightforward mistake on Other's behalf, but in a second-order reading, Other is perceived as telling an untruth under the assumption that Self does not share, or would not be convinced to share, the untruth. Other's utterance is then recognized as playful pretense.

Generalizing, the ambiguity potential of Other's utterance appears to rest on the choice between a first-order and a second-order perspective, and the choice between an assumption of convergence or divergence in Other's mind between Self's and Other's beliefs. A more complete system of interpretative configurations can then be charted depending on, first, Self's first-order or second-order empathic stance with regard to Other, i.e. Self's assessment of Other's degree of empathy, and second, Self's assessment of Other's assessment of the common ground between Self and Other. This full system is presented in Table 1. Three categories are added to the three (mistake, deception, irony) that were already distinguished: assertion, agreement, disagreement. These are straightforward. An utterance is perceived as a mere assertion if Other is assumed to be sincere, and to be making his/her statement without specific consideration of Self's alleged view on the matter. But if Other is indeed thought to be addressing Self's point of view, Other's statement can either be a consenting confirmation of Self's understanding of the matter, or an expression of disagreement, depending on what Self thinks Other's view of Self's beliefs to be.

Table 1.

	1st order	2nd order	
		Convergent	Divergent
	Self believes Other believes p	Self believes Other believes Self believes p	Self believes Other believes Self believes ~p
Other asserts p	assertion	agreement	disagreement
Other asserts ~p	mistake	irony	deception

The following four remarks are now due to further clarify the calculus.

First, the categories in the classification should be taken as reference points encompassing variations and modulations, i.e. each of the categories may have a prototype structure. For instance, as was implied above, deception may either take the form of a benevolent lie or a maliciously deceptive one depending on Self's assessment of Other's affective position: would Other want to harm Self? Specifically also when Other is identified as playfully pretending, various options occur. Irony is probably the core example of this class, but hyperbole ('I will do everything I can')

belongs in the same group of utterances that are not meant to be taken literally. (See Barnden, 2017 for a unified treatment of irony, hyperbole and pretense in general. In light of non-ironic cases of pretense, it could perhaps be argued that the overall label for the configuration should be *pretense* instead of *irony*. In this context, it should also be mentioned that the second-order empathy view of irony presented here is highly compatible with the ‘view of viewpoint’ conception of irony formulated by Tobin and Israel, 2012. To the extent that it is a precondition for Self’s ironic interpretation of Other’s utterance that Self assumes Other to take into account Self’s viewpoint, the ironic meaning attributed to Other is indeed a ‘view of viewpoint’.) Further, irony itself may be of different kinds, for instance depending on whether the cognitive convergence is accompanied by an axiological alignment. On the one hand, complicit irony builds on shared conceptions and evaluations between speaker and hearer; typically, the target of the irony is a third party. Illustrations may be found in dramatic irony, with as prime example Marc Anthony in *Julius Caesar* referring to Brutus as ‘an honorable man’: the speaker and the audience are aware that Brutus participated in Caesar’s murder, share a negative evaluation of the fact, and thus recognize the non-immediate interpretation hidden behind the surface of the expression – as if they were sharing a secret. On the other hand, in confrontational irony targeting the hearer (parent entering child’s littered room: ‘Oh, I see you’ve cleaned up’) the speaker differs from the addressee with regard to the evaluation of the cognitive common ground: ‘we both know that you didn’t clean up, but whereas you don’t care, I am not particularly happy about it’.

Second, the variety of interpretative possibilities may seem daunting, but some of the distinctions are not necessarily consequential. For instance, whether a statement is merely an assertion made by Other without specific consideration of Self, or whether it is perceived as deliberately expressing agreement with Self’s views, may not matter very much for the rest of the conversation; the options are contextually neutralized. Similarly, let us analyze why the audience laughed when president Trump addressed the United Nations on 25 September 2018, and stated: “In less than two years my administration has accomplished more than almost any administration in the history of our country”. The laughter could come about in a number of ways. Some could think that the president is making a sincere statement (expressing *his* truth) but be surprised at the fact that he does not seem to realize, for lack of an empathic perspective, that his view of the world is not shared by the audience. Others would attribute some consideration of his audience’s beliefs to mr Trump, and identify the statement as an attempt at deception – but one so blatantly boastful that it turns funny. Choosing between the two explanations (one with a non-empathic sincere Trump and one with an empathic but deceptive Trump) is probably much less important than the very existence of the hilarious reaction. Such reductions of the interpretative field do not entirely eliminate the possibility

of conflicting readings, though, and empirical work is needed to find out how and to what extent the interpretative possibilities are recognized and/or resolved. Self's beliefs, the relationship between Self and Other, the reliability of Other, the context etc. will all play a role, together with linguistic cues like conventional irony markers.

Third, the overview does not include Self's 'zero empathy' perspective, i.e. Self's conception of the world regardless of Other's views. Clearly, whether Self believes *p* or not also adds to the picture. The polysemy of the word *mistake* may illustrate the difference. As included in Table 1, a mistake is an error of Other detected by Self on the assumption that Other believes *p*. It is (as far as Self can tell) an involuntary error of expression on the part of Other. As such, it is an error relative to Other's beliefs as assumed by Self, regardless of whether Self actually shares those beliefs. But in a zero empathy framework, Self could take Other's utterances at face value and compare them to Self's own assumptions. Other's statement of $\sim p$ would then be a mistake of a different kind: a factual mistake, an untruth, a falsehood, a proposition diverging from the reality that Self thinks to know. A 'zero empathy' perspective is a scientific one: propositions are interpreted and evaluated from an impersonal perspective, not as expressions of any specific person's views. In Table 2, this perspective is added to the overview.

Table 2.

	0th order	1st order	2nd order	
			Convergent	Divergent
	Self believes <i>p</i>	Self believes Other believes <i>p</i>	Self believes Other believes Self believes <i>p</i>	Self believes Other believes Self believes $\sim p$
Other asserts <i>p</i>	truth	assertion	agreement	disagreement
Other asserts $\sim p$	falsehood	mistake	irony (pretense)	deception

Fourth and finally, we may switch to the perspective of language production. So far, the perspective has been perceptive: we have considered Self as hearer and Other as speaker, and the calculus of pragmatic ambiguities covers the interpretative potential that Self is confronted with. But what role does empathy play in language production? To facilitate the description, we will now switch to a terminology distinguishing Hearer and Speaker. (The perspective of language production considers Self in the role of Speaker. The perspective of language perception considers Self in the role of Hearer.) Let us see how this works for irony.

From the point of view of language perception, an ironic interpretation arises when Hearer assumes that Speaker assumes that Speaker and Hearer share the same view, and that Speaker's utterance contrary to that view takes into account that

assumption. Slightly more formally, an ironic interpretation arises when Speaker says $\sim p$, and (first-order empathic condition) Hearer believes Speaker believes p , and (second-order empathic condition) Hearer believes Speaker believes Hearer believes p .

From the point of view of language production, an ironic utterance is an intentionally ironic one, i.e. one which the speaker may reasonably expect to be understood ironically. This then implies third-order empathic cognition on the side of the speaker, because the speaker needs to have a model of the hearer's mind that corresponds to the conditions for an ironic understanding as just defined. More formally, then, an intentionally ironic utterance is one in which Speaker says $\sim p$ but believes p , while simultaneously assuming (first-order empathic condition) that Hearer believes p , (second-order empathic condition) that Hearer believes that S believes p , and (third-order empathic condition) that Hearer believes that Speaker believes that Hearer believes p .

It could be questioned whether the third-order empathic condition in this description is necessary, but note that in its absence, the speaker would not have a clear idea of his/her own intentions. Without the final condition, speakers would not be able to distinguish between uttering a lie and uttering an antiphrase, i.e. their own pragmatic intention would be underdetermined (and in general, we assume that most speakers have sufficient control over their conversational behavior to want to distinguish for themselves between lying and being ironic). Further, it should also be noted that the intended reception category included in the definition of the production categories is not necessarily that category itself. Irony is intended to be identified as irony, but blatant lies are not supposed to be distinguished as such. Intended irony wants to be recognized as irony, but a lie wants to be recognized as truth.

5. Conclusions

We may now wrap up. We have identified the notion of second-order empathy as a reflexive type of cognitive empathy (or theory of mind, mind-reading, mentalising, metarepresentation): if first-order empathy is the ability of Self to take into account Other's point of view, then second-order empathy is the ability of Self to take into account Other's point of view as including a view of Self. Taking the perspective of language perception rather than production, i.e. a perspective of Self as hearer, we reached the following conclusions.

First, the possibility for the hearer to choose between a first-order empathic and a second-order empathic interpretation of speaker utterances introduces a principled indeterminacy in the speaker-hearer interaction. In the absence of explicit

or implicit disambiguation cues, Self as hearer faces the possibility of a systematic interpretative ambiguity: does Other as speaker construe the objective situation in a non-empathic or in an empathic way? If the hearer's interpretation is first-order empathic, the speaker's construal is taken to be non-empathic, and if the hearer's interpretation is second-order empathic, the speaker's construal is taken to be empathic.

Second, the indeterminacy is pervasive: we have been able to illustrate it with examples of referential ambiguity, speech-act-related ambiguity, and sociocommunicative ambiguity. Specifically with regard to representative speech acts, the interaction of degree of empathy and convergence/divergence of beliefs yields six basic interpretative configurations: assertion, mistake, agreement, disagreement, irony, deception.

Third, the ambiguity potential of Other's ability to conceptualize Self's point of view is relevant for the psychological theory of mind paradigm, as it may broaden the empirical range of experimental mind-reading research. It is also relevant for the cognitive linguistic interest in intersubjectivity, as it adds a nuance to the notion of common ground: recursive mind-reading may be a crucial feature of common ground and successful communication, but it is simultaneously a structural source of pragmatic underdetermination.

To round off (and to mirror the way in which we started the paper with a broad literary perspective), we may now put the latter observation in a wider, philosophical context. The interest in intersubjectivity in cognitive linguistics is linked with recent phenomenological thinking in philosophy. While the mutual relevance of cognitive linguistics and phenomenology has long been noted (Geeraerts 1985), only in the last decade or so has an actual conversation between philosophers and linguists started to emerge: see collections like Ziemke, Zlatev and Frank (2007), Zlatev et al. (2008), Fusaroli, Demuru and Borghi (2012). Intersubjectivity plays a central role in this rapprochement.

On one side, contemporary phenomenology emphasizes that intersubjective interaction is constitutive of subjectivity (see Gallagher, 2012, p. 182–204), and that the subject's epistemological openness onto the world – the founding intuition of the phenomenological tradition – arises through 'participatory sense-making', as De Jaegher and Di Paolo (2007) have aptly labeled it. This phenomenological perspective on intersubjectivity emphasizes dimensions like direct perception and social interaction that are less prominent in the psychological 'mind-reading' and 'theory of mind' tradition that we surveyed in Section 2. In the latter framework, empathy is very much seen as an inferential process in which a representation of Other's mental state is cognitively computed by Self. In contrast, the phenomenological perspective assumes an immediate presence of Other. (On this distinction, see the introduction to Zlatev et al., 2008.)

On the other side, linguists like Geeraerts and Grondelaers (1995), Zlatev (2008), Harder (2010) have argued that the cognitive linguistic insistence on embodied cognition needs to recognize the profoundly social and cultural – in one word, interpersonal – nature of language to avoid reductionism. The nuance that identifying the ambiguity potential of second-order empathy adds to this philosophical-linguistic exchange is the insight that intersubjective interaction does not necessarily or automatically converge towards a common understanding or a fully transparent interpretation. Intersubjectivity is key, but it doesn't automatically open all the doors: empathy, the very condition for an intersubjective encounter, introduces an element of precariousness in the interpersonal interaction. Philosophically speaking, this hermeneutic underdetermination evokes an element of the phenomenological tradition that has so far hardly played a role in the convergence of phenomenology and cognitive linguistics: Levinas's (1961) notion of the 'irreducible alterity' of the Other, the idea in other words, that even as we open up to them, other minds resist complete transparency, maintain a difference, stay beyond our cognitive control. Perhaps then we may think philosophically of the empathic potential for ambiguity as the communicative correlate of that Levinasian idea: the intersubjective ground may be far from firm.

Acknowledgement

The ideas presented in this paper have matured over a number of years, but at various stages of their gestation, I had the opportunity to present them as keynote talks at conferences: in Reykjavik in 2014, in Tübingen in 2016, and in Braga in 2018. I thank the organizers (Bergljót Kristjánsdóttir, Esme Winter-Froemel, Augusto Soares da Silva) for the invitations, and the respective audiences for their feedback. Thanks are equally due to Kris Heylen and Jordan Zlatev for their comments on pre-final versions of the paper.

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Desiderata for metaphor theory, the Motivation & Sedimentation Model and motion-emotion metaphoremes

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Metaphor research has increasingly diversified, leading to extensive disagreements. A set of desiderata for any contemporary theory of metaphor are (i) to account for both communication and cognition, (ii) to explain both universal and culture-specific aspects, (iii) to achieve a balance between stable structures and contextual processes, (iv) to apply not only to different languages, but to other semiotic systems such as gesture, (v) to provide clear theoretical and operational definitions. We argue that a recent cognitive-semiotic theory, the Motivation & Sedimentation Model (MSM) is capable of fulfilling these desiderata. To evaluate predictions from the theoretical model we compare motion-emotion metaphoremes, such as *my heart jumped*, in six differentially related European languages – English, Swedish, Spanish, Bulgarian, Finnish and Estonian.

Keywords: metaphoricity, semiotic systems, motion, emotion, cognitive semiotics

1. Introduction

Research in metaphor within cognitive linguistics and related fields has increased exponentially during the latest decades, as testified by a surge of dedicated journals, books and conference series. At the same time, it has diversified, and we are far from any consensus on theory or even a definition of what metaphor is. Some even characterize this state of affairs as “metaphor wars” (Gibbs, 2017). Our goal with the present article is two-sided. First, in an effort of peace making we propose a set of desiderata that we believe all contemporary metaphor theorists should be able to accept. The second goal risks going into the opposite direction, as we propose that a recent cognitive-semiotic theory, the Motivation & Sedimentation Model, MSM (Devyllder and Zlatev, 2020; Stampoulidis et al., 2019) is capable of fulfilling

these desiderata. The purpose of this is, above all, to illustrate the difficult terrain, and an example of how it can be negotiated.

The five desiderata for a contemporary theory of metaphor are (i) to account for metaphor as a matter of both communication and cognition, (ii) to be able to explain both universal (pan-human) and culture-specific aspects, (iii) to achieve a balance between stable structures and contextual processes, and to account for the interaction between the two, (iv) to be general enough to apply not only to metaphor in language (and across different languages), but to other semiotic systems such as gesture and depiction, and to combinations of these, and (v) to provide clear and interrelated theoretical and operational definitions, with the latter essential for empirical research. In Section 2 we describe these desiderata, with examples of how different theories position themselves with respect to them, and propose that no theory yet manages to tick all the boxes. In Section 3 we review the Motivation & Sedimentation Model, and show that it comes a good way to meeting the five desiderata.

To make this more than a programmatic statement, in Section 4 we apply MSM to previous research on “motion-emotion metaphors” (Zlatev et al., 2012), which we here argue should be treated as *metaphoremes*. Adding new data and a more systematic methodology, we compare metaphoremes such as *my heart jumped* in six differentially related European languages – English, Swedish, Spanish, Bulgarian, Finnish and Estonian – and use this as a basis to evaluate predictions from the theoretical model. In Section 5 we take stock, and evaluate our contributions.

2. Five desiderata for a contemporary theory of metaphor

As stated in the introduction, the five desiderata for metaphor theory that we delineate should not be particularly controversial. At the same time, we indicate how in each of the five cases metaphor theories seem to have been rather one-sided, even if we are not capable of providing a comprehensive overview of the literature. The implication is that there is still work to be done in each case, and especially for a theory that aims to be comprehensive.

2.1 Combining communication and cognition

Metaphor has been understood ever since Aristotle as a rhetorical figure based on “the application of an alien name by transference either from genus to species, or from species to genus, or from species to species, or by analogy” (Aristotle, 1987, Book 3, Part XXI). While what is meant by “name” can be discussed (see below), it

was accepted since classical times until recently that metaphors are *signs* (not necessarily verbal), which signify by extending their sense from what they usually mean, and hence achieving rhetorical effects through semantic transfer. Consider Figure 1, where the expression *pig* is clearly used with such an extended sense along the lines of “contemptuous” and “greedy”. Whatever the exact interpretation, it is clear that the metaphor is rhetorical and that it aims to provoke an affective response in the audience. In fact, it has been argued persuasively by Foolen (2012, p. 359) that “affect is fundamental to why and how people use metaphor... This being so, the affective cannot be added to the conceptual but should be seen as a driving force in the use and evolution of metaphors through real-life talk”.

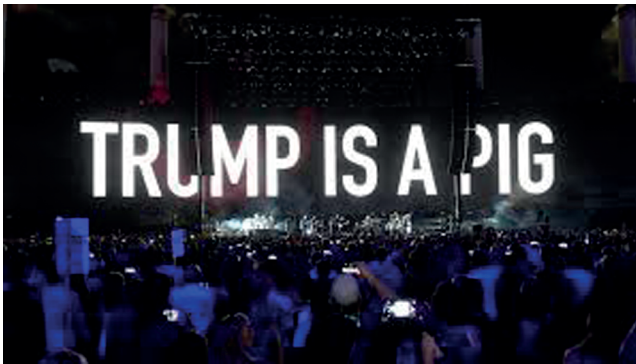


Figure 1. Metaphor as a rhetorical figure: Roger Waters performance at Desert Trip at The Empire Polo Club on October 9, 2016 in Indio, California. (Photo by Kevin Mazur/Getty Images for Desert Trip)

With the publication of *Metaphors We Live By* (Lakoff and Johnson, 1980), hailing the rise of so-called Conceptual Metaphor Theory, hence CMT (Gibbs, 2017; Grady, 1997; Johnson, 1987, 2010; Kövecses, 2000; Lakoff and Johnson, 1999), metaphor was essentially redefined as a conceptual scheme of cognitive correspondences, or “mappings”, from relatively more concrete (e.g. JOURNEY) to more abstract (e.g. LIFE) conceptual domains. Since according to CMT “our ordinary conceptual system, in terms of which we both think and act, is fundamentally metaphorical in nature” (Lakoff and Johnson, 1980, p. 3), metaphor becomes essentially a matter of cognition, and only secondarily of communication. Metaphorical expressions then become relatively less important realizations of the underlying mappings.

More recent work in metaphor theory, also within cognitive linguistics, has made efforts to re-establish the communicative dimension of metaphor, while retaining the need for a “cognitive commitment” (Lakoff, 1990). For example, Semino (2008) argues that decontextualized mappings, expressed in the traditional X IS Y

form, cannot account for the variability of metaphor use in real-life social discourse. Steen (2008, 2017) has defended a “three-dimensional model” of metaphor, where one of the dimensions is precisely that of communication. At least a sub-set of metaphors are according to this theory regarded as *deliberate*, that is: intended to “draw attention to their source domain as a separate detail for attention in working memory” (Steen, 2017, p. 8), which brings us back to rhetoric. This has, unsurprisingly, provoked a rebuke by Gibbs (2017), one of the modern defenders of CMT and of the primarily cognitive take on metaphor. The battle goes on, and it is not our aim here to resolve it. Still, its existence helps to illustrate our point that while most metaphor researchers will probably agree that metaphor is a matter of communication *and* cognition, how to formulate the interaction, or balance, between the two remains controversial.

2.2 Combining the universal and the culture-specific

Corresponding to, without being identical to, the issue of combining cognition and communication, is that of both distinguishing and integrating (potentially) universal aspects of metaphor and culture-specific ones. While occasionally mentioning “cultural experience” the emphasis of authors like Lakoff, Johnson and Gibbs has always been on the human body as such, and given that all human beings have essentially the same kind of biological bodies: on the universal side of the pole. But cultures and languages clearly have their own ways of construing (relatively) abstract phenomena such as colds, as shown in (1–4), the first three examples taken from a popular textbook in semantics (Saeed, 2009, p. 25).

- | | |
|---|-----------|
| (1) <i>You have a cold.</i> | (English) |
| (2) <i>Hargab ba ku haya</i>
cold FOC you has
'A cold has you.' | (Somali) |
| (3) <i>Tá slaghdán ort</i>
Is cold on-you
'A cold on you.' | (Irish) |
| (4) <i>Khun pen wát</i>
You COP cold
'You are a cold.' | (Thai) |

A popular way to address this issue within CMT, due to the proposal of Grady (1997), is to distinguish between *primary metaphors*, understood as spatio-temporal correlations between sensory-motor experiences, like INTIMACY and CLOSENESS, and *complex* (or compound) metaphors, like LIFE IS A JOURNEY, which are supposed

to be built atop the primary ones, by adding culture-specific mappings. Lakoff and Johnson (1999) fully endorse this distinction, and discuss a number of primary and thus supposedly universal metaphors. Apparently, all the 24 primary metaphors that have been offered are given in (5), bearing in mind that these are labels for the putative domains, and for the mappings/correspondences between them.¹

- (5) Affection Is Warmth, Important Is Big, Happy Is Up, Intimacy Is Closeness, Bad Is Stinky, Difficulties Are Burdens, More Is Up, Categories Are Containers, Similarity Is Closeness, Linear Scales Are Paths, Organization Is Physical Structure, Help Is Support, Time Is Motion, States Are Locations, Change Is Motion, Actions Are Self-Propelled Motions, Purposes Are Destinations, Purposes Are Desired Objects, Causes Are Physical Forces, Relationships Are Enclosures, Control Is Up, Knowing Is Seeing, Understanding Is Grasping, Seeing Is Touching

But even postponing for a while the discussion of problems with notions like “domains” and “mappings” (see 2.5), especially when it comes to such general experiential correlations as those in (5), it is problematic to assume a binary distinction between primary vs. complex metaphors. For example, Kövecses (2005) discusses the rather extensive cultural variation that goes beyond combinations or sub-divisions of primary metaphors. Others have questioned the universality of specific presumptive primary metaphors, such as Knowing is Seeing, as when Evans and Wilkins (2000) show that many Aboriginal languages and cultures regularly extend verbs meaning ‘hear’ rather than ‘see’ to express knowing. In short, the proper balance between “nature and nurture”, or body and culture, is something that remains an unachieved desideratum for metaphor theory.

2.3 Combining stable and dynamic aspects

Again, parallel to but distinct from the previous issue is the need to account for the combination of, on the one hand, relatively stable metaphorical structures, and on the other, of highly dynamic processes through which specific metaphors and their interpretations emerge. Continuing on the topic discussed above, Lakoff and Johnson (2003, p. 256, our emphasis) state in the revised edition of *Metaphors We Live By* that CMT has established “a *stable, conventional system* of primary metaphors that tend to *remain in place indefinitely* within the conceptual system and that are independent of language”. But this begs the question: where is this “conceptual

1. The list was compiled by Jono Hey and posted on this site <http://palojono.blogspot.se/2004/12/primary-metaphor-list.html>; Accessed Sept 8, 2019.

system” located, and if in “the brain”, given that CMT has been aiming to become a “neural theory of metaphor” (Lakoff, 2009): whose brain, and how can they remain there indefinitely? Given the enormous plasticity of neural structures, the metaphor that the brain is (more like) a jungle rather than a switchboard (Edelman, 1992) is quite apt.

Another, and more plausible form of metaphor stability has been proposed by *discourse metaphor* theory (Cameron and Deignan, 2006; Zinken, 2007), where theorists document how particular metaphorical expressions become conventionalized in a community as a result of repeated usage on the basis of social interactions and linguistic corpora. Using implicitly the analogy with the concept of *morphemes*, Cameron and Deignan (2006, p. 674) have proposed the notion of *metaphoremes*, which “combine specific lexical and grammatical form with specific conceptual content and with specific affective value and pragmatics”. In other words, expressions such as *drive X crazy*, or *bleed (X) to death* are entrenched in the manner of semi-idiomatic constructions, preserving a certain tension between their literal and extended senses.

On the other side are those who only admit metaphors as ongoing processes, such as when Müller (2016, p. 50) states that “metaphors come to exist only in the moment”. This should be understood against the backdrop of an approach that focuses on face-to-face social interaction, recently summarized under the heading *cinematic metaphor* (Müller and Kappelhoff, 2018). A representative citation from this tradition claims that “metaphors ... should be regarded as a process of meaning construal in which new metaphoric expressions dynamically emerge, are elaborated, and are selectively activated over the course of a conversation” (Kolter et al., 2012, p. 221). Some theorists advocating such rather extreme dynamism have been drawn to conceptual integration (blending) theory (Fauconnier and Turner, 2008), since projections from multiple “spaces” in fully opportunistic manners allows more flexibility than the Target-Is-Source schema.

However, critics from the other side have questioned whether such analyses can be intersubjectively validated. More generally, the claims of metaphor theorists who endorse metaphor-dynamism to the extent of denying the existence of any stable structures, be they cognitive schemas or cultural conventions such as metaphoremes, resemble those of proponents of “distributed language” like Cowley (2011), who likewise deny the existence of linguistic rules and symbols in favour of all pervasive micro-interactions. But are such claims fully justified? Linguistic and metaphorical creativity is possible and actual, but arguably only against the background of more or less stable norms (Itkonen, 2008a; Zlatev and Blomberg, 2019). Once again, a synthesis of stability and dynamism is needed, rather than only one or the other.

2.4 Metaphors across semiotic systems

Given the assumptions of CMT theorists that metaphor is (primarily) a matter of cognition and not of language, it is surprising that the bulk of metaphor research has been conducted on language, with predominance of work on English and other Western-European languages. As Forceville (2017, p. 26) points out: “If, indeed, we *think* metaphorically, this means that metaphors should appear not just in language but also in visuals, gestures, sounds, music, and in discourses that combine these modes”. More recently, metaphor theorists have investigated such “multimodal” (Forceville and Urios-Aparisi, 2009) metaphors in above all pictorial representations, in genres such as print advertising (Sobrino, 2017) and film (Müller and Kappelhoff, 2018). Others have focused on gestures (Cienki, 2008).

However, something that has arguably inhibited progress in investigating metaphors beyond language is the vagueness of the notion of “mode”. For example, Forceville (2017) writes: “The question of what constitutes a mode is a much-debated and hitherto unresolved issue ... I distinguish the following modes: written language, spoken language, visuals, music, non-verbal sound, gestures, olfaction, taste, and touch.” But as this shows, here we have a conflation of semiotic systems like language and gesture, on the one hand, and sensory modalities, on the other. The problem derives from the tradition of *social semiotics* (Kress, 2009) where “modes” are suggested in a rather *ad hoc* basis: text, image, colour, music, typography, font, layout, design, etc. As pointed out by Green (2014, pp. 9–10) “there is no theoretical limit to the number of modes that may be recognized in various socio-cultural contexts, and this leads to an abundance of modes that are difficult to compare”. Further, are speech and gesture different modes, or different *modalities*, another ambiguous notion? And what about the sensory modalities, and the general acknowledgement that perception is multimodal? It is becoming generally recognized that the term “multimodality” is highly ambiguous, and hence problematic (Devyllder, 2019).

To help clear up this ambiguity, it is useful to re-introduce the notion of *semiotic system*, defined as the combination of a particular kind of signs, relations between signs, and material affordances depending on the medium employed (Zlatev, 2019). Table 1, adapted from Stampoulidis et al. (2019), shows what are arguably the most fundamental semiotic systems in human communication, with some of their central properties. Some of the latter have to do with corresponding sensory modalities, but not all, and the notions of modality and system must be held distinct. When several systems are combined, we have an instance of *polysemiosis*, and when polysemiotic communication fulfils the criteria for metaphoricality (see below), polysemiotic metaphors, such as that shown in Figure 2.

Table 1. The semiotic systems of language, gesture and depiction, with some of their properties, adapted from Stampoulidis et al. (2019)

Properties	Semiotic systems			
	Language		Gesture	Depiction
	Speech	Writing		
<i>Production</i>	Vocal	Material	Body	Material
<i>Perception</i>	Auditory	Visual	Visual (+Auditory)	Visual (+ Tactile)
<i>Degree of permanence</i>	Very low	High	Low	Intermediate
<i>Double articulation</i>	Yes		No	No
<i>Semiotic grounds</i>	Conventional > Iconic		Iconic + Conventional	Iconic > Conventional
<i>Syntagmatic relations</i>	Compositional		Sequential	Possibly sequential



Figure 2. A polysemiotic metaphor in street art in Athens, Greece: MERKEL \equiv MINNIE MOUSE. Creator: Unknown. Photography: Georgios Stampoulidis ©, August 2017

As pointed out below, it has been hard to agree on a clear definition of what constitutes a metaphor in language, and this difficulty has only become compounded by including pictorial metaphors (Bolognesi, van den Heerik, and van den Berg, 2018). With the conceptual distinctions made in this sub-section, and operational procedures based on the Motivation & Sedimentation Model, described in Section 3, it may be possible to go beyond the impasse of “multimodal metaphor”.

2.5 Explicit theoretical and operational definitions

Given the differences outlined above, it is hardly surprising that there are a multitude of different concepts of metaphor in the literature, and that they are not all compatible. Still, the ambiguity of the term “metaphor” in the literature is arguably a matter of polysemy rather than homonymy, as these senses go back to Aristotle’s original notion of conceptual transfer (see 2.1). This is also evident in the oft-quoted statement of Lakoff and Johnson (1980, p. 5) that metaphor involves “understanding and experiencing one kind of thing in terms of another”. The difficulties begin to accumulate when the “things” in question, as well as the processes that link them, need to be specified.

As pointed out earlier, CMT defines metaphor as “a *cross-domain mapping* of structure from a source domain to a target domain, where the two domains are regarded as *different in kind*” (Johnson, 2010, p. 407, our emphasis). The problem is that deciding what a “conceptual domain” is, and when two of these are “different in kind” is far from clear (cf. Croft and Cruse, 2004). Are HEAD and MIND one or two domains? What about MOTION and EMOTION, the topic of the study in Section 4? Since crossing domain boundaries or not is supposed to be the main difference between metaphor and metonymy, the ability to distinguish these two basic figures has become proverbially difficult in cognitive linguistics (Barcelona, 2012).

No less problematic is the notion of “mapping”. In the well-known article by Lakoff (1993) on “the contemporary theory of metaphor”, it is repeated again and again what mappings are *not*: labels, propositions, “processes, or . . . algorithms that mechanically take source domain inputs and produce target domain outputs” (p. 8), the latter apparently in an effort to contrast CMT’s notion of mapping with that of *metaphor as structure mapping* (e.g. Gentner and Bowdle, 2008). But when it comes to explaining what mappings are, we are left with little more than “a fixed patterns of ontological correspondences” (p. 8). Why this is not a form of analogy (Itkonen, 2005) is unclear, and neither is the manner in which it is supposed to operate. Turning to neuroscience (Gallese and Lakoff, 2005) has not helped particularly, especially since neural connections are in general bi-directional, which contradicts the basic directionality of metaphor. For a similar reason, regarding primary metaphors (see Section 2.2) as true metaphors is problematic, since “correlations in experience” are per definition bi-directional, or symmetric.

Given such difficulties of individuating “conceptual” metaphor, and the need for intersubjectively valid criteria to decide what is metaphor, has prompted many to turn back to analyzing metaphors as (linguistic) expressions. One of the best-known procedures for identifying metaphors in text is that of (Pragglejaz,

2007). Krennmayr (2006, p. 112) provides a useful summary of the crucial step in this procedure:²

- A. Establish the contextual meaning for each unit.
- B. Establish a more basic contemporary meaning in other contexts than in the given context. The basic meaning tends to be more concrete, related to bodily action, more precise or historically older.
- C. Decide whether the more basic meaning and the contextual meaning contrast with each other but can be understood in comparison.

This is on a whole a reasonable operational definition of metaphor, given that it is based on the two conditions of *contrast* and *similarity* (condition C) between intended (condition A) and “other” (condition B) sense of a given expression, which are also reflected in our proposed definition in Section 3. However, deciding what is “more basic” is problematic, as well as the reliance of MIP and related procedures on dictionaries in order to be able to pick out the relevant senses (MacArthur, 2015). To use a variation on a well-known example, which sense of *Nazi* is to be taken as “more basic” in (6)? Historical knowledge of Nazi doctors in concentration camps is here being applied to the poor dentist, but we would be hard-pressed to find a “contextual meaning” corresponding to this in a dictionary.

(6) *My dentist is a Nazi.*

These difficulties are only compounded in the case of non-verbal metaphor like that in Figure 2, where deciding what is source and what is target requires extensive context-sensitive interpretation.

2. The original formulation is the following: “3. (a) For each lexical unit in the text, establish its meaning in context, that is how it applies to an entity, relation, or attribute in the situation evoked by the text (contextual meaning). Take into account what comes before and after the lexical unit. (b) For each lexical unit, determine if it has a more basic contemporary meaning in other contexts than the one in the given context. For our purposes, basic meanings tend to be

- More concrete [what they evoke is easier to imagine, see, hear, feel, smell, and taste];
- Related to bodily action;
- More precise (as opposed to vague);
- Historically older;

Basic meanings are not necessarily the most frequent meanings of the lexical unit.

(c) If the lexical unit has a more basic current-contemporary meaning in other contexts than the given context, decide whether the contextual meaning contrasts with the basic meaning but can be understood in comparison with it.” (Pragglejaz, 2007, p. 3).

2.6 Summary

There appears to be a growing agreement that a comprehensive modern theory of metaphor needs to deal with the following five desiderata: (D1) combining communication and cognition, (D2) combining universal tendencies and culture-specific knowledge, (D3) involving both stable and dynamic phenomena, (D4) covering language(s) and other semiotic systems and (D5) providing clear theoretical and operational definitions. The presented, albeit partial, review of the current state of the art indicates that progress is needed with respect to all of these desiderata. In the next section, we introduce our theoretical model, and show that there are reasons to believe that it can meet these challenges.

3. Metaphor within the Motivation & Sedimentation Model

The Motivation & Sedimentation Model (MSM) emerged over the past decade, as we attempted to address issues such as those discussed in the previous section with respect to street-art metaphors (Stampoulidis et al., 2019) and metaphors for the divided self (Devyllder and Zlatev, 2020), but also while dealing with other complex issues such as the nature of *language norms* (Zlatev and Blomberg, 2019) and the constantly controversial topic of *linguistic relativity* (Blomberg and Zlatev, 2020).

The model's main influences are the philosophical tradition of *phenomenology*, in particular the work of Merleau-Ponty (1962, 1964), and the *integral linguistics* emanating from Coseriu (1985, 2000). Like the latter, MSM distinguishes between three fundamental levels of meaning making. But while Coseriu and his followers focus exclusively on language and regard the most general level (called “universal”) as concerning only language and linguistic knowledge, MSM differs from this in both terminology and interpretation. Its most general level is the Embodied³ level of meaning, which consists of *non-linguistic* cognitive and experiential processes and structures such as the body-schema and body-image (Gallagher, 2005), cross-modal perceptual experience (Abram, 1996), bodily mimesis (Donald, 2001), and analogy-making (Itkonen, 2005). It is this level of meaning-making, as illustrated in Figure 3, and explained below, that ultimately underlies all sign processes, and language use in particular, serving as a *Fundierung* that grounds all meaning-making, though not in a reductionist manner (Zlatev, 2018).

On the other pole, and metaphorically speaking “on the surface”, lies the Situated level, which is that of actual live social interaction, spontaneous language

3. We capitalize the names of the levels in the model, to avoid connotations with other senses of these terms.

use, and artistic improvisation. This is where all particular meaning making takes place, and where diversity and creativity manifest themselves most clearly. Yet, this level would be impossible without the Embodied level, as well as without a level that can be conceived as intermediary between these two: the Sedimented level of historically derived, relatively stable linguistic and other social norms (Itkonen, 2008a; Zlatev and Blomberg, 2019). It is this level that gives stability to human communication: a shared reference frame for a larger or smaller social community.

Before we turn to the processes that interlink the three levels, we should comment on the “horizontal” dimension of the MSM schema shown in Figure 3. Each level has both more stable elements (Structure) and specific, spatiotemporally unique activities (Process) both based on and changing these structures.⁴ Thus, the model implies two different kinds of norms: *situated*, emerging within a specific interaction, and *sedimented*, and two corresponding forms of use: *creative* and *conventional*, the latter consisting of pre-fabricated expressions, such as those we encounter daily when forced to “communicate” with machines.⁵


Level	Structure	Process
 Situated	Situated norms	Creative use
Sedimented	Sedimented norms	Conventional use
Embodied	Sensory knowledge Body schema Mimetic schemas	Bodily acting Pragmatic inferences Analogy-making

Figure 3. The Motivation & Sedimentation Model (MSM): Levels and processes.

Motivation is represented in solid lines and sedimentation in dotted lines, on short-term (horizontal) and long-term (vertical) timescales (adapted from Zlatev and Blomberg, 2019)

The most basic relation that links the levels, as well as the Structure and Process poles, is that of *motivation*. The motivating experience grounds, but does not determine the meaning of the expression that is motivated. First of all, this relation links the Embodied and the Situated levels: neither the production, nor the

4. This corresponds to the alterative viewpoints of *ergon/dynamis* and *energia* in Coseriu’s framework, and to the “dialectics of sedimentation and spontaneity” for Merleau-Ponty, as discussed by Zlatev (2018).

5. See Torstensson (2019) for a discussion of the role of these kinds of norms in relation to metaphors in within-generational and cross-generational Swedish discourse.

comprehension of any truly creative (metaphorical) expression like the first lines of the poem *Soaring Hour* from Bunichi Kagawa given in (7), would be possible without the motivating role of bodily experience, as evident from the strong sensory-motor imagery.⁶

- (7) *I shall dig deep with my brain
Toward the strength and ways of glittering glass
And soaring cubes of granite.
Their naked crushing leap of clean motionlessness
That out-hushes the stillness of a rose
The dream of rose – it shall be my blood.*

This vertical aspect of the motivation relation resembles a key phenomenological concept, that of *Fundierung*, through which “the symbolic function rests on the visual as on a ground” (Merleau-Ponty, 1962, p. 146). *Sedimentation* conversely entrenches expressions that have been successfully used in the past, both in individual memory and in the “shared mind” of the community (Langacker, 2017). Importantly, given this level of sedimented norms and corresponding processes, expressions used on the Situated level are *doubly motivated* – not only by the visceral experiences and non-linguistic cognitive processes on the Embodied level, but also by the norms of the Sedimented level. Thus, both the more conventional metaphors in (1–4) and the more novel ones in (6–7) are doubly motivated, with novel metaphors being predominantly motivated by the Embodied level, and conventional ones by the Sedimented level, as we discuss further below.

Even given this summary description it can be appreciated that MSM integrates elements of different metaphor theories, such as those reviewed in Section 2. Along with proponents of metaphorical dynamism such as Müller and colleagues, MSM agrees that on the Situated level metaphors “dynamically emerge, are elaborated, and are selectively activated over the course of a conversation” (Kolter et al., 2012, p. 221). However, these could neither emerge nor be elaborated without the other two levels. The Sedimented level is where both metaphorical categories (Bowdle and Gentner, 2005) and metaphoremes (Cameron and Deignan, 2006) reside. It is where historical factors accumulate to establish “metaphorical patterns” (Geraerts and Grondelaers, 1995). Further, the model is capable of accommodating long-standing claims on the centrality of human bodily experience in meaning making by cognitive linguists (Gibbs, 2006; Johnson, 1987; Lakoff and Johnson, 1999), but with the important distinction that such experiences, and the analogical structures and processes that link concepts and “domains”, such as the correspondences listed

6. <https://www.poetryfoundation.org/poetrymagazine/browse?contentId=18928>, Accessed Sept 9, 2019.

in (5), are not metaphors *per se*, but rather pan-human experiences that motivate the emergence of metaphors, and their subsequent sedimentation.

We can now summarize how MSM can at least in principle fulfil the five desiderata for a contemporary theory of metaphor. With respect to D1 (combining communication and cognition), the model claims that metaphors are primarily (combinations of) communicative *signs*, i.e. expressions with meanings that users are consciously aware of, unlike the case of communicative signals (Zlatev, Zywiczynski and Wacewicz, 2020). While the meanings of these signs are motivated by the structures and processes of the Embodied level, they are not identical with these. Signs are used not just for interpersonal communication, but also in thinking. Thus metaphors involve a tight mix of cognition and communication.

With respect to D2 (combining universal and culture-specific factors), the model implies a necessary interaction between the universal experiences of the Embodied level, the culture-specific ones of the Sedimented level and the contextual ones of the Situated level. This interaction would be realized differently for metaphors that differ in their conventionality. Relatively novel metaphors like (8) will be predominantly motivated by the Embodied level, where “creative” analogies need to be performed, and less so by the Sedimented level, in the spirit of the “career of metaphor” model (Bowdle and Gentner, 2005). Metaphors like (9) on the other hand, are primarily motivated by metaphoremes on the Sedimented level, and are also likely to be experienced as less metaphorical. In either case, the way the metaphors are to be interpreted will be highly dependent on the Situated level.

(8) *John is a real rhinoceros.*

(9) *John is a male chauvinist pig.*

While the Situated and Embodied level will always be involved, relatively more sedimented metaphors will tend to be more common when communication needs to rely on shared conventions, so as to make successful comprehension more probable. As can be seen in (10), taken from a recent political tractate, a high density of metaphorical expressions (given in bold face) is fully possible in a single sentence, given that most, if not all, of these can be characterized as highly conventional, which again in terms of MSM means: motivated primarily by the Sedimented level.

(10) *It is beginning to be possible to see a genuine **path forward** – new political **formations** that, from their **inception**, will **marry the fight** for economic fairness with a **deep** analysis of how racism and misogyny are used as **potent tools** to enforce a system that enriches the already **obscenely** wealthy on **the backs** of both people and the planet.* (Klein, 2017, p. 256)

The treatment of D3 (the balance between the dynamic and the stable) is reflected in MSM both in the interactions between the Situated and Sedimented levels, and between the Structure/Process dialectics. For example, emergent metaphoremes, such as the well-known example *lollipop trees* of Cameron and Deignan (2006), correspond to situated norms, stabilizing over the course of a single social interaction.

With respect to D4, the model was explicitly developed so as to be applicable to any human language, as well as to other semiotic systems than language (see Table 1 in Section 2). Figure 4 shows a pictorial metaphor from Greek street art which can be analyzed as GREECE IS SULLIED, given the appropriate metonymic associations between the depicted object: flag and toilet paper (Stampoulidis et al., 2019).



Figure 4. Greece Flag = Toilet paper, leading to the metaphorical interpretation GREECE IS SULLIED, given appropriate knowledge on the Sedimented and Situated levels (Stampoulidis et al., 2019). Creator: Unknown. Photography: Georgios Stampoulidis ©, July 2015

Let us consider this example along with a definition of metaphor that follows MSM (see Stampoulidis et al., 2019, p. 10), leading us to the final desideratum D5: the need for clear theoretical and operational definitions. The following is the theoretical definition, and how it can be operationalized will depend on the particular kind of data and “context” in question.

Metaphor is a sign in a given semiotic system (or a combination of systems) with (a) at least two different potential interpretations (tension), (b) standing in an iconic relationship with each other, where (c) one interpretation is more relevant in the communicative context, and (d) can be understood in part by comparison with the less relevant interpretation.

The pictorial expression in Figure 4 is indeed ambiguous between “two interpretations”, the Greek flag and a role of toilet paper. The iconicity in this case is a matter of fairly *imagistic*, i.e. specific, similarity in the properties of the two denoted objects. The question of “relevance” is always difficult, and will need to be resolved based on the context in which the metaphor is created and interpreted. Given that the street artwork is a commentary on the political situation of Greece, it is reasonable that Greek flag, and by metonymy Greece, is the topic (target) of the metaphor, which is here construed via the “less relevant” interpretation of toilet paper, and its pejorative associations.⁷

In many cases, as in most linguistic metaphors such as those in (10), the iconicity/similarity between contextually relevant and “other” interpretation will be much more schematic, or *diagrammatic* (Devyllder, 2018). But likewise, for all the bold-faced expressions in (10) “at least” two different interpretations (senses) can be intersubjectively established, even without the use of dictionaries. In the case of the first expression, *see*, this is the more relevant sense of APPRECIATE. The “other”, less relevant sense is VISUALLY PERCEIVE, which may be “more concrete”, as in this case, but does not need to be. The similarity lies in the inferential structure of the interpretations (e.g. first not being aware, and then becoming; consequently being able to act on this awareness etc.). The role of the Embodied level for experiencing this similarity should be acknowledged, but without the need to postulate a universal “primary metaphor” such as SEEING IS UNDERSTANDING, which as discussed in Section 2 is at least in part culture-specific, and thus a matter of the Sedimented level. Once more, how this is to be operationalized depends on the particular kind of data under investigation. For example, Torstensson (2019) successfully provides one possible operationalization of the key concepts of tension, iconicity and

7. See Stampoulidis and Bolognesi (2019) for a detailed discussion of how the identification and analysis of pictorial metaphors can be operationalized.

relevance, applying it for the identification of metaphors in a corpus of spontaneous conversations on the topic of experienced dangerous situations.

This brings our summary presentation of how MSM applies to metaphor to a close. We are aware that it is far from conclusive, and many theoretical and methodological questions remain. But to address these, we need to turn to specific empirical studies, some of which we mentioned in the previous discussion. In the following section, we turn to one such study, and use MSM to re-think and further develop previous work on linguistic metaphors where the relevant interpretation concerns emotions, understood in comparison to situations involving motion, construed in a broad sense as *change in the position of figure against a background* (Zlatev, Blomberg and David, 2010).

4. Comparing motion-emotion metaphoremes across languages

4.1 General considerations

In earlier research we analysed and compared expressions that are polysemous between motion and emotion interpretations such as the highlighted terms in (11–12), where the contextually relevant interpretation (commonly called “target”) clearly concerns emotion, while the other (“source”) interpretation concerns motion.

(11) *My spirit soared.* (English)

(12) *I was uplifted by the concert.*

Such metaphors are likely to be universal, as there is an intimate connection between emotional life and movement, between “being moved” and “moving” (Foolen, Lüdtke, Racine, and Zlatev, 2012; Fuchs and Koch, 2014). While there is little consensus on the ultimate nature of emotions, there is some agreement that emotions are a *dynamic* phenomenon: they constitute above all *changes* rather than states in human (and animal) affective life (Houben, Van Den Noortgate, and Kuppens, 2015). This by itself gives a degree of schematic similarity, and thus iconicity, between corresponding motion and emotion senses or interpretations. In most cases, however, such similarity is more extensive, going deeper in inferential and aspectual structure. For example, the phenomenon of observed motion, that can be defined as *change of the position of figure against a background* (Zlatev, Blomberg and David, 2010) can be divided into 8 different categories, depending on whether there is *translocation* (change in relative position according to a frame of reference), *boundedness* (with respect to Beginning, Middle and End), and *causation* (Blomberg, 2014; Naidu et al., 2018) as shown in Table 2. The corresponding

emotional interpretations can be similarly divided, making the metaphorical motion in (11) belong to the category [Translocative, Unbound, Uncaused] and (12) to [Translocative, Bound, Caused].

Table 2. Classification of the eight *motion event categories*, using English as a meta-language. F = Figure, LM = Landmark, C = Cause, View-C = Viewpoint centred, Geo-C = Geocentric, Obj-C = Object centred Frame of Reference (based on Zlatev, Blomberg and David, 2010)

	Uncaused motion	Caused motion
Translocative, Bound	F goes from LM (Begin)	C takes F from LM (Begin)
	F goes over LM (Mid)	C throws F over LM (Mid)
	F goes to LM (End)	C puts F into LM (End)
Translocative, Unbound	F goes away (View-C)	C takes F away (View-C)
	F goes up (Geo-C)	C pushes F upward (Geo-C)
	F goes forward (Obj-C)	C pushes F forward (Obj-C)
Translocative, Bound	F jumps	C breaks F in pieces
Translocative, Unbound	F waves	C waves F

As the criteria of ambiguity (or more generally, tension) and iconicity (as explained in Section 3) are fulfilled for expressions like (11–12), we are entitled to regard them as metaphors, even if motion and emotion do *not* constitute “two domains ... regarded as different in kind” (Johnson, 2010, p. 407), which as we saw in Section 2 is definitional of CMT metaphors.

Zlatev, Blomberg, and Magnusson (2012) compared such “motion-emotion metaphors” in English, Swedish, Bulgarian and Thai. Jacobsson (2015) and Jacobsson and Zlatev (2016) updated and re-analyzed the metaphors in English and Swedish, and compared these with similar metaphors in Spanish. Paju (2016) added to this comparison metaphors in Finnish and Estonian. In all of these studies we looked for evidence for (a) a shared set of metaphors, and expected these to be strongly grounded in human embodiment, and (b) differences between the metaphors in the languages, which would correlate with how different the languages, and cultures, were from one another. As expected, Zlatev, Blomberg, and Magnusson (2012) found Thai motion-emotion metaphors to differ the most when compared with English, Swedish and Bulgarian data.

The goals of the present study were to bring together most of this data, and to reanalyse it with the help of a more elaborated theoretical model and improved methodology. First of all, in accordance with MSM, we must acknowledge that what we are comparing are not metaphors, but *metaphoremes* (see Section 2.3). These are expression-types such as <Part-of-Self SOAR>, which examples like (11) instantiate. While it is important to identify instances of these types in actual language use on the Situated level (and thus showing at least some degree of creativity) the

comparison itself was made on the Sedimented level. Thus, the predictions from previous work can be re-formulated as follows:

- a. motion-emotion metaphoremes present in all languages will be motivated by the Embodied level;
- b. there will be extensive variation between languages on the Sedimented level, and the more distant the languages are geographically and culturally – the more different the metaphoremes will be.

4.2 Methodology

Following the guiding principles of cognitive semiotics (Zlatev, 2012, 2015), the study used pheno-methodological triangulation, specified as the combination of *first-person* (e.g. intuition), *second-person* (e.g. intersubjective validation) and *third-person* (e.g. quantification) methods, as described in this section.

A first step was to gather the motion-emotion metaphoremes (hence, MEMs) from previous work (Jacobsson, 2015; Paju, 2016; Zlatev et al., 2012) for the languages, for which we had most reliable native and near-native speaker intuitions: English, Swedish, Spanish, Bulgarian, Estonian and Finnish. Following the methodological primacy of systematic intuition in the human sciences (Coseriu, 2000; Itkonen, 2008b; Zlatev, 2016), the MEMs were identified primarily on the researchers' semantic judgments: is a particular MEM idiomatic in the language or not? Secondly, an instance of each metaphoreme in written discourse was attested using corpora, and when such were not available, through Google searches. Effort was made to find examples that represented "conventional use", which in terms of MSM can be regarded as strongly motivated by the Sedimented level (see Figure 3). These metaphorical expressions in the six languages were collected in a database,⁸ and were consulted if doubts concerning the categorization of a given MEM occurred.

The second step was to arrange the MEMs of all six languages in a scheme, implemented as an Excel table, where each row corresponded to a single semantic type in a meta-language. While Zlatev et al. (2012) performed a cross-linguistic comparison on the basis of individual MEMs, this was problematic as it was ultimately on the basis of the English *glosses* that semantic overlap/non-overlap had to be decided. Therefore, a more systematic approach was initiated for English, Swedish and Spanish (Jacobsson, 2015; Jacobsson and Zlatev, 2016) and further extended to Finnish and Estonian by Paju (2016). This was developed for the present study as follows. The left-most column of the scheme (see Table 3) gives a Meta-Language Type (hence, MLT), consisting of two sub-types depending on whether it is the Self,

8. Additional appendix can be found online: <https://benjamins.com/catalog/ftl.11.02zla/additional>

as in (12) or Part of Self, as in (11), that serves as the Figure (i.e. what undergoes motion/emotion). The relationship between Self and Part-of-Self can be regarded as one of metonymy, but as it was conventional expressions that we were comparing, and very often one or more of the languages lacked either the Self or Part-of-Self sub-type (see Table 3), comparison was made both on the “coarse-grained” level, disregarding the difference between sub-types, and on the “fine grained” level, considering each row in the table as a separate MLT.

Each attested MLT included one or more MEMs, in one or more of the six languages. Each MLT was formulated in English but there was no requirement for it to be expressed by single verbs, or to be fully idiomatic in English. Different MEMs in a single language were considered synonymous to the extent that lexical or grammatical differences did not change the values for fundamental categories of motion semantics: Path, Direction, Region, Frame of Reference, Manner and Cause (Naidu et al., 2018). The basic principle was to have as few MLTs as possible, and to introduce a new one only when a semantic distinction in the categories listed above was required. For example, in Table 3, two MEMs in Finnish are treated as synonymous, falling under the MLT <LIFT UP Part-of-Self>.

The third step in the analysis was extensive cross checking for MEMs across the 6 languages. For this, we consulted our intuitions as native or near-native speakers of all the languages in the sample but Finnish, for which an additional analyst was

Table 3. Three Meta-Language Types (LIFT UP, CRUSH, STIR) with motion-emotion metaphores (MEMs), in Estonian, Finnish, English, Swedish, Bulgarian and Spanish. Numbers in parenthesis index with attested instances in the database. (S = Self; P = Part-of-Self)

	Estonian	Finnish	English	Swedish	Bulgarian	Spanish
LIFT UP Self			uplifts S (30)	S är upplyft (28)	vüz-visjava S (nad) (35)	
LIFT UP Part-of-Self	tõstab P (44)	kohotti P (29); mieltäkohottava P (30)			po-vdiga P (36)	levanta P (32)
CRUSH Self		musertaa S (34)	shatters S (36)		smackva S (16)	aplasta S (42)
CRUSH Part-of-Self	puruks muljub P (54)	musertaa P (42)	crushes P (48)	krossar P (36)	smackva P (17)	
STIR Self	segab S (59)	sekoitaa S (48)	stirs S (53)	upprör S (43)	po-bärkva S (57)	
STIR Part-of-Self					raz-bärkva P (58)	conmueve P (54)

consulted. Once an MEM was added for one language by one analyst, we immediately tested if there could be a corresponding one for the other languages. In the process, we also used corpora and lexica. This resulted in an iterative process where new MLTs were added to the scheme and database, but in other cases we agreed to remove a given MLT, if the differences with other ones were not substantial enough to merit this.

As a fourth step, in order to maximize comparability of the data, and in accordance with our previous analyses, the following five criteria for inclusion in the scheme were followed, and candidates for MEMs that did not fulfil them were removed from the database.

a. *The expression of the figure denotes the Self or a Part-of-Self.*

To remind, the figure is what is expressed as (if) moving in the MEM. A Part-of-Self could be something quite abstract like ‘spirit’, ‘heart’ and ‘soul’, but not the names for individual emotions like ‘happiness’ and ‘fear’. Thus, (a) allows the inclusion of (13), but not of (14).

(13) *Caigo en una tristeza infinita.* (Spanish)
 fall.1SG.PRS in a sadness endless
 ‘I fall into an endless sadness.’

(14) *Min rädsla blås-te bort.* (Swedish)
 my fear blow.PST away.
 ‘My fear blew away.’

b. *The relevant interpretation does not involve actual motion.*

For example, (15) fulfils criterion (b), while (16) does not, as the figure moves actually, if subtly, in physical space.

(15) *Mu tuju tõuseb.* (Estonian)
 My mood rise.3SG.PRS
 ‘My mood is rising.’

(16) *She trembled with fear.* (English)

c. *Substitution of the figure expression can lead to an actual motion sentence.*

Example (17), as can be seen, qualifies, as substituting ‘heart’ with ‘boat’ makes the sentence a description of actual motion.

(17) *My heart is sinking.*
My boat is sinking.

d. *Motion is overtly expressed by the verb-root*

Example (18) clearly fulfils (d). Example (19), however, does not. While the speaker’s ‘heart’ (Part-of-Self) is implied to have moved from the breast to the throat, this is not expressed by the verb *får* (‘get’). This criterion implies that

motion-expressing verbs serve as the core of all MEMs in all languages, even though prepositions and particles could change the meaning, and lead to a separate MEMs and even separate MLTs.

(18) *Hon sväva-r av lycka.*

she hover.PRS by happiness.

‘She is hovering with happiness.’

(19) *Jag fick hjärta-t i halsgrop-en.*

I get.PST heart-DET.DEF in throat-DET.DEF.

‘I became very afraid.’

e. *Both motion and emotion senses (interpretations) are accessible to present-day speakers.*

For example, speakers of English are still able to access both the motion and emotion meaning of the phrase *fall in X*, and hence (20) fulfils (e). On the other hand, the ambiguity of *flies off (the handle)* in (21) is based on a practice of chopping wood with an ax, which most modern English speakers would not recognize. Hence, they would not be able to recognize the “source” sense of the expression, disqualifying (21) as a MEM.

(20) *He fell passionately in love.*

(21) *He flies right off the handle for nothing.*

Finally, as a fifth step, using the taxonomy of motion situation types shown in Table 2, all selected MEMs (grouped in MLTs) in the six languages were classified as belonging to one of the 8 categories. This was done on the basis of the motion (“source”) semantics, allowing only one situation type per MEM, based on what appeared to be the basic (i.e. most unmarked) form. For example, all three MLTs in the Table 3 have the feature Caused, but while LIFT UP is Translocative and Unbound, CRUSH is Non-translocative and Bound, and STIR is Non-translocative and Unbound.

4.3 Results

Using the iterative scheme described above, the MEMs in the six languages were found to belong to a total of 194 MLTs, using the fine-grained level (separating Self from Part-of-Self) metaphorememes; or 97 MLTs, using the course-grained level of analysis (where Self from Part-of-Self were conflated). The 194 MLTs were distributed along the 8 categories as shown in Table 4. As can be seen, Caused motion MEMs were more frequent than Uncaused motion, and this was especially pronounced for the Non-translocative, Bound category, with types such as CRUSH.

Table 4. The distribution of the 194 Meta-Language Types (MLTs) in the data for the six languages, divided by the 8 kinds of motion situation types

	Uncaused motion	Caused motion
Trans, Bound motion	24	26
Trans, Unbound motion	14	20
Non-trans, Bound motion	14	34
Non-trans, Unbound motion	30	32

Looking at it from the perspective of individual languages, less than one third of the 194 MLTs (on the “fine count”) and about half of the 97 (on the “coarse count”) were realized in each language separately, as shown in Figure 5. The total number of motion-emotion metaphoremes (MEMs) across the languages was relatively stable, with the “fine” count giving expectedly higher numbers (though not proportions). Of the six languages, Bulgarian was found to stand out, as the two different counts gave markedly different results, stemming from the fact that the language had more cases where a particular MEM could be used indiscriminately with both Self and Part-of-self expressions than the other languages (as also visible from the types given in Table 3). Thus, the same high number of MLTs on the fine count level between English and Bulgarian changes completely when the comparison is performed on the coarse count.

Turning to the hypothesis that there would be relatively few MLTs that are shared by all the languages, and that those would be strongly motivated by the Embodied level, this may be regarded as born out, given that only the 9 MLTs shown in Table 5 were common to all six languages. Going from the fine to the coarse level count would add three more MLTs, namely those shown in Table 3 previously (i.e.

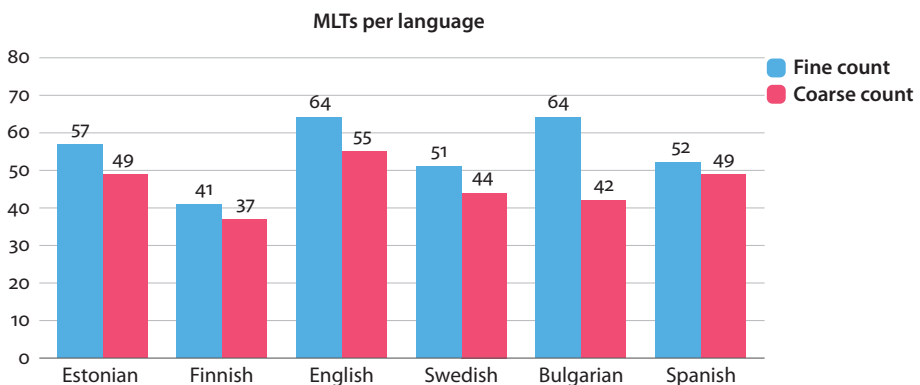


Figure 5. The number of MLTs attested per language, for the “fine count” (max = 194) and “coarse count” (max = 97)

LIFT UP, CRUSH, STIR). What is striking is that all but the first two MLTs in Table 5 represent Caused Motion. In other words, the Self (or Part of it) is construed as being subjected to more or less violent forces (BREAK, TEAR APART, SHAKE, PULL), supporting in part the analysis of Kövecses (2000) that focuses on FORCE as “source domain”. The three remaining MLTs (OPEN, CLOSE, GIVE-TO), as the previous ones, correspond to the definition of *mimetic schemas* (Zlatev, 2005), as relatively specific, easily imitated social actions, as opposed to more abstract (image) schemas like MOVE UP and EXIT FROM, which interestingly were not found to be common to the languages in the sample. Given that bodily mimesis is a central aspect of human experience (Donald, 2001; Zlatev, 2019), the shared MEMs can be regarded, at least in part, as motivated by the Embodied level.⁹

Table 5. MLTs, on the fine count level, shared by all six languages, with one or more MEMs per cell

	Estonian	Finnish	English	Swedish	Bulgarian	Spanish
Self SINK INTO	S vajub LM (3), S upub LM (2)	S vajoaa LM (2)	S sinks into LM (4)	S sjunker ned i LM (1)	S potqva v (55)	S hunden LM (3)
Self EXPLODE	S plahvatab (48), S löhkab (47)	S räjähtää (10)	S explodes (14)	S exploderar (10)	S iz-buhva v (21)	S estalla (57)
BREAK Part	murrab P (52)	särkeä P (40)	breaks P (43)	knäcker P (37)	pre-chupva P (4)	rompe P (43)
TEAR Self APART	rebib S tükkiüks (46)	repii S kappaleiksi (33, 53)	tears S apart (40)	sliter sönder S (32)	raz-käsva S (60)	destroza S (40)
PULL Self	tõmbab ligi S (36); ligitõmbab S (37)	viehättää S (28)	pulls S (27), attracts S (28)	attraherar S (26) tilldrager S (27)	pri-vličha S (43)	arrastra S (35), atrae S (36)
SHAKE Self	raputab S (58)	järkytyin S (47)	shakes S (52), agitates S (54)	(om)skakar S (42)	raz-tärsva S (52)	sacude S (28)
CLOSE Part	sulgeb P (50)	sulkee P (38)	closes P (45)	stänger P (41)	zatvori P (14)	cierra P (39)
OPEN Part	avab P (49)	avaa P (37)	opens P (44)	öppnar P (40)	ot-varja P (39)	abre P (38)
GIVE TO Part	annab P to LM (35)	antaa P to LM (27)	gives P to LM (26)	skänker P till LM (22)	dava P (29)	entrega P a LM (22)

9. At the same time, as many of the MEMs take as figures culturally sedimented notions such as “heart” and “soul”, the overlap here may as well be due to a pan-European conceptual framework for (romantic) love. The two motivating factors are of course not mutually exclusive.

In sum, while it is hard to “measure” the degree of being motivated by the Embodied level independently, the fact that only 9 (of 194) or 12 (of 97) MLTs were common to the six languages, and all of these could be seen as ultimately grounded in bodily experiences, supports our first prediction.

Considering the second hypothesis, that there would be stronger MEM overlap between languages that are genealogically and culturally closer to one another than between those that are most distant, differences between fine-level and coarse-level comparison, like those pointed out above, showed that both levels need to be considered. Tables 6 and 7 show correlation matrixes for the six languages on each level, respectively.

Table 6. Correlation matrix on the *fine level*, with $N = 194$ MLTs

	Estonian	Finnish	English	Swedish	Bulgarian	Spanish
Estonian	1.00	0.61	0.34	0.39	0.15	0.33
Finnish	0.61	1.00	0.33	0.38	0.15	0.34
English	0.34	0.33	1.00	0.50	0.16	0.49
Swedish	0.39	0.38	0.50	1.00	0.23	0.30
Bulgarian	0.15	0.15	0.16	0.23	1.00	0.17
Spanish	0.33	0.34	0.49	0.30	0.17	1.00

Table 7. Correlation matrix on the *coarse level*, with $N = 97$ MLTs (disregarding the difference between figure = Self and figure = Part-of-Self)

	Estonian	Finnish	English	Swedish	Bulgarian	Spanish
Estonian	1.00	0.61	0.22	0.40	0.03	0.22
Finnish	0.61	1.00	0.22	0.39	0.08	0.23
English	0.22	0.22	1.00	0.50	-0.03	0.47
Swedish	0.40	0.39	0.50	1.00	0.12	0.24
Bulgarian	0.03	0.08	-0.03	0.12	1.00	0.03
Spanish	0.22	0.23	0.47	0.24	0.03	1.00

As can be seen, on both measures the MEMs of Estonian and Finnish, two very closely related languages, correlate strongly with each other. Especially the coarse count (see Table 7) shows that their overlap with Swedish, which given historical and areas factors lies culturally close to these languages, is higher than with English and Spanish. Bulgarian is most distant on both counts.

The MEMs of English can be seen to be similar to those of Swedish, as could be expected, but also to Spanish, which was not expected, but is hardly surprising given the heavy influence of Romance on English. Estonian and Finnish were only moderately correlated (especially on the coarse level) with English, while Bulgarian was again most different, even showing a weak negative correlation on the coarse

count level. For Swedish, the situation was likewise: most similar to English and most dissimilar from Bulgarian, but the correlations were reversed with respect to Finnish and Estonian (stronger) and Spanish (weaker). This reflects the respective distance areally and perhaps culturally, if not genealogically.

For Spanish, the only strong correlations were with English (0.49, 0.47), medium with Swedish, Finnish and Estonian, and weak with Bulgarian, which was clearly the “outlier” of the comparison group, as also testified by looking at its own correlation with the five languages, with only a relatively weak correlation with Swedish: 0.12 (coarse count) and 0.23 (fine count).

4.4 Summary

The study showed that a relatively small proportion of motion-emotion metaphores (ca. 5% of the MLTs on the fine level count) were shared by all six languages. All of these can be said to correspond to mimetic schemas (Zlatev, 2005) or basic-level actions (Van Dam, Rueschemeyer, and Bekkering, 2010) and can thus be regarded as at least in part motivated by the Embodied level, as predicted. To remind, MSM holds that pan-human non-linguistic processes and experiences motivate but do not determine semantic structures, such as the motion-emotion metaphores compared in the study, which become conventionalized in a given language (or another semiotic system) on the Sedimented level. Hence, a balance between overlap and variation such as the one attested is to be expected.

Further, there was considerable overlap between closely related languages: Estonian-Finnish, Swedish-English, and (more surprisingly) Spanish-English. Bulgarian, the only Slavonic language in the sample, and spoken at the opposite “corner” of Europe compared to the other five languages, was as predicted an outlier. The other correlations, such as English-Finnish/Estonian, and Spanish-Finnish/Estonian, were intermediate. Given the shared Indo-European heritage of Bulgarian, English and Spanish, this would seem to imply that relatively more recent history and cultural interactions outweigh ancestry when it comes to explaining shared (motion-emotion) metaphores, though this conjecture would need to be supported with more evidence, and in particular evidence of a diachronic kind (Geeraerts, 2015).¹⁰

In sum, the study can be seen as both an illustration and partial validation of MSM, given that the predictions formulated on its basis were confirmed.

10. We can remind that one of the criteria for inclusion in the data set of metaphores was explicitly synchronic: “(e) Both motion and emotion senses (interpretations) are accessible to present-day speakers”. (Section 4.2)

Admittedly, similar predictions were stated in our work even before, without the tools provided by the model. But there were both conceptual and methodological issues with this earlier study (such as lacking a clear definition of metaphor), which were arguably resolved better in the current study. At the same time, we are quite aware that the present research is only a step on the long road to developing a fully adequate theory of metaphor. Hence, it needs to be placed in a broader perspective, as we sum up in the following and final section.

5. Conclusions

With dedicated journals like *Metaphor and Symbol*¹¹ and *Metaphor and the Social World*,¹² many special issues of other journals, like the latest issue of *Cognitive Semiotics*,¹³ as well as regular conference series such as those of the *Association for Research and Applying Metaphor* (RaAM), and *Figurative Thought and Language* (FTL), it is fair to say that research in metaphor (and other figures like metonymy) has been expanding centrifugally over the past two decades. Such expansion concerns new semiotic systems and media, new methods and new theoretical frameworks. This is to be applauded, but as with all kinds of expansion, it comes with its problems: conflicts concerning theories, methods, and even definitions of the central concepts. The five desiderata for metaphor theory that we proposed in the first part of this article may hopefully serve as a centripetal force, as it should be relatively easy to agree to use them as a kind of benchmark, given their general and balancing character. Indeed, one could see them as not only relevant for the analysis of metaphor, and applicable to any theory on human meaning making that aims to be both comprehensive and explicit, in the spirit of cognitive semiotics (Zlatev, 2015).

Our own contribution to the field of metaphor theory, the Motivation & Sedimentation Model (MSM), was to a considerable degree developed for the purpose of addressing these desiderata, so it is perhaps not so surprising to find that it “fulfils” them. As we stated repeatedly, we see its main strength not as the wound-be victor of the “metaphor wars”, but as an example of how different aspects of different metaphor theories can be brought together in a synthetic account. Building on ideas from classic thinkers, from Aristotle to Merleau-Ponty, MSM affirms that *metaphors should continue to be treated primarily as signs and sign processes*. And

11. <https://www.tandfonline.com/toc/hmet20/current>, Accessed Sept 8, 2019.

12. <https://benjamins.com/catalog/msw>, Accessed Sept 8, 2019.

13. <https://www.degruyter.com/view/j/cogsem.2019.12.issue-1/issue-files/cogsem.2019.12.issue-1.xml>, Accessed Sept 8, 2019.

that this insight should not be considered as contradicting the fundamental role of lived bodily experience, emphasised by phenomenologists and cognitive linguists alike. The Embodied level of the model satisfies the aspirations of the latter. The Sedimented level, on the other hand, can accommodate the insights of scholars like Geeraerts (2014, 2015), who rightfully emphasise the need for a socio-historical perspective on metaphor. The key point is to distinguish between *motivations* (from both the Embodied and the Situated levels), *conventions* (of more stable, and more transitory kinds) and *situated* sign use, all of which are necessary in order to make sense of the complex dynamics of metaphor, over shorter and longer periods of time. This reflects our understanding of how cognitive linguistics can continue to follow the “cognitive commitment”, but understanding this in a broad sense, including social, cultural, historical and emotional aspects of cognition.

Methodologically, we emphasised what could perhaps be regarded as obvious: the need for providing clear theoretical and operational definitions of metaphor, and the concepts needed to define it (like “domains”, “mappings”, “contrast”, “comparison”, etc.). But living up to this desideratum has proven to be more difficult than expected for many metaphor theories, including the formerly influential CMT, which is currently often found to be wanting on the operational side. On the other hand, “identification procedures” such as MIP(VU) seem to be hard to extend beyond the linguistic data for which they were developed, especially when the use of standard lexica needs to be abandoned. This is the case, for example, when venturing into other semiotic systems. In our current application to MSM, we stayed within the system of language, and furthermore did not consider the full complexity of metaphor use on the Situated level. Still, it was possible to compare the sedimented metaphoremes where emotions are talked about as-if involving motion in six European languages, and to establish two findings. First, relatively few motion-emotion metaphoremes appear to be shared among all six languages, and those that are, evoke very basic kinds of actions. Second, languages/cultures that could be said (on independent criteria) to be closer to one another, also shared more motion-emotion metaphoremes with each other. Both of these findings were predicted from MSM, and could be further tested by investigating other languages using the same methodology. Unlike other researchers, who would seem to aspire to curb “subjective” methods in the analysis of metaphors and semantics in general, we argue that intuition is not only unavoidable, but an essential tool in metaphor research (and in everything else that concerns meaning). At the same time, it needs to be “disciplined” by making it systematic and intersubjectively accountable, as in Husserlian phenomenology. And further, it should be complemented by data on actual sign use, in specific contexts and over historical periods.

Acknowledgements

We wish to thank Karoliina Louhema and Ralitsa Krumova for contributing with native speaker intuitions on MEMs from Finnish and Bulgarian, respectively. The work by Björn Torstensson on metaphors in elicited conversations was important for developing the theoretical definition of metaphor along the lines of the Motivation & Sedimentation Model (MSM) used here. Further, we thank Simon Devylder, Johan Blomberg, Georgios Stampoulidis, Elena Faur and Kalina Moskaluk for helpful comments on an earlier version of this text, and to Joost van de Weijer for help with the statistical analysis. The comments of two anonymous reviewers were most helpful for making some final improvements.

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Evaluating metaphor accounts via their pragmatic effects

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A prominent pragmatic effect of metaphor is meaning enhancement (Colston, 2015). Relative to comparable non-metaphorical language, metaphors can provide stronger, richer, or more poignant delivery of a proposition, idea, attitude, emotion, schema, or other meaningful construct. Metaphor constructions also alter their component parts (e.g., source and target domains). The paper measures pragmatic effect performance when metaphors are assembled in different ways, as a means of evaluating metaphor accounts. In four experiments metaphors were altered by using: (1) weak versus strong SDs, (2) mixed versus un-mixed SDs, (3) single versus double instantiations of SDs, and (4) using standard metaphor versus simile constructions. Observed differences (e.g., in meaning enhancement) support the idea that metaphor understandings arise in part due to embodied simulations.

Keywords: pragmatic effect(s), metaphor, metaphor accounts, meaning enhancement

1. Introduction

Please consider the following metaphors from Helena Maria Viramontes' novel, "Under the Feet of Jesus" (1995):¹

"The clouds above them ready to burst like cotton plants"

"The etched horizon of the mountain range"

"A cluster of amputated trees marked the entrance to the side road"

"His skin was like the bark of a juniper tree"

"a car engine puckering"

1. Many thanks to Rasse (2016) for bringing this metaphor-rich novel to my attention. As evidence of this richness, all of these examples appeared within the first ten pages of the work.

“through the colander of leaves”

“while wasps droned near the resinous fruit. Their hind legs dangled like golden threads”

“the man’s glasses glimmered like sparks”

“the twin girls spilled out of the backseat”

“the twins trailed like busy chicks”

“the stink of despair shot through the musty sunlight”

“cobwebs laced the corners”

“but her words netted in the rustle of the trees”

“the twins’ laughter curdled into whispers”

“Estrella offered her head first”

“feathers snowing down”

Among the many questions asked by metaphor researchers are why writers (and speakers, signers, people engaging in other modes of expression) use metaphorical expressions such as these? Why would people use metaphors when presumably some other more direct means of communication, perhaps means posing less of an invitation for misinterpretation, are available?

The short answer is that metaphors are used, and indeed even exist, largely because they can *enhance meaning* relative to non-metaphorical language (Colston, 2015). Whether via tapping into established conceptual metaphors (Lakoff and Johnson, 1980), through producing blended meanings that combine and synergize source domain and target domain content (Fauconnier and Turner, 2008), by evaluating domain similarity or overarching domain categories (Glucksberg and Keysar, 1990) or through usurping pre-existing generic meaning content in the form of sensorimotor neural programs (Bergen, 2012), metaphors can be variously explained as packing a meaningful wallop – they can demonstrably enrich, enhance, or otherwise strengthen the meaning(s) being conveyed, relative to comparable non-metaphorical language (Citron and Goldberg, 2014; Citron, Gusten, Michaelis and Goldberg, 2016; Colston, 2015; Conrad, Humphries and Chatterjee, 2019).

This idea of meaning enhancement as one type of pragmatic effect arose, at least via one route, from a study by Roberts and Kreuz (1994) which presented people with different forms of figurative language including metaphor, and measured what people thought those forms did for language users. Metaphors were reported to “add interest” by 71 percent of the participants in this task. Colston (2015, see chapter 2) then refined the general notion of a pragmatic effect, including that of meaning enhancement, by comparing it to related concepts from both psychological and linguistic literatures on different meaning-making processes such as implicatures, positive cognitive effects, interpretive hypotheses, inferences, and other related ideas. Colston argued that pragmatic effects share some aspects of these other meaning generating mechanisms, but pragmatic effects also allow in a number of

well-established perceptual, cognitive, cultural, and social processes derived from sub-disciplines in psychology, and potentially non-linguistic in general functioning (e.g., contrast effects) which can interact with or supplant other meaning generators, or arise independently to influence meaning. Pragmatic effects of this broad nature constitute a very complex mixture and interaction of meaning-making processes taking place during language usage and comprehension.

These pragmatic effects, such as meaning enhancement, among many others (see Colston, 2015 for a discussion of pragmatic effects germane to individual figures as well as to families of figures and figurative language as a whole), are thus meant loosely as mental/internal activity taking place in a person, traceable to his or her encountering figurative as well as other language, usually when encountering it (e.g., as an addressee, overhearer, reader, etc.) but additionally when the person produces or even thinks about it. Pragmatic effects can both contain aspects of linguistic meaning itself, but can also include related things that arise when using language such as emotional reactions, social alliances/breakages, attitude adjustments or formulations, and related cognitive reactions (e.g., suspicions, confirmations, etc.). It is also argued that pragmatic effects are not necessarily down-stream *reactions* that arise as a consequence of language meaning derivation having been completed. Rather pragmatic effects can co-occur in the mix of linguistic cognitive activity from the very onset of some received language exposure, and indeed, even preceding it, and are interwoven with meaning derivation per se, often influencing it (Colston, 2015, 2019).

But *how* metaphors achieve specifically the core pragmatic effect of meaning enhancement is still very much a matter of vibrant debate (Gibbs, 2017). In addition to the possible processes discussed above, metaphors might additionally enhance meaning due to an activation of a cognitive base of meaning, perhaps schematic in nature; through the general alignment with strong, pre-existing metaphorical comparative patterns; via an ad hoc semantic and/or analogical discernment process gleaned from juxtaposed conceptual categories; through an optimal amount of cognitive inferencing; or through several other mechanisms from the array of proposed metaphor comprehension accounts (or a combination of them) (Gibbs, 2017).

Metaphors can also certainly come in an almost infinity of construction forms. They can additionally contain a myriad of other meaningful sub-components (e.g., diminutivization, repetition, sound symbolism, tense differences, etc.). And metaphors can arise in an enormous range of broader language genres, which themselves contribute meaningful content and structure, both independently and in interaction with all the other components accompanying and underlying metaphors (see Colston, 2019 for a discussion of these factors and their potentially enormous degree of interaction). But oddly enough, before even attending to this larger degree of

metaphorical accompaniment complexity, and its effect on meaning enhancement, relatively less work has empirically evaluated the fairly straightforward and more core phenomena of *pragmatic effects* in metaphors of various types.

Such work could be interesting in its own right as we know less about which pragmatic effects might ensue from varied metaphorical structures, and the extent to which those pragmatic effects might be performed. But evaluating pragmatic effects of varying structured metaphors might also help inform the long-running debate among the different metaphor accounts mentioned and alluded-to above. If different accounts predict different pragmatic effects when metaphors are structured differently, and if we can see what kinds of pragmatic effects arise, and fail to arise, when people encounter these different metaphors, we may have an additional means to evaluate among metaphor accounts.

Attempting such an evaluation on the full range of metaphor accounts is beyond the scope of the present work. Nonetheless, as a proof of concept of the value of using the pragmatic effect of meaning enhancement as an evaluation tool for metaphor comprehension accounts, five kinds of accounts will be considered here. These are accounts based on similarity, categorization, conceptual metaphor, blending and embodied simulation.

2. Metaphor accounts

2.1 Similarity

As a very brief overview, accounts based on similarity argue that people comprehend metaphors by noting the similarity of characteristics of a metaphor's target and source domain. On this view, metaphors are comprehended by matching features between source and target domains (Bowdle and Gentner, 2005; Gibbs, 2017; Johnson and Malgady, 1980; Malgady and Johnson, 1980; Miller, 1979; Ortony, 1979; Tversky, 1977). So for instance a person hearing the metaphor, "That midterm was a root canal", would make note of what characteristics of a midterm examination might be similar to those of a root canal. As both domains can have the similar characteristic of *extreme discomfort, extreme unpleasantness, strong motivation to avoid, difficulty but necessity of enduring, relative lengthiness*, etc., the person notes those similarities to realize the speaker was in essence saying the examination bore those characteristics shared by the two domains.

Bowdle and Gentner (2005) review accounts based on similarity, or feature mapping, noting both their antiquity and their intuitive appeal. They also briefly discuss some empirical support they have received (i.e., that the level of similarity between source and target domains predicts rated aptness, interpretability, and speed of

processing of metaphors (Johnson and Malgady, 1979; Malgady and Johnson, 1976; Marschark, Katz and Pavio, 1983; Gentner and Wolff, 1997). Bowdle and Gentner end up criticizing this approach to metaphor comprehension, opting instead for a modified version based on structure mapping instead of feature matching, for when metaphors are novel. As metaphors gain in usage and conventionalization, they're argued to morph into being comprehended as a form of categorization (see next) modified to be based on analogy. But since simple similarity-based accounts using feature mapping were the norm for much of the history of metaphor explanations, and likely remain as a popular lay account of metaphor comprehension, they're considered here.

2.2 Categorization

A categorization account of metaphor comprehension is slightly different, it argues that people seek to find a category to which both the source and target domains belong that would afford sensibility to the metaphorical statement used in its context (Bowdle and Gentner, 2005; Gibbs, 2017; Glucksberg, 2001; Glucksberg and Keysar, 1990; Glucksberg, McGlone and Manfredi, 1997; Honeck, Kibler and Firment, 1987; Johnson, 1996; Kennedy, 1990). So, using the same example as above, the hearer/reader would note that midterm examinations and root canals can belong to a category of *very unpleasant experiences*, or something similar. Determining that category then affords the comprehension of the metaphor – the speaker is saying in essence that the midterm examination is a member of the category of *very unpleasant experiences*.

Bowdle and Gentner (2005) borrow Gentner's notion of structure mapping (1983) between categories and their contents, based on the twin mechanisms of alignment and projection, to account for certain characteristics of metaphors' typical operation (Falkenhainer, Forbus and Gentner, 1989). Among these are the usual pattern of metaphorical uni-directionality – due to the intransitive quality of categorization (i.e., *a car is a vehicle* vis-à-vis *a vehicle is a car*), as well as how information is transferred from source to target domains (i.e., “properties of categories are automatically inherited by subordinate concepts”).

They also then introduce the pattern of comparison found in analogy to further refine how metaphors first align source and target domains when metaphors are novel, and how that form of comprehension morphs into a nuanced kind of categorization account – their career of metaphor view (Bowdle and Gentner, 2005). The form of a categorization account being considered here is of the more nuanced type, that allows for the location of a referenced exemplar (e.g., “razor”) amid it's broader schematic category (e.g., “sharp things”). This has implications for the predictions being offered below (see predictions for categorization accounts).

These first two very general accounts are interesting in that they don't particularly offer claims that all metaphors would enhance meaning over say, comparable non-metaphorical language (i.e., that midterm was *bad*, *awful*, *horrible*, etc.). No mechanism(s) or process(es) seem in place in these accounts to drive some kind of meaning enhancement in the usage of a metaphor per se over that in comparable nonfigurative language. And indeed, especially for similarity based accounts, whatever would work to drive metaphorical meaning enhancement could also work for nonfigurative language meaning enhancement:

...some studies have confirmed that the matching properties selected during comprehension are often less salient for the target than for the base, not only for metaphors (Katz, 1982; Ortony, Vondruska, Foss and Jones, 1985; Gentner and Clement, 1988; Tourangeau and Rips, 1991), but also for literal similarity comparisons (Medin, Goldstone and Gentner, 1993). (Bowdle and Gentner, 2005)

But the categorization account does offer a mechanism for how some metaphors at least, could enhance meaning over non-figurative language.

Each of the next three accounts, though, do offer such claims of metaphorical meaning enhancement for the use of metaphor per se, along with differing processes for how that enhancement would be brought about.

2.3 Conceptual metaphor

Conceptual metaphor, among the more widely known, tested and debated accounts of metaphor comprehension, argues that metaphors are not merely linguistic creations, but rather are *conceptual* mappings (Gibbs, 2017; Lakoff and Johnson, 1980). Derived ultimately from bodily experiences which are structured into cognitive schemas or knowledge structures, conceptual metaphors are cognitive mappings between pairs of commonly and repeatedly aligned experiences. So, for instance, in the world around us, we often notice through our different sensory and motor systems that more of something is usually bigger or taller than less of something, so we can build a cognitive generic mapping that MORE IS UP and LESS IS DOWN from this common pattern in our shared experiences. These mappings then underlie, according to the account, a vast array of systematic patterns of spoken language (as well as expression through other mediums), as in the linguistic metaphors, "The attack in the Middle East sent crude prices *through the roof*", "The candidate's approval ratings are *dropping*", "My blood pressure is a *roller coaster*", etc.

According to this account, when a person encounters a metaphor, such as one of the linguistic examples above, the underlying conceptual metaphor can get activated, which then delivers the meaning of the metaphor. Saying for instance that a person's 'approval ratings are dropping', taps into the conceptual metaphor LESS

IS DOWN so the hearer knows the comment means that the level of approval for the candidate is therefore lessening.

Since conceptual metaphors are highly entrenched, often from our very earliest sensory, motor, emotional and cognitive experiences, a linguistic or other form that taps into them would receive an extra boost of meaning, relative to other language which doesn't tap into the conceptual metaphors. The presence of the conceptual metaphors and their deeply grounded basis in raw sensory/motor/etc. experience puts a sort of extra momentum behind the metaphor's meaning.²

2.4 Blending

Blending accounts of metaphor go beyond what many metaphor accounts argue in that they afford more of a bidirectional mapping of sorts between source and target domains, and a resulting form of emergent meaning (Coulson, 2001; Fauconnier and Turner, 2002, 2008; Grady, Oakley and Coulson, 1999). Most other accounts stress a more unidirectional mapping where source domain characteristics or category headers or embodied meaningful gestalts are mapped onto target domains. So we borrow characteristics, categories, or gestalts of root canals (i.e., their intense unpleasantness, our being forced to endure them, their lengthiness, etc.) and map those onto midterm examinations. But blending theory allows for a greater mixing of the domains and argues that the resultant meaning is a blend of the two domains plus a form of synergistic additional meaning. So midterm examinations, by this account, also map onto root canals to a degree, in addition to mappings also going in the other direction, so that the source and target domains mutually refine and define one another. The outcome meaning then has components of both unpleasant root canals and unpleasant midterm examinations, working to enrich the overall meaning of the metaphor.

2.5 Embodied simulation

The last account to be reviewed here, embodied simulations, is the newest of the accounts to be developed. One may also claim that conceptual metaphor has in some ways morphed into embodied simulations. So perhaps we can consider the treatment of conceptual metaphor above as how it worked when initially introduced and developed, where embodied simulations is a later iteration. But either way,

2. It should be noted that later versions of conceptual metaphor absorbed aspects of embodied simulation accounts of metaphor comprehension, but for the sake of comparison, the two accounts are being discussed separately.

what this embodied simulation account claims is that meaning in the mind, for metaphors or non-metaphorical content, is represented in a different sort of way relative to earlier accounts of knowledge representation. Rather than language and meaning residing only or mainly in a sort of mental database or mental lexicon, according to this embodied simulations much of meaning is stored, and indeed, *is*, the result of mental/neural simulations being run in areas of the brain not normally used for linguistic processing (Bergen, 2012).

These simulations take place in our normally non-linguistic brain areas governing sensation and motor action (and possible other areas like emotion). So for example, when a person hears or reads the language, “The man pushed the laden cart across the parking lot”, we run a simulation of *actually* seeing a person pushing a laden cart (or of our actually pushing a cart ourselves). These simulations aren’t some kind of mental imagery taking place on the heels of language comprehension. Rather they *are* that comprehension, or at least part of it. This is a fairly radical way of thinking about meaning itself – it is built in part from generic patterns of neural activity which occur when we interact with the world sensorally or motorally. This neural activity is a generic version of what we do neurally when *actually* encountering content mentioned in the language (i.e., hear or read the word TREE, and your brain acts as if you are seeing a tree, hearing the rustle of a tree, smelling or climbing a tree, chopping a tree, hugging a tree, etc., depending upon your past experiences with trees and whatever the context of the language affords).

As these embodied simulations, akin to the early version of conceptual metaphor discussed above, are anchored in baser sensation and motor brain functioning, they too afford a means of enhancing meaning. They can do this for metaphors over non-metaphorical language, as well as for non-metaphorical language which invokes enriched embodied simulations versus non-metaphorical language which does not. So for instance when a person uses the metaphor, “the man pushed his laden agenda at the meeting”, we run a simulation of “pushing” in either our sensory or motor brain regions, a simulation of actually pushing or watching the pushing of something physical. The kind of simulation done on metaphors versus nonmetaphorical uses of the same language is a bit different, but it nonetheless bears a lot of similarity to simulating actual pushing. So we get a boost or enhancement of meaning coming from the embodied simulation (i.e., the difficulty and therefore increased effort needed to push a *laden* cart, helps outline the metaphorical usage of pushing [a laden agenda] in the considered sentence).

3. Varyingly structured metaphors

So in terms of pragmatic effect accomplishment we have two accounts that do not explicitly predict meaning enhancement in the usage of metaphor (relative to a non-metaphor), and three accounts that do. But we may also derive some predictions that vary across the accounts by looking more closely at different ways of structuring metaphors, and how the accounts would likely handle them. Three different ways of structuring metaphors will be considered. An additional comparison of metaphor with simile and non-metaphorical commentary will also be discussed.³

The first way of structuring metaphors concerns the “strength” of the source domains used to invoke a target domain. “Strength” here is operationalized as the degree to which a word or term exhibits the most prominent feature of a source domain. For example, if we consider the source domain of SHARP THINGS, we can readily find a range of exemplars from that domain, which vary in the degree to which they exhibit sharpness. *Knife*, and *razor* are two such examples. They’re both reasonably considered *sharp things*, but *razor* is most likely more exhibitiv of that sharpness feature. When coupled then with the target domain INTELLIGENCE, we now have a pair of metaphorical terms which differ in their operationalized “strength”. In the context of considering the intelligence of an elementary school student, we would have,

“That kid is a knife”,

versus,

“That kid is a razor”.

These could also be compared with a non-metaphorical example, “That kid is smart”.

The next way of structuring metaphors is to invoke individual target domains with *multiple* source domain exemplars, and to then either have those multiple exemplars come from either the same or different source domains. For example, continuing with examples pertaining to the intelligence of an elementary school student, we could invoke the target domain INTELLIGENCE with two source domain exemplars from the same source domain, BRIGHT LIGHTBULB, or from different source domains, SHARP LIGHTBULB. This would give us metaphorical terms such as,

3. It should be pointed out that, for the sake of experimental design, the different ways of varyingly structuring metaphors will be conducted using direct (e.g., A is a B) metaphors, despite these being relatively rare in discourse (Steen, 2017). Such a practice will help minimize the introduction of other potentially influencing factors, but their relative rarity in everyday discourse should be kept in mind when interpreting the findings.

“That kid is a bright lightbulb”,

versus,

“That kid is a sharp lightbulb”.

The third means of structuring metaphors is sort of a mixture of the first two methods. The “strength” of a target domain invocation (exhibited by the manipulation in the first method above) can be varied by using multiple source domains (from the second manipulation described above), or only a single source domain. Continuing again with the intelligence of an elementary school student, we could invoke INTELLIGENCE with just a single source domain exemplar versus two (from the same source domain). For instance, we could have,

“That kid is a knife”,

versus,

“That kid is a knife hatchet”.

These could also be compared with a non-metaphorical example, “That kid is smart”.

Finally, we can compare instances of metaphorical usage with something very similar but which doesn’t as directly invoke the typical metaphorical construction, through the use of similes. For instance, we could readily compare metaphors, similes and non-metaphorical constructions:

“That kid is a knife”,

versus,

“That kid is like a knife”,

versus,

“That kid is smart”.

4. Predictions of metaphor accounts

The different accounts offer somewhat differing predictions for how these comparisons should affect the strength of meaning conveyed – the meaning enhancement pragmatic effect. A matrix of these predictions is presented in Table 1. We’ll discuss these by going through each account individually, specifying how the processes of that account might handle the different ways of structuring metaphors treated above.

4.1 Similarity predictions

Accounts based on the general notion of similarity, in depending upon a comprehender noting the level of similarity between target and source domain features, would likely predict that the weak source domain versus strong source domain manipulation would have little impact on meaning enhancement. An equal amount of similarity likely exists between *knives* and *intelligence* as exists between *razors* and *intelligence*. And as mentioned earlier, there doesn't seem a way to predict a metaphor per se advantage, over non-metaphorical language, based on a strict reading of this account.

For the unmixed source domain versus mixed source domain however, there does seem reason to predict a difference based on a similarity account. It is most likely easier to determine the similarity of characteristics shared by a source domain and target domain if only one source domain is invoked (e.g., INTELLIGENCE IS LUMINESCENCE, as in, "This kid is a bright lightbulb). If two different source domains are invoked, albeit source domains commonly used in the metaphor individually, then similarity seems harder to determine – too many different things are being compared (i.e., INTELLIGENCE IS LUMINESCENCE and INTELLIGENCE IS SHARPNESS, and therefore LUMINESCENCE IS SHARPNESS, as in, "This kid is a sharp lightbulb"). So the unmixed metaphors ought to show enhanced meaning over the mixed ones. Or perhaps more precisely, there might be a dilution of meaning strength in the mixed metaphors due to greater difficulty in ascertaining the level of similarity between the different source domain and the target domain features.

A difference might also be predicted for the single versus double source domain manipulation based on a similarity account. One might argue there is a greater similarity, or perhaps a greater ease of determining similarity, when two instances of a single source domain are invoked over just one (i.e., "That kid is a knife hatchet", versus "That kid is a knife"). And again, given no overall or per se metaphor advantage being predicted by a similarity account, it would not predict enhanced meaning differences between a non-metaphorical comment and a metaphor invoking only one source domain entity.

For the metaphor versus simile comparison, one could really predict things either way based on similarity. Either the presence or absence of the word "like" shouldn't have any bearing on meaning enhancement – in either construction, two similar-to-a-degree domains are being compared (i.e., "that kid is like a knife" and "that kid is a knife"). But one might alternatively argue the word "like" itself suggests a weaker similarity (i.e., as in, that kid is not just *like* a knife, he *is* a knife). We'll make the former prediction for this account, relying on a strict reading of the similarity account as a search for similarity between a source and target domain, placing less emphasis on the construction used to make that comparison. But we don't insist on this interpretation.

4.2 Categorization predictions

A slightly different pattern of predictions might hold for a categorization account of metaphor. As such an account also claims no overall metaphor advantage, instances of metaphorical usage should not enhance meaning relative to non-metaphorical utterances, except in the cases where one type of metaphor is predicted to enhance meaning relative to another kind of metaphor. In these cases the meaning enhancing metaphor would outdo a non-metaphorical comment.

For the specific structural manipulations, the category account might predict enhanced meaning with a strong versus a weak source domain. By using a more exemplary member of a source domain category, it might be easier to determine the broader category needed to house the source and target domains (e.g., a razor and a smart student belong to the category of *precisely honed or tuned functioning things*, or something similar). A less exemplary category member might make such a determination more difficult (e.g., a knife and a smart student belong to category X).

For the unmixed and mixed manipulation, the same prediction would likely hold as for the similarity account – enhanced meaning with the unmixed metaphor. This would likely be due to a greater difficulty in determining an overarching category when different source domains are invoked for a single target domain (e.g., “...a sharp lightbulb” versus “...a bright lightbulb”).

No difference is predicted for the single versus double source domain manipulation, however. The broad category to which a source and target domain belong, necessary for the metaphor’s comprehension based on a category account, should be equally derivable if one versus two instances of that source domain are invoked (i.e., “that kid is a knife” versus “that kid is a knife hatchet”). So this account predicts no differences between the different kinds of metaphors and non-metaphorical utterances.⁴

No differences are predicted across the non-metaphor, simile and metaphor comparison as well, based on a categorization account. The particular construction a comparison comes in shouldn’t necessarily affect the ability to derive the overarching category to which a source and target domain belong. A child being “like a knife” versus being “a knife”, shouldn’t affect the category determination (i.e., children and knives belonging to the category of *precise, high performance instruments*, or again something similar). For all three upcoming accounts that call for an overall metaphor advantage, any manipulation that pits a non-metaphorical comment against a metaphor ought to show an advantage for the metaphor. So non-metaphorical commentary will receive less focus.

4. Also not a prediction we make forcefully. One might make a claim that having two exemplars helps confirm the specific overarching category. But we wouldn’t expect this alternative possible process to be a very strong one.

4.3 Conceptual metaphor predictions

For the conceptual metaphor account, we're not predicting a difference across the strong/weak manipulation. As both types of source domains still serve to activate a conceptual metaphor (i.e., "that kid is a knife" and "that kid is razor", both activate the conceptual metaphor INTELLIGENCE IS SHARPNESS), they should convey their meaning at an equal strength, according to this account.

We're also making the same prediction of a difference across the mixed/unmixed manipulation for conceptual metaphor, as was made for similarity and category accounts, but for conceptual metaphor we're making the prediction in the opposite direction as the previous accounts. The idea being that, if two separate conceptual metaphors are activated in the mixed type of metaphor (e.g., "that kid is a sharp lightbulb" invoking INTELLIGENCE IS SHARPNESS as well as INTELLIGENCE IS BRIGHTNESS), then meaning ought to be enhanced over just one of those conceptual metaphors being activated (Kövecses, 2016).

For the single versus double source domain manipulation, no difference is predicted. Both single source domain metaphors (e.g., "that kid is a knife") and double source domain metaphors (e.g., "that kid is a knife hatchet") should just activate the one conceptual metaphor (i.e., INTELLIGENCE IS SHARPNESS), so no difference in the strength of the meaning of the metaphors should be found.

Finally, for the simile/metaphor comparison, conceptual metaphor would likely predict equally enhanced meaning for metaphor and simile, which would be greater than that for nonfigurative statements. Given how conceptual metaphor is presumed to be an underlying conceptual structure rather than just a purely linguistic phenomenon, the metaphorical and simile constructions should both activate the particular conceptual metaphors underlying the written forms of the similes and metaphors.

4.4 Blending predictions

The predictions for blending theory are similar to those for conceptual metaphor, excepting for weak versus strong source domains. An exemplary source domain member should contribute to a more poignant blended space than a less exemplary member. For mixed versus unmixed structures, under the terms of blending theory, it would probably make for a more enriched blended space and inherent emergent metaphorical meaning, when two different source domains are invoked instead of just one (e.g., "...a sharp lightbulb", versus "...a bright lightbulb"), (Muller, 2016). For the single versus double source domain manipulation, adding a second exemplar from a source domain ought not add anything to the blend, compared to just one exemplar being used (e.g., "...a knife hatchet", versus "...a knife"). And for the

simile versus metaphor manipulation, as with conceptual metaphor, the use of either the standard metaphorical construction or the simile one, ought to more likely trigger a metaphorical blending process than just a mere nonfigurative statement.

4.5 Embodied simulation predictions

The predictions offered by embodied simulations are also similar to those for blending theory with one exception. For the mixed/unmixed manipulation, it would likely be more difficult to run an embodied simulation of a mixed metaphor than an unmixed one – relatively too many disparate things to simulate – again resulting in relatively enhanced meaning in the unmixed metaphor.⁵ For the strong/weak manipulation, the stronger source domain exemplar used in the metaphor should create a more vivid embodied simulation, resulting in enhanced meaning over the weaker source domain exemplar. For the single/double manipulation, there wouldn't seem to be an advantage of simulating two sharp objects over just one (e.g., “that kid is a knife hatchet” versus “that kid is a knife”), so only the general metaphor advantage is predicted, not a difference between single and double source domain metaphors. And for construction type, according to embodied simulations, although the kind of construction used for an utterance can definitely have *some* influence on the type and strength and patterning of embodied simulations which ensue, this control is limited. The presence and juxtaposition of the two domains mentioned in both the simile and metaphorical construction (i.e., “that kid is like a knife” and “that kid is a knife”) would probably not be greatly affected by the construction type – people would run embodied simulations in both constructions which attempt to reconcile the relationship between the mentioned child and sharp object. So on this manipulation we're predicting an advantage of both the simile and metaphor constructions over the non-metaphorical one, but no difference between the two.

5. Experiments

To evaluate the predictions reviewed above, four experiments were conducted. Experiment 1 evaluated the weak versus strong source domain manipulation. Experiment 2 tested the mixed versus unmixed source domain manipulation.

5. It is important to keep in mind that such a prediction is not claiming that people would necessarily have difficulty comprehending mixed metaphors over unmixed ones. Rather the claim is that there would relatively less meaning enhancement in the mixed metaphors. Put differently, people can comprehend and glean meaning from mixed metaphors, but such metaphors may not produce an overly enhanced level of meaning – at least in terms of how meaning enhancement is being measured presently. This matter is revisited in the discussion.

Experiment three compared metaphors using single versus double instantiations of a single source domain. Finally, Experiment 4 evaluated simile versus metaphor constructions. Experiments 1, 3 and 4 also included non-metaphorical utterances.

5.1 Participants

All experiments were conducted using participants from a medium-sized American Midwestern university. All participants were recruited from the subject pool of an Introductory Psychology course. The participants received partial course credit for their participation. Age, gender and native language status were not specifically recorded in the experiments. But the normal demographics of the pool were majority female, mean age around 20 years, and predominantly native English speaking. Experiment 1 had 18 participants, Experiment 2 had 24, Experiments 3 and 4 had 18 and 24 participants respectively. Each participant took part in only one of the experiments.

5.2 Materials

Experiment one presented participants with direct metaphors using standard conceptual cross domain mappings⁶ (e.g., INTELLIGENCE IS SHARPNESS, FRIENDLINESS IS SWEETNESS, IMPORTANCE IS BIGNESS, etc.). The metaphors were created by making two versions of each, one using a weak source domain exemplar, the other using a relatively strong exemplar from the same source domain.⁷ Non-metaphorical utterances were also used. For example (parenthetical labels were not shown to participants),

This kid is a razor. (strong)
 This kid is a knife. (weak)
 This kid is smart. (non-metaphorical)
 The new teacher is fudge. (strong)
 The new teacher is caramel. (weak)
 The new teacher is nice. (non-metaphorical)
 Transportation is microscopic. (strong)
 Transportation is tiny. (weak)
 Transportation is unimportant. (non-metaphorical)

6. Standard for Conceptual Metaphor Theory, or at least earlier versions of it.

7. The relative strength of the exemplars was verified in a separate norming task, “strong” exemplars were rated as significantly stronger members of the host category (e.g., sharp things) relative to the “weak” exemplars.

Experiment two presented participants with direct metaphors also using standard conceptual cross domain mappings. The metaphors for this experiment were created with two versions of each metaphor, one using two exemplars from the same source domain (i.e., unmixed), the other using two exemplars from different source domains (i.e., mixed). Non-metaphorical utterances were not used in this experiment. For example (parenthetical labels were not shown to participants),

This kid is a bright lightbulb. (unmixed)
 This kid is a sharp lightbulb. (mixed)
 This puzzle is a padlocked safe. (unmixed)
 This puzzle is a concrete safe. (mixed)
 That story is a stretched rubberband. (unmixed)
 That story is a tall rubberband. (mixed)

Experiment three presented participants with direct metaphors from standard conceptual cross domain mappings. The metaphors for this experiment were created with two versions of each metaphor, one using one exemplar from a source domain (i.e., single), the other using two exemplars from that same source domain (i.e., double). Non-metaphorical utterances were also used in this experiment. For example (parenthetical labels were not shown to participants),

This kid is a knife. (single)
 This kid is a knife hatchet. (double)
 This kid is smart. (non-metaphorical)
 He is burning. (single)
 He is a burning fire. (double)
 He is sexy. (non-metaphorical)
 The coach exploded. (single)
 The coach was exploding dynamite. (double)
 The coach was angry. (non-metaphorical)

Finally, experiment four presented participants with direct metaphors from standard conceptual cross domain mappings, along with comparable simile constructions. Non-metaphorical utterances were also used in this experiment. For example (parenthetical labels were not shown to participants),

This kid is a knife. (metaphor)
 This kid is like a knife. (simile)
 This kid is smart. (non-metaphorical)
 She is a kite. (metaphor)
 She is like a kite. (simile)
 She is happy. (happy)

This guy is the moon. (metaphor)
 This guy is like the moon. (simile)
 This guy is irrational. (non-metaphorical)

All utterances were preceded by short contextualizing stories that provided background to the utterances. For instance, for the metaphors and other utterances involving a smart kid, the following story was presented:

You are working during the summer with an elementary school teacher, helping her prepare for her fall class. You are going over the incoming students' records, when you both see one boy who easily outscores the other students. His math, science and writing scores put him way in front. The teacher sees this and says to you,

The stories and utterances were organized into different sets such that each participant would see each story only one time, and that story would be paired with only one of the possible utterances for that story. The pairings varied though so that each participant would see the same number of utterance types (e.g., weak, strong and non-metaphorical, in Experiment 1). The sets were given to an equal number of participants in each experiment, thus counterbalancing stories and utterance types across participants. All experiments used 12 different stories with their accompanying utterances.

For example, in Experiment 1, the first set of stories was created such that story 1 (concerning the elementary school teacher and the intelligent boy) was paired with its "strong" utterance. Story 2 would then be paired with its "weak" utterance. Story 3 was paired with its non-metaphorical utterance. This pattern continued through the remainder of the 12 stories. Set 2 then paired story 1 with its "weak" utterance. Story 2 was paired with its non-metaphorical utterance and story 3 was paired with its "strong" utterance and so on. Set three then continued this rotation. Each set was viewed and rated by an equal number of participants.

Each story and utterance were presented with a customized rating scale, designed to evaluate the strength of meaning of that utterance used in its context. For instance, for the example story above, the following scale was used:

How smart does the speaker think the student is?

|-----|-----|-----|-----|-----|-----|-----|

fairly

extremely

smart

smart

Participants were instructed to mark each scale with an X on the line to indicate their opinions. Marks were later quantified for analysis (“fairly smart” coded as 1, “extremely smart” coded as 7, with gradations in between). All items are provided in the Appendix.

5.3 Results

Mean ratings were calculated for each utterance type in each experiment and compared using either T-tests, or one way analysis of variance, followed by pairwise T-tests where warranted. All reported differences were statistically significant.

Experiment 1 revealed that each different kind of utterance was rated as different from the others with non-metaphorical utterances (“This kid is smart”, mean rating = 4.42) showing the least meaning enhancement, followed by weak metaphors (“This kid is a knife”, mean rating = 5.42) and then strong metaphors (“This kid is a razor”, mean rating = 6.22).

Experiment 2 found that unmixed metaphors (“This kid is a bright lightbulb”, mean rating = 5.92) enhanced meaning relative to mixed metaphors (“This kid is a sharp lightbulb”, mean rating = 5.55).

Experiment three revealed that both single metaphors (“This kid is a knife”, mean rating = 6.42) and double metaphors (“This kid is a knife hatchet”, mean rating = 6.33) enhanced meaning relative to non-metaphorical utterances (“This kid is smart”, mean rating = 4.45), but did not differ from each other.

Experiment four found that both simile (“This kid is like a knife”, mean rating = 5.79) and metaphorical constructions (“This kid is a knife”, mean rating = 6.10) enhanced meaning relative to non-metaphorical utterances (“This kid is smart”, mean rating = 5.23), but did not differ from one another.

5.5 Discussion

Before considering the implications of this pattern of results, a couple of caveats are in order. The first is that these accounts needn’t necessarily be considered completely mutually exclusive. We’ve already discussed how one might consider conceptual metaphor and embodied simulations synonymous. But one might also note that the emergent meaning often discussed in the context of blending theory, might be akin to the “wrap up” simulations observed in embodied simulations on metaphorical items (Bergen, 2012). As blending theory and embodied simulations both showed the greatest degree of support in terms of their confirmed predictions, such an overlap is worthy of further consideration.

Secondly, as alluded to in the introduction, some of the predictions offered for the different metaphor accounts were admittedly a bit forced. On occasion,

we narrowly stuck to some of the claimed principles or processes of different accounts in order to make hard predictions. One might disagree with some of those predictions accordingly, especially if different kinds of “meaning enhancement” are considered (see below), and arrive at a somewhat different concluding interpretation of the results.

With these caveats in mind, we can now compare this pattern of results with the prediction matrix presented in Table 1. A new version of this Table is presented below (Table 2) with the results obtained in the experiments highlighted. We can readily see that the pattern of obtained results provides the greatest degree of support for the account based on embodied simulations.⁸ The second highest level of support would be for blending theory. The other accounts all received less support.

The result of Experiment 4, verifying the prediction concerning simile versus metaphorical constructions (i.e., their both enhancing meaning relative to non-metaphorical language, but not differing between themselves) is especially noteworthy, given that this finding supported conceptual metaphor, blending, and embodied simulations. But it should also be considered in light of other work which has shown some metaphorical advantages over similes under certain circumstances (e.g., Kennedy and Chiappe, 1999; Chiappe and Kennedy, 2001), so the present finding might not be the entire story.

One extremely important point about the pragmatic effect of meaning enhancement is also raised by these findings. Meaning enhancement can be more than one thing, and the type predicted and measured by the present work is of only one among these.⁹ Meaning enhancement could come in the form of a focused strengthening of a key component of a metaphor’s meaning. For instance, if the main thing being conveyed by a metaphor is an expression of a referent person’s intelligence, meaning enhancement could manifest as the *extent* of that meaning (i.e., the expressed degree or magnitude of the person’s intelligence – being *very smart* versus being *extremely smart*). This is the type of meaning enhancement measured in the present studies (note the structure of the rating scales, and their anchor labels, used in the experiments). But meaning enhancement could also come in the form of the richness and/or nuance of a metaphor’s meaning, or its breadth. It could also appear through the strength of emotion and/or conviction expressed via the metaphorical meaning, the power to persuade in a metaphor’s meaning, the diversity in meaning being conveyed, or many other related notions.

8. Recall though the earlier discussion that the embodied simulations account might be considered synonymous with newer versions of conceptual metaphor, so one might argue the results also support conceptual metaphor in its newer iterations.

9. Credit for this realization should be shared with the anonymous reviewers of this chapter – the idea arose in our indirect correspondence, via the reviewers’ letters and my responses to them.

The predictions offered for the current studies, as described in the section on predictions, were driven in part by the nature of the particular metaphor accounts being evaluated. But the predictions also stemmed from the kind of meaning enhancement inherent in the measurement tools used here. Had other measures been utilized or other kinds of meaning enhancement been of interest, the pattern of predictions might have differed.

One might also note that some accounts (e.g., the Career of Metaphor account, Bowdle and Gentner, 2005) make claims that different kinds of metaphors might be best handled by different metaphor accounts (i.e., novel metaphors are handled via structure-mapping-based comparison, conventional metaphors via a type of categorization based on analogy). So, creating different types of metaphors and then evaluating them all by different accounts may create a sort of apple/oranges comparison. But on the other hand, many scholars are likely striving to create accounts general and flexible enough to handle all kinds of metaphors, or at least all kinds of linguistic ones. On that view, an approach such as the present one is warranted. It remains to be seen which of these situations is the case. But comparisons such as those used here can be revealing either way. They can either test the viability of a metaphor account's claim to handle all kinds of at least linguistic metaphors, or they can *reveal* that different kinds of metaphors are better and less-well handled by different metaphor accounts.

It is perhaps yet another testament to the richness and complexity of metaphor that different kinds of metaphors with different constructions, different levels of conventionality,¹⁰ and through differences across other factors, can perform different types of meaning enhancement according to different metaphor accounts. Indeed, the same account might offer different predictions across a metaphor variable (i.e., mixed versus unmixed) for two different types of meaning enhancement.

The enhancement or "*weaponization*" of meaning by metaphors (Colston, 2019), allows other corollary pragmatic effects to be performed (e.g., mastery display, social engineering, etc., see Colston, 2015 for a fuller accounting). So another means of using the basic technique here – evaluating metaphor accounts by testing their predicted pragmatic effects, might be available by deriving predictions of those other pragmatic effects and evaluating their strength across different kinds of metaphors or usage contexts. Meaning enhancement may not be the only tool available to researchers to use this technique. But evaluating meaning enhancement as a predicted yet variable outcome of metaphor comprehension, in different kinds of metaphors, does seem a successful arrow in the quiver of metaphor researchers, in their quest to further our understanding of how people process metaphors.

10. Something admittedly not given strict attention in the present studies – conventionality was simply allowed to randomly vary.

Table 1. Predictions for meaning enhancement among metaphor accounts

	Nonfig/weak/ strong SD	Unmixed/mixed SD	Nonfig/single/ double SD	Nonfig/sim/met
	Smart/knife/ razor	Bright lightbulb/ sharp lightbulb	Smart/knife/ knife hatchet	Is smart/is like a knife/is a knife
<u>no met adv</u>				
similarity	nonfig = weak = strong	unmixed > mixed	nonfig = single < double	nonfig = sim = met
categorization	nonfig = weak < strong	unmixed > mixed	nonfig = single = double	nonfig = sim = met
<u>met adv</u>				
cm	nonfig < weak = strong	unmixed < mixed	nonfig < single = double	nonfig < sim = met
blend	nonfig < weak < strong	unmixed < mixed	nonfig < single = double	nonfig < sim = met
es	nonfig < weak < strong	unmixed > mixed	nonfig < single = double	nonfig < sim = met

Notes: cm = conceptual metaphor, es = embodied simulation, SD = source domain, sim = simile, met = metaphor, adv = advantage, nonfig = non-metaphorical

Table 2. Results for meaning enhancement among metaphor accounts (underlines indicate obtained results)

	Nonfig/weak/ strong SD	Unmixed/mixed SD	Nonfig/single/ double SD	Nonfig/sim/met
	Smart/knife/ razor	Bright lightbulb/ sharp lightbulb	Smart/knife/ knife hatchet	Is smart/is like a knife/is a knife
<u>no met adv</u>				
similarity	nonfig = weak = strong	<u>unmixed > mixed</u>	nonfig = single < double	nonfig = sim = met
categorization	nonfig = weak < strong	<u>unmixed > mixed</u>	nonfig = single = double	nonfig = sim = met
<u>met adv</u>				
cm	nonfig < weak = strong	unmixed < mixed	<u>nonfig < single = double</u>	<u>nonfig < sim = met</u>
blend	<u>nonfig < weak < strong</u>	unmixed < mixed	<u>nonfig < single = double</u>	<u>nonfig < sim = met</u>
es	<u>nonfig < weak < strong</u>	<u>unmixed > mixed</u>	<u>nonfig < single = double</u>	<u>nonfig < sim = met</u>

Notes: cm = conceptual metaphor, es = embodied simulation, SD = source domain, sim = simile, met = metaphor, adv = advantage, nonfig = non-metaphorical

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Appendix. Contexts and utterances used in the Experiments

(Note: For brevity, only the rating scales used for Experiment 1 are shown. Subsequent Experiments used analogous customized scales.)

Experiment 1. (For each, the utterances are ordered from top to bottom: strong, weak, non-metaphorical).

1. You are working during the summer with an elementary school teacher, helping her prepare for her fall class. You are going over the incoming students' records, when you both see one boy who easily outscores the other students. His math, science and writing scores put him way in front. The teacher sees this and says to you,
This kid is a razor blade.
This kid is a knife.
This kid is smart.

How smart does the speaker think the student is?

|-----|-----|-----|-----|-----|-----|-----|

fairly

extremely

smart

smart

2. You and your Mother are watching television. A new entertainment awards show is on, where the best male and female singers of the last decade are picked by an international survey. When the female winner is announced, she loses her decorum and starts running, screaming and crying all over the stage. Your mother turns to you and says,
She is in orbit.
She is flying
She is happy.

How happy does the speaker think the singer is?

|-----|-----|-----|-----|-----|-----|-----|

fairly

extremely

happy

happy

3. You and a friend are planning your summer vacation. You both need to work, but you've found fantastic jobs at a film camp upstate where you'd get paid well to work with many famous directors and actors from all over the world. When you mention a few problems that you'll need to overcome to attend, including how to get there, your friend responds,
 Transportation is microscopic.
 Transportation is tiny.
 Transportation is unimportant.

How unimportant does the speaker think transportation is?

|-----|-----|-----|-----|-----|-----|-----|

fairly extremely

unimportant unimportant

4. You and a woman you work with are watching a body-building contest televised during your break. One of the men in the competition is exceptionally well built, and is wearing a small red speedo swimsuit. You turn to your co-worker and ask what she thinks of this guy and she responds,
 He is an inferno.
 He is burning.
 He is sexy.

How sexy does the speaker think the body-builder is?

|-----|-----|-----|-----|-----|-----|-----|

fairly extremely

sexy sexy

5. You arrive at a summer camp for school children from a very disadvantaged country. Right away you see that these kids are intensely interested in learning, as they all crowd around you when you start pointing out the parts of an insect you found. One of your counselors says in your ear,
 These kids are famished.
 These kids are hungry.
 These kids are curious.

How curious does the speaker think the students are?

|-----|-----|-----|-----|-----|-----|-----|

fairly extremely

curious curious

6. You and a classmate are listening to a guest lecture in your Political Science class. The speaker starts talking about how the Iraq and Afghan wars were actually caused by an imbalance in the international coffee and salt trade, which caused an upheaval in the Chinese gold and gun market causing the wars. Your classmate whispers to you,
This guy is on Pluto.
This guy is on the Moon.
This guy is irrational.

How irrational does the speaker think the guest speaker is?

|-----|-----|-----|-----|-----|-----|-----|

fairly extremely

irrational irrational

7. You and several other students in a business class have been working together all semester on a powerpoint presentation about the current job market for college graduates. One of the students is feeling discouraged that you'll never finish the work, with the end of the semester nearing. Another student tries to encourage her by saying,
We've come a thousand miles on this project.
We've come a mile on this project.
We've accomplished a lot on this project.

How much does the speaker think you've accomplished on the project?

|-----|-----|-----|-----|-----|-----|-----|

a fair an extreme

amount amount

8. You and a basketball teammate are talking about another player on your team who failed to show at last night's game. You ended up losing. The missing player talked to the coach this morning, and had no excuse. She said she had just forgotten about the game. Your teammate was there when she said this, and now tells you about the coach's reaction,
The coach went nuclear.
The coach exploded.
The coach was angry.

How angry does the speaker think the coach was?

|-----|-----|-----|-----|-----|-----|-----|

fairly extremely

angry angry

9. You have just enrolled in a driving class where you will learn to operate large delivery trucks. At the first class, they're telling you that you'll have to pass both a road and written exam at the end. You aren't worried about the road test – you are already a pretty good driver. But you greatly fear the written test. One of the other trainees attempts to calm you, saying,

The written test is melted butter.

The written test is a pillow.

The written test is easy.

How easy does the speaker think the exam is?

|-----|-----|-----|-----|-----|-----|-----|

fairly

extremely

easy

easy

10. Your major requires you to take one class that has always been taught by a very tough old Professor who never gives As or Bs and who belittles students. It turns out though, that a new Professor will teach the class the semester you plan to take it. You are worried that the new person will also be mean, when another classmate tells you,

The new teacher is chocolate fudge.

The new teacher is caramel.

The new teacher is nice.

How nice does the speaker think the teacher is?

|-----|-----|-----|-----|-----|-----|-----|

fairly

extremely

nice

nice

11. You and a partner in your history class have been assigned to do a report based on non-electronic sources. Your topic is George Washington's children. You have to find printed sources like books or newspaper articles to do your report. Neither of you can find anything. Finally, you locate a book called, "The Children of The Father of the U.S.: George Washington" in the library. You wonder if it will be of help and ask your partner. She looks through the book and says,

This book is a meal.

This book is a banquet.

This book is informative

How informative does the speaker think the book is?

|-----|-----|-----|-----|-----|-----|-----|

fairly

extremely

informative

informative

12. A good friend of yours has applied to a prestigious law school. The deadline for hearing from them has passed, and your friend is desperately awaiting news. Finally she gets a letter, and she's been accepted. You ask her how getting the letter felt and she replies,
That letter was a song.
That letter was a symphony.
That letter was good news.

How good does the speaker think the news is?

|-----|-----|-----|-----|-----|-----|-----|

fairly

extremely

good

good

Experiment 2. (For each, the utterances are ordered from top to bottom: *unmixed, mixed*).

- You and a classmate are in a Chemistry class. The professor asks a very difficult question that stumps everyone except one woman in the front, who answers the question perfectly. Your classmate turns to you and says,
She is a bright lightbulb.
She is a sharp lightbulb.
- One of your roommates just found out in an email message that she's been accepted into a highly acclaimed medical school. You ask her what it feels like getting that news and she replies,
This message is a flying kite.
This message is a chocolate kite.
- You and your best friend have gotten summer jobs working at a public beach. Although there is a lot of work to do, you spend some of your time looking at and commenting about some of the people at the beach. One day you notice an elderly man sunning himself. You ask your friend if she's attracted to him and she replies,
He's sandpaper burlap.
He's arid burlap.
- You and a friend are killing time before your next class. Your friend has gotten into crossword puzzles recently, and is now trying to do one from the New York Times newspaper while you wait. You see him scratching his head and ask him about the puzzle, he responds,
This puzzle is a padlocked safe.
This puzzle is a concrete safe.
- You go to a nearby town to visit a friend over the weekend. The friend lives at home with his parents and brother, to save money while going to school. You notice that the brother seems really depressed about something. You politely ask your friend what is up with his brother and your friend sympathetically says,
He is a grey raincloud.
He is a basement raincloud.

6. A co-worker is telling you about a convoluted family problem involving his divorced parents, four sets of lawyers, three half-siblings and a love-triangle. He shakes his head as he tries to explain it all, finally saying,
This situation is a tangled pretzel.
This situation is a thick pretzel.
7. A guy who lives in your dorm is crazy about gaming. He is the first person to tell you about this revolutionary new game that you play by wearing a pair of glasses that somehow displays to you people chasing you in your actual environment (for instance, they'll show a guy peaking out behind the corner of an building that is actually in front of you). In describing this new game the guy says,
This format is a newborn baby.
This format is a newly-sprouted baby.
8. You and a few friends are hanging out near a coffee cart on campus, waiting to go into your next class. A student from the class comes up, and starts telling a story about how he had appeared in a movie from last summer – as part of a crowd scene. One of your friends leans to you and says,
That story's a stretched rubberband.
That story's a tall rubberband.
9. You and some friends have been going out to bars on Friday nights. One of your friends just turned 21 and is planning on joining you this Friday for the first time. It's early Friday evening and he's already dressed and waiting to go. One of your other friends nods at him and says to you,
He's a cocked trigger.
He's a bucking trigger.
10. With the economy having turned bad, you are worried about getting a job this summer. You have seen that job postings around campus and on job websites have diminished. You ask a friend if he thinks the downturn will last. He isn't worried, saying,
This is a glanced blink.
This is a meteor blink.
11. You and a co-worker are worried about your workloads. You fear your boss is going to assign you a bunch of extra work to meet an upcoming deadline. Your co-worker comes in with your new assignments. You ask him about it and he says,
This workload is a lead anchor.
This workload is a lead mountain.
12. You and a teammate are worried your team is going to lose the volleyball match you're playing. Suddenly, your coach calls time out. He huddles you all together and says he has an idea to win. Right before your next serve, one of you is going to pretend to faint, to distract the other team. Your teammate whispers to you,
This idea is a left-handed catcher's mitt.
This idea is a plaid catcher's mitt.

Experiment 3. (For each, the utterances are ordered from top to bottom: single, double, non-metaphorical).

1. You are working during the summer with an elementary school teacher, helping her prepare for her fall class. You are going over the incoming students' records, when you both see one boy who easily outscores the other students. His math, science and writing scores put him way in front. The teacher sees this and says to you,
This kid is a knife.
This kid is a knife hatchet.
This kid is smart.
2. You and your Mother are watching television. A new entertainment awards show is on, where the best male and female singers of the last decade are picked by an international survey. When the female winner is announced, she loses her decorum and starts running, screaming and crying all over the stage. Your mother says to you,
She is flying
She is a flying kite.
She is happy.
3. You and a friend are planning your summer vacation. You both need to work, but you've found fantastic jobs at a film camp upstate where you'd get paid well to work with many famous directors and actors from all over the world. When you mention a few problems that you'll need to overcome to attend, including how to get there, your friend responds,
Transportation is tiny.
Transportation is a tiny speck.
Transportation is unimportant.
4. You and a woman you work with are watching a body-building contest televised during your break. One of the men in the competition is exceptionally well-built, and is wearing a small red speedo swimsuit. You turn to your co-worker and ask what she thinks of this guy and she responds,
He is burning.
He is a burning fire.
He is sexy.
5. You arrive at a summer camp for school children from a very disadvantaged country. Right away you see that the kids are intensely interested in learning, as they all crowd around you when you start pointing out the parts of an insect you found. One of your counselors says in your ear,
These kids are hungry.
These kids are hungry hatchlings.
These kids are curious.
6. You and a classmate are listening to a guest lecture in your Political Science class. The speaker starts talking about how the Iraq and Afghan wars were actually caused by an imbalance in the international coffee and salt trade, which caused an upheaval in the Chinese gold and gun market, causing the wars. Your classmate whispers to you,
This guy is on the Moon.
This guy is on the far side of the Moon.
This guy is irrational.

7. You and several other students in a business class have been working together all semester on a powerpoint presentation about the current job market for college graduates. One of the students is feeling discouraged that you'll never finish the work, with the end of the semester nearing. Another student tries to encourage her by saying,
We've come a mile on this project.
We've come a mile over rough terrain on this project.
We've accomplished a lot on this project.
8. You and a basketball teammate are talking about another player on your team who failed to show at last night's game. You ended up losing. The missing player talked to the coach this morning, and had no excuse. She said she had just forgotten about the game. Your teammate was there when the player said this, and now tells you about the coach's reaction,
The coach exploded.
The coach was exploding dynamite.
The coach was angry.
9. You have just enrolled in a driving class where you will learn to operate large delivery trucks. At the first class, they're telling you that you'll have to pass both a road and written exam at the end. You aren't worried about the road test – you are already a pretty good driver. But you greatly fear the written exam. One of the other trainees attempts to calm you, saying,
The written test is a pillow.
The written test is a pillow air cushion.
The written test is easy.
10. Your major requires you to take one class that has always been taught by a very tough old Professor who never gives As or Bs and who belittles students. It turns out though, that a new Professor will teach the class the semester you plan to take it. You are worried that the new person will also be mean, when another classmate tells you,
The new teacher is caramel.
The new teacher is a caramel cookie.
The new teacher is nice.
11. You and a partner in your history class have been assigned to do a report based on non-electronic sources. Your topic is George Washington's children. You have to find printed sources like books or newspaper articles to do your report. Neither of you can find anything. Finally, you locate a book called, "The Children of The Father of the U.S.: George Washington" in the library. You wonder if it will be of help and ask your partner. She looks through the book and says,
This book is a meal.
This book is a meal with dessert.
This book is informative.
12. A good friend of yours has applied to a prestigious law school. The deadline for hearing from them has passed, and your friend is desperately awaiting news. Finally she gets a letter, and she's been accepted. You ask her how getting the letter felt and she replies,
That letter was a song.
That letter was a song with a choir.
That letter was good news.

Experiment 4. (For each, the utterances are ordered from top to bottom: *metaphor, simile, non-metaphorical*).

1. You are working during the summer with an elementary school teacher, helping her prepare for her fall class. You are going over the incoming students' records, when you both see one boy who easily outscores the other students. His math, science and writing scores put him way in front. The teacher sees this and says to you,
This kid is a knife.
This kid is like a knife.
This kid is smart.
2. You and your Mother are watching television. A new entertainment awards show is on, where the best male and female singers of the last decade are picked by an international survey. When the female winner is announced, she loses her decorum and starts running, screaming and crying all over the stage. Your mother says to you,
She is a kite
She is like a kite.
She is happy.
3. You and a friend are planning your summer vacation. You both need to work, but you've found fantastic jobs at a film camp upstate where you'd get paid well to work with many famous directors and actors from all over the world. When you mention a few problems that you'll need to overcome to attend, including how to get there, your friend responds,
Transportation is a speck.
Transportation is like a speck.
Transportation is unimportant.
4. You and a woman you work with are watching a body-building contest televised during your break. One of the men in the competition is exceptionally well-built, and is wearing a small red speedo swimsuit. You turn to your co-worker and ask what she thinks of this guy, and she responds,
He is fire.
He is like fire.
He is sexy.
5. You arrive at a summer camp for school children from a disadvantaged foreign country. Right away you see that the kids are intensely interested in learning, as they all crowd around you when you start pointing out the fossils in a rock you found. One of your counselors says in your ear,
These kids are hunger.
These kids are like hunger.
These kids are curious.
6. You and a classmate are listening to a guest lecture in your Political Science class. The speaker starts talking about how the Iraq and Afghan wars were actually caused by an imbalance in the international coffee and salt trade, which caused an upheaval in the Chinese gold and gun market, causing the wars. Your classmate whispers to you,
This guy is the Moon.
This guy is like the Moon.
This guy is irrational.

7. You and several other students in a business class have been working together all semester on a powerpoint presentation about the current job market for college graduates. You are feeling discouraged that you'll never finish the work, with the end of the semester nearing. Another student tries to encourage you by saying,
This project has been a long journey.
This project has been like a long journey.
We've accomplished a lot on this project.
8. You and a basketball teammate are talking about another player on your team who failed to show at last night's game. You ended up losing. The missing player talked to the coach this morning, and had no excuse. She said she had just forgotten about the game. Your teammate was there when the player said this, and now tells you about the coach's reaction,
The coach was an explosion.
The coach was like an explosion.
The coach was angry.
9. You have just enrolled in a driving class where you will learn to operate large delivery trucks. At the first class, they're telling you that you'll have to pass both a road and written exam at the end. You aren't worried about the road test – you are already a pretty good driver. But you greatly fear the written exam. One of the other trainees attempts to calm you, saying,
The written test is a pillow.
The written test is like a pillow.
The written test is easy.
10. Your major requires you to take one class that has always been taught by a very tough old Professor who never gives As or Bs and who belittles students. It turns out though, that a new Professor will teach the class the semester you plan to take it. You are worried the new person will also be mean, when another classmate tells you,
The new teacher is caramel.
The new teacher is like caramel.
The new teacher is nice.
11. You and a partner in your history class have been assigned to do a report based on non-electronic sources. Your topic is George Washington's children. You have to find printed sources like books or newspaper articles to do your report. Neither of you can find anything. Finally, you locate a book called, "The Children of The Father of the U.S.: George Washington" in the library. You wonder if it will be of help and ask your partner. She looks through the book and says,
This book is a meal.
This book is like a meal.
This book is informative.
12. A good friend of yours has applied to a prestigious law school. The deadline for hearing from them has passed, and your friend is desperately awaiting news. Finally she gets a letter, and she's been accepted. You ask her how getting the letter felt and she replies,
That letter was a song.
That letter was like a song.
That letter was good news.

The multimodal negotiation of irony and humor in interaction

On the role of eye gaze in joint pretense

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Interactionally grounded accounts of humor and irony have focused on the construction of complex layered gestalts. In most cases, these accounts provide a model for the pretense that speakers are engaged in when jointly construing ironic or humorous utterances, as well as for the affective power of such utterances. Much less studied, however, is the question how speakers interactionally monitor such sequences of joint pretense. To investigate this more systematically, I zoom in on the role of eye gaze as a mechanism for reaction monitoring by speakers and hearers. Using humorous sequences taken from a multimodal video corpus of three-party interactions, in which the gaze behavior of all participants was recorded using mobile eye-tracking devices, I describe specific gaze patterns.

Keywords: irony, humor, pretense, eye gaze, eye-tracking, multimodality

1. Introduction

In a study on reported speech in storytelling, Charles Goodwin concisely categorized a story in face-to-face interaction as a “multi-modal, multi-party field of activity” (2007, p. 25). That interactional language use is a multimodal activity involving the deployment of multiple semiotic resources (i.e. means for meaning making, including artefacts and bodily actions such as gesture, posture and eye gaze) in a highly interactive and synchronized manner, may not seem particularly surprising or controversial, especially given the recent interest in multimodal research in Conversation Analysis (Mortensen, 2012; Deppermann, 2013; Deppermann and Streeck, 2018; Mondada, 2019) and Cognitive Linguistics (Pinar Sanz, 2015; Cienki,

2016; Feyaerts et al., 2017), among others.¹ Nevertheless, researchers have only barely scratched the surface when accounting for the integration of multiple layers of meaning, both theoretically (e.g. how do recurrent nonverbal patterns fit into a usage-based grammar?) and empirically (e.g. which quantitative and qualitative methods can be used to uncover the inherent sequentiality and simultaneity of interacting speakers and the multiple semiotic resources they resort to?). One way to approach this challenge is to zoom in on particular phenomena, as Goodwin did in his study on storystelling, to see if there are any patterns in the use of multiple semiotic resources that may be specific to that particular activity type (see e.g. also Rossano, 2012), and if so, whether these patterns may be related to any key features of that activity already described in the literature.

In the present study, I follow a similar logic by zooming in on interactional humor and irony as highly frequent, yet interactionally and cognitively complex phenomena that have received much attention in several subdisciplines of linguistics and beyond. Yet, only little is known about the way in which humor and irony are negotiated multimodally in interaction, both on the part of speakers and their addressees. In order to gain a first, empirically sound insight into this complex negotiation process, the present chapter deals with the role of eye gaze as a resource that interlocutors resort to in order to provide and elicit feedback, invite others to join an ironic or humorous sequence, and mark the layered nature of an utterance. The choice of eye gaze as the focus of attention is motivated by the fact that (i) the particular gaze distributions under scrutiny can be related to work in both Cognitive Linguistics (studies on irony and humor as complex viewpoint phenomena) as well as Conversation Analysis (most notably the above-mentioned work on storytelling in interaction), and (ii) there is a notable gap in the literature on gaze and humor. Using a data set of spontaneous triadic interactions in which the participants' eye gaze was recorded with mobile eye-tracking equipment (Brône and Oben, 2015), I will focus on how eye gaze is instrumental in jointly setting up staged communicative stance acts in interaction. The fine-grained information on speaker and addressee gaze, obtained through this multifocal eye-tracking technique, allows for both a quantitative and qualitative analysis of gaze patterns in interaction. In this chapter, I opt for a primarily qualitative approach (a more quantitative account is presented in Brône and Oben, in prep.), zooming in on particular interactional sequences in which participants' eye gaze seems to play a crucial role in setting up and negotiating the humorous or ironic utterances. By taking this perspective,

1. It should be noted that the concept of *multimodality* is not unproblematic, in part because the term is defined somewhat differently in the different (sub)fields that adopt it (see e.g. Devylder, 2019 for a discussion). Alternatives have been proposed in the literature (e.g. *polysemiosis*, Zlatev, 2019), but we opt to retain the notion of multimodality in the sense described above, viz. the deployment of and interplay between different semiotic resources in (face-to-face) interaction.

I hope to contribute to filling the gap in the research on the multimodal construal of irony and humor in interaction.

The paper is structured as follows: In the following section, I present a concise outline of the research on irony and humor in interaction, with a particular focus on cognitive-interactional accounts. In a third section, I discuss some of the functions of eye gaze in interaction, again zooming in on functions that may be of particular relevance to the study of humor and irony in interaction. Based on the first two sections, I review the few studies that have actually dealt with the relationship between eye gaze and humor, and somewhat broader with staged communicative acts in general (Section 4). Based on the insights from the literature, I present the research questions and hypotheses as well as the data set with which I will address these questions (Section 5). In Section 6, I present a micro-analysis of a selection of sequences, showing the tight interaction of the gaze behavior of speakers and their addressees, as well as between addressees, contributing to the success of the humorous/ironic exchanges.

2. Irony and humor in interaction

The linguistic theorizing on humor and irony has largely treated these phenomena separately, with the most prominent theoretical frameworks in humor research finding their origin in the analysis of canned jokes and other conventionalized humor genres (see e.g. Attardo, 1994, 2001a, 2017 for overviews) and irony being one of the prime phenomena in pragmatics and later also in research on figurative language and thought (see e.g. Giora, 2003; Gibbs and Colston, 2007; Athanasiadou and Colston, 2017).² Rather than reviewing the large body of literature on both phenomena, which would extend well beyond the scope of this contribution (for reviews of the cognitive approaches to humor and irony, see Brône, 2012, 2017), I will focus on cognitive-interactional accounts, since they are most relevant to the multimodal approach proposed here. What is more, when looking at spontaneous interactional data, the distinction between irony and humor becomes problematic, as already discussed by Tannen (1984), Gibbs (2000), Attardo (2001b), Gibbs et al. (2014), among others. For instance, it is in many cases impossible to draw a clear boundary between irony, teasing, jocularly and hyperbole, which is why Gibbs (2000) treats them as belonging to the overarching category of irony in interaction.

2. Needless to say, it has been pointed out repeatedly that irony can have a humorous effect, and hence can and should be treated in relation to humor. But since it is not a defining feature (ironic utterances can be successful without generating a humorous effect), different theoretical accounts have generally been proposed.

Along the same lines, I did not make a categorical distinction between irony and humor in interaction in the introduction to this chapter, and I will do not do so in the remainder of this contribution.

A large variety of models have been proposed to account for irony and humor in interaction, typically couched in a larger theoretical framework dealing with fundamental principles of language use. These include the *echoic mention theory*, based on the principles of Relevance Theory (Sperber and Wilson, 1981, 1995), and its offshoot in the *echoic reminder theory* (Kreuz and Glucksberg, 1989). Herbert Clark proposed an alternative account, based on his work on language as joint action (Clark and Gerrig, 1984; Clark, 1996), in which irony and humor are viewed as forms of *pretense*, with speakers and hearers setting up staged communicative acts. Again, a variant of this model was proposed, in this case in the *illusional pretense* account (Kumon-Nakamura et al., 1995). Several other models formulate the key assumptions against the background of notions in pragmatics, including (neo-)Gricean pragmatics, such as Attardo's *contextual inappropriateness* model (Attardo, 2000) and Giora's *indirect negation* approach (Giora, 1998, 2003). Several overviews have been published that describe the (often subtle) commonalities and differences between the different approaches (see e.g. Brône, 2012; Giora and Attardo, 2014; Colston, 2017).

Importantly, however, different ways have been proposed to model the underlying principle of the above-mentioned theoretical accounts. To take the example of the pretense-based view on irony, initially developed by Clark and colleagues (Clark and Gerrig, 1984; Clark, 1996, 2016) and strongly hinging on the concepts of layering, staging and joint pretense, this view has been incorporated (explicitly or implicitly) in different other approaches, including e.g. Barnden's (2017) analysis of irony in terms of micro-drama and fictively elaborating hyperbole, and cognitive-linguistic approaches dealing with layered phenomena in terms of viewpoint mental spaces (Coulson, 2005; Kihara, 2005; Brône, 2008; Tobin and Israel, 2012; Tobin, 2016). As an illustration of this relationship between different pretense-based accounts, let us take the classic example of ironic teasing discussed by Clark (1996, p. 353):

(1)

Ken: and I'm cheap, - - -
Margaret: I've always felt that about you,
Ken: oh shut up,
 (- - laughs) fifteen bob a lesson at home, -

In this specific sequence, we have a husband (Ken) and wife (Margaret) engaged in a casual conversation on the husband's work as a private teacher. When he somewhat self-praisingly mentions that he is an inexpensive tutor (*and I'm cheap*), this is confirmed by Margaret in the following turn, in which she uses the anaphoric

pronoun *that* to explicitly refer back to the previous utterance (*I've always felt that about you*). In doing so, however, she construes a radically different meaning of the adjective *cheap* for ironic-playful purposes, in part by integrating it in the phrase *to feel something about someone*. When used in this particular constructional context, the meaning of *cheap* shifts from the initially intended 'inexpensive' to the extended reading of 'ungenerous' or 'of low moral value'. Obviously, Margaret's reply is not intended as a serious categorization of her husband in the latter sense. Rather, she sets up a pretense reading, in which she reacts as if Ken had used *cheap* self-disparagingly in the extended sense and she responds affirmatively.

The duality of the teasing utterance can be viewed as the tension between two layers of action: at the level of the actual communicative interaction, Margaret pretends that she, at a second level, seriously claims that Ken is metaphorically cheap. Importantly also for the success of *staged communicative acts* (where the layering is locally construed by the participants in an interaction, in contrast to larger layered structures such as narratives, plays, etc.), all participants have to recognize (and appreciate) the pretense involved. This is clearly the case in (1), where Ken explicitly reacts to the tease (*oh shut up*) before returning to the base layer, i.e. the initial topic. In other words, staged communicative acts always involve the negotiation of a joint pretense. Figure 1 represents the double duality inherent to even the simplest cases of teasing: the two discourse layers need to be jointly construed and played upon in real-time, making this a complex interactional project.

Cognitive-linguistic accounts of irony, sarcasm and humor have presented similar analyses, using primarily concepts and insights from Mental Spaces Theory (Coulson, 2005; Kihara, 2005; Ritchie, 2006; Brône, 2008; Tobin and Israel, 2012, among others). In the case of the ironic tease in (1), the mental space configuration could be represented as in Figure 2. The discourse base space, on this theory, represents a speaker's mental representation of reality (Fauconnier, 1994, p. 15). Based on and dependent on this discourse base space, complex mental space constellations can be construed, including embedded viewpoints, counterfactual scenarios, and many more (see e.g. Fauconnier, 1997; Dancygier and Sweetser, 2012; Van Krieken and Sanders, 2019). In the case of (1), we can safely assume that Margaret's representation of reality includes the belief that Ken intended his use of the word *cheap* literally (represented as I1). At the same time, she sets up a counterfactual pretense space, in which the represented viewpoint is substantially different and involves the belief that Ken intended *cheap* metaphorically (I2). In Brône (2008), building

Layer 1	Margaret and Ken jointly pretend that
Layer 2	Implied Margaret seriously claims that implied Ken is cheap

Figure 1. Staged communicative act in (1)

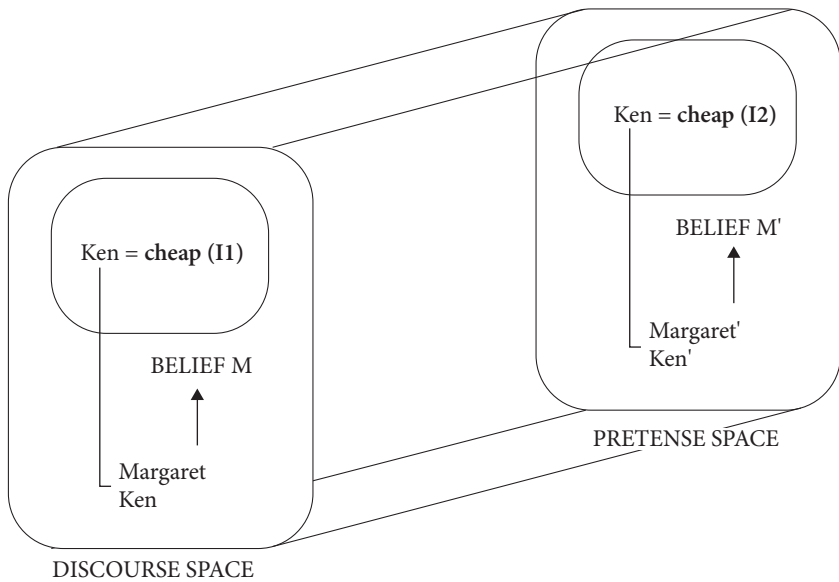


Figure 2. Mental space constellation for Example (1)

on an earlier study by Veale et al. (2006), I described such cases of interactionally embedded wordplay as a form of hyper-understanding: a speaker manages to exploit a potential weak spot in a previous speaker's utterance (e.g. the lexical polysemy of *cheap* in (1)), and by echoing that utterance with a fundamentally different meaning displays the ability to reconstruct the conceptual construal of that utterance.

Importantly, for phenomena such as these to work, complex operations need to take place simultaneously at different levels. Speakers need to be able to opportunistically recruit co(n)textually available information (Fauconnier and Turner, 2002) in order to construe the locally relevant ironic meaning. Addressees, on their part, have to see through the layered or embedded nature of the ironist's utterance, managing the equivalencies and differences between the elements in different mental spaces. And thirdly, at the level of the interaction, jointly managing such staged communicative acts requires a complex (often multimodal) negotiation process on the part of all participants involved. When looking at the literature on irony and humor in interaction, then it is apparent that the speaker's and the addressee's perspective have received substantial scholarly attention. For instance, most pretense-based accounts of irony have primarily zoomed in on the ironist's perspective, and this is sometimes presented as an explicit choice, as in Barnden (2017, p. 148): "My main concern is not to explain the successful communication of irony from speaker to hearers, but rather to analyse the ironist's pretending". The addressee's perspective has been a main concern in psycholinguistic work dealing

with the cognitive processing of irony and figurative language in general, as for instance the debate on one-stage vs. two-stage processing of metaphor, irony and idioms (Gibbs, 1994; Giora et al., 2007). What is largely unexplored, however, is the question how interactants jointly manage the complex negotiation operation involved, although it has been pointed out that it would be fruitful to look into such processes against the background of nonironic utterances: “I did not analyze the nonironic utterances in the conversations. In principle, this would have been good to do, especially to compare people’s use and reactions to irony against nonironic speech” (Gibbs 2000, p. 9). In the present chapter, I focus exactly on this interactionally relevant verbal and nonverbal behavior that speakers and hearers display to ground their utterance, to check for and signal understanding, to invite others to join the pretense, etc. For the purpose of this study, I will deal with the role of eye gaze in the interactional project that is irony.

3. Eye gaze in interaction

Several subdisciplines in linguistics, including psycholinguistics, conversation analysis and Cognitive Linguistics, have shown long-standing interest in the role of eye gaze in interaction. Early pioneering work by Kendon (1967), Argyle and Cook (1976) and Goodwin (1980, 1981) paved the way for systematic research on gaze as a multifunctional resource in interaction (see Rossano, 2012 for an overview). This research has shown that eye gaze, in close coordination with other verbal and nonverbal semiotic resources, plays a constitutive role in establishing successful communication as joint action (Clark, 1996; Pickering and Garrod, 2004; Linell, 2009; Feyaerts et al., 2017). Coordinating the production and interpretation involved in any type of communicative exchange requires the simultaneous engagement of different semiotic resources, and eye gaze seems to be of key importance in each phase of this process, including the establishment of joint attention, signaling interest and engagement, organizing the sequential structure of the interaction, identifying and disambiguating reference, providing and eliciting feedback, etc.

Rossano, in his overview of different functions of eye gaze in interaction (Rossano, 2012), distinguishes between three different clusters that can be defined on the basis of the existing literature, viz. (i) the distribution of participation roles, (ii) the regulation of the turn-taking machinery, and (iii) the role of eye gaze in action formation and social acts. As for the relationship between gaze behavior and participation roles, early research already showed that gaze behavior of speakers in spontaneous turn-by-turn interactions differs from that of their addressees (Kendon, 1967; Argyle and Cook, 1976; Goodwin, 1981; findings confirmed in later studies by Vertegaal, 1999; Hirvenkari et al., 2013; Brône et al. 2017). While hearers

display longer sequences of sustained gaze towards the speaker (hence showing engagement and interest), speakers tend to shift their gaze constantly towards and away from the recipient. This speaker behavior may be explained both in cognitive and interactional terms: avoiding longer sequences of eye contact may be beneficial to the cognitive planning and production process involved in speaking, while at the same time, it may avoid addressees interpreting the gaze contact as an invitation to take the turn. The importance of participation roles is also reflected in the relationship between activity types and gaze patterns, as specific interactional activities require more or less sustained gaze by speakers and recipients, depending on the particular role of the participants. For instance, in longer tellings, studies have shown that listeners tend to gaze at the narrator for longer uninterrupted periods, while in the case of questions, speakers show more sustained gaze towards the addressee than in other utterance types (which may be explained in terms of next speaker selection, Rossano, 2012). And finally, the gaze behavior of participants who are currently not directly involved in an ongoing interactional sequence, for instance in multi-party interaction, may be of particular interest as well. A study by Holler and Kendrick (2015) on question-response sequences (replicated by Beukeleers et al., 2020 for Flemish Sign Language interactions) has shown that unaddressed participants in multi-party interaction seem to anticipate turn shifts between the primary participants. They show that in question-response sequences, the unaddressed participants shift their gaze towards the next speaker before turn completion.

The regulatory functions of eye gaze pertain to the dynamics of floor apportionment or the smooth transitions between turns in ongoing interaction. Within this domain, eye gaze again can serve multiple purposes, including as a turn holding mechanism (through gaze aversion) or for turn yielding (through eye contact) (Duncan, 1975; Auer, 2018, a.o.). Also relevant for the sequential organization of talk-in-interaction is feedback by recipients during utterance production. Speaker gaze may serve as an instrument for monitoring and eliciting a response by the recipients, as the work by Goodwin and Goodwin (1986), Thompson and Suzuki (2014), and Bavelas et al. (2002) has shown. The latter study described the relevance of so-called gaze windows for feedback production, i.e. brief moments during which speakers establish eye contact with a recipient (who typically displays sustained gaze towards the speaker, *supra*). During these gaze windows, recipients tend to produce feedback signals, after which the eye contact is immediately broken off again.

A third and final cluster of phenomena pertains to the social role of eye gaze and its function in action formation. Several studies have pointed at the social-interactional meanings that are attributed to particular gaze patterns, including a display of negative stance (Haddington, 2006), practices of looking interpreted as giving warning (Kidwell, 2005, 2009) or the signaling of re-enactment

or viewpoint shifts (Sidnell 2006; Sweetser and Stec, 2016). These studies, along with the other above-mentioned clusters of functions, show that gaze may serve an important purpose in the complex multimodal negotiation operation that is face-to-face interaction, and that participants have particular gaze expectations for specific activity types. In what follows, I briefly review the existing literature on the role of eye gaze in the particular activity type of interactional humor.

4. Eye gaze and interactional humor

When looking at the substantial body of linguistic literature on interactional humor, it is striking that only few studies have directly addressed the role of eye gaze as an important resource in marking humorous intent or understanding. This is in contrast also to the significant attention that gaze has received as a measure of processing difficulty in written jokes, irony, sarcasm and wordplay (see e.g. Coulson et al., 2006; Ferstl et al., 2016; Filik et al., 2017; López and Vaid, 2017). In these studies, eye-tracking is used as a methodological paradigm to gain insights into cognitive processing strategies by studying fixation times and particular gaze patterns (e.g. regressions and saccades) produced by participants while reading experimentally controlled stimuli. The role of eye gaze in naturally occurring interactional humor, however, remains largely unexplored.

The only study that, to the best of my knowledge, has explicitly addressed the relationship between eye gaze and interactional humor, is an exploratory account by Gironzetti et al. (2016), who studied the role of smiling as a marker of humor in interaction. They observed that participants display an increased attention to mouth and eyes in occurrences of humor in face-to-face interaction, and this observation holds for both speakers and their addressees. This result, although based on a restricted dataset, suggests that interlocutors pay particular attention to information that is provided nonverbally by their co-participants, and more specifically through gaze and facial expressions. This observation, in fact, may be related to a study that did not address eye gaze as such, but which did point at the relevance of facial expressions as markers of particular humor types. In a corpus-based study on sarcasm in scripted interactions of television series, Tabacaru and Lemmens (2014) show that raised eyebrows on the part of the speaker may serve as gestural triggers, guiding the addressees towards the intended sarcastic interpretation of the utterance.

More indirectly related to the phenomenon of interactional humor, but relevant because of the link to staged communicative acts (*supra*), is a series of studies that have pointed at the role of eye gaze in marking (re-)enactment in dialogue. Gaze, together with head movements and gestures, has been shown to indicate viewpoint

shifts in interactions, especially when speakers shift from a narrator to a character viewpoint in telling a story in conversation (Sweetser and Stec, 2016; Parrill, 2012; McClave, 2000). By shifting their eye gaze and/or head position away from their addressees at the start of re-enacted sequences, and returning back at the end of such sequences, speakers effectively realize a form of body partitioning (or body torque) to represent multiple viewpoints. In other words, gaze may be viewed as an important resource for parsing a telling in interactionally relevant units (Thompson and Suzuki, 2014; Sidnell, 2006), interpolating two ‘layers’ of representation: the habitat of the original event being recounted and that of the reenacting event taking place.

The existing studies looking into the relationship between gaze and reenactments focus on the narration of past events rather than the forms of pretense typical for (many types of) interactional humor. As a matter of fact, this is addressed explicitly by Thompson and Suzuki (2014, p. 842), who point out that “reenactments of hypothetical events occur as well, but the majority of the reenactments in our collection dramatize previous events”. This raises the interesting question whether we find similar patterns of gaze-supported parsing in the type of staged communicative acts I am interested in for the present study, where speakers jointly set up forms of local pretense. In Section 6, I will present a qualitative analysis of this particular gaze pattern, suggesting a tightly organized gaze machinery at work.

5. Research questions and data set

Based on the general introduction into the cognitive setup of interactional humor as well as the role of eye gaze in interaction, we can formulate a central research question pertaining to the relationship between eye gaze and interactional humor:

Assuming that interactional humor is a multimodal, multi-party and multi-layered phenomenon, does it exhibit particular gaze patterns that may reflect its setup as a jointly construed pretense act?

From the speaker perspective, the gaze patterns referred to in this question may be linked to forms of feedback monitoring as well as a more general appeal for appreciation, whereas from an addressee perspective, gaze may serve a function in reaction monitoring between the addressees (e.g. checking understanding with the other addressees) as well as more generally creating a form of complicity (cf. Geeraerts, this volume). As mentioned in the introduction to this chapter, we have addressed this central research question in a quantitative manner in Brône and Oben (in prep.), zooming in on a comparison between humorous and nonhumorous sequences in a data set of three-party interactions (infra). More specifically,

we studied the frequency of particular gaze patterns (gaze shifts and mutual gaze between addressees), showing that indeed there are quantitative differences between humorous and nonhumorous turns, and these differences may be related to the above-mentioned phenomena such as parsing, viewpoint shifts and reciprocity. The main findings of this study can be summarized as follows:

- a. Both speakers and hearers produce more gaze shifts in co-occurrence with humorous turns than with nonhumorous turns in the same interaction. This counts for all possible gaze shift types (to and away from the speaker, to and away from an addressee, to the background, etc.), but a multifactorial analysis with gaze shifts and interactions as factors shows that one specific gaze shift type is a particularly strong predictor: gaze shifts by an addressee from the current speaker to the other addressee are significantly more frequent during humorous turns. This can be attributed to addressees' efforts to visually check how the fellow addressee responds to the humorous utterance or to engage in the joint pretense.
- b. Not only is there a stronger tendency for addressees to shift their gaze towards the other addressee in humorous turns compared to nonhumorous ones, this also results in more instances of mutual gaze between the addressees. Interestingly also, the moments of mutual gaze are significantly longer in the humorous utterances as well, pointing at a more complex process of establishing mutual understanding between the addressees.
- c. The above-mentioned gaze patterns on the part of the addressees cannot be accounted for purely on the basis of speakers' visible bodily behavior alone. One might expect that speakers produce more hand gestures and other body movements when producing humorous turns, adding to their expressive appeal, and this might have an impact on addressees' gaze behavior (as an effect of visual saliency of the movements). The data, however, show that neither hand gestures nor postural movements on the part of the speaker affect addressees' gaze behavior. This leads us to conclude that it is the humorous utterance as such, and not the visible bodily behavior accompanying its production, that accounts for the particular gaze patterns.

In the present chapter, I want to add a more qualitative dimension to this largely distributional analysis by presenting a micro-analysis of a number of sequences in the same data set used in Brône and Oben (in prep). Such a fine-grained multimodal analysis of the sequential organization of interactional humor will help us in understanding what is behind the above-mentioned distributions for gaze shifts and mutual gaze. Before I present this analysis, however, I first need to introduce the data set used for this study.

The data for this paper are taken from the Insight Interaction Corpus (Brône and Oben, 2015), a multimodal corpus of face-to-face interactions in Dutch, transcribed and annotated for gaze and gesture. The corpus consists of conversations between 15 dyads (of about 30 minutes each) and 15 three-party interactions (of about 20 minutes each). The dyadic interactions each consist of three subparts: storytelling, brainstorming and targeted collaborative tasks (on spatial relationships). The three-party interactions are casual conversations without a predefined topic. In both the two- and three-party interactions, the participants were students (age 18–23, male and female in different configurations) and all native speakers of Dutch. For the purpose of this study (as well as the quantitative study presented in Brône and Oben, in prep), a selection of 5 triads from the corpus was used, which amounts to about 100 minutes of data. This selection provides us with a sufficiently large subset to uncover some of the basic gaze patterns associated with particular interactional humor sequences.

The screenshot in Figure 3 shows the recording set-up for the three-party interactions. The figure is a composite of different camera perspectives: an external camera perspective and three participant perspectives recorded using mobile eye-tracking devices that the participants are wearing. The external camera perspective is shown in the bottom right of the image, and this video is synchronized with the output of the three eye-tracking systems worn by the participants (using Pupil Pro Eye-Tracking Glasses as well as Tobii 2 glasses, see Brône and Oben 2015 for technical details on the recording set-up, devices and post-processing). The eye-tracking system provides both a participant perspective through the scene camera and specific gaze information (the red circle is the gaze cursor that indicates



Figure 3. Recording setup and resulting quadvid for the triadic interactions

the visual focus of the respective participant). As a result, we obtain a quadvid video that provides highly detailed information on all participants' gaze behavior at each point in time for the ongoing interaction. This allows us to study the exact timing of gaze in relation to verbal and nonverbal behavior by speakers as well as their addressees.

All of the data of the corpus were transcribed and annotated using the ELAN environment, a tool developed specifically for video annotation and analysis (Brugman and Russel, 2004; Lausberg and Sloetjes, 2009). This tool allows for different levels of segmentation: the speech of each participant is represented as a separate annotation layer in the interface (labelled 'tiers'), allowing for a visual representation of overlapping speech. On each tier, a participant's speech can be segmented into different units, corresponding to intonation units (Chafe, 1994) and turns. In the InSight Interaction Corpus, we used the GAT transcription standard (Selting et al., 1998; Selting, 2000).

Unique to the corpus is, as mentioned, the detailed gaze information for each of the participants engaged in the recorded interactions. Similar to the segmentation of speakers and their speech, the participants' gaze information is annotated in different tiers in ELAN (i.e. one gaze tier per participant). This again allows us to have a full access to all relevant information at each point in time. In order to manage the continuous information provided by the mobile eye-trackers, we segmented the gaze information into discrete chunks, using information on gaze fixations (i.e. instances of a minimum of 120ms during which the gaze remains relatively focused on a single target, Gullberg and Kita, 2009) and relevant areas of interest (AOI's). In the context of a static face-to-face interaction, these AOI's are relatively straightforward to define, as the participants are typically focusing on either the face of one of the co-participants, a gesture of a co-participant, his/her own gesture, or the background. Each gaze fixation in the dataset is thus annotated for one of the possible AOI's. Saccades, i.e. the gaze movements between fixations, are not annotated, mainly because the resolution of the mobile eye-tracking systems does not allow for fully reliable information for movement patterns. Of central importance to the present study, however, is the fact that the combination of AOI information of multiple participants simultaneously allows us to calculate moments of mutual gaze, gaze aversion and gaze shifts between participants.

A last point I need to address for the dataset is the identification of humorous and ironic sequences in the subset of the corpus we focus on for this study (supra). As discussed in Section 2 above, previous research has shown that it is often impossible to draw clear boundaries between irony and humor in spontaneous interactional data. For that reason, I follow Gibbs' (2000) approach, which takes irony as a superordinate category that includes much-studied phenomena such as

teasing, hyperbole, sarcasm, jocularity and others. Taking this broad category, we were able to single out 167 instances of interactional humor/irony in the dataset.³

In the following section, I present an analysis of three sequences taken from the above-mentioned dataset, illustrating some of the gaze patterns that seem to be typical for this particular activity type. I will focus on different aspects of the interactional grounding process and joint pretense involved in the ironic sequences, taking into account the addressee and speaker perspective as well as the collaborative processes between them.

6. A micro-analysis of selected sequences

Assuming that humor and irony in interaction require a complex joint project that needs to be negotiated on different levels, it is to be expected that this process is reflected in the participants' embodied behavior. For participants' gaze behavior in particular, this activity may involve specific patterns that are different from the 'baseline' of normal typical speaker and addressee gaze behavior, as described in the literature (cf. Section 2) above. For instance, several studies have pointed at the fact that addressees tend to display sustained gaze directed at the current speaker, whereas speakers tend to shift their gaze more frequently between addressee(s) and background while speaking (see Rossano, 2012; Brône et al., 2017; Brône and Oben, 2018 for reviews). Taking into account the cognitive and pragmatic challenge/puzzle that addressees are confronted with in the case of irony (e.g. in making sense of the pretense space that is being set up), we may expect a different type of gaze behavior on the part of the addressees, reflecting that challenge. More specifically for the interaction type at hand (three-party face-to-face interactions), we expect to see more gaze shifts on the part of the addressees, for instance shifting their gaze from the speaker to the other addressee, reflecting a process of checking for understanding.

In the dataset for this study, we find many sequences in which the addressees produce multiple gaze shifts in co-occurrence with an ironic utterance by a speaker. Example (2) provides an illustration of this particular pattern. In this sequence, which is taken from the beginning of a conversation between two female students

3. As mentioned above, this annotated dataset was used for the quantitative study in Brône and Oben (in prep.) as well. In order to arrive at a reliable base for analysis, both authors independently coded the dataset using Gibbs' definition. After the initial coding, those cases where one of the authors did not mark a sequence as humorous were discussed until consensus was reached.

(S1, S2) who have known each other for several years and a male student (S3) who only recently arrived on campus, both addressees display a similar gaze behavior. At the start of the excerpt, S1 opens the introductory round by checking with S3 whether she's right in assuming that he is called Martin.⁴ As the participants' names were not mentioned before the recording session (by the students or the researchers involved), S3 therefore assumes that he must have a certain reputation on campus (line 2), despite the fact that he has only been there for a few months. This is confirmed by S1 (line 3) and leads up to the ironic tease produced by S2 (line 4: *notorious* (.) *notorious Martin*). Important for the analysis of this particular example is the observation that it is in fact the target of the tease himself who initiates the ironic sequence by first referring to his alleged reputation in line 2.

(2)

1. S1: Gij zijt Martin he ja,
You are *Martin* right,
 2. S3: oei ge kent mij AL?
ouch so you know me already?
 3. S1: ja hehe (.) ik heb het al gehoord;
Yes hehe (.) I've heard already;
 4. S2: berucht (.) beruchte Martin-
notorious (.) *notorious Martin*-
- S1 S3--S2-----S3-----
S2 S3-----
S3 S2--S1-S2-----S1-

The score-like representation below line 4 represents the gaze behavior of the three participants in co-occurrence with that particular intonation unit. The symbols in the score represent the gaze target at each point in time (e.g. on the top line of the score, representing the gaze behavior of S1, we see that S1 first gazes at S3, then briefly shifts her gaze to S2 before moving back to S3), and they are vertically aligned with the words in the corresponding transcript. By representing the gaze direction of all three participants in this way, we get a detailed picture of the distribution of visual attention at each point in time, relating to the turns being produced.

What is immediately clear from the score for line 4, is that S2, in producing the tease, keeps her gaze directed at the target S3 while referring to him by his name. Gaze and speech are thus directly addressing the target. More interesting, however, is the gaze behavior of the other two participants, who shift their gaze several times while S2 produces the ironic utterance. This marked gaze behavior on the part of

4. The original names have been changed in all transcripts in this chapter for reasons of anonymity.

the addressees may be attributed, as mentioned above, to their efforts to establish and/or check mutual understanding of the pretense. When looking at the vertical alignment of S1 and S3's gaze, it becomes clear that these efforts do not result in mutual gaze between the two until the very end of the TCU ('turn-constructional unit'). Establishing mutual gaze may serve a role in creating a sense of complicity between the participants involved in the joint pretense (cf. Geeraerts, this volume). As mentioned in Section 5, Brône and Oben (in prep.) provide quantitative evidence for the specific nature of this gaze pattern: in comparison to nonhumorous turns from the same conversations, addressees produce significantly more gaze shifts in the humorous ones. This, in fact, turned out to be the strongest (gaze) predictor for the difference between the humorous and nonhumorous data we could identify so far.

Let us now turn to a second example, in which speaker gaze plays a particular role as well. In this sequence, the three participants (two female and one male student, all three are well-acquainted) are sharing recollections of an Erasmus stay abroad they had the year before. In (3), they are talking about a trip to Paris, where they visited the Eiffel tower. The sequence starts with a remark by one of the female students that the weather was nice when they climbed the tower. This leads to the teasing remark by S2 (the other female student) in lines 3–4, where she refers to S1's fear of heights and notes that it must be double the fun when you're climbing a high tower with a clear view. When looking at S2's gaze behavior in co-occurrence with the production of the teasing utterance, it is immediately apparent that she shifts her gaze multiple times throughout the turn. In contrast with the typical speaker patterns described in the literature, however, the speaker does not shift her gaze from an addressee to the background and back (which may be linked to cognitive planning and/or turn management, cf. Rossano, 2012; Brône et al., 2017), but only between the addressees, one of whom is the target of the tease. Interestingly also, S2 does not directly address the target (in contrast to Example (2) above) but rather uses the generic *you*, thus pretending to make a general claim on fear of heights when climbing a tower. Exactly timed with the production of this pronoun, however, she briefly shifts her gaze from S3 to S1 (the target), identifying him as the one with the fear of heights as well as the target of the tease. In the second part of the tease (line 4), we see a similar pattern with S2 shifting her gaze towards the target when producing the core of the ironic tease (*double the fun*) and then moving her gaze back to S3 when laughing with her own tease, possibly inviting her to join in the pretense and/or the laughter. It is, in fact, S3 who takes the turn (lines 5–7) but she does not pursue the pretense set up by S2. Rather, she expresses that she was surprised by the degree to which S1 suffers from a fear of heights.

(3)

1. S3: ja en ook op de Eiffeltoren hadden we ook echt wel chance [hoor;
yeah and also on the Eiffel Tower we were really lucky right
2. S1: [ja
[yeah
3. S2: ja zeker als ge geen hoogtevrees hebt he,
yeah especially if you don't have fear of heights,
S1 S3-----S2-----
S2 S3-----S1---S3-----
S3 BG----S2-----
4. S2: dan is dat nog twee keer zo leuk he (lacht),
then it's double the fun right (laughs),
S1 S2--S3-----S2----
S2 S3-----S1-----S3----
S3 S2----S1-----S2----
5. S3: nee maar da was echt gewoon zo-
No, but that was really just-
6. Ik wist echt niet dat ge zo'n-
I really didn't know you had such a-
7. Ik heb nog nooit iemand gehad met zo'n hoogtevrees;
I never experienced someone with such fear of heights;
8. S1: Nee zeg ik ben daar wel opgekropen he,
No but hey I did climb it, right,

It should also be noted that just like in Example (2), both addressees in (3) shift their gaze multiple times during the teasing utterance. Of particular interest is the gaze score for line 4, where both addressees gaze at the speaker (S2) at the onset of the TCU, but then establish mutual gaze, reflecting the process of establishing mutual understanding between them. In line with the quantitative results reported in Brône and Oben (in prep.), this moment of mutual gaze between the addressees is markedly long (i.e. longer than the average duration of mutual addressee gaze in non-humorous turns as well as between speakers and addressees in ironic utterances, as e.g. between S1 and S2 in line 3 above). In fact, the mutual gaze is broken off only at the end of the teasing utterance, when S2 starts laughing, at which point S1 and S3 simultaneously direct their gaze at S2. This may again contribute to the sense of complicity between the addressees and the speaker: establishing eye contact with the speaker and joining in the laughter after the teasing utterance may serve a social function in establishing a mutual relationship between the participants engaged in the pretense, creating a bond between the 'laughers' (Provine, 2000).

A third and final example I will discuss provides an illustration of the role of gaze in managing the joint action involved in interactional irony. In this example, taken from yet another triad (consisting of three female students), one of the participants (S3) opens up the teasing sequence in line 1 by referring to a party that all three of them went to some time ago. In inviting the others to reconstruct that

past experience (*do you remember*), S3 shifts her gaze to the background (which is typically associated with viewpoint shifts, e.g. when recollecting and reenacting past events (Sidnell, 2006; Sweetser and Stec, 2016)), only to return back to S2 towards the end of the TCU. Both addressees display sustained gaze towards S2 for the most part of the TCU, in line with the typical addressee behavior described in the literature. S3's verbal invitation, along with her gaze shift to S2 towards the end of line 1, opens up the floor for S2 to start the teasing sequence in line 2 (so like in Example (2), it is the target who sets up the joint pretense). S2 responds affirmatively and continues with a staged stance act (*yeah Sarah, sorry but*), pretending to seriously reprimand S3 (Sarah) for what happened at the party.⁵ Of particular interest in this line is S2's gaze behavior: although she verbally addresses S3 by explicitly calling her by her name, her gaze shifts almost immediately to the other addressee (S1) at the onset of the TCU. This partitioning of resources (verbal and gaze) may serve the purpose of simultaneously addressing the target (and previous speaker) and inviting the other participant to join the tease. And this invitation is successful, as S1 continues the joint pretense and joins S2 in staging a negative stance act towards S3 in lines 3–4. Note again that, while addressing the target explicitly, S1 gazes at the other participant (S2, in this case the complicit in the joint pretense) most of the time, except for the moment she mentions S3's name (*Sarah*).⁶

Partly in overlap with S1's pretense reprimand in line 4, S2 continues the sequence in line 5, also staging a warning addressed at S3 not to drink alcohol anymore. Note that the speaker's gaze behavior in this line is typical for instances of overlap between competing speakers in conversation. A recent study by Zima, Weiß and Brône (2018), using the same type of data as in this chapter, has shown that in simultaneous starts by two or more speakers, gaze withdrawal (e.g. by gazing at the background rather than a co-speaker's face) is a successful strategy in the competition for the turn space. In this example, S2 averts her gaze for a substantial part of her turn before shifting back to the target S3. The gaze shift towards S3 also marks the potential closure of the teasing sequence; rather than shifting to S1, as she did in line 2, her gaze remains focused on S3 for the remainder of line 5 and the final remark in line 6. In doing so, S1 is no longer invited to continue the back and forth of the joint pretense as it progressed so far, and the sequence can be closed.

5. Although the TCU ends with the conjunction *but* and thus appears to be syntactically incomplete, it can be considered pragmatically complete. On the use of 'final conjunctions' followed by turn transition, see Mulder and Thompson (2008).

6. It should be noted, however, that the second part of S1's turn overlaps with the next turn by S2. This may also explain the gaze shift towards S2, which co-occurs with the onset of the overlap.

(4)

1. S3: amai (0.5) weet ge nog dat laatste feestje?
wow (0.5) do you remember that last party?
- S1 S2-----S3-----
 S2 S3-----
 S3 S2----BG-----S2---
2. S2: ja Sarah sorry [he ma-
yeah Sarah sorry [but-
- S1 S3-----S2-----S3--S2
 S2 S3-S1-----
 S3 S2-----S1----
3. S1: [ja euh Sarah
[yeah eh Sarah
- S1 S2-----S3----
 S2 S1-----
 S3 S1-----
4. S1: gij drinkt [gene Martini meer;
you don't drink Martini anymore;
- S1 S3-S2-----
 S2 S1-----BG-----
 S3 S1-----S2-----
5. S2: [ofwel blijft gij thuis, ofwel gaat ge mee maar drinkt
geen druppel alcohol meer;
[either you stay home, or you join us but you don't
drink a drop of alcohol anymore;
- S1 S2-----S3-----S2---
 S2 BG-----S3-----
 S3 S1---S2-----BG-----S2----
6. S2: dat is onze afspraak;
that is our deal
- S1 S2-----S3---
 S2 S3-----
 S3 S2-----

An example like (4), although apparently simple and relatively mundane, provides a good illustration of the resources that interactants bring into play when engaging in joint pretense in interaction. For the specific case of participants' gaze behavior, the example shows how gaze may be recruited for various purposes, including viewpoint shifts, invitations to participate in a joint activity, maintaining speakership, monitoring responses, etc. Only through a micro-analysis of this gaze

behavior, using fine-grained information on participants' gaze captured by HD cameras or (ideally) eye-tracking systems, can we get a full-blown picture of the multimodal negotiation process involved in this particular activity type. Needless to say, however, the analysis as presented here is still largely explorative and based on a limited sample, so we should be careful with claims on generalizability, but the basic layout for this type of analysis is presented here with a view to extending it in future studies.

7. Concluding remarks

In line with the general usage-based perspective in Cognitive Linguistics, more recent approaches to figurative language and thought have focused on the contextual embeddedness of this cluster of phenomena, including their use and negotiation in face-to-face interaction as the most basic form of language use (see e.g. the chapters in Semino and Demjén, 2017). This also holds for irony and humor, which have been approached from a combined cognitive-pragmatic and interactional perspective (see e.g. Brône, 2012 and chapters in Attardo, 2017), taking into account the process of intersubjective meaning coordination involved. The present chapter was intended as a contribution to this line of research, zooming in on the process of coordinating and modeling interlocutors' minds in spontaneously produced ironic sequences, with a particular focus on the bodily resources that may be recruited in this coordination process.

The starting point was the observation that in the multitude of perspectives on the phenomenon of irony, developed in different (sub)disciplines, research programs and using different methods, the multimodal perspective seems to be largely missing. This is all the more surprising, given the fact that multimodal analysis, and more specifically gesture studies, is a rapidly developing field with a strong link, among others, with metaphor research in usage-based Cognitive Linguistics (see e.g. Cienki and Müller, 2008; Cienki, 2017). For the purpose of the present study, I attempted to integrate insights from cognitive-interactional research into irony (with a specific focus on the pretense-based views) with current views in multimodal interaction analysis (developed mainly in interactional linguistics and conversation analysis), which embrace both verbal and non-verbal phenomena as essential parts of an integrated process of meaning making. Studies in the latter field illustrate for an abundance of phenomena that participants in (spoken and signed) interaction mobilize and tightly coordinate a complete toolbox of resources in the production and understanding of a communicative exchange, including speech, gesture, gaze, facial expression, posture, etc. (see Mondada, 2019 for an overview).

The focus of this chapter on eye gaze as a semiotic resource that plays a particular role in the multimodal negotiation of humor/irony was determined by two factors. First, as discussed in Section 3, several studies have pointed at specific gaze patterns that co-occur with phenomena that bear a resemblance to irony (such as viewpoint shifts and enactment in storytelling, partitioning of information, etc.). One of the objectives of the present study was to analyze how these known patterns may also contribute to the successful realization of a joint ironic pretense in interaction. Second, the study of participants' gaze behavior presents a compelling (methodological) case for the inclusion of multiple and different temporalities among the different resources involved in the interactional process of meaning making (Goodwin, 2017; Deppermann and Günthner, 2015; Deppermann and Streeck, 2018). In other words, a participant's gaze direction provides us with a continuous stream of information that may be affected by, or affect that same participant's or other participants' verbal and nonverbal behavior. In effect, we are confronted with a highly complex network of interrelated actions, some of which occur simultaneously whereas other actions tend to occur prior to others, thus projecting and partially constraining the action(s) to come. The multimodal micro-analyses presented in this chapter show how the participants' gaze behavior may be strongly synchronized at key points of ironic sequences (e.g. mutual checking of understanding, creating a sense of complicity), whereas in other cases, a gaze shift by one participant triggers (non)verbal behavior in others that is of essential importance for the success of the ironic sequence (e.g. gaze as an instrument in inviting others to join the tease).

Given the fact that the study of eye gaze in relation to joint pretense is still in its infancy, the analysis presented in this chapter is largely exploratory, focusing on only a few aspects that may be of relevance to this multimodal, multiparty field of activity. However, I hope to have illustrated how a qualitative micro-analysis of the interplay of resources, taking into account the different temporalities involved, may complement a quantitative distributional analysis and thus contribute to a better understanding of the interactional dynamics involved. In future studies, the scope of the analysis can be expanded to the full breadth of interactionally relevant (non)verbal behavior, including gesture, posture and facial expressions, which may turn out to be relevant resources in the construction and negotiation of staged communicative acts. Showing the tightly organized multimodal machinery at work in this particular phenomenon will have a relevance beyond the field of humor/irony research, however. Just as linguists have argued that verbal irony and humor, because of their cognitive and linguistic complexity, may serve simultaneously as a test case and a show case for the flexibility of analytical constructs (Fauconnier and Turner, 2002; Brône, 2012), their realization as part of embodied interaction may yield important insights into the multimodal DNA of human interaction in

general. In other words, some of the most basic patterns in the use of various semiotic resources may manifest themselves in such a marked or strong way in expressive language use that they provide researchers with a clearer understanding of their basic function.

Acknowledgements

I would like to thank the anonymous referees as well as the colleagues from the Freiburg MobEyeLab for their valuable comments on an earlier version of this manuscript.

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PART II

Mechanisms and processes

Metaphor and irony

Messy when mixed

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We address metaphor/irony mixing, as in ironic “*What a rocket!*” about a very slow train. We agree that the final meaning is often better viewed as resting ironically on metaphorical meaning (the train is very fast) than metaphorically resting on ironic meaning (the train is far from being a [literal] rocket). However, we discover that matters are much messier than previously discussed. The reverse meaning dependence can be supported; it can sometimes be preferable; and there is parallel mixing, with irony and metaphor mutually independent. Also, even when hearers do metaphoric processing mostly before ironic processing, they can benefit from first of all detecting the utterance’s ironicity. This in turn suggests metaphor processing that involves contrast-based, as well as similarity-based, mappings.

Keywords: irony, metaphor, mixtures of figures of speech, serial mixing, parallel mixing, contrast in figures of speech, meaning composition, cognitive processing, attitudes in irony, affective processing

1. Introduction

Suppose Sue ironically says

(1) “*Wow, this train’s a rocket!*”

to convey a train’s great slowness, playing metaphorically on the great quickness of rockets. Irony/metaphor mixtures have been a significant concern in the literature on figurative language (Grice, 1989; Katz and Lee, 1993; Popa-Wyatt, 2017; Musolff, 2017; Ritchie, 2006; Ruiz de Mendoza and Lozano-Palacio, 2019; Stern, 2000), and present special difficulties, heightening and going beyond the problems that metaphor and irony present in isolation. Much remains to be done to get a full theory of how such mixtures work, whether in terms of abstract theory of meaning or in terms of actual cognitive processes of understanding undertaken by a hearer. Also, a motivation for studying mixtures of figures (be they metaphor, irony, or

any other) is that the task of adequately addressing them serves to stress-test the existing theories of individual figures, revealing needs and inadequacies that might otherwise be overlooked or sidelined.

A central background tenet of this chapter is an observation made by many irony researchers. Consider an ironic use of “*This train is the fastest one on earth.*” The observation is that that the ironic speaker is not merely conveying a *contrasting claim* (e.g., that the train is very slow), i.e., a claim that is somehow in stark contrast to the *overt claim* (that the train is the fastest one on earth, in our current example, or that the train is akin to a rocket, in (1)).¹ Rather, the speaker is also conveying some *accompanying attitude* such as disappointment, mild criticism, mockery, humour, etc. This attitude is part of the speaker’s reaction to some claim, expectation, hope, etc. that has been expressed or referred to, often recently in the discourse, or to some expectation or hope of her own, or to some societal norm. Many types and intensities of accompanying attitude, and many variations as to what the attitude is targeted at, have been discussed in the literature (Colston, 1997; Colston and Keller, 1998; Gibbs, 2007/2000; Kumon-Nakamura et al., 2007/1995; Sperber and Wilson, 1995). For instance, it may be that someone – perhaps, but not necessarily, the person to whom the ironic utterance of (1) or “*This train is the fastest one on earth*” is addressed – has a moment ago sincerely claimed that the train is very fast. Then the speaker may be mocking or teasing that person for believing that claim. On the other hand, there may a general expectation that the train of the sort the speaker is on will be fast, so the speaker is (for instance) mocking unknown people who created that expectation (e.g., the train company, or the government). There are other possibilities, such as that she² is criticizing herself for having believed hype about the train, or that she is not criticizing anyone, but just feeling disappointment. There could also be a mix of attitude types, for example a mixture of disappointment and mockery.

Also, as Dynel (2018) forcefully brings out, in so-called positive or praising irony – e.g., “*Sure, you’re the stupidest person in the world*” to a clever but unconfident student Simon – there is still some degree of criticism, here of Simon for holding a negative attitude about himself, even if the criticism amounts to no more than teasing. The criticism exists despite the positivity or praising quality of the contrasting claim, which is to the effect that Simon is clever.

1. In common with many other researchers, and contrary to rough descriptions of irony as a matter of overtly saying the *opposite* of something one means, the latter meaning may merely be in *contrast* with the overt meaning in some notable way that is short of being opposite (Burgers & Steen, 2017; Colston, 2017; Partington, 2007).

2. For lexical convenience I will use “she” for a speaker of an utterance, and “he” for a hearer. Also in most cases “speaker” should be understood to mean speaker or writer, and “hearer” to mean hearer or reader.

Many commentators on irony, such as those cited above, have recognized that the accompanying attitude (together with what it is targeted at) is not just an important feature of irony but is in fact an absolutely crucial aspect of what is communicated, at least as important as the contrasting meaning. And it turns out that the issue of the accompanying attitude has a special sort of importance in properly addressing irony/metaphor mixtures. It is convenient for presentational purposes in this chapter to use the term “meaning” to cover both (i) the contrasting claim and (ii) the accompanying attitude and its targeting, so that both (i) and (ii) are components of the “ironic meaning” of the utterance, rather than following a common tendency to use “ironic meaning” or “ironic content” to refer just to the contrasting claim.³

One main focus of this chapter is on how the metaphor-handling and irony-handling aspects of a hearer’s interpretation process for mixed ironic/metaphorical utterances interact with each other. A particular sub-focus is on a certain aspect of their temporal ordering. The metaphor-handling aspects includes matters such as use of known metaphorical mappings as in Conceptual Metaphor Theory (Lakoff and Johnson, 2003), creation of analogical mappings as in Gentner and Bowdle (2008), or creation of superordinate categories as in Glucksberg (2001). The irony-handling aspects include matters such as working out – or, more precisely, coming to a reasonable decision on – what the speaker is reacting to (a claim, norm, expectation, etc.), the type and intensity of her accompanying attitude towards it, and what her contrasting meaning is. While I occasionally cite some relevant experimental findings, my aim is not to claim what people actually do in interpreting metaphor/irony mixtures, but rather to clarify the space of promising possibilities concerning what they do.

My main specific purpose is to develop and support a suggestion that, at least for many mixed utterances on the rough lines of (1), a somewhat messy, mixed-up ordering is desirable. Specifically, it is desirable for the hearer first to detect that the speaker is *being ironic*, before the hearer works out any specific meaning. This determination of ironicity can then affect the course of metaphor handling that delivers a metaphorical non-ironic meaning (e.g., that *the train is very fast*) that is then ironically converted⁴ into the final contrasting meaning of the utterance (e.g., that *the rain is very slow*). This *ironicity-first* regimentation of the processing

3. In “meaning” I am therefore including not only elements that would traditionally be called semantic but also elements that would often be called pragmatic. But this is just a question of terminology and my usage does not amount to a technical claim.

4. By the term “convert” I merely refer to some sort of derivation that delivers a different meaning, whether the derivation is a matter of applying some sort of specialized operator, or a matter of extended inference, or ...

guards against certain problems that could arise if the metaphor-handling were done without taking into account the fact that the metaphorical meaning is to be ironically converted.⁵

Inherent in the proposal is a presumption about the *dependence direction* of the metaphorical and ironic aspects of meaning. The previous paragraph assumes that the (final, ironic-and-metaphorical) meaning of (1) is to be analysed as ironically derived from a metaphorical (but non-ironic) meaning of it. Call this an *irony-upon-metaphor* analysis, because a metaphorical analysis provides the basis for an ironic analysis. An opposite style of analysis would be that the utterance's meaning metaphorically rests upon an ironic (but non-metaphorical) meaning of (1). Call this a *metaphor-upon-irony* analysis.⁶

These descriptions of the two dependence directions do not explicitly refer to the contrasting-meaning and accompanying-attitude components of ironic meaning. Let us take these separately.

It is relatively easy to see what the directions amount to for the contrasting meaning. Under a possible irony-upon-metaphor analysis, the overall contrasting meaning that *the train is very slow* is an ironic conversion of (1)'s metaphorical meaning that *it is very fast*. On the other hand, under a possible metaphor-upon-irony analysis, the overall contrasting meaning is a metaphorical conversion of the claim that *the train fails badly to be a rocket*, which is the contrastive component of a possible ironic meaning of (1).

Accounting for the accompanying attitude under an irony-upon-metaphor analysis presents no great difficulty compared to doing so for an ironically uttered "*This train is very fast*", this sentence being a non-metaphorical paraphrase of (1). However, it turns out that the matter is troublesome under a metaphor-upon-irony analysis. Indeed, Popa-Wyatt (2017) presents an argument that (when translated into the terms of this chapter) says that a metaphor-upon-irony analysis provides no way of accounting for the appropriate accompanying attitude and what it is

5. The gist of the idea of irony-first is due to Popa-Wyatt. It was briefly expressed, though not using that label, in her 2017 article and in personal communications from 2010 to 2013. But the chapter develops and supports the idea in detail. Popa-Wyatt has also separately developed the idea, in a 2019 draft manuscript, but this focuses on different considerations from mine, such as its claimed congenial fit with Gricean notions of communicative intention.

6. The term "dependence direction" as used here and the terms "irony-upon-metaphor" and "metaphor-upon-irony" are my own labels, and I have defined their meaning in a particular way, but they are not intended to denote new concepts. For instance, dependence direction is what Stern (2000) calls the logical order of interpretation, and the thesis that that order should be irony-upon-metaphor is what Popa-Wyatt (2017) calls the Logical Metaphor Priority Thesis (Logical-MPT). I am using different terminology because I believe it to be intuitively clearer and less theory-laden.

targeted at. Dynel (2016), Popa (2011) and Popa-Wyatt (2017) discuss various other arguments that bear against metaphor-upon-irony, but based on other considerations. By contrast, no-one appears to have found fault with irony-upon-metaphor for utterances such as (1).

Popa-Wyatt's argument is distinctive and especially powerful because of bearing down on the accompanying attitude. However, there is an important feature of metaphor she does not consider. I therefore concentrate on a modified version of the argument. It no longer shows that a metaphor-upon-irony analysis is incapable of handling the accompanying attitude and what it is targeted at, but, instead, merely that significant cumbersomeness is required to enable it to do so, in comparison to irony-upon-metaphor.

This article is therefore much more lenient towards metaphor-upon-irony as a possible dependence direction in comparison to other authors, who tend either just tacitly to assume that irony-upon-metaphor is the one correct order, or explicitly to maintain that it is uncontroversial that irony-upon-metaphor is the one correct order (e.g., Popa-Wyatt, 2017; following Stern, 2000 and Bezuidenhout, 2001).

The question of dependence direction is, strictly speaking, a logical or structural one about how a final meaning is related to another, intermediate meaning, rather than a question about the temporal ordering of processing phases. Let an irony-upon-metaphor *interpretation process* (as opposed to theoretical analysis) be one in the course of which (a) the metaphorical meaning that is proposed in some contextually-appropriate irony-upon-metaphor *analysis* of the utterance comes to be represented, and (b) its ironic connection to the final utterance meaning is developed. Clearly, there is the temporal-ordering consequence that the construction of that connection in (b) cannot be finished (and may not even be able to be started) before the metaphorical meaning comes to be represented in (a). However, this does not of itself imply that all the metaphorical processing has to temporally precede all the irony processing. It leaves open numerous possibilities, including: the possibility that there is more than one cycle of metaphorical and ironic processing, with different cycles considering different alternative possibilities for meaning; the possibility that some parallelization is used to increase efficiency; and the possibility that some intertwining enables the ironic and metaphor processing to help each other to achieve an appropriate outcome. Indeed, the irony-first strategy to be supported in this chapter can be viewed as a sort of intertwining.

And a great complication in the space of possibilities is that in many cases the accompanying attitude together with its target, not just the irony, might be apparent at an early stage of processing, before any metaphorical processing is done, even though ultimately the metaphorical meaning has to be properly integrated into the overall picture about the accompanying attitude and its target.

As implied above, the benefit of detecting irony before engaging in metaphorical processing is that the metaphorical processing may be usefully guided by that detection, and may be different in important respects from the metaphorical processing that would have occurred had the hearer not be interpreting the utterance as irony. A central part of this paper will be about the nature of that guidance and that modification to the metaphorical processing, and the conditions under which it arises.

One of the particular suggestions we will make here is that it can be beneficial for the metaphorical relationship worked out between the metaphorical source and target be *contrast-imbued*. This resonates with ideas of some previous metaphor researchers. A contrast-imbued metaphorical relationship is one where some correspondences (mappings) between source and target items are between items that are deemed to contrast with each other, rather than between items that are deemed to be similar. For instance, the metaphorical relationship between a rocket and a slow train might include a correspondence between the rocket's high speed and the train's great slowness, not just similarity links (e.g., between the vehicular and artefactual nature of a rocket and the vehicular and artefactual nature of a train). Contrast-imbuedness *allows the particular nature of the target to guide the metaphor analysis without misguiding it*.⁷

The article is structured as follows. Section 2 presents various examples of irony/metaphor mixing. It concentrates on the main type of mixing that has been addressed in discussions bearing on the issue of dependence direction, and that naturally suggests the irony-upon-metaphor direction. However, it also features an example of a type that does not feature in those discussions, and is here analysed as metaphor-upon-irony. Section 3 provides my modified version of the argument that Popa-Wyatt (2017) gives against the metaphor-upon-irony direction. Section 4 therefore assumes that irony-upon-metaphor is the correct dependence direction for the utterance type of interest, but argues that it should be implemented by an irony-first version of an irony-upon-metaphor interpretation process, where detection of irony precedes the metaphor processing. Section 5 first briefly discusses the possible usefulness here of contrast-imbued metaphor analysis. It then resumes on the roughly metaphor-upon-irony example raised in Section 2, and then goes into types of mixing and mixture-analysis that go beyond the bulk of the article. These include a form of parallel mixing, where neither irony-upon-metaphor nor metaphor-upon-irony is appropriate – both a metaphorical meaning and an ironic meaning are output, neither dependent on the other. The section also touches

7. Again, Popa-Wyatt had an important role here. She and I collaboratively produced the idea that contrast-imbued metaphorical processing could help with the interpretation of irony/metaphor mixtures.

on the question of whether a mixed utterance should be interpreted by means of a process that is inseparably both one of ironic processing and metaphorical processing. It is important to consider this possibility and parallel mixing as a brake on any hasty assumption that irony-upon-metaphor and metaphor-upon-irony are the only options. Section 6 concludes.

The article's arguments are largely insensitive to which particular theories of metaphor and irony are chosen. However, it does assume that metaphor processing is primarily a deep cognitive matter (see, e.g., Lakoff and Johnson, 2003). As for irony, the most important observation is that the arguments are insensitive to the classic question of whether irony should be regarded as a matter of echoing (Wilson, 2006; Wilson and Sperber, 2012) or of pretence (Clark and Gerrig, 2007/1984; Currie, 2006; Kumon-Nakamura, Glucksberg and Brown, 2007/1995).

It is also important that there are a variety of clues (cues, signals) that often suggest to a hearer that the speaker is being ironic and what her attitude is (e.g., mockery), without pointing to a specific contrasting meaning. A variety of clues have been studied (see, e.g., Attardo, 2000; Bryant and Fox Tree, 2005; Burgers and Steen, 2017; Kreuz and Johnson, 2020; Kreuz and Roberts, 1995; Pexman, 2008; Rockwell, 2000; Ruiz de Mendoza and Lozano-Palacio, 2019, and Ruiz de Mendoza and Lozano-Palacio, this volume). Possibly-available clues include lexical items like “*Yeah*,” “*Sure*” and “*Great*” at the start of ironic statements,⁸ the use of qualifiers like “*so*” and “*such a*”, especially when emphasized (as in an ironic “*Yes, he's so clever*”), hyperbolic features (such as the use of “*genius*” in an ironic “*Sure, he's a genius*” when someone has merely been claimed to be clever, not a genius), special intonation, other paralinguistic clues such as eye-rolling, and recent or habitual irony usage by the particular speaker at hand, or by speakers of the same type (e.g., assertive interviewers on TV). However, we will not assume that such clues are always available to the hearer, or that they all always indicate irony when present. For instance, one can say “*Yeah, sure*” with an approving demeanour and one can say “*Yes, he's a genius*” to agree with a cleverness claim.

8. They help to suggest irony because by default they indicate agreement, but in combination with other clues the hearer may be able to discern that they only indicate pretended agreement. Cf. comments by Ruiz de Mendoza & Lozano-Palacio (2019, and this volume). In particular, special (e.g., sarcastic) intonation can be loaded onto such words, which are typically at the start of the utterance. We might conjecture that this allows especially fast detection of irony: the hearer does not need to wait to assess the intonation of the whole utterance. The apparent-agreement function of the wording plays an important role in Section 4 below.

2. Examples of irony/metaphor mixing

Example (1) illustrates the type of mixing with which this article is mainly concerned. Some further examples of this type, taken from the literature on irony/metaphor mixing, are listed in Section 2.1. All these examples lend themselves more intuitively to an irony-upon-metaphor dependence direction than the opposite direction. But Section 2.2 presents an example for which metaphor-upon-irony is more natural.

2.1 Some examples suitable for irony-upon-metaphor

For ease of reference, we repeat the first example here:

- (1) “*Wow, this train’s a rocket!*”

Now consider:

- (2) “*You are the cream in my coffee.*” [Grice 1989]

This sentence could be said sincerely and non-ironically to someone who had a special positive role in the speaker’s life. The cream in a cup of coffee is, for many people it seems, what makes the cup especially pleasurable to drink. Analogously, the addressee of (2) is what makes (some aspect of) the speaker’s life especially pleasurable. So, the sentence might instead be used ironically to convey that the addressee is far from making the speaker’s life especially pleasurable and that the speaker is mocking someone (say, the addressee himself) for claiming that he makes the speaker’s life especially pleasurable.

This meaning of (2) is susceptible to an irony-upon-metaphor analysis on lines highly analogous to that of (1) in the Introduction. The metaphorical, non-ironic proposition that the addressee makes the speaker’s life especially pleasurable is converted into the ironic-and-metaphorical proposition that the addressee is far from doing so.

But this is merely the contrasting component of the final meaning. The attitudinal component (the mocking) could, potentially, be accounted for much as in an ironic use of “*You make my life especially pleasurable*”. In such an account, the metaphoricality of the original utterance is irrelevant to the attitudinal component: all that matters is the apparently claimed proposition that the addressee makes the speaker’s life especially pleasurable. However, one could imagine a more complex story in which the use of metaphor, through for instance its extra vividness, adds extra apparent approval of the addressee as compared to “*You make my life*

especially pleasurable.” This additional apparent approval then translates into more intense mockery. In this case the attitudinal component of the final meaning of (1) is dependent in part on an attitudinal component in the metaphorical, non-ironic meaning of (1).

Similar comments apply to the remaining examples in this subsection. The next example, slightly adapted from an example in Ruiz de Mendoza (2017) is:

(3) *“Paul’s an angel.”*

Sincerely and non-ironically saying that someone is an angel can mean that the person is notably good, helpful or protective in some way, or has been on a specific occasion. This is because of the stereotypical properties credited to angels (but not to fallen ones such as Lucifer!). So, the sentence can instead be used ironically-and-metaphorically to convey that Paul has fallen far short of being good, helpful or protective in a relevant sense, and that the speaker is (say) disappointed or bitter about this.

Next example:

(4) *“He’s a towering figure.”* [Stern 2000]

This might be said ironically of someone who is insignificant in some relevant sphere of life such as politics, given that the idiom “a towering figure” metaphorically means someone who is highly prominent, in a non-physical sense, in a sphere of life. Next example:

(5) *“[Someone’s handwriting is] such delicate lacework!”* [Stern 2000]

“Delicate lacework” could be a sincere metaphorical description of handwriting that is beautiful and ordered in a way similar to actual delicate lacework. So, it could instead be used ironically-and-metaphorically about handwriting that is an ugly mess.

The next example, from Burgers, Konijn and Steen (2016), could be ironically said about a poor plan:

(6) *“Yeah, the ECB plan really is a map that leads right into heaven!”*

where the ECB is the European Central Bank.

Next, there is a wide class of potential examples that have been subject to study by Rachel Giora and colleagues, e.g. recently in Giora and Becker (2019). A typical example in this class would be

(7) *“John is not the most sparkling drink in the pub.”*

This is a metaphorical instance of the use of the construction *X is not [superlative case of Y]*, which also has non-metaphorical instances like “*John is not the jolliest of people*”. The usual meaning of “*John is not the jolliest of people*” appears to be that John is one of the *least* jolly people. There is an argument that this meaning is ironic. It contrasts with the overt meaning, which is merely that John is somewhere below maximum jolliness. According to this overt meaning, John could well be jolly to a normal extent. So the speaker is arguably pointing to a violation of a normal expectation about how jolly people are.⁹

Finally for this subsection, it is worth noting that irony and simile can be mixed. This is relevant because, whatever one’s view of the precise relationship between simile and metaphor,¹⁰ this relationship is certainly a strong one. An example of an irony/smile mixture is

- (8) “*Yeah, right, you are like a toothpick*” [Athanasiadou 2017]

if this is said ironically to someone that the speaker considers to be far from thin.

2.2 An example suitable for metaphor-upon-irony

Consider the following example, slightly enriched from one in Ruiz de Mendoza (2017):

- (9) [Speaker A, an Englishwoman, speaking sincerely:] “*Italians eat pasta every day.*” [Speaker B, a Spanish woman, responding ironically:] “*Yeah, right, and Spaniards have a siesta every day.*”

I contend that the following analysis is natural, assuming that there is a stereotype that Spaniards indulge in a siesta every day, and also assuming that B is ironically reacting to this stereotype as well as to A’s claim about Italians.¹¹ B’s sentence is purely ironic, i.e., without metaphoricity, insofar as it reacts to the *Spanish-siesta* stereotype. But the criticism by B of people who believe this stereotype holds metaphorically transfers to become criticism of speaker A for believing that *Italians eat*

9. An alternative analysis could be that the utterance is an understatement of how non-jolly John is. It is not clear that this should be held to be ironic, though it can still be caustic.

10. This is a vexed area. See Barnden (2012, 2015b) for some discussion and pointers to the literature.

11. A full analysis of (9) should take account of the strong likelihood that A means her “*every day*” hyperbolically, actually only conveying something like *on the large majority of days*. B’s comment in (9) arguably uses this hyperbole as well. Then, what B is criticizing is two claims framed implicitly in a majority-of-days way, not claims about what happens literally every day.

pasta every day. It is this metaphorically transferred criticism that is the main point of B's remark. We have an example of metaphor-upon-irony because (a) an attitude targeted at believers of the Spanish siesta stereotype is metaphorically transformed into an attitude targeted at a believer of the Italian pasta claim, and at the same time, (b) the contrasting component of the non-metaphorical ironic meaning of B's statement – a proposition such as that *Spaniards are far from having a siesta every day* – is metaphorically transformed into the proposition that *Italians are far from eating pasta every day*.¹²

While it is possible to devise an irony-upon-metaphor analysis of (9), it is a disadvantageous one. One could say that B's remark is a metaphorical version of saying

(10) “*Yeah, right, Italians eat pasta every day.*”

Sentence (10) could have been used as a direct, i.e., non-metaphorical, ironic response to A's claim. So, overall, in an irony-upon-metaphor analysis, B's actual comment in (9) has, as a metaphorical meaning, the overt meaning of (10), and this meaning is then ironically converted. Oddly, however, this analysis misses out precisely what it is that makes B's comment in (9) an *appropriate* metaphor, namely that both this comment and A's claim are criticizable stereotypes. But if we were to add that common feature to metaphor target and source, we would in effect be including in the source the information that B is criticizing people who believe the Spanish stereotype and in the target the information that B is criticizing people who believe the Italian stereotype, and we would be putting these ironically conveyed *criticisms* into correspondence. So we would in effect be back with a metaphor-upon-irony analysis.

3. A (non-fatal) problem with metaphor-upon-irony analyses

In this section, I will discuss a particular problem with the metaphor-upon-irony dependence direction for examples on the lines of those in Section 2.1. A version of the problem was raised by Popa-Wyatt (2017). Her argument addresses a crucial aspect of irony not attended to by other arguments, namely the accompanying attitude, and is roughly to the effect that *a metaphor-upon-irony analysis would get the wrong target, if any, for the accompanying attitude*. While Popa-Wyatt takes her argument to be a fatal blow against metaphor-upon-irony, I will less severely argue that considerations of accompanying attitude cause metaphor-upon-irony to have

12. The type of communicative strategy involved in (9) might be placed under the notion of echoic chains in Ruiz de Mendoza & Lozano-Palacio (2019).

considerable analytical cost compared to irony-upon-metaphor. The reduction in severity results from my allowing a richer form of metaphorical analysis than she caters for.¹³

For simplicity of presentation, I will attend only to the case of the irony being a response to an explicit claim by someone, rather than to an expectation, norm, etc., and I will assume the speaker is mocking the claimant. However, the discussion can straightforwardly be adjusted to handle the possibilities left out.

3.1 The potential and cost of metaphor-upon-irony analysis

Consider the following sentence, which is parallel to the examples in Section 2.1:¹⁴

(11) “*Yeah sure, Paul’s right up in the ionosphere.*”

Suppose this is uttered by speaker Speranza in mocking response to a claim by Clem that politician Paul is a very important member of a government. If Speranza had uttered (11) ironically and not metaphorically in some suitable context – one where Paul’s *physical* location was at issue – then she could be reacting to some claim (etc.) about Paul’s vertical location in physical space. This claim would be similar to the overt meaning of (11) that Paul is in the ionosphere.¹⁵ Speranza would be mocking that person for making that claim, and her contrasting meaning would be (say) that *Paul is far from being up in the ionosphere*. So we have an ironic meaning, in the physical domain, consisting of that accompanying attitude (together with what it is targeted at) and the mentioned contrasting meaning.

13. I take Popa-Wyatt’s argument to be stronger and deeper than previous arguments against metaphor-upon-irony, though it is beyond the scope of the present article to argue this point or report her reasons for it. I should also mention that she and others also bring in notions and considerations that are beyond the scope of this article, such as whether metaphor is semantic whereas irony is post-semantic (Stern 2000), whether the speaker’s communicative intent is primarily ironic or primarily metaphorical, and whether or not implicatures can be subject to further derivation of meaning (e.g., Bezuidenhout, 2001, 2015; Camp, 2006).

14. Following Stern (2000) Popa-Wyatt actually uses an example of an ineffectual politician being ironically described as a “*towering figure*”. However, there are certain presentational complexities raised by this example connected to exactly how “*towering*” works metaphorically, especially given that it can be seen to have more than one conventional meaning that could be used in an analysis of the example. I have chosen my example to help ensure that the metaphor is novel, minimizing the possibility of an analysis based on just selecting one of the coded conventional meanings of the metaphorical phraseology.

15. Recalling that ironic statements are often hyperbolic relative to the relevant reacted-to-claim expectation, etc., the reacted-to claim might not be that Paul is in the ionosphere, but merely that he is at some very high location.

But of course the actual context of (11) is a political context, one that is probably not also a physical-position context.¹⁶ So, in what context should we construct an ironic meaning for (11), in the ironic aspect of a metaphor-upon-irony analysis? I contend that we should not use the actual, political context of utterance, precisely because we have *not* yet cashed out the metaphorical step from the source domain of physical space to the target domain of politics. In the irony aspect, we should adopt a context that is suitable for the source domain of the metaphor, not its target domain. I propose that we can use an *imaginary* physical-position context, in which Speranza is mocking the claimant of some *imagined* physical-position claim similar to the overt meaning of the utterance. That is, we can, in the analysis, use an ironic meaning like the physical one above. One natural choice is to take: the imaginary reacted-to claim to be exactly the overt claim that *Paul is in the ionosphere*; the imaginary claimant to be Clem himself (although one could invent an imaginary, unspecified person instead, and adjust the description below in straightforward ways, leading to slight extra complication); and the contrasting meaning to be that *Paul is far from being in the ionosphere*. Let us use “PhysIM” as a label for this physical ironic meaning.

PhysIM consists of the contrasting meaning plus the accompanying attitude and its targeting, not just the contrasting claim. I propose that PhysIM as a whole is subject to metaphorical transformation to get the final meaning of the utterance. In saying this I am emphasizing that it would be a mistake to assume that the metaphorical aspect of a metaphor-upon-irony analysis only transforms a contrasting meaning such that *Paul is far from being in the ionosphere*, ignoring the attitudinal component of meaning.

Now, with suitable reasonable assumptions about how metaphor works in general (and *not* just when combined with irony), not only does the *Paul-far-from-ionosphere* proposition get metaphorically mapped to *Paul-far-from-politically-prominent* proposition, but also Speranza’s (imaginary) mockery of Clem for claiming *Paul-in-ionosphere* is transferred to become her (real) mockery of Clem for claiming *Paul-politically-prominent*. The metaphorical transformation of PhysIM transforms not just the contrasting meaning but also the accompanying attitude and its targeting.

That transfer of attitude is a straightforward instance of a general phenomenon arising in much non-ironic metaphor. Consider a metaphorical, non-ironic use of “*Donald has his troops gathering around the NHS*,” where the NHS is the UK’s

16. There *could* coincidentally be a physical claim in the political context about Paul’s vertical position, or it might be well-known that Paul is an aeronaut. Then, (11) might playfully resonate with that claim or knowledge, or even be ironic about Paul’s aeronautical ability as well as about his political status. The latter case would be similar to that of (9).

National Health Service, and the issue at hand is whether the NHS will be taken over by American companies in a trade deal to be negotiated. A natural aspect of the task of interpreting the metaphor would be to assume that, in the imaginary, military source scenario, the people involved in the NHS (or who care about the NHS) are afraid of the troops and of the prospect that the troops will physically capture or destroy the NHS, which is a physical entity in the source scenario. It is surely natural to transfer this fear into the target scenario to become a real-world fear of people being afraid that the NHS will be commercially taken over or abstractly destroyed. Such transfer of mental or emotional states from source to target scenario in metaphor – along with, crucially, the re-targeting of those states – is so prevalent and standard that it is not remarked upon as much as it deserves in metaphor theory. Yet it is often arguably central to the effect of metaphor. A range of examples that support this is analysed in Barnden (2006, 2015a, 2016), but is also an aspect, though often only implicit, of assumptions and postulations in prominent metaphor theories. For instance, the transfer of higher-order structure in Structure Mapping Theory (Gentner and Bowdle, 2008) must presumably include the transfer of emotional and mental relations; the interpretations assumed for classic examples in categorization theory (Glucksberg, 2001), such as “*My job is a jail*” and “*Lawyers are sharks*” always implicitly involve, and even centrally based upon, emotional/mental relations that are transferred, such as in these examples a prisoner’s feeling of being confined in a prison cell and sharks’ (stereotypically alleged) aggressiveness, greed, and uncaringness towards people. Prominently discussed conceptual metaphors (in the sense of Lakoff and Johnson, 2003) have clear entailments of transfer of emotional/mental relations. For instance, in the case of TIME IS MONEY, just as spending more money than one needs to is undesirable (i.e., one shouldn’t desire it), using up more time than one needs to is undesirable. For our present purposes, the transfer of Speranza’s mockery of Clem for making his imaginary physical-position claim to become her mockery of Clem for making his corresponding real-world claim is exactly parallel to the transfer, in the NHS example, of the fear of the imaginary military prospect to become fear of the corresponding real-world non-military prospect.

To summarize, we have developed a possible metaphor-upon-irony analysis of the meaning of (11). But we have considerable analytical cost compared to an irony-upon-metaphor analysis. Both types of analysis require (i) consideration of a political-prominence claim about Paul, and Speranza’s attitude to it in the real world. But the metaphor-upon-irony analysis also requires (ii) consideration of an analogous claim and *attitude to it* in the *imaginary physical* scenario, and (iii) mapping of that physical claim and attitude to the political claim and attitude in (i). Points (ii) and (iii) are considerable extra baggage. This is not just a theoretical point, as this analytical baggage would lead to considerable extra cognitive

activity in a metaphor-upon-irony interpretation *process*. Moreover, bearing in mind that (ii) and (iii) are merely tools towards providing (i), and are not of independent interest to the hearer, they are pure overhead. There does not seem to be any good reason for proposing a metaphor-upon-irony analysis instead of an irony-upon-metaphor one. However:-

3.2 Pasta and siestas revisited

It is instructive to go back to Example (9), about pasta and siestas, for which we argued that metaphor-upon-irony *is* the appropriate dependence direction. Why does it not suffer from the overhead problem of Section 3.1? The answer is that part of the metaphor-upon-irony analysis of (9) was that not only is B being ironic in reaction to a claim about Italians eating pasta, but is also throwing in an irony in reaction to a well-known stereotype about Spaniards taking siestas. Comparing (9) and (11), B's reaction to the pasta claim corresponds to Speranza's reaction to a political-prominence claim, and B's reaction to the Spanish siesta stereotype corresponds to the reaction by Speranza to a physical-location claim. The latter reaction by Speranza is purely imaginary and, together with its mapping to the political domain, constitutes the undesirable overhead we complained about. But, for (9), the corresponding matters (B's reaction to the Spanish siesta stereotype, and the mapping to her reaction to the pasta claim) are *not* imaginary, and hence not an overhead needed just to get metaphor-upon-irony to work. They are core elements of the communication in their own right.

3.3 A middle way

Since we have emphasized that irony has two branches of "meaning" – the contrastive meaning and the accompanying speaker attitude with its targeting, we should entertain the possibility that the two branches are treated differently. What I consider here is an analysis that is metaphor-upon-irony as regard contrastive meaning only, leaving the accompanying attitude component to be analysed in a direct way, thus avoiding the extra-baggage problem.

This analysis is motivated by considering actual cognitive processing by a hearer, in a particular sort of situation in which (11) might be uttered. It is quite possible that (11) is a reaction to an immediately preceding claim by Clem about Paul having high political standing, and that Speranza is using a sarcastic tone. Then, the hearer might easily guess that she is reacting to that claim, and is mocking the claimant Clem. The hearer does need first to grasp the contrasting or attitudinal components of an ironic non-metaphorical meaning of (11). The "*Yeah, sure*"

suggests that the utterance is linked to the immediately preceding one, and is either agreeing with it or ironically reacting to it. The sarcastic tone suggests the second, ironic, option. In short, the hearer has already guessed the attitudinal component of the final, metaphorical-and-ironic, meaning. He can now proceed to work out just the contrasting component of the final meaning (although by the end of the process the hearer should have ensured, or should eventually confirm, that the meaning thereby arrived at fits with his guess about the accompanying attitude and its targeting).

And the contrasting component can be worked out with roughly equal ease using either dependence direction, i.e. either in an irony-upon-metaphor way or a metaphor-upon-irony way. I concentrate on the latter here, as the intent of this section is to explore the metaphor-upon-irony direction. So he derives the ironic non-metaphorical meaning that, say, Paul is at a physical location that is far from being up in the ionosphere and then, by metaphorical transformation, the meaning that he is far from being prominent politically.

Now, backing away from actual cognitive processing into the realm of theoretical analysis, we need a style of abstract analysis that suits the above processing possibility. That style is simply one where the contrasting component of the overall meaning is derived in a metaphor-upon-irony way, and where the accompanying attitude is extra information that is (a) suitably connected to that contrasting meaning (specifically, that contrasting meaning is noted as being in contrast with the reacted-to claim) and (b) depending on how far the analysis goes in bringing in the discourse context, the reacted-to-claim is noted as being part of the meaning of a recent utterance. On the theoretical side we are only trying to provide a structure of meaning, not a mechanism explaining how and why that structure arises in actual processing of the utterance, and how other possible structures did not arise. (If it did, it would itself be a processing theory.) There is simply no role in this analysis for a claim about Paul's physical location, nor therefore a role for a reaction by Speranza to it. So it is not of the metaphor-upon-irony style as regards the accompanying attitude.

The main lesson here is that there is no compulsion on us to suppose that an abstract analysis of an irony/metaphor mixture has to involve the whole of the ironic apparatus that would be needed if the utterance had been ironic but not metaphorical or the whole of the metaphorical apparatus that would have been needed if it had been metaphorical but not ironic. We are liberty to propose reduced or otherwise modified forms of the apparatuses, even if this possibility is less "clean" than just bolting together them together without reduction. So, in particular, there is no need to confine the metaphor-upon-irony concept to apply to the whole of ironic meaning – it might only apply to its contrastive component.

Clearly, the resulting type of analysis escapes the problem of overhead that was raised in 2.1. So, as far as this chapter is concerned, the analysis remains a viable possibility for some discourse contexts, though there may be arguments against it not considered here.

4. The irony-first processing strategy

Section 3 has established a superiority of irony-upon-metaphor over metaphor-upon-irony as the better dependence direction for many utterances that mix metaphor and irony, and in particular for examples such as those in Section 2.1. Of course, given examples such as (9) [pasta and siestas], and the “middle way” mentioned in Section 3.3, there are cases where some form of metaphor-upon-irony analysis and processing is preferable or at least about as good. There may be no blanket answer as to whether metaphor-upon-irony (in some form) or irony-upon-metaphor (in some form) is preferable. Even for a given sentence, different contexts may select for different analyses and/or processing strategies. Also, a choice between different viable theoretical analyses can be based on practical considerations – there is no reason to think a choice between theoretical analyses of anything can itself be based purely on theoretical considerations.

The present section now confines itself to looking at a particular processing issue that arises when irony-upon-metaphor analysis and processing *is* suitable. It is beyond the scope of this article to determine how a hearer determines what related processing strategy to adopt. I will simply assume that the hearer is, for whatever reason, pursuing irony-upon-metaphor processing. Recall from the Introduction that an *irony-upon-metaphor [interpretation] process* is one where the metaphorical meaning that is proposed in some contextually-appropriate irony-upon-metaphor *analysis* of the utterance comes to be represented, and the ironic connection of this metaphorical meaning to final utterance meaning is developed.

In saying the hearer is pursuing an irony-upon-metaphor process, I am not implying that he necessarily knows at the start of processing that the utterance is ironic. He may start by just interpreting the utterance metaphorically, and only then notice that it is ironic. But the possibility that he detects the irony at an earlier point, perhaps even at the very start, will be key in this section. Indeed, the main point of this section will precisely be that, *when* it is possible for the hearer to detect that the utterance is ironic – because of clues such as those mentioned in the Introduction (intonation, use of “*Yeah*”, hyperbole, etc.) – without working out its meaning, it is often beneficial for the hearer to perform this detection in advance of proceeding with the remainder of the interpretation work. In particular, it is

beneficial to detect irony before doing the main metaphorical work of (say) noticing/constructing appropriate mappings and using them to transfer information from metaphorical source to target.

The benefit is that the knowledge or suspicion that the utterance is ironic can help to guide the metaphorical processing towards an appropriate metaphorical meaning (which is then subjected to remaining ironical processing), and away from inappropriate metaphorical meanings. Note carefully, however, that despite the *ironicity-first* aspect of the temporal ordering of the processing, and despite the possibility that there is further intertwining of ironic and metaphorical processing, I am assuming that the overall process still fully obeys the definition of an irony-upon-metaphor process in that at some point it develops an appropriate metaphorical, non-ironic meaning that is then suitably woven into discourse-appropriate ironic meaning (which may already be being independently developed to some extent because of clues from discourse).

An aside on experimental evidence:- Given the wide range of possibilities for how processing is ordered under either an irony-upon-metaphor processing strategy or a metaphor-upon-irony one, it is hard to adduce experimental, psycholinguistic evidence directly bearing on which strategy people follow and when, least of all whether they use an irony-first version of irony-upon-metaphor processing. However, on certain assumptions, there is indirect evidence that people are more likely to follow irony-upon-metaphor than the opposite. For instance, there is evidence that irony processing involves considerable use by hearers of reasoning involving “theory of mind” or some other form of reasoning about the speaker’s thoughts, whereas metaphor processing does not involve this, or involves it less so (e.g., see Adachi et al., 2004; Brüne, 2005; Colston and Gibbs, 2002; MacKay and Shaw, 2004; Norbury, 2005; and Shamay-Tsoory, Tomer and Aharon-Peretz, 2005). So, if one assumes that people are likely to engage in, or at least to complete, less elaborate processing earlier than more elaborate processing, irony-upon-metaphor gets some support. See also Popa (2011) for comments on this line of evidence, and also of the evidence provided by results in the experimental literature that directly find that metaphor is (in suitable conditions) quicker to process than irony.

I now illustrate the potential usefulness of an irony-first processing strategy. As mentioned in Section 3.3, a particular type of discourse situation is when the hearer can easily notice, or at least guess, that the speaker is ironically reacting to an immediately preceding claim. This may be because of irony signals such as sarcastic tone, and linking wording such as “*yeah*” and “*sure*.”

Clearly, if Clem has claimed that Paul is very prominent politically just before Speranza reacts by saying (11), there is another thing the hearer Harry can do, which is to guess that the overt meaning of (11) is metaphorically related to Clem’s claim. He does not have to start with a blank slate in metaphorically interpreting (11).

In other contexts, (11) could have had a large variety of different metaphorical meanings, including for instance that he thinks in an excessively theoretical and abstract way (cf. metaphors such as “blue sky thinking”, “head in the clouds”, etc.). But given (a) Clem’s claim that Paul is very prominent politically, (b) the overt claim of (11) that Paul is up in the ionosphere, and (c) the common use of vertical position to stand metaphorical for prominence, power, etc., it is easy for Harry to metaphorically interpret (11) as re-stating Clem’s claim. (This re-statement may be in an exaggerated form that could be glossed as Paul is *extremely* prominent politically, rather than just very prominent.) So Harry can now proceed to the (remaining) ironic processing just as if Speranza had *non-metaphorically* said “*Yeah sure, Paul is very/extremely prominent politically.*”

The main lesson here is that the metaphorical processing is helped, perhaps enormously, by noticing not just the ironicity but also what the speaker is ironically reacting to. But the point also strikes another blow against the use of a metaphor-upon-irony process, one that represents an imaginary context and ironic meaning in the vertical-location domain such as envisaged in Section 3.1, and then metaphorically transforms that meaning. That ironic meaning has, as its contrasting component, a proposition such as *Paul is far from being in the ionosphere*. This needs to be metaphorically transformed. The knowledge that Clem’s claim is about political prominence can certainly suggest that *Paul is far from being in the ionosphere* should be interpreted as stating a lack of political prominence. But producing this interpretation is more complicated than just noticing the metaphorical connection between Speranza’s overt claim that *Paul is in the ionosphere* and Clem’s claim that Paul is very prominent politically. There is extra complication for two reasons: the statement of lack of prominence has to be constructed while Clem’s claim is already at hand and only needs to be matched with the overt claim; and there is a need to match the *far from being* with the lack.

Before proceeding, it is important to note that the help with metaphorical processing arises also with *non-ironic*, metaphorical utterances. Suppose a speaker says (11) *non-ironically*, to *agree* with Clem’s claim that Paul is very prominent politically. This can easily be imagined if the speaker has a light, reassuring tone rather than a heavy, sarcastic one. Then of course we get the same sort of help with the metaphorical processing as in the ironic case.

This simple observation brings along with it another crucial point, however. This is that a hearer Harry of (11) in the agreement case need not in any way share the speaker’s opinion. He might think that Paul is completely non-prominent. But of course *he must not use his own belief about the metaphorical target to infect his metaphorical interpretation* of what the speaker says. Equally, in an ironic use of (11) in the political context, Harry may agree with Clem, with Speranza, or neither (in this last case, he may have no prior opinion about Paul’s prominence). If he

happens to agree with Clem, then he may be immediately led to interpret (11) metaphorically in the appropriate way. But suppose he agrees with Speranza that Paul is non-prominent politically. Whether or not he notices that Speranza is being ironic, he should not interpret (11) metaphorically in the light of his own belief. Rather, he needs to relate (11) metaphorically to *Clem's* claim.

Suppose now (11) lacked the “*Yeah, sure*” but Speranza still had a sarcastic tone. Although there would be no overt phraseological indicator of a connection to a previous claim, the mere guess that Speranza is being ironic would be enough to suggest that she is reacting to a recent claim. If he now recalls that Clem has just said that Paul is very prominent politically, he gets the useful help with his metaphorical processing and knows not to rely on his own set of beliefs about Paul in that processing.

And it would actually be enough for Harry to know that the issue behind (11) is something or other about Paul's role in politics to guess that it is about his *prominence* there, even if he doesn't know about Clem's specific claim. Merely knowing also that Speranza is being ironic enables Harry to guess that she is making a comment about prominence and that it (overtly) is about high prominence, given the common metaphorical use of higher vertical position to mean greater prominence in abstract domains.

It is helpful now to switch to a different example, where the metaphor is not so easy to interpret and has a worse competition of interpretations in the given context. Suppose Speranza ironically says:

(12) “*Yeah, sure, Peter's the bubbles in Mary's champagne.*”

This could be metaphorically interpreted in at least two (non-ironic) ways. One is that Peter is in some way an exciting aspect of Mary's life, given that bubbles are stereotypically exciting to champagne drinkers (indeed, the word “bubbly” is often colloquially used as a noun to mean champagne). A second interpretation is that Peter is just a peripheral aspect of Mary's life (i.e., an aspect not connecting much with her main concerns), given that bubbles are physically not part of the main substance of a body of liquid. So, without a specific guiding context, the indeterminacy of the meaning of the metaphor is more troublesome than in the case of (11). The two metaphorical interpretations, while somewhat related, are about different aspects of Peter's role in Mary's life, so knowing that (12) is about this role is not enough to disambiguate the metaphor. This is unlike (11), where knowing that the utterance is about Paul's role in politics is enough to guess that it is about the prominence of his role and furthermore that it is metaphorically claiming high prominence.

Clearly then, it is yet more important for Harry to be careful about which beliefs he uses (noting that he may or may not believe that Peter plays an exciting role in Mary's life, or the negation of this, or that Peter is peripheral in Mary's life, or

the negation of this), and it is especially useful for him not only to detect irony but also to have grounds for guessing what claim, expectation, norm, etc. it is that Speranza is reacting to.

In particular, if he notices a recent claim by someone that Peter plays an exciting role in Mary's life, then he may be able to see the metaphorical relationship between that claim and the overt meaning of (12) without even considering the metaphorical interpretation based on peripherality. Similarly, if he notices a recent claim that Peter only plays a peripheral role in her life he may be able to see the metaphorical relationship to the overt meaning without even considering the metaphorical interpretation based on excitingness. But even if he does consider the inappropriate interpretations, his detection of the recent claim helps with his choice of interpretation.

To summarize so far, it is advantageous, in conducting irony-upon-metaphor processing, to do the following before proceeding with metaphorical interpretation: (i) exploit irony clues (intonation, special lexis, etc., as mentioned in the Introduction) and (ii) try to detect what the speaker is reacting to (i.e., apparently agreeing with). Even without immediate success on (ii), success on (i) can be helpful.

The other way round also holds: success on only (ii) can be helpful. If he fails (at first) to detect that the speaker is being ironic, but thinks the speaker is agreeing with a recent claim (because of the speaker saying "Yeah, sure" for instance) he will still get the above sort of guidance of the metaphorical interpretation. In the case of (12), when there has been a recent claim that Peter is exciting, he can interpret the metaphor as being about that excitingness, and after metaphorical interpretation he will be in a similar position to a hearer of "Yeah sure, he's an exciting part of Mary's life" but who hasn't (yet) realized that the speaker (Speranza) is being ironic.

However, success at (i) as well as (ii) could still have been additionally helpful with the metaphorical interpretation process. Suppose Harry happens to suspect already that Speranza regards Peter as not exciting. Then if he can see she is being ironic, he knows not to let the proposition that he is not exciting interfere with the metaphorical interpretation. But if he doesn't see that she is being ironic, he may be puzzled as to why she seems to be agreeing with a claim that Peter is exciting (perhaps she's just being polite?), or may decide that despite appearances she is not agreeing with that claim but with something else. Or, of course, he may at this point decide that she is being ironic. His understanding process overall would have been more direct had he detected irony to begin with.

As regards the question of a hearer bringing in his own beliefs to bear or refraining from doing so, there is a dilemma that we cannot resolve in this article. The dilemma is for us as theorists, or for hearers, or for both. One horn is: should a hearer always cautiously refrain from using his specific beliefs in interpreting an

(unfamiliar) metaphor, just as a precaution against the possibility that the speaker has different beliefs or is being non-straightforward by being ironic, or mendacious, etc.? The disadvantage of this is wasted effort in many normal cases where the speaker is being straightforward, speaker and hearer do not differ much on the relevant facts, and the hearer is confident that they don't. The other horn of the dilemma is that if the hearer always uses, at least as a first try, his specific beliefs as a guide, when he is confident of no divergence of beliefs with the speaker, he will end up with wrong interpretations of utterances or with wasted work in considering them on the way to a correct interpretation, when the speaker is being ironic (or mendacious, etc.).

This dilemma is connected of the general issue of the extent to which people consider information in the light of other people's perspectives when appropriate, or are more egocentric, sometimes sticking to their own perspective even when inappropriate. There is evidence for the latter (e.g., Keysar, Barr, Bain and Brauner, 2000; Frisson and Wakefield, 2011). On the other hand, they are also often able to take an interlocutor's perspective into account (e.g., Brown-Schmidt and Hanna, 2011). Clearly, the more egocentric a hearer is the more he will tend to go wrong, in certain types of situation, on interpreting mixed ironic/metaphorical utterances in particular. But earlier we mentioned empirical evidence that when interpreting (non-metaphorical) ironies people engage in reasoning more about the speaker's perspective than when interpreting (non-ironic) metaphors. This may add to the advantage of the ironicity-first strategy. If the hearer detects ironicity, this may bring into play the tendency to reason about the speaker's viewpoint, and this tendency could now swing into action in the metaphorical processing as well as in the remainder of the ironic processing.

Notice that our argument that an ironicity-first process is beneficial has largely assumed that the hearer is not someone to whom the speaker is ironically reacting. In the case of (12), if the person Clem whom Speranza is mocking, for having claimed that Peter is exciting for Mary, is himself a hearer, then *Clem's* views are of a sort that he himself could indeed use correctly as a guide to his metaphorical interpretation of (12). So (somewhat ironically!) he is in relatively little danger of going wrong on the metaphorical interpretation if he doesn't notice that Speranza is being ironic and he just blindly bases his interpretation on his own beliefs.

But for hearers such as Harry of (11) or (12) – a hearer who is not being targeted by the irony and who may agree with the speaker about the addressed situation – the desirability of ironicity-first is created by the possibility of divergent metaphorical interpretations. The fewer possible interpretations there are and the less their divergence, the less is there a benefit for ironicity-first. The most extreme case in this direction is conventional metaphorical wording that has one conventional metaphorical meaning and has little possibility of its literal meaning or a

novel interpretation being salient in a given context. Suppose we vary Example (11) to the following:

(13) *Peter is at the absolute summit.*

The word “*summit*” has a standard metaphorical meaning to do with great, well-known achievement, in any field. It has another conventional metaphorical meaning, as a meeting of (e.g.) political leaders from around the world. Applying “*absolute*” to “*summit*” in its second conventional meaning doesn’t make much sense, so, if the discourse context is free of mountain exploits and has already raised the issue of Paul’s political position, it is easy to interpret “*summit*” appropriately without first noticing that the speaker is agreeing with or being ironic about something.

Even with “*summit*”, though, there is a problem if the example does not include the qualifier “*absolute*”, so the sentence is just “*Yeah sure, Paul’s at the summit.*” If this is uttered in a context where both (a) Paul’s political importance or otherwise and (b) his possible appearance at a meeting of political leaders are plausibly relevant, then evidence that the speaker is being ironic can help guide a hearer to a correct metaphorical interpretation, through considering what it is that the speaker is likely to be being ironic about, (a) or (b).

5. Further discussion: When other analyses are appropriate

Even if some metaphor/irony mixtures seem to be adequately addressed with an irony-upon-metaphor or metaphor-upon-irony analysis and corresponding cognitive processing strategy, it is important to consider other types of analysis and processing strategy, for these examples or others of a different type. In Sections 5.1 to 5.3 I briefly discuss, as a prelude to further work, three other types of analysis. In Section 5.4, I raise the additional issue of the role of hyperbole in metaphor/irony mixtures, picking up on the occasional hints in prior sections of this article.

5.1 Contrast-imbued analogy and metaphor

Let us look again at the relationship between a possible contrasting meaning of (12), that *Peter plays a non-exciting [or even boring] role in Mary’s life*, and the overt meaning, i.e. that *Peter is the bubbles in Mary’s champagne*. This relationship could be analysed as being one of *contrast-imbued analogy [or metaphor]*. Peter and Mary in the addressed scenario, concerning his non-exciting role in her life, corresponds to the Peter and Mary in the metaphor’s source scenario, about champagne and bubbles; Mary’s life corresponds to her champagne-drinking experience; and

playing a role in Mary's life corresponds to playing a role in her champagne experience. These correspondences together make up the perceived *similarity* of the two scenarios, with each individual correspondence constituting a point of similarity (albeit that the fact that these correspondences are points of similarity emerges from the construction of the overall analogy, rather than existing in advance). The boring or at least non-exciting nature of Peter's role within the addressed scenario is in direct contrast to the exciting nature of the bubbles' role within the champagne scenario. So this contrast plays no role within the worked-out analogy. But there is nevertheless a broader sense in which the boringness corresponds to the excitingness: we could say we have an *anti-correspondence*. If we added this to the analogy we would have a contrast-imbued analogy. It is largely a standard structural analogy, but at least one of the correspondences (mappings) constitutes a point of contrast, not similarity.

Theories of metaphor and analogy overwhelmingly consider potential *similarities* as opposed to contrasts between source and target. Contrasts are precisely what are to be avoided in the final mappings. Contrasts may be important in allowing a hearer to notice that an utterance is metaphorical, but do not enter into the mapping process other than in the weak sense that the process must steer away from them. Analogous comments can be made about other dominant proposals, such as the categorization method. Here the name of the game there is to find a superordinate category that fits both source and target, avoiding their differences. The contrasts exert pressure because of the need for their avoidance, but do not themselves survive into the superordinate category or into the use of it to transfer information to the target.

But contrast-imbued analogy or metaphor resonates with a minority of other work by analogy and metaphor theorists, where specific contrasts play a positive and distinctive role. Birgisson (2012) discusses the deliberately clash-involving imagery in Old Norse poetry, particularly in "kennings," such as calling a sword the "*saddle of the whetstone*." He claims here that the effect is very much to do with the dissimilarities, e.g. between sword and saddle, rather than the likenesses. The likenesses are only valued if surrounded by contrasts. Coulson and Matlock (2001) propose a model of metaphor called the Space Structuring Model (SSM), which explicitly handles disanalogies in metaphor. An example is a metaphor of the movie *The Titanic* being unsinkable though likened to the ship itself. Mac Cormac (1985) claims that metaphors are to varying extents chosen to evoke consideration of both similarities and dissimilarities. The dissimilarities produce emotional shock or tension, but their significance goes beyond this. A particular claim here is that "the identification of dissimilarities allows for the possibility of [their] transformation into previously unthought-of similarities, thereby ensuring the creation of new meaning" [p. 50]. A somewhat different way of using contrasts arises in an

implemented AI metaphor (and metonymy) processing system (Fass 1997) that analyses source/target differences associated with an analogy to give an evaluative score to each analogy found. Also see Ruiz de Mendoza and Galera (2014) for discussion of cognitive contrast operations in many types of utterance interpretation.

The case for considering contrast-imbued analogies is a point made in passing above, namely that the similarity-ness of a correspondence may *emerge* from the analogy rather than be pre-existing. Thus, analogy-formation is not in the first place concerned entirely with whether correspondences are in and of themselves ones that carry similarity. So the contrast-imbued proposal is merely saying that whatever set of reasons are deployed for putting things on the two sides of the analogy into correspondence, those reasons could end up with the correspondence being regarded as carrying either similarity or contrast. As it happens, in our example the contrast is pre-existing – being non-exciting or boring obviously already contrasts with being exciting – but a point for further research would be whether there are cases where the contrastingness of a correspondence can be emergent in the way that similarity-ness can.

Contrast-imbued analogy could be a useful tool for analysing negated metaphors such as John Donne's famous "*No man is an island*" or a statement like "*Joe is no angel*," or such as "*Joe's not the most angelic person*" [cf. examples in Giora and Becker, 2019]. Certainly, one can analyse "*Joe is an angel*" metaphorically, negate the features thereby ascribed, and then ascribe these negated versions to Joe if they are compatible with other information about him. However, an alternative and perhaps better – or at least richer and more interesting – analysis would be to view the way Joe interacts with other people as analogous to the way an angel interacts with people, except that bad things Joe does anti-correspond to good things that angels do.

Going back to irony/metaphor mixtures of the sort illustrated in Section 2, we see that contrast-imbued metaphor may provide an alternative to the dependence directions of irony-upon-metaphor and irony-into metaphor, as far as just the contrasting meaning is concerned (i.e., leaving the accompanying attitude and its targeting aside). In other words, the contrasting meaning may perhaps be best viewed as a matter of a metaphorical-*cum*-ironic relationship between source scenario and addressed scenario, *not* a matter of a metaphorical relationship and an ironic relationship bolted together.

But, as it does leave the accompanying attitude aside, the analysis cannot be the whole story. One still needs to add to the analysis a scenario that the ironic speaker is reacting to, such as a scenario of Peter making Mary's life more enjoyable. That scenario bears an ordinary (i.e., not contrast-imbued) metaphorical relationship to the overt meaning of the utterance, and a contrastive, non-metaphorical relationship to the contrasting metaphorical-and-ironic meaning of the utterance. Therefore, whether the contrast-imbued analysis adds anything useful requires

further investigation. A central question is whether it reveals meanings that are not readily obtainable – or perhaps even completely unobtainable – by the bolting together of metaphorical and ironic relationships.

Also needing further investigation is whether a processing style based on the analysis would be useful, even if the analysis does not provide anything new at the abstract level of meaning. Suppose a hearer of a mixed utterance cannot tell, at the beginning of the process of interpreting it, what the speaker is reacting to, but has detected that she is being ironic. If he now notices a contrast-imbued analogy between the overt meaning and what he believes (or takes the speaker to believe) he thereby obtains conjectures both about what the contrasting meaning is and what metaphor is involved, enabling him to conjecture what it is the speaker is objecting to. Noticing a contrast-imbued analogy between Peter being the bubbles in Mary's champagne and (in the hearer's view) Peter playing a boring role in Mary's life could suggest that the speaker is reacting to a claim about Peter's role that is in contrast with its being a boring one.

5.2 Parallel versus serial mixing of irony and metaphor

The possibility of contrast-imbued metaphorical analysis notwithstanding, every example so far considered in this article are ones amenable to either an irony-upon-metaphor or a metaphor-upon-irony analysis. These two styles of analysis can be classed as being *serial* in how they join the metaphorical and ironic aspects of the analysis, and so the mixing in the utterance can by extension be said to be serial. But there is a parallel type of mixing as well, which appears rarely to have been considered. This is where both a non-metaphorical ironic and a metaphorical non-ironic meaning are communicated, where, furthermore, *both rely on the same overt meaning of the sentence*, but neither meaning rests on the other. Someone who regularly plays a game or some type of sport with a friend might ruefully say

(14) *"It's my turn to win"*

after losing several times in a row. She might, on the one hand, metaphorically but non-ironically mean something that could be paraphrased as *"It's time for me to win"*. This meaning arises from viewing the whole process of playing several instances of the game consecutively as itself metaphorically a turn-taking activity such as a game or conversation. In such an activity, each player hopes eventually to have a turn at doing something, such as making a move or saying something. (In the former case, making one move in the metaphorical game corresponds to winning a whole instance of the actual game.) But on the other hand – and simultaneously – she might humorously and ironically, but *non*-metaphorically, be

contrasting the idea of a literal “turn” to win at something with the non-existence of such turn-taking in the real situation of playing a sequence of games; she is thereby admitting that she has no basis on which to expect to win on the current occasion, and wryly mocking her own desire that it be her (literal) turn to win.

Here, the ironic and metaphorical meanings are motivated by one and the same overt meaning of the sentence – i.e., that it is literally her turn to win. It’s not the case that the metaphorical meaning is the input for an ironic transformation, or vice versa. We have a *parallel* mixing of metaphor and irony.

The parallelism in the example is of a tight sort, in that the ironic and metaphorical meanings are related to the same overt meaning. Of course, there is a looser and more obvious sort of parallelism, as in “*Yeah, sure, this train is really fast. Actually, in my view it’s a snail.*” Here there are simply two utterances about the same topic side by side with separate overt meanings, the first utterance being ironic but non-metaphorical and the second being metaphorical but not ironic.

Arguably, there is an interestingly different form of tight parallelism in the pasta/siesta example, (9), on the assumption that B communicates a Spanish-siesta stereotype as well as communicating an ironic meaning reacting to speaker A’s claim about Italians and pasta. We have two parallel ironic meanings, but one of them is a metaphorical transformation of the other.

5.3 Metaphor within attitude-wrapped irony

There is a well-known type of irony that can be illustrated by both of the following non-metaphoric examples:

(15a) “*I really love it when drivers signal carefully before turning.*”

(15b) “*I really love it when drivers don’t signal before turning.*”

For examples such as these, see Kihara (2005) and Colston (2007/2000.) Somewhat paradoxically, both of those sentences can be used as an ironic comment on drivers who have annoyingly failed to signal before turning. Barnden (2017) labels both of them as examples of *attitude-wrapped* irony. A similar example-pair is “*Thanks for keeping the door open for me*” / “*Thanks for letting the door slam in my face*” to someone who has unhelpfully not held the door open, where the attitude-wrapping resides in the use of “*Thanks for*” (“*I am grateful to you for*”). In each pair, the first variant overtly says something that is eminently reasonable (given an appropriate context) and the second overtly says something strange if not absurd. It’s reasonable to like drivers who signal carefully and to thank people when they have left doors open; it is strange if not absurd to love it when drivers don’t signal or when people have let doors slam in your face. Barnden (2017) analyses both the reasonable and

the strange cases in detail, on the basis of the approach there to irony, and argues that the approach predicts that the strange variety is more biting/critical. This difference of force matches the results of some experiments in Colston (2007/2000).

Now, the statement wrapped by the attitude need not be a literal statement, but can be metaphorical, as in the following example, said by the chair of a meeting to a participant who appears to be asleep:

(16) *“I’m extremely glad that your brain is on holiday!”* [Dynel, 2016]

The mixing of the ironicity with the metaphoricity here is not quite like either serial or parallel mixing as discussed so far in this article. In a sense it is serial, because, of course, what the speaker is overtly glad about, and in reality annoyed about, is the person being asleep. Hence, this sleepiness, the metaphorical meaning of *“your brain is on holiday”* is what is actually being ironically commented upon. But it is unlike the seriality above, and more like the parallelism above, in that the metaphorical meaning is not modified (e.g., reversed) by ironic processing, and is also communicated in its own right by the utterance.

As an aside, in a case like (15b) or (16), one might argue that what I have called the accompanying attitude component of ironic meaning coincides with the contrasting meaning. When the overtly-stated attitude of love or gladness about a situation is transformed into an attitude of dislike or annoyance towards that situation, the latter could naturally be held to be the contrasting meaning. But it might also be considered to be enough of an “accompanying attitude.” As a counter to this, however, one might claim that the dislike or annoyance is not quite enough by itself; rather, it is the associated criticism of the deficient drivers in (15b) or sleepy participant in (16) that is the accompanying attitude or an important component of it. One can be annoyed that someone is sleepy while not criticizing them for being so, because one recognizes that there have been circumstances beyond their control. I leave the issue open.

5.4 Hyperbole in metaphor/irony mixtures

Hyperbole is recognized in the literature as being an important component of much irony (see, e.g., Carston and Wearing, 2015; Colston and Keller, 1998; Currie, 2006; Kreuz and Johnson, 2020; Kreuz and Roberts, 1995; and McCarthy and Carter, 2004; also Currie, 2006 about the reacted-to claim being merely similar to the overt claim). We have briefly touched on hyperbole at various places in this paper, noting for instance that wording such as *“rocket,” “genius”* and *“ionosphere”* in ironic statements can be hyperbolic. Of course, it is possible for the overt claim to be no stronger than the claim reacted to. *“Sure, he’s a genius”* could possibly be a reaction to a claim that Peter is literally a genius. But this is just a special case. A hearer who

has not heard the original claim cannot easily tell how far in intensity it is below the overt claim, if at all; he will need additional evidence from context to do better than to guess or to simply leave the matter open. In the case of someone ironically and non-metaphorically saying that astronaut Paul is “right up in the ionosphere,” the actual claim she is reacting to might merely be that he’s at a location that’s a few hundred feet up. The use of attitude-wrapping as in Section 5.3 can be also be seen as a type of hyperbole. Barnden (2017, 2020) embarks on a unified, detailed account of the way different forms of hyperbole work in irony.

I have refrained from discussing in detail how hyperbole affects analyses of the examples in this article, as it leads to considerable complication. As one example of this, consider (11), under the assumption that Clem has merely claimed that Paul is prominent politically, and not that he is extremely so, so that Speranza’s use of “ionosphere” in her ironic response is hyperbolic. One question is that of where in an irony-upon-metaphor analysis the hyperbole is “cashed out.” (Analogous issues would arise for a metaphor-upon-irony analysis.) For instance, one possibility is that the metaphorical meaning is that *Paul is extremely prominent politically*, so that the ironic aspect of the analysis is much like the analysis of an ironic use of “*Paul is extremely prominent politically*.” Thus, the hyperbole is left to be cashed out in the ironic aspect of the analysis. But another possibility is that the metaphorical meaning is “*Paul is prominent politically*” so that the hyperbole has already been cashed out by the metaphorical aspect of the analysis. And other possibilities arise because of the “middle way” in Section 3.3 and the contrast-imbued metaphorical style of analysis in Section 5.1. I leave these matters to further research.

6. Summary and conclusions

I have examined aspects of how hearers should interpret mixed metaphorical/ironic utterances of certain types. I have not precisely defined the types, but have illustrated them mainly by examples previously discussed in the literature, a selection of which is presented in Section 2. The article has been distinctive in giving full and detailed attention to how the accompanying-attitude component of ironic meaning is to be analysed and produced, rather than just focussing on how the contrasting meaning is produced. This complicates the nature of the space of possible theoretical analyses and processing strategies, but these complications are inherent to the subject matter.

The article has provided a new argument – though it is a modification of an argument presented in the literature by Popa-Wyatt (2017) – against analyses that are of an “metaphor-upon-irony” style in having the final meaning be a metaphorical transformation of a non-metaphorical ironic meaning. By extension, the argument

is against a hearer using a processing strategy conforming to this analysis style. However, some cases of mixing are indeed most naturally handled by such an analysis and process, as illustrated by Example (9) in Section 2.2, concerning frequent indulgence in pasta dishes and siestas. The key element in this example that makes a metaphor-upon-irony analysis and process natural is that the non-metaphorical ironic processing result is conveyed in its own right as well as being metaphorically transformed to be an ironic riposte to another speaker.

The argument against metaphor-upon-irony rests on the accompanying-attitude component of ironic meaning. (This focus is inherited with modifications from Popa-Wyatt's argument, which was distinctively insightful in having that focus.) The conclusion of the argument is that a metaphor-upon-irony analysis is encumbered with considerable overhead compared to an irony-upon-metaphor analysis. This overhead consists of the need to postulate an imaginary discourse context suiting the source domain of the metaphor, an imaginary reacted-to claim and speaker attitude towards it in that context, and metaphorical transformation of that attitude and its targeting at that claim over to the target domain of the metaphor.

As there appears to be no argument against an irony-upon-metaphor analysis for the main type of example considered in this article (illustrated in Section 2.1), we concluded that a hearer is best served by pursuing an irony-upon-metaphor interpretation process for such utterances. Such a process is one where a metaphorical but non-ironic interpretation of the utterance is derived and its connections to the final ironic meaning (consisting of a contrasting meaning and an accompanying meaning) are produced. However, as one aspect of the point that this does not mean that all metaphorical processing should precede all ironic processing, I argued the benefit of an *ironicity-first* processing strategy (the gist of which was suggested by Popa-Wyatt, p.c. and 2017). This is one where the process starts with a decision that the speaker is being ironic, and in many cases also with a discernment of what she is ironically reacting to and what her attitude is. These determinations are often possible, at least to a useful extent, because of ironicity and attitude-type clues such as sarcastic intonation, special lexis such as “*Yeah, sure*” and hyperbole such as use of terms like “*absolute*” in “*absolute summit*”; and because, for instance, if the speaker is reacting to an explicit claim made by someone, that claim is likely to have been made or referred to very recently in the discourse. Crucially, such determinations can be greatly helpful in steering the metaphorical processing in the right directions and away from wrong directions, especially a wrong direction arising because of a misguided attempt by the hearer to use his own beliefs about the situation addressed by the utterance while he is forming his metaphorical interpretation. A point arising here for future work is whether, analogously, a *metaphoricity-first* processing strategy is beneficial when the interpretation process fits a metaphor-upon-irony analysis.

We saw in passing that similar guidance to metaphor processing arises when a hearer notices that a metaphorical, non-ironic utterance is expressing agreement with a prior claim. Thus, the irony-first strategy for irony/metaphor mixtures is really a special case of the general issue of how noticing agreements and disagreements between pieces of discourse can help with metaphor processing.

We went on to argue that, in some circumstances, the metaphorical aspect of an irony/metaphor mixture can also usefully be *contrast-imbued*, i.e. the metaphorical interpretation contains contrast-bearing as well as similarity-bearing correspondences between the source and target subject matters. This proposal resonates with a variety of other proposals aired in (a minority of) the metaphor research literature. Contrast-imbued metaphor allows an analysis of irony/metaphor mixtures that is not, and perhaps cannot be, divided into separate metaphorical and ironic aspects that are bolted together as they are in irony-upon-metaphor or metaphor-upon-irony. However, it remains to be seen whether this style is genuinely useful.

We also looked relatively briefly at other analytical possibilities that are not, or are not fully, of an irony-upon-metaphor or metaphor-upon-irony style. We had the “middle way” of Section 3.3, which merely uses metaphor-upon-irony for the contrasting component of ironic meaning; the possibility of parallel mixing in Section 5.2; and the embedding of metaphor in attitude-wrapping in Section 5.3.

It should be apparent that the article has produced more questions than answers as to what the possible space of theoretical analyses of irony/metaphor mixtures is, and what the nature of processing strategies that accord with them is. We noted in particular that hyperbole introduces considerable extra latitude and complexity.

Acknowledgements

Much of the impetus for the research arose from discussions and prior work of Mihaela Popa (later Popa-Wyatt), then the Research Fellow on the project mentioned under Funding below. For the opportunity to develop this article I am grateful to Augusto Soares da Silva and other organizers of the 2018 *Figurative Thought and Language* conference (FTL-4), where I was honored to be a plenary speaker, and to Angeliki Athanasiadou and Herbert Colston, who organized a Theme Session there entitled *Figuratively Mixed and Massed: Blends and Bursts in Figurative Communication*, at which I presented. I am also grateful to anonymous reviewers for many constructive comments, which led to major improvements to the paper.

Funding

The research in this article was initially supported in part by Research Project Grant F/00 094/BE from the Leverhulme Trust in the UK.

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Metonymic indeterminacy and metalepsis

Getting two (or more) targets for the price of one vehicle

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Given appropriate context, indeterminacy may arise when a metonymic vehicle, i.e. the source, can be simultaneously linked to more than one metonymic target. We claim that this situation, akin to the phenomenon of metalepsis or transgression in narratology, is not rare, but quite usual, and even regular in certain contexts. This may lead to an increase of a second-order type of anisomorphy, but ultimately leaves space for dynamic meaning construal and optimizes texts coherence. In order to accommodate metalepsis, we argue for an approach to metonymy not based on mappings but on the activation of the source conceptual cluster opening a mental space dynamically expanded or reduced so as to fit the conceptual frame provided by the co(n)text of use.

Keywords: metonymy, metalepsis, indeterminacy, complex metonymy, metonymic chain, metonymic target, metonymic source, mental space

1. Introduction

When one thinks about the interaction of figurative processes, what typically emerges is some combination of conceptual metaphors and metonymies in the sense of Goossens's metaphonymy (1990) or Geeraerts' prismatic model (2002). Metaphors and metonymies combined in this way need not be always verbal. As a simple example of a combination of metaphor and metonymy, let us consider the following newspaper headline:

(1) *Exiled in Belgium, has Carles Puigdemont met his Waterloo?*

(The Guardian, March 2, 2018, <https://www.theguardian.com/world/2018/mar/02/exile-belgium-carles-puigdemont-met-his-waterloo-catalonia-spain>)

Waterloo is a small town in Belgium well known as the place of a battle in which Napoleon's army was defeated by a British-led alliance. The battle ended Napoleon's

rule and led to his exile. The name of the place stands metonymically for the event that took place there (PLACE FOR EVENT), just like places of other memorable historical events like Antietam, Gettysburg, the Alamo, Verdun, Stalingrad or El Alamein. *Waterloo* is also commonly used metaphorically to refer to a final and resounding defeat or failure. This means that a metonymic figurative layer is followed by a metaphorical transfer. In the case of our example above, it is the conceptual metaphor POLITICS IS WAR, the activation of the concept of WAR made possible the EVENT component of the above metonymy.

An interesting non-verbal example of the interplay of metonymy and metaphor can be seen in *Paddington*, a 2014 live-action animated comedy written and directed by Paul King, based on stories by Michael Bond about Paddington Bear, a marmalade-loving young bear from “darkest Peru”. The staircase of the house of the Brown family that adopted the bear is decorated by a mural, depicting trees that reflect the general mood of the family in an intriguing way. When Paddington first arrives, the leaves of the trees are of purple color. After an accidental fire and explosion in the kitchen during an attempt to abduct the bear (blamed on Paddington), he leaves the family on his own in order to find the explorer who is supposed to give him home in London. When in the morning the family reads the note he left and everybody is shocked by the loss, the leaves start falling off the trees. The falling of leaves can be interpreted as a metonymic-indexical clue, i.e. it is part of what happens in nature in late autumn and early winter, along with gloomy weather and less natural light. This metonymy enables us to draw a metaphorical parallel between the season and the emotional state the family is in. At the very end of the movie, after Paddington is rescued from the hands of the evil taxidermist by the whole Brown family and when they happily return home, there is a change in the trees, they are no longer barren, new leaves start shooting, some of them have green color, metaphorically reflecting a new shot of life due to Paddington’s adoption and the positive changes of relations in the family.

As another interesting case of visual interaction of metaphor and metonymy (this time a static picture), consider the advertisement campaign created in 2007 by Chris Redditt for *Recycle Boutique*, an Auckland, New Zealand, company selling quality second-hand clothing and accessories. There is a series of similar pictures showing female and male clothes next to each other on hangers. All of these involve the sleeves of an article of dress, e.g. the sleeve of a male shirt, or a sleeve of a female jacket, reaching inside or under the clothing item expected to be worn by the opposite sex, e.g. the sleeve of a male T-shirt reaching under a skirt next to it. All the advertisements carry the following text in one of their corners: *Where old clothes feel young again*. We could argue that we have a combination of metaphor and metonymy again, with a personification metaphor at the beginning this time (CLOTHES ARE HUMANS), followed by a series of metonymies. The position of the

clothing items (and their parts) relative to each other, heavily suggestive of petting metonymically stands for the strong sexual drive, i.e. libido, and this is finally seen as part of the state of being young (CHARACTERISTIC BEHAVIOR FOR STATE).

However, there are many other ways in which figurative processes can interact. Some of these are discussed in Ruiz de Mendoza (2017), but also in this volume, as e.g. in the contribution by Barnden, who studies the relation between metaphor and irony. Figurative processes can, in addition to being mixed, also be massed (when a conspicuous number of figurative items occur in rapid succession), as shown by Colston (this volume) for metaphors. Metonymies are, however, no exception in this respect and can also be massed and mixed, i.e. they can interact in a number of interesting ways, although they are usually not very conspicuous and more than often pass undetected.

In our first example above, the name of the Belgian town of Waterloo functions as a metonymy of the type PLACE FOR EVENT. However, unlike the Battle of Alamo or the Battle of Vukovar (Croatia) in 1991, the Battle of Waterloo did not actually take place in or in the form of a siege around the town. Most great battles of the past took place in a field away from a populated area that would just obstruct the movement of the armies (and block the view of the armies for their commanders). In the case of what is called the Battle of Waterloo, the actual venue is three miles south of Waterloo in the area surrounding the villages of Braine-l'Alleud and Plancenoit along the Mont Saint-Jean Ridge. In French historiography, the battle is referred to as the Battle of Mont Saint-Jean. In fact, when Napoleon "met his Waterloo", he was not actually in Waterloo; what is more, he never set a foot in Waterloo. The more familiar reference is due to the fact that the Duke of Wellington, who was in charge of the allied forces, made his headquarters in the town of Waterloo, all of his official reports back to Britain were written there and sent from there. This is why this locality got linked so strongly to the battle, and made possible the metonymic reference. Some battles are referred to by specifying the actual locality, like the Battle of Thermopyllae (the name of the mountain pass), or the Battle of Kosovo (field), but very many are referred to by means of metonymic reference to a nearby salient locality. It is interesting that one and the same battle can be referred to in the non-identical way in different languages and cultures. The 955 conflict between German and Hungarian forces, when the latter laid siege to the town of Augsburg on the Lech river but were subsequently annihilated, is called the *Battle of Lechfeld* (literally, on the Lech field) in English, and the *Schlacht auf dem Lechfeld* (literally, the battle on the Lechfield) in German, while the town of Augsburg is chosen as the salient reference point in the Hungarian expression *Augsburgi csata* (Augsbburg-ADJ battle). All this means that in the first example with *Waterloo* above there is an additional metonymic layer that is usually overlooked (SPECIFIC LOCALITY FOR AN AREA SURROUNDING THIS LOCALITY).

Our intention in this chapter is to show that the phenomenon of metonymic complexity, i.e. massed and mixed metonymies, also testifies to figurative flexibility and leads to various rhetorical effects, sometimes resulting in figurative creativity, but very often producing indeterminacy which may go more or less completely unnoticed, as very many metonymies in general do. More specifically, we focus on cases of metonymic indeterminacy, i.e. cases where a given expression can be interpreted differently in a particular context due to alternative conceptualizations. This may involve three subcases. In the first subcase, there is a single conceptual metonymy with the alternation between the basic, non-metonymic, and the metonymically extended sense. In the second subcase there are two metonymies. An utterance contains two expressions related to two related but different conceptual metonymies, both compatible with the context, but only can be activated at a time. In this case, the interaction between the two metonymies is rather virtual. Finally, we may have cases of genuine metonymic indeterminacy in context, where a single expression is simultaneously compatible with two or more metonymic interpretations. Some of these can be viewed as exemplifying what in the classical rhetorical notion goes under the name of *metalepsis*.

In Part 2 of this chapter, we first briefly sum up some more or less well-known cases of metonymic interactions in complex networks as a background against which to appreciate the sort of metonymic indeterminacy as outlined above. The three subcases of metonymic indeterminacy are discussed in more detail in Part 3. Most attention will be devoted to *metaleptic* cases of interaction. Part 4, where we consider the relevance of this phenomenon in the light of some more theoretical issues such as the typology of conceptual metonymies and their definition, carries some conclusions and suggestions for further research.

2. Metonymic interaction: Chains and tiers

Instances of authentic use of metonymy in networks can exhibit a lot of complexity, i.e. tiers and chains, in such a way that metonymic targets or sources, i.e. vehicles, overlap or are shared (cf. Barcelona, 2005). In our opinion the two dimensions are essential and inseparable. Both the textual (horizontal or linear) dimension and the conceptual (vertical) dimension should be integrated into a comprehensive study of how metonymy works in discourse, i.e. in the study of metonymic networks, similarly to what has been shown for metaphors in a series of studies by Goatly (1997), Koller (2003a, b), Cameron and Stelma (2004), and Semino (2008). Note also that these authors use the term ‘metaphorical chain’ to refer to the phenomenon of “the occurrence of several related metaphorical expressions throughout a text” (Semino, 2008, p. 226).

We take here as our starting point the threefold distinction between linguistic vehicle, metonymic source and metonymic target, as in Panther (2005, p. 358). In a modified version (suggested in Brdar and Brdar-Szabó, 2014, p. 326), the source meaning and the target meaning are renamed as metonymic source concept (SC) and metonymic target concept (TC), respectively.

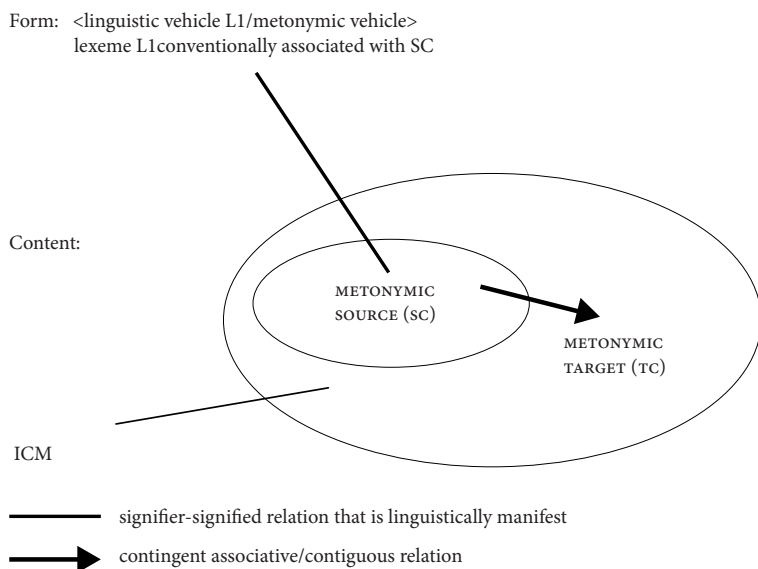


Figure 1. The basic metonymic relation

The tiered metonymy is a case of superimposition of one metonymy upon another, such that there is only one instance of a vehicle, when it is linguistically realized.¹ In the case of linguistic chains, there are several metonymic vehicles and/or one of them is repeatedly used.

In a tiered metonymy, a metonymic target of one metonymy may actually be a metonymic source for another metonymy, so that a single metonymic vehicle simultaneously expresses two metonymic targets, only one of which may be prominent (and noticed), as in the above case of *Waterloo*. In texts that came into existence prior to 1991, i.e., before the breakdown of the Soviet Union, or that refer to the world before this breakup, instances of *Russia*, metonymically intended as ultimately referring to the Soviet government or the Soviet national team, as in (2)

1. The notion of metonymic chain has an antecedent in that of double metonymies, first discussed in Ruiz de Mendoza (2000). A more systematic account of double metonymic patterns is found in Ruiz de Mendoza and Galera Masegosa (2014) and in Ruiz de Mendoza (2014). These are double domain expansion, double domain reduction, domain expansion plus reduction, and domain reduction plus domain expansion.

below, must be assumed to have a metonymic target (THE SOVIET UNION) that is at the same time the source for the metonymy that has THE SOVIET NATIONAL TEAM (or THE SOVIET GOVERNMENT, in other contexts) as its target. Russia, as the most dominant part of the Soviet Union, is used metonymically to stand for the whole of the Union, just like England is often used to refer to Great Britain or the UK (cf. Radden and Kövecses, 1999):

- (2) *His 76th and final international appearance came at Wembley on October 22, 1958 when England beat Russia 5–0. Only 18 days earlier Finney had set a new goalscoring record when he netted his 30th in a 3–3 draw with Northern Ireland in Belfast. But he failed to add to it against the USSR, selflessly allowing Bobby Charlton to take a penalty. And when Nat Lofthouse made it 5–0 in the last minute he equalled Finney’s 30 goals!* (<http://sirtomfinney.com/life-and-career/local-hero/>)

This phenomenon is called a double metonymy in the framework worked out by Ruiz de Mendoza and his collaborators (Ruiz de Mendoza and Díez, 2002; Ruiz de Mendoza and Mairal, 2007; Ruiz de Mendoza, 2008). The term ‘chain’ has also been used in a different, more specialized sense in metonymy research from Reddy (1979), Fass (1991), Nerlich and Clarke (2001), Radden and Kövecses (1999, p. 36), to Hilpert (2007). These authors are primarily concerned with metonymies involving multiple conceptual shifts, breaking up “complex conceptual mappings into simple, well-motivated mappings with a strong experiential basis” (Hilpert, 2007, p. 80). Diachronic multiple metonymies may be better called serial metonymies (Nerlich and Clarke, 2001), while synchronic cases are referred to as metonymic tiers in Brdar and Brdar-Szabó (2007), a neutral term allowing for metonymy’s interaction with metaphorical tiers.

In Example (3) below, on the other hand, the three instances of metonymic expressions (*Croatia – Croatia – Zagreb*), form a metonymic chain, all sharing the same metonymic target concept:

- (3) *Croatia and Serbia have banned each other’s vehicles from entering their territory and traded sharp accusations over their handling of Europe’s migration crisis, which is causing havoc as thousands move through the Balkans each day. Serbia banned Croatian goods and cargo vehicles from entering the country yesterday, and Croatia responded by barring all Serbian-registered vehicles from crossing into its territory. Officials in Serbia also angrily accused its neighbour of “racism”, amid reports that Serb citizens had been barred from travelling into Croatia, in incidents that Zagreb said were caused by a computer problem.*

(The Irish Times, September 25, 2015, <https://www.irishtimes.com/news/world/europe/croatia-serbia-tensions-rise-over-migrants-1.2365342>)

This type of metonymic patterning in discourse has been studied in some detail by Barcelona (2005), who uses the term metonymic chains to refer to “direct or

indirect series of conceptual metonymies guiding a series of pragmatic inferences (Barcelona, 2005, p. 328). From this wording, one might get the impression that Barcelona is primarily interested in purely tracking a series of metonymic expressions as they occur linearly in a running text. However, it is apparent in the article that what Barcelona has in mind is a more complex system of interaction involving both textual and conceptual dimensions when he talks about “two, often more, metonymies regularly occurring at the same or different analytical levels in the same utterance, even in the same sentence” (Barcelona, 2005, p. 316).

As pointed out by Brdar and Brdar-Szabó (2014) and Brdar (2015), the relationship of synonymy may obtain between the metonymic vehicle associated with (SC), which is linguistically manifest, and the lexeme that is conventionally associated with the metonymic target (TC), which is linguistically not manifest. The metonymic target meaning can be just a nonce sense, but it can also become a conventionalized meaning of L_1 , leading to the polysemy of L_1 . Due to this polysemy, the relationship between L_1 and L_2 , the lexeme or the lexical expression conventionally associated with the metonymic target concept, may be characterized as an asymmetric type of synonymy (cf. Bierwiazzonek, 2007). The point is that L_1 , the metonymic vehicle, can function as a synonym of L_2 , but normally not the other way round.

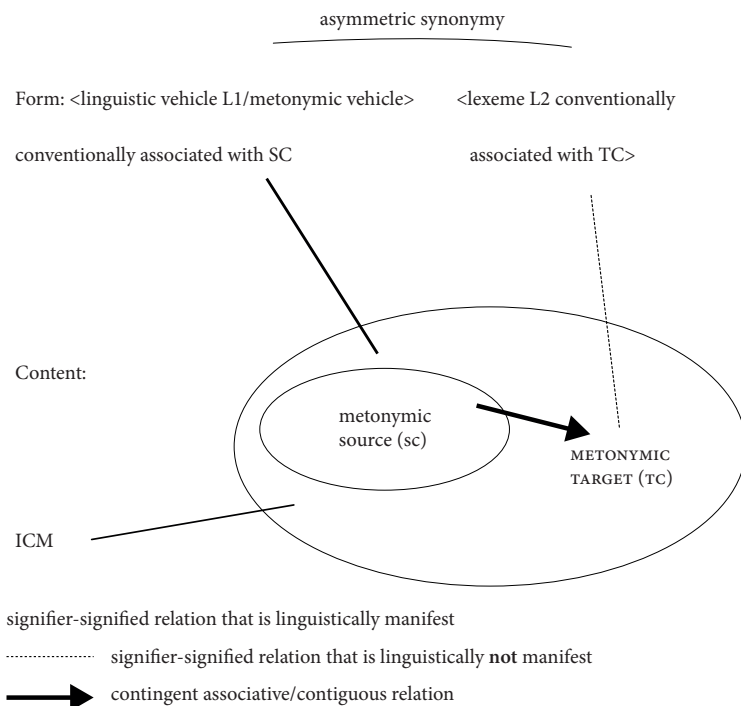


Figure 2. The asymmetric synonymy of metonymic relations

The relationship can, however, be reversed, so that we can also have identical metonymic vehicles shared by different metonymic targets, as in the example below, where *Beijing* is first the vehicle for the CAPITAL FOR GOVERNMENT metonymy, and then for the PLACE-FOR-EVENT metonymy (i.e. the Olympic Games to be held in Beijing):

- (4) ... *Li's swift court proceedings and promised release just hours after the Olympics vote leave an appearance of tit-for-tat justice, raising questions about whether Li and other detainees with US ties are being used as bargaining chips by Beijing, observers said.*

Li was "a hostage in the Olympics bid," said Frank Lu,.... "We know that just two weeks ago the Chinese government told the US government that if the US voted against Beijing, they wouldn't release him."

(Boston Globe, July 15, 2001, <https://www.sfgate.com/politics/article/China-convicts-will-deport-U-S-scholar-2900097.php>)

Note, however, that the two instances of Beijing form a metonymic chain, i.e. two different metonymic targets do not converge on a single vehicle. A different type of metonymic complexity, which we concentrate on in Section 3, is when a single metonymic vehicle can be simultaneously linked to more than one metonymic target. As we argue in Section 3, this can be viewed as exemplifying what in the classical rhetorical notion goes under the name of metalepsis.

3. Metonymic indeterminacy

3.1 Sylleptic and complementary metonymies

The alternation between the basic, non-metonymic, and the metonymically extended sense in the case of a single conceptual metonymy, instantiating a more general phenomenon known in rhetoric as syllepsis, is the most trivial of the three possibilities mentioned in the introduction. Given the right context, this sort of sylleptic indeterminacy occurs very often because metonymy, apart from lexicalized diachronic dead metonymies (or postmetonymies) is by its nature not binding, but optional and defeasible (though this is not always clear, cf. Ruiz de Mendoza and Pérez (2001)). An utterance like

- (5) *I need a set of new wheels.*

Can be interpreted as involving a metonymic reference (PART FOR WHOLE) to a new car, or simply literally express the need for four new wheels, possibly to replace the old ones on one's car. Similarly, (6) can also allow a pair of interpretations analogous to (5):

- (6) *This turkey is beautiful.*

Extending the utterance, and providing more context, is most likely to remove any such indeterminacy:

- (6a) *This turkey is beautiful, delicious and going to make your dinner feel like a special event any time you make it!* (<https://www.shared.com/17-recipes-that-take-the-stress-out-of-making-thanksgiving-dinner/>)
- (6b) *Oh, wow! That turkey is beautiful. Great photos!*

In other words, such syllepsis is context-dependent. While some metonymies that can exhibit this sort of indeterminacy are lexically isolated (*wheel, sail*, etc.), some other are very productive and may almost regularly produce this sort of indeterminacy in the right context (e.g. MATERIAL FOR THE OBJECT MADE OF THAT MATERIAL, e.g. *gold* for ‘gold medal’ or OBJECT FOR THE MATERIAL CONSTITUTING THE OBJECT, e.g. *turkey* for ‘meat of turkey’, as in (6a) below, THE NAME OF A DISEASE FOR THE PATIENT WITH THAT DISEASE, etc.).

This sort of indeterminacy may sometimes be quite difficult to detect when it occurs in chains; what is more, there even may be difficulty spotting the switch from literal to metonymic in some chains. Let us illustrate this point on the use of some names of diseases and their abbreviations.

- (7) *Inflammatory bowel diseases [IBDs], which include Crohn’s disease [CD] and ulcerative colitis [UC], are thought to result from an overly aggressive immune response in genetically susceptible individuals to an environmental factor, such as gut commensals. The highest prevalence rates worldwide of CD and UC are found in Europe, with 322 and 505 cases per 100000 persons, respectively. ...*

These techniques have been used to great effect in establishing a gut microbiota profile for health and for IBD. In healthy individuals, the phyla Firmicutes [...] and Bacteroidetes [...] dominate, with lower abundance of other phyla, mainly Proteobacteria [...] and Actinobacteria [...]. The IBD gut microbiota displays dysbiosis when compared with that of healthy individuals, and there is a marked reduction in bacterial diversity, related particularly to the Firmicutes and Bacteroidetes phyla. This coincides with an increase in Gammaproteobacteria [...]. The CD microbiome displays greater dysbiosis than that found in UC – specifically, a greater reduction in microbial diversity, with a more altered and less stable microbiome composition. Inflamed mucosal tissue from CD patients contains higher levels of Bacteroidetes and Fusobacteria [...], whereas Proteobacteria and Firmicutes [...] are more frequently observed in inflamed UC mucosa. Despite these changes, the microbiome of UC patients has been described as one that is more similar to healthy individuals.

(Kiernan et al.: The Human Mesenteric Lymph Node Microbiome Differentiates Between Crohn’s Disease and Ulcerative Colitis, 2019, doi: 10.1093/ecco-jcc/jjy136)

The second mention of *IBD*, coordinated with *health*, may seem at first sight to be an ordinary abbreviation, referring just to the disease itself. Note, however, that the next sentence begins with [I]n *healthy individuals*, which indicates that *health* may actually be a somewhat unusual metonymy used for people enjoying that state. This means that the second mention of *IBD* may also be a metonymy, though evidence is inconclusive. This is followed by a sentence beginning with *the IBD gut microbiota*. If *IBD* had its literal reference here, and not refer to patients/individuals with *IBD* (THE NAME OF A DISEASE FOR THE PATIENT WITH THAT DISEASE), the complex expression would make much less sense. A microbiota or microbiome are all the microbes – bacteria, fungi, protozoa and viruses – that live on and inside the body of a human or an animal. Therefore, *the IBD gut microbiota*, *CD microbiome* are most likely to refer to patients, and not just to the disease. The expression *UC* in the third last sentence above in the expression *greater dysbiosis than that found in UC*, contrasted with *inflamed mucosal tissue from CD patients*, also refers to the patient(s). Finally, in the expression *inflamed UC mucosa* in the second last sentence *UC* actually refers to patients. All these metonymic references, and switches between the literal and the figurative, are extremely difficult to spot, even for experts. Such use of abbreviations is certainly motivated by requirements on this type of publications – articles should not exceed a certain number of words –, and extensive use of abbreviations intended elliptically, even at the expense of potential confusion, is one of the means available to achieve that aim. As a result, we seem to get more than one for the price of one, although it need not always be clearly evident to the readers.

The second type of metonymic indeterminacy we mentioned in the introduction is when an utterance contains two expressions that can both be interpreted metonymically, but one of these metonymies blocks the other. In other words, the two potential metonymies are in a paradigmatic relationship, i.e. in complementary distribution. Brdar and Brdar-Szabó (2003) analyze a number of predicative adjectives with or without prepositional complements that can be conventionally used in an utterance like *He was clear on that issue* to refer to a speech act ('to speak clearly on some issue'), where the speech act itself is not explicitly coded in the expression but conventionally evoked via a predicational metonymy² MANNER (OR LINGUISTIC ACTION) FOR LINGUISTIC ACTION. A sentence like:

2. Within the framework of a pragmatic typology of metonymies proposed in Panther and Thornburg (1999, p. 335f), expressions like the one highlighted in (8) are characterized as instances of propositional metonymy. Propositional metonymies come in two subtypes. In a predicational metonymy, illustrated in (8), one propositional content stands for another propositional content, while in a referential metonymy, exemplified in the alternative analysis of the same utterance in (9), one referring expression, usually a noun phrase, is the vehicle for an implied target that is also a referring expression normally realized as a noun phrase. The third type of discourse-pragmatic metonymy, extensively discussed in Thornburg and Panther (1997) and Panther and Thornburg (1998), is illocutionary metonymy where one illocutionary act stands for another illocutionary act.

(8) *I'll be brief.*

Can in fact be interpreted in two ways, not only as containing a predicational metonymy of the above type, but also as containing a referential metonymy. It lends itself to an analysis in which the subject, which in our examples always denotes a person, i.e. the speaker, stands for his/her utterance:

(9) *I'll be brief* ('My speech/words, etc. will be brief')

This SPEAKER FOR UTTERANCE metonymy can be seen as a special case of the more ubiquitous PRODUCER FOR PRODUCT metonymy, or SPEAKER FOR SPEAKER \leftrightarrow S LINGUISTIC ACTION (Panther, 2005, p. 375). Ruiz de Mendoza (2020) aligns examples like (9) with hypallage, or transferred epithet, along the lines of *sad novel* (a novel that makes readers sad). *I'll be brief* ascribes 'brevity' to the speaker, but this description is epiphenomenal.

Both of these can also be interpreted as containing another metonymic layer, specifically an illocutionary type of metonymy, since the statement *I'll be brief*, although formally a declarative, in fact, functions as a commissive speech act. However, the illocutionary metonymy appears to be superimposed here on a more basic and conceptually prior propositional metonymy, either referential or predicational.

Most importantly, only one of these can be activated at a time, either the predicational or the referential metonymy. One might suppose that this is just a rare, special case of rivalry between two metonymies, but it can be observed with many cases of the MANNER FOR THE ACTIVITY metonymies across several domains, as shown in in Brdar-Szabó and Brdar (2003).

The same sort of rivalry can also be observed with what has often been referred to as a type of regular polysemy or logical metonymy (Pustejovsky, 1991, 1995) obtaining with two classes of verbs. These are so-called aspectual verbs like *begin*, or *start* (but hardly ever *stop*), and so-called emotive verbs of liking and disliking, such as *enjoy*, *like*, etc. (cf. Brdar, 2007a, pp. 184–186; Jodár-Sánchez, 2014). Ruiz de Mendoza and Pérez (2001) discuss these metonymies in detail in connection with Jackendoff's account of enriched composition (which is again another epiphenomenon, the real phenomenon being the OBJECT FOR ACTION metonymy licensing the use of a noun where a verb would be expected).

The phenomenon of apparent incompatibility of the monotransitive predicative expression with its direct object, which can be resolved by an almost automatic sense alternation, is exemplified in the two sets of examples below:

- (10) a. *You have started the book with this bubble over your head that contains a cathedral full of fire – that contains a novel so vast and great and penetrating and bright and dark that it will put all other novels ever written to shame. And then, as you get towards the end, you begin to realise, no, it's just this book.*
 ("Michael Cunningham: A life in writing" by Emma Brockes,
www.theguardian.com. February 7, 2011)

- b. *On Sunday, the Observer published an interview with Martin talking about the fact that Game of Thrones is off the air and how maybe – maybe – this means he can finally finish those last two books now.*
 (https://www.vice.com/en_us/article/43kde3/george-rr-martin-says-he-can-finally-finish-the-books-now-that-got-is-over)
- c. *I started the book and it is truly inspiring. I didn't know much about Stacey Abrams before this but she is definitely on my radar of power leaders. Thank you.* (<https://lasportivamountainbootsguide.blogspot.com/2019/05/pdf-lead-from-outside-how-to-build-your.html>)
- d. *Here's an exciting development that will brighten the day of anyone who knows Dad: Dad just finished the book that's been on his bedside table for the past 23 years!*
Way to go, Dad!
It was back in October 1996 when Dad first picked up John Grisham's The Chamber, read three pages, and promptly tossed it aside to take a nap – marking the first day in what would be a decades-long journey with reading the novel.
 (<https://www.facebook.com/2032231390372475/posts/spectacular-news-dad-finished-the-book-thats-been-on-his-bedside-table-for-23-ye/2193612650901014/>)
- (11) a. *I enjoyed the paper, especially the careful and thorough discussion of the different dimensions in which the two systems differ.* (Ananth Madhavan, Discussion, doi: 10.1111/0022-1082.00376)
- b. *I liked the dictionary as I could find most of the terms I looked for.*
 (https://www.thriftbooks.com/w/mosbys-dental-dictionary_scott-stocking_thomas-zwemer/307553/#isbn=0323025102&idq=6652517)

Such constructions have also been discussed as cases of ellipsis (cf. Andor, 1998), but they are more often treated as result of metonymic mappings. What happens in all these examples is that the verb that normally takes an event-type complement (either clausal or phrasal structure) is actually complemented by a direct object complement that deviates in semantic terms from the expectation in that it denotes not an event, but a more or less concrete object. The direct object is interpreted, as it is claimed in the literature, through type coercion, a semantic operation that converts an argument to the type expected by a function (Pustejovsky, 1991, 1993). Specifically, in our examples it is interpreted as standing for some event associated with that object. The direct objects tend to belong to several fairly compact semantic classes. For example, they often denote printed matter (books, papers, etc.), movies, pieces of music, as well as various objects that can be eaten or drunk, etc. What the event in question is often turns out from the context. In (10a) and (10b) it is clear that the process of writing a book is meant, while sentences (10c) and (10d) are about reading a book.

As pointed out by Lapata, Keller and Scheepers (2003, p. 651), the choice of subject can influence the interpretation of *book* in collocation with *enjoy*. Cf. the following examples:

- (12) a. *The student enjoyed the book.*
 b. *The author enjoyed the book.*

Enjoy in the first example is most likely to be interpreted as referring to the activity of reading the book, while the second example, particularly, when contrasted with the first, is more likely to be interpreted as being about writing a book. However, some utterances with poor context, or without any context, must be seen as ambiguous. A sentence such as:

- (13) *I finished the book.*

Could be interpreted as denoting the activity of reading the book, writing the book, but also to typing the book, editing it, etc. We would like to claim that the metonymy at work is SALIENT PARTICIPANT FOR THE WHOLE EVENT. This is, in our opinion, a special type of propositional metonymy that is somewhere between referential one and the predicational one. Its vehicle is a non-predicatively used nominal expression, as is the case with referential metonymies, but its target is a predicational expression, i.e. a predicate together with its arguments.

This, however, is not the only possible analysis of these examples. It would be equally plausible to assume that a purely predicational metonymy is involved here in the sense that verbs like *start*, *finish*, *like* or *enjoy* are extended to include the specific activity in question. In other words, *finish* could be metonymically interpreted as standing for *finish writing* or *finish reading*, etc. The nouns in the direct object phrase would of course retain their literal or basic meaning. It will be seen that the two analyses again rule out each other, i.e. we cannot have these two metonymies at the same time. The phenomena that Langacker (1999) calls active zone can also be analyzed in two ways, similarly to aspectual and emotive predicates, but this will be discussed in more detail in 3.3 below.

3.2 Metonymy and metalepsis

3.2.1 *Some more cases of metonymic indeterminacy*

Let us now take a look at some cases of metonymic indeterminacy or vagueness in which a single metonymic vehicle allows simultaneous access to two potential targets. The following headline of a news article would normally be interpreted so that *Budapest* as a metonymic vehicle has the city council as its target:

- (14) *Relief and disappointment as Budapest gives up 2024 Olympic dream*
 (Daily Mail, February 23, 2017, <https://www.dailymail.co.uk/wires/reuters/article-4252598/Olympics-Relief-disappointment-Budapest-gives-2024-Olympic-dream.html>)

Note, however, that the first sentence of the article says the following:

- (15) *Hungarians displayed a mixture of disappointment and relief on Thursday after the government ended Budapest's bid to host the 2024 summer Olympic Games in the face of growing popular opposition.*

This indicates that the initial assumption about the first mention of *Budapest* was incorrect, as the interpretation now moves in the direction of the CAPITAL FOR GOVERNMENT metonymy. It actually turns out that the formal cancellation was filed by the city council and not the government itself. This means that our headline actually blends two metonymies sharing the same vehicle, viz. metonymic source. In other words, we have a sort of indeterminacy, or uncertainty, as to the reference of the metonymically used name of the capital city, at least of a post-hoc type, after reading into the article.

The two target concepts cannot be said to be in overlapping relationship, let alone that one is a subset of the other. The metonymic source is whole and the targets are parts within this whole. This is all conditional on the assumption that the capital for government metonymy is of the whole for part type, as suggested by our diagram:

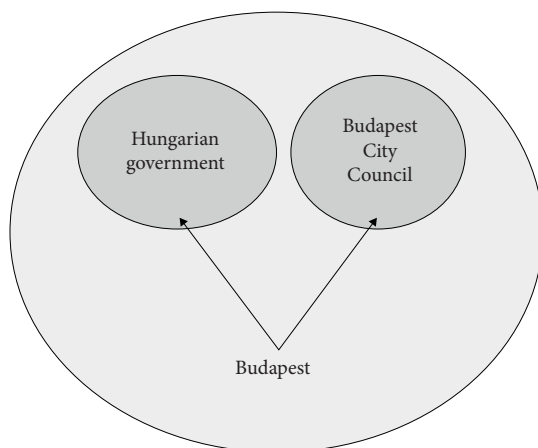


Figure 3. Subdomains as metonymic targets within BUDAPEST as a source domain

However, in Radden and Kövecses (1999, p. 41), metonymies involving the Location ICM are treated as being PART-FOR-PART metonymies, along with CAUSE-EFFECT, CONTAINER-CONTAINED, PRODUCER-PRODUCT metonymies, etc. This would imply

that both Budapest and the Hungarian government or the Budapest city council are subdomains within some larger domain, but the question is what this superdomain should be – Radden and Kövecses (1999) do not state this exactly anywhere.

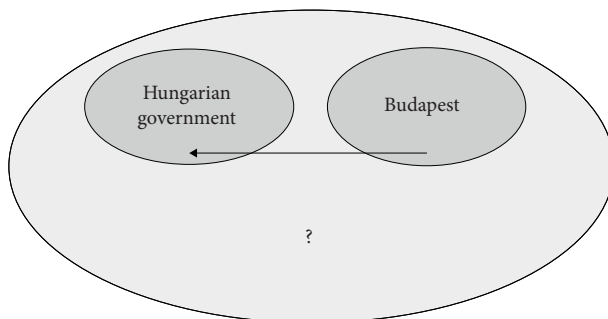


Figure 4. CAPITAL FOR GOVERNMENT metonymy as a PART FOR PART metonymy

The same difficult question may be asked for most other PART-FOR-PART metonymy types. Of course, some of them seem at first sight to be more convincing as cases of PART-FOR-PART metonymies, e.g. cause for effect and effect for cause. Some similar examples bring to surface grave problems arising from the assumption that PART-FOR-PART metonymy is involved here. Specifically, it is hard to see how the domain of a whole country is not superordinate to the domain with its capital city, as shown by the following example

- (16) *Zagreb stepped up the fight against corruption, especially at top levels, from mid-2009 when Kosor took over as prime minister from Ivo Sanader. Mr Sanader is currently detained under suspicion of graft.*

...

Croatia's state secretary for European integration, Andrej Plenkovic, remains convinced, however, that Zagreb's goal of EU membership was 'realistic.' He said Croatia would hope to sign the accession treaty in November, which has be ratified by member states parliaments, a process expected to last up to a year and a half. Zagreb hopes to eventually become a full-fledged EU member by January 2013.

(<http://www.rte.ie/news/special-reports/2011/0518/301210-croatia/>)

While in the first two occurrences the metonymic target is shared, i.e. it is the Croatian government that *Zagreb* refers to, the third token causes a problem as it now no longer refers to the government or any other political body/institution, but rather to the whole country, i.e. Croatia as a state. While both, the name of a capital city and the name of a country, can stand metonymically for the government of that country, the name of a capital city can hardly stand for the state or country. Nevertheless, joining an association such as the EU is not something that

a government does – it is states/countries that join it. However illicit this shift may be, there is no other possibility. This is precisely what is discussed by Radden (2014):

(17) *Last year, Greece was rescued with a package worth €110 billion.*

This is clearly again a context in which more than one target is viable at the same time, i.e. a case of ambiguity or vagueness, and the metonymy is clearly treated as being of the PART FOR PART type, but the domain that serves as the whole is not specified in any way.

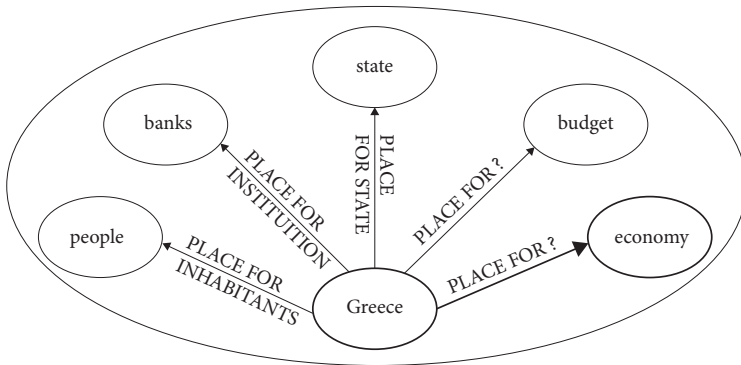


Figure 5. Indeterminacy of metonymies with the name of a country as metonymic vehicle (Radden, 2014)

It can also be observed that domains with ontologically different status are treated as being on equal footing in Radden's analysis (e.g. the budget domain should be within the state domain).

In the following example the situation is even more complicated. The metonymic vehicle/source is shared, and has different targets, but has to be repeated, not only because of the pun, but also due to different conceptual operations:

(18) *But the Walloons did not act alone. The region of Brussels – which, to go along with its six police forces, also gets a say on trade deals – said no, too. Or in other words: Brussels said no to Brussels, in a blow for both Brussels and Brussels. This is great news for fans of wordplay, but bad news for anyone seeking to reach a deal with the EU quickly.* (Financial Times, October 25, 2016, <https://www.ft.com/content/100b8c3d-6dd4-3b31-8b46-1733ebb0855f>)

In one case, we have the expansion of BRUSSELS (PART FOR WHOLE) to encompass the region; in the other, there is the reduction (WHOLE FOR PART) to the EU GOVERNMENT (cf. Ruiz Mendoza and Díez Velasco, 2002 and Ruiz de Mendoza and Otal Campo, 2002 for the idea of domain expansion and reduction in the case of metonymy). Otherwise, the example is similar to the previous ones in that one

metonymic vehicle makes it possible to straddle two (or more) metonymic targets, or switch between them as the discourse unfolds. This means that the same phenomenon of indeterminacy may obtain regardless of whether there is a single metonymic vehicle or a chain of metonymies.

3.2.2 *Metalepsis*

At this stage we might ask ourselves what is actually going on here. We claim that we could understand this phenomenon better if we invoke the notion of metalepsis, specifically, not so much (or only) the classical rhetoric notion as the Genettian, narratological notion of metalepsis (Genette, 2004). Using a metaphor, we could as well say that this makes it possible for us to take alternative peeps into two different worlds.

Let us now take a look at the two ways this notion is used. It is sometimes considered to be a subtype of metonymy, just like *synechdoche*. It is often treated as a poorly understood rhetoric ragbag of a sort, including multiple, i.e. stacked or tiered metonymies, and even what is considered to be run-of-the-mill metonymies like *EFFECT FOR CAUSE*.

Metalepsis can be defined as a figure of speech in which an expression makes indirect reference to another figure of speech, or as a “figure of speech consisting in the substitution by metonymy of one figurative sense for another” (Merriam Webster). Harold Bloom takes it to be “the trope of a trope” (1975, p. 74), “a scheme, frequently allusive, that refers the reader back to any previous scheme” (ib.). He goes on to say that metalepsis can be called “maddeningly, but correctly, a metonymy of metonymy” (1975, p. 102).

Cummings (2007, p. 219) describes metalepsis as a “process of transition, doubling, or ellipsis in figuration, of replacing a figure with another figure, and of missing out of the figure in between in order to create a figure that stretches the sense or which fetches things from far off.” Put more simply, Cummings claims that metalepsis is a complex which appears to involve a mental jump over several figurative steps somewhere in the middle. As such, this would qualify, in some cases, as a sort of tiered metonymy we mentioned above, while in other cases, it may involve other figures of speech related to each other by a metonymic link. This link is often of the *CAUSE-EFFECT* type. Let us now provide some examples:

- (19) “*Was this the face that launched a thousand ships and burnt the topless towers of Ilium?*” (Ch. Marlowe: Dr Faustus)
- (20) *A lead foot is driving behind me.*

In Example (19), the face metonymically stands for the whole person, which happens to be Helen, abducted and brought to Troy. She is presented here as the agent causing a thousand ships to be launched and responsible for the destruction of the

towers of Ilium. However, stating that we have here a simple case of a CAUSE FOR EFFECT metonymy or its opposite, would be wrong. It was not Helen who caused the whole thing but the event of her abduction, so this is one covert metonymic tier that needs to be taken into account. In another tier, her abduction leads to an armed conflict, and armed conflict has some accompanying circumstances, such as sending troops (or ships) and consequences (or effects), such as the destruction of cities.

The expression *a lead foot* in (20) stands for a specific type of driver, the one that likes to speed. Apparently, one of the metonymies involved is of the PART FOR WHOLE type whereby the body part named stands for the whole human (person). It is also clear from the context that this person is a driver. In a car-driving context, both legs are used, but one of them, the right one, is far more significant as it is used to press the gas pedal and the brake. This means that we have another metonymy here, of the GENERIC FOR SPECIFIC type. It follows that the right leg ultimately stands for the driver (two tiers). Further, the body part, the foot, is qualified by the attribute *lead*. As part of our general world knowledge, we also activate the information that this is a type of metal with very high specific weight, and that any object made from it would exert quite a pressure on anything that is placed underneath it. This also applies to the foot. The object (lead) stands here metonymically for its salient property (being heavy). As we know, the heavy pressure by the foot can be applied to either the brake or the gas pedal, but this is not what is actually intended. The above statement is about pressing the gas pedal, which means that we have another tier of metonymic reduction. Further, provided all the technical requirements are fulfilled (e.g. that the engine is running, etc.), pressing the gas pedal results in the increase of the car's speed. This could be considered to be a CAUSE FOR EFFECT metonymy, but we prefer to call it ACTION FOR RESULT. Finally, we need to move from the concept of acceleration to the excessive speed. This is, we claim, achieved by invoking two other metonymies, the ACTUAL FOR HABITUAL and a scale metonymy ((MOVING TOWARDS) THE UPPER PART OF THE SCALE FOR (BEING AT) THE TOP OF THE SCALE),

Concerning metonymies of the type CONTAINER FOR CONTENT, which are also claimed to be a subtype of the high-level metonymy PART FOR PART (Kövecses and Radden, 1998, p. 58), exemplified in:

(21) *The bottle is sour.* ('bottle' for 'milk')

(22) *The milk tipped over.* (for 'the milk container tipped over')

We seem to have two metonymies involving the whole and a part in a series, assuming that the whole is a complex one, consisting of the whole-and-part, i.e. of the container and the content together forming a functional unit. First, the label for the container, *the bottle*, stands for both the container and the contents, and is

then reduced to just the contents ('milk') in the second step. Similarly, the vehicle *milk*, as part, provides access to the whole (functional unit), and then we have the opposite, the whole is metonymically reduced to its part, the container, so as to adapt to the context in which we find *tip over*. It could be perhaps argued that the second metonymy is unnecessary, as in reality it is the container-with-its-milk that tips over. Note, however, that Kövecses and Radden (1998, p. 58) analyze this example as an instance of the CONTAINED FOR CONTAINER metonymy, while Norrick (1981, p. 58), explicitly interprets this as meaning 'the milk container tipped over.' Note also that we would use that label in the same way for a container that carries the inscription MILK even if it were empty, or in cases in which the container is not transparent and we do not know whether it is empty or not. The most important thing for us is that in all these cases the middle part of this metonymic path, with the functional unit as the whole, goes unnoticed, equaling Cummings's metonymic jump in the middle.

Such complex functional units brought about by metonymies of the type PART FOR PART must be assumed anyway in order to account for the way that *dog* and *horse* are used in the police/military jargon to refer to units: the former is a unit consisting of a search dog and its human guide, in the latter case we have either a unit consisting of a horse and its mount (the soldier), or cavalry, consisting of horses and soldiers riding them. Similarly, in an example like:

(23) *They destroyed the enemy tank/plane/bunker.*

What is most likely meant by this (as a sort of euphemism, or at least as a vague statement) is that the enemy tank and its crew, etc. were destroyed. This type of analysis can also be applied to a series of metonymies based on the Location ICM, such as PLACE FOR INHABITANTS:

(24) *The whole town showed up.*

The notion of metalepsis plays a significant role in narratology. Following Genette (2004), metalepsis is a transgression of the boundaries between narrative levels or logically distinct worlds. This can take place in a wide variety of ways and modalities. Different literary, graphic or cinematic works by the same author may be considered to create logically distinct worlds independent of each other, but there are so many cases of sequels, where one work builds on the previous one. Different works by the same author may feature the same character(s), and sometimes characters from previous works may appear together in a given work. Further, in some cases of mixing distinct fiction worlds, we may observe the phenomenon of crossover when a character or characters from two (or possibly more) distinct TV series or comic novels, etc. appear together in a single installment. Whereas they mix in a

single new (or blended) world in that case, it is also possible for one of these worlds to be embedded as a sort of meta-world in the other.

An intriguing example of more than one type of transgression can be found in John Fowles' *The French Lieutenant's Woman*, when the narrator offers three different ways in which the novel could end, and in particular before the second and the third ending, when the narrator becomes a character in the novel.

In Chapter 55, the main male character travels on a train, being stared at by his travelling companion, who, as the chapter unfolds, turns out to be the writer himself. He refers to himself as *the bearded man staring at Charles*, and in almost all of his publicly available photographs he is bearded. The narrator is able to entertain two perspectives here at the same time: sitting facing the main character and scrutinizing him, while at the same time contemplating his destiny from the point of view of a writer familiar with novelistic conventions of both the present and of the Victorian fiction:

(25) *In my experience there is only one profession that gives that particular look, with its bizarre blend of the inquisitive and the magistral; of the ironic and the soliciting. Now could I use you?*

Now what could I do with you?

It is precisely, it has always seemed to me, the look an omnipotent god – if there were such an absurd thing – should be shown to have. Not at all what we think of as a divine look; but one of a distinctly mean and dubious (as the theoreticians of the nouveau roman have pointed out) moral quality. I see this with particular clarity on the face, only too familiar to me, of the bearded man who stares at Charles. And I will keep up the pretense no longer.

Now the question I am asking, as I stare at Charles, is not quite the same as the two above. But rather, what the devil am I going to do with you? I have already thought of ending Charles's career here and now; of leaving him for eternity on his way to London. But the conventions of Victorian fiction allow, allowed no place for the open, the inconclusive ending...

Another remarkable example of confusion between distinct ontological levels can be found in Julio Cortazar's short story *Continuity of parks* (*Continuidad de los parques*). In this short story a wealthy businessman starts reading a crime novel but puts the book down for a couple of days because he has to attend his business. The story opens with his taking up the novel again, sitting in a green velvet armchair, smoking and enjoying the view of the park from his study window. In the novel he is reading, a man and woman, two lovers, meet and plot to kill the woman's husband with a dagger. The woman then leaves, and the man goes to her house. Armed with the dagger, the man goes inside the house and sees his victim: a man who is sitting in a green velvet armchair and reading a novel. The character reading the crime

novel in the short story thus becomes the victim of a murder committed in the novel he is reading. This means that the metafiction (the world of the crime novel) loops back into the main level fiction (the world of the short story).

Needless to say, examples of metalepsis actually abound in literary works. It can be found in Shakespeare's *Midsummer Night's Dream* with its play within a play. In Pedro Calderón de la Barca's play *Life is a Dream* (*La vida es sueño*), one of the main protagonists, Segismundo ends his famous monologue at the end of Act 1 by saying:

- (26) *¿Qué es la vida? Un frenesí.
 ¿Qué es la vida? Una ilusión,
 una sombra, una ficción,
 y el mayor bien es pequeño:
 que toda la vida es sueño,
 y los sueños, sueños son.*
 What is life? a tale that is told;
 What is life? a frenzy extreme,
 A shadow of things that seem;
 And the greatest good is but small,
 That all life is a dream to all,
 And that dreams themselves are a dream.

An impressive example of visual metalepsis, i.e. transgression from one world into another (from one film to another), can be seen in the Paddington movie, when Paddington watches with the Brown family the documentary made by Montgomery Clyde, the Explorer, about his visit to the jungle of “darkest Peru.” At the beginning of the projection, Paddington sits together with the family, and all the characters and the room are bathed in the bluish color characteristic of the projection of a black and white film. Paddington becomes excited, stands up and is then shown from the profile walking towards the wall with the screen. He stops for a brief moment just before the screen, and his nose “dives” into the screen which for an instant becomes stirred like the surface of water. We next see Paddington entering “the other side” of the screen, finding himself in the middle of the Peruvian jungle where he lived with Aunt Lucy and Uncle Pastuzo. The leaves of trees on the screen that were bluish on the projection side, are green, in full daylight color on this side, like just everything else. Towards the end of the documentary, the color of Paddington and his surroundings gradually dims, i.e. returns to the initial bluish light of the projection, indicating that he is again back in the basic world of the film. We could say that Paddington's return from the world of the documentary is signaled by a metonymy, the bluish light metonymically evoking the film projection. This means that the movement between two or more narratological worlds is made possible by metonymy.

Using metonymy as a bridge for the transgression or movement between two or more worlds is of course not usual, let alone binding, but nevertheless is a possibility. We know that the name of a character from a series of novels, or from a film based on these novels, can be used metonymically to refer to a novel or a film, not necessarily one in which the character in question is indeed found:

(27) *I like a good Poirot or Sherlock Holmes (Jeremy Brett version) every now and again. We'll probably watch The Blue Carbuncle at some point this weekend (the plot revolves around a Christmas goose).*

(<https://buffy-boards.com/threads/scooby-spotlight-grace.71913/>)

(28) *The story apes all the hallmarks of a good Poirot or Miss Marple, to a frighteningly comforting degree.*

(https://games.highdefdigest.com/11423/raven_master_thief_ps3.html)

Similarly, the name of an actor can be used metonymically to refer to a film he played in:

(29) *There's something about the Bond movies that makes them instantly forgettable for me. I rewatched all of them up to Skyfall about 3 years ago, and then rewatched all the Craig ones incl. Spectre a few months ago and I literally can't remember any of it. Except how pretty Eva Green looked (I normally don't like her or her movies) and the Aston Martin chase at the beginning of... One of them. And I only remember that because I resprayed and slapped a JB007 plate on my Massacro after seeing it.*

Same goes for the older ones now that I think of it. I'm pretty sure I've seen most of them but the only scene I can recall is the "Do you expect me to talk?" "No, I expect you to die."

They are always fun to watch but they never leave any impression on me, unlike, say, the Bourne trilogy.

(<https://gtaforums.com/topic/868458-the-official-james-bond-series-discussion-thread/>)

We can also have the metonymy of the type THE (MAIN) ROLE FOR THE ACTOR PLAYING IT. An interesting example, which also contains an instance of transgression or movement between two worlds, comes from an interview Roger Moore gave to GQ Magazine in 2012:

(30) *Didn't one of your children ask you at the time whether if you and James Bond had a fight, who would win?*

Yes, that was Geoffrey, he was about eight or nine years old. He was at the age when kids think that their dad is bigger and stronger than anybody else. And we were in a restaurant having lunch, and he said, "Daddy, could you beat up anybody who came in here?" And I looked around and they all looked fairly old

so I said, "Sure, I could." He said, "What if **James Bond** comes in?" I said, "Well, I'm **James Bond**," and he said, "I mean the real **James Bond**, **Sean Connery**."

(<https://www.gq-magazine.co.uk/article/roger-moore-dies-89>)

This metonymy seems to be reversible, as it is also possible for the actor to metonymically stand for the role s/he plays. This is again a case of metaleptic transgression or movement between two worlds. The examples come from the film *Ocean's Twelve* (directed by Steven Soderbergh, 2004), briefly discussed in Sarkhosh (2011, p. 181). In one case, Bruce Willis plays himself. In other words, we simultaneously have the ACTOR FOR THE ROLE and the ROLE FOR THE ACTOR metonymies, and an utterance like:

(31) *Bruce Willis exposes Tess as an impostor.*

can be analyzed as being the instance of one of the two complementary metonymies. Assuming that *Bruce Willis* is the label for a role, it would qualify as a 'literal' expression. This means that we also have a sylleptic indeterminacy, because the same expression could also be a metonymy of the type ROLE FOR THE ACTOR. In short, *Bruce Willis* could have a literal and metonymic meaning.

In the same film, the role of *Tess*, the wife of *Danny Ocean* (George Clooney), is played by Julia Roberts. At one point she is persuaded by several members of Danny's criminal gang to come to Rome and fraudulently pose as a pregnant Julia Roberts in order to make it possible for Danny's gang to enter a museum and get close to the exhibit they plan to steal. Example (31), now rephrased as:

(32) *Bruce Willis exposes Julia Roberts as an impostor.*

can be similarly analyzed. *Julia Roberts* could be ACTOR FOR ROLE or the ROLE FOR ACTOR metonymy, the metaleptic transgression made possible by metonymy, and also exhibiting sylleptic indeterminacy. This is all topped by dramatic irony, because Bruce Willis exposes Julia Roberts as not being a 'real' Julia Roberts. In real life, the actress is a left-hander (just like Bruce Willis), but in the film Tess fails when she starts signing autographs with her right hand.

In some cases we may even have a metaleptic transgression accompanied by a metaleptic type of indeterminacy, i.e. a situation in which a single metonymic source can simultaneously have two metonymic targets. In *The Sixth Day*, an American science-fiction film directed in 2000 by Roger Spottiswoode, Arnold Schwarzenegger plays two roles: the charter pilot Adam Gibson and his exact clone. Arriving home late on the night of his birthday party, Adam sees his family through the window and discovers he is already inside eating cake. Seconds later, he is captured by security agents intent on destroying him. By some mistake he has been

cloned and because this is a highly illegal activity, one of his copies must die. In the course of film, two Adam Gibsons team up in the fight, and in the end the clone leaves for Argentina to work in a satellite office of Gibson's charter company. One of the reviews of the film says:

- (33) *But Schwarzenegger (who recently criticized media violence in the press, and even has a line denouncing it within this movie) finds ample opportunity to use his high-tech weapons with the perfect excuse of eliminating evil clones.*
(<https://parentreviews.com/movie-reviews/6th-day>)

The expression Schwarzenegger simultaneously refers to the actor and, metonymically (ACTOR FOR THE ROLE), to the two roles, i.e. has at the same time literal (note the comment in the brackets about Schwarzenegger the actor criticizing the media) and figurative meaning (high-tech weapons associated with the roles). This is thus also a case of metaleptic transgression. Note that when we have an utterance like:

- (34) *Schwarzenegger puts up a great fight in that scene.*

we cannot be sure which role is associated with him if both the original and the clone are present in the scene. In other words, the actor for role metonymy could exhibit two target concepts, sharing the same vehicle, which is the metaleptic type of indeterminacy, discussed in the rest of this chapter.

3.3 Multiple metonymic targets

3.3.1 *Getting two or more targets for the price of one (vehicle)*

The metaleptic indeterminacy of metonymies that we observed above, where the context allows several metonymic targets simultaneously, does not, as a rule, rest on such a wide array of subtle possibilities, but the parallel is clear. Although we can find many examples of metaleptic transgression in various forms of art, it is actually not frequent, or at least, we could say that it is not a standard procedure, but rather something of an exception. We may therefore also think that the metaleptic indeterminacy of metonymies may also be fairly rare. However, adducing examples of it is not problematic.

First, we note that there are two types of metonymic phenomena that have been singled out as special, and sometimes claimed not to belong to the same bag as "typical" metonymies. The issue is first raised by Croft and Cruse (2004) and Paradis (2004). They distinguish between three types of construals commonly referred to as metonymy in the literature: in addition to metonymy proper there are facetization and active zones.

Metonymization, i.e. the process leading to metonymies in the strictest sense of the term, involves the use of a lexical item to evoke the sense of something that is not a conventional, lexicalized meaning of that particular lexical item. According

to Croft and Cruse (2004, p. 48), metonymy is “the ability of a speaker to select a different contextually salient concept profile in a domain or domain matrix than the one usually symbolized by the word.” Facetization, on the other hand, is the highlighting of different facets or domains in a domain matrix. Facets are readings within senses and they can be conventionally activated by one and the same lexical item. The activated meaning cannot normally be conventionally referred to by some other simple lexical item (though in some cases the concept can be expressed by means of compounds, e.g. *window pane*, in (34a):

- (34) a. *The window is dirty.* (Croft and Cruse, 2004, p. 48)
 b. *She came in through the window.* (Croft and Cruse, 2004, p. 48)

The facetization type of metonymy is fairly regular in a double sense. Firstly, it tends to operate on lexical items that are associated with certain types of concepts as their primary readings, e.g. the institution reading (*school, bank, court, hospital*, etc.). Secondly, the arrays of readings, i.e. metonymic extensions available with such lexical items are very similar (‘building’, ‘staff’, ‘abstract institution’, etc.). The intended target is most of the time made clear by the context, but there are also cases where more than one target makes sense, e.g. in *He was admiring windows* the target may be both the glass surface (because it is painted), or the frame (because of its decorations), or the whole unit.

According to Langacker (1999), Example (35) should be analyzed as an active zone phenomenon. Active zones are those portions of an entity “that participate most directly and crucially” in a given relationship (Langacker, 1993, p. 31). In a more traditional approach to metonymy, the referential expression *the piano* would be considered to be an instance of metonymy, standing for ‘the sound of piano’.

- (35) *She heard the piano.*

However, Langacker proposes an alternative analysis in which a relational predication, e.g. a verb, an adjective, an adverb or a preposition, adjusts its meaning to accommodate its semantic argument, and incorporates the ‘literal’ argument as its active zone. In (35) the meaning of *heard* is claimed to shift to ‘Subj *heard the sound* of Obj’. Active zone phenomena are apparently even more common than the facetization type of metonymy. The analysis that Langacker proposes is, however, not binding. Examples like (35) or

- (36) *He painted the house red.*

can also be analyzed as involving run-of-the-mill referential metonymies, i.e. *the piano* and *the house* can be analyzed as metonymies, standing for the SOUND OF THE PIANO and the OUTER WALLS OF THE HOUSE, respectively. Note that Kövecses (2012, p. 143) explicitly argues against separating metonymies in the way suggested by Langacker and Paradis and claims that “all active zone cases are instances of

metonymy.” The distinction is more or less disregarded in the mainstream research on conceptual metonymy.

Such examples are interesting here not only because they allow such dual but complementary analysis, as discussed in 3.1 above, but also because if the expressions in question are analyzed as referential metonymies we can often observe indeterminacy in the sense that more than one target is simultaneously viable. Let us illustrate this point on the set of lexical items denoting musical instruments.

Discussing one of the notorious examples of referential metonymy such as:

(37) *The first violin has the flu.*

Panther and Radden (1999, p. 9) note that

[a]s a musical instrument, a violin is immediately associated with a violinist as the player of that instrument. Moreover, the first violinist is defined as a member or a larger group of musicians, the symphony orchestra. Among the musicians or the orchestra, the first violinist is the most outstanding member. Finally, our knowledge of orchestras includes, among other things, the notion of music and its representation in scores. The predication *has the flu* as well as the attribute *first* trigger a non-literal interpretation of the noun phrase *the first violin*. Thus, the metonymic reading in [12] involves a shift from the instrument to the musician as the most readily available element in the frame. Through this metonymic shift, the reference point (‘the first violin’) is backgrounded and the desired target (‘the first violinist’) is foregrounded.

A sentence like (38) is of course a clear example of the expression in question referring to the musician (note the feminine personal pronoun as anaphor):

(38) *... and then a moment later I realized that the first violin was playing it with an intensity that had her practically flying out of her chair.*

The same expression could in (39) be construed as referring to something more abstract, viz. the function or the role of the instrument in the orchestra:

(39) *Of course, I adore playing the first violin again, particularly live, but I...*

The expression “the first violin” could also be used to refer to the section of the orchestra or to the score written for the instrument. This means that we in fact may have more than one potential metonymic target in some examples. The same sort of indeterminacy may obtain with any musical instrument, making it quite a regular phenomenon. In fact, it extends to all cases in which an expression simultaneously denotes a person and a function/value, as e.g. in the case of *black belt* in (40):

(40) *One should be careful with a black belt.*

This expression is also a two-pronged metonymy because an object used in karate or judo stands metonymically for a certain level of expertise and skill in these martial

arts, but at the same time the object stands for its possessor, i.e. the belt stands for the person having it.

Finally, the regularity of the potential activation of more than one target can also be observed in medical discourse. As we have seen above in 3.1, patients may be referred to by the name of their disease (THE NAME OF A DISEASE/MEDICAL CONDITION FOR THE PATIENT WITH THAT DISEASE/CONDITION). Patients presenting to emergency wards may do so for a number of more or less obvious reasons and be referred to by the name of their disease or injury by health practitioners. So a patient presenting with salient symptoms of appendicitis or a bone fracture, respectively, may be talked about as follows:

(41) *This is an **appendicitis** over there.*

(42) *The **hip fracture** arrived an hour ago.*

Before the relevant checks are conducted, such medical conditions are actually just suspected. The radiology request card in the latter case would contain the relevant history and the clinical suspicion, which can be expressed by a question mark following the condition (e.g. *fracture?*). This means that medical practitioners are at that stage so to say in two minds: they have good reasons to believe that something is the case, but have to wait for the confirmation by the x-ray, ultrasound scan, etc., as the case might be. The highlighted expression in (41–42) can also be analyzed as DISEASE/MEDICAL CONDITION FOR THE SUSPICION OF DISEASE/MEDICAL CONDITION. As a consequence, the metonymically used expressions above have three parallel targets. In addition to PATIENT WITH A DISEASE/MEDICAL CONDITION and DISEASE/MEDICAL CONDITION FOR THE SUSPICION OF DISEASE/MEDICAL CONDITION there is also their combination – PATIENT WITH THE SUSPICION OF A DISEASE/MEDICAL CONDITION.

Putting aside such subtleties, we can turn to the regular metonymic use of names of branches of medicine. Krišković (2016) observes that names for various branches of medicine can be used metonymically to refer to a number of other related concepts. The lexeme *pathology*, for example, can be used not only to refer to “the study of the causes and effects of disease or injury and especially the branch of medicine dealing with the laboratory examination of samples of body tissue for diagnostic or forensic purposes”, but to many other contiguous concepts. It can, of course, be used metaphorically

(43) *As the **façade of democracy crumbles**, at the same time, what is now being exposed is the **pathology of our society** – a kind of systemic psychopathy that has been locking people into a tunnel vision of American exceptionalism and an oligarchic government;...* (<https://countercurrents.org/2017/02/trump-as-the-pathology-of-empire-and-healing-the-wound-of-america>)

- (44) *We are thus able to offer both broad insights into the roots of China's phantom urbanization and a careful tracing of the specific development and effects of the **pathology of ghost cities** for the first time.* (<https://www.valuewalk.com/2015/08/chinas-phantom-urbanization-and-the-pathology-of-ghost-cities/>)

The term *pathology* can be used metonymically to refer to pathological features considered collectively in (45), or to the typical behavior of a disease in (46):

- (45) *The **pathology of MS**: new insights and potential clinical applications... The pathological hallmarks of the multiple sclerosis (MS) lesion consist of focal demyelination, inflammation, scar formation, and variable axonal destruction.*
(Pittock and Luchinetti, 2007, doi: 10.1097/01.nrl.0000253065.31662.37)
- (46) *The purpose of this article is to introduce the pathology of atherosclerotic lesions to provide a rational basis for their clinical management. For each human individual, the natural history of the **pathology** of arterial lesion development lasts >40 years.*
(Insull: The Pathology of Atherosclerosis: Plaque Development and Plaque Responses to Medical Treatment, 2009, doi: 10.1016/j.amjmed.2008.10.013)

It may also refer to a pathological condition:

- (47) *The pathology of frozen shoulder remains unclear, with information usually derived only from recalcitrant cases. Arthroscopy and open exploration of the frozen shoulder have increased our understanding of both the macroscopic and microscopic appearances. The **pathology** affects the glenohumeral capsular tissue and is particularly localised to the coracohumeral ligament in the rotator interval.*
(<https://www.campbellhand.co.uk/publications/the-pathology-of-frozen-shoulder>)

We further find pathology referring to the academic course of study (48), medical school or hospital department (49), the building in which this department is located (50), pathology tests and their results (51–52), sample of tissue taken for testing (53), and even part of the body affected by a disease or condition (54):

- (48) *Their education is built from there and moves on to more advanced courses, such as **pathology**, microbiology, pharmacology, and more.*
(The San Diego Voice & Viewpoint, May 15, 2017, <https://sdvoice.info/american-university-of-antigua-finds-success-with-diversity-mission/>)
- (49) *Since our **Pathology** is open round the clock we are able to get our reports faster and hence no time is wasted in starting the treatment.*
(<https://www.desunhospital.com/pathology.php>)
- (50) *They stepped out of the **Pathology**.*

- (51) *When requesting **pathology**, please make sure the lab encloses the corresponding report with matching case numbers inside the pathology envelope.*
(<https://moffitt.org/patient-family/international-referral-services/frequently-asked-questions/>)
- (52) *The **pathology** from the bronchoscopic biopsy observed abundant fungal hyphae which was stained.* (Han et al.: A Case of Invasive Pulmonary Aspergillosis with Direct Invasion of the Mediastinum and the Left Atrium in an Immunocompetent Patient, 2014, doi: 10.4046/trd.2014.77.1.28)
- (53) *Our **pathology** is sent to the best dermatopathologists in the state increasing our diagnostic accuracy.* (<https://www.bradleyderm.com/medical-dermatology/>)
- (54) *We showed in our study that the involvement of hidden parts of small arteries and especially veins in the compression conflict can be better visualized with an angled endoscope placed in front of the **pathology**.*
(Charalampaki et al.: Vascular Decompression of Trigeminal and Facial Nerves in the Posterior Fossa under Endoscope-Assisted Keyhole Conditions, 2007, doi: 10.1055/s-2007-1003927)

It is quite clear that some of these are related in tiers, i.e. form complex metonymies based on simple ones (basic meaning → DEPARTMENT → BUILDING, or basic meaning → TEST → RESULT), but it is also clear that some of these cannot be seen as derived from each other, but only as a number of parallel metonymies derived directly from a basic meaning (TEST & PART OF THE BODY AFFECTED and SAMPLE TISSUE & RESULT):

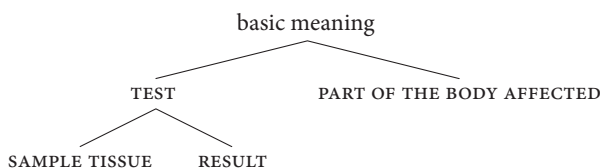


Figure 6. Pairs of parallel metonymies

Needless to say, a similar picture, though perhaps slightly less intricate, may obtain with other names for branches of medicine.

3.3.2 Multiple metonymic targets: So what?

Three things of descriptive and theoretical relevance seem to emerge from what we have seen in the course of our discussion of metonymic indeterminacy, especially of the metaleptic type.

Firstly, the occurrence of multiple metonymic targets, i.e. metonymic indeterminacy, is by no means a marginal phenomenon, as also stressed in Langacker (2009). It could be actually said to be at least in part fairly regular.

Secondly, this phenomenon appears to bring about a sort of second-order anisomorphy. In order to be able to function as an effective means of communication, ensuring adequate margin of intersubjectivity and mutual intelligibility among its speakers, language must be stable enough. On the other hand, the extralinguistic reality that language is used to communicate about is in a constant state of change. This means that language must also be an open code, elastic enough to allow for certain changes. Human languages thus must balance between transparent and opaque coding strategies, or in Geeraerts's terms (1989, p. 191), between isomorphy and anisomorphy. Isomorphy is a one-to-one relation between meaning and expression, i.e. between word forms and concepts, e.g. when a lexeme has only one meaning. Anisomorphy is a lack of one-to-one correspondence, leading to polysemy and homonymy. There is a natural tendency in human languages to go for isomorphy whenever possible, but things are more complicated than that, and anisomorphy seems to be more frequent than isomorphy. Isomorphy increases the burden on storage, as it results in an increase of lexical items stored in the mental lexicon. Anisomorphy, on the other hand, relieves this burden by recycling existing expressions, but increases the cost of the processing of ambiguity. Metonymy and metaphor maximize polysemy, i.e. new meanings are added that make the lexemes in question (more) polysemous. In terms of the meaning-expression fit, this results in a decrease of isomorphy in language as a one-to-one relation between meanings and expressions. In the course of processing of expressions that are viable as metonymies the indeterminacy between the literal and the figurative meaning is resolved, increasing isomorphy locally within the discourse. When we have a set of parallel metonymic possibilities to choose from, the level of anisomorphy is again increased. This is why we used the label second-order anisomorphy above – the already existing amount of anisomorphy is compounded by the fact that the metonymic target is indeterminate. It will be seen that fluid shifts from one metonymic target to another, while keeping the same metonymic vehicle, may make the discourse more cohesive, as shown in Brdar (2007b, 2017) and Brdar and Szabó (2009).

Finally, the phenomenon of metonymic indeterminacy can be easily accommodated in an approach to metonymy argued for in Brdar and Brdar-Szabó (2017) and Brdar (2017). Metonymy can be seen as a cognitive operation of conceptual elaboration based on the part-whole relationship that is triggered by the use of an expression (or metonymic vehicle) that is associated with a certain conceptual cluster (or metonymic source). The activation of the source conceptual cluster opens up a mental space (in the sense of Fauconnier, 1985) that is dynamically expanded or reduced in the sense of Ruiz de Mendoza and Díez Velasco (2002) and Ruiz de

Mendoza and Ota Campo (2002) so as to come as close as possible to fitting the conceptual frame provided by the co(n)text of use.³ The mental space thus opened and elaborated carries a conceptual cluster that functions as the metonymic target. Very often, this conceptual cluster is associated with another, non-metonymic expression. Reduction and expansion can of course occur in succession. In Figure 7 below the metonymic source (MS), represented as the circle at the bottom of the drawing, bounded by the green line, is first expanded (blue arrow) so as to stand for the target concept cluster 1 (TC₁). The original metonymic source may be reduced (red arrow) to the metonymic target concept cluster 2 (TC₂), bounded in red in the figure. However, the metonymic target concept cluster 1 (TC₁) can serve as the source for another metonymy and be also reduced (yellow arrow) in another tier to the metonymic target concept cluster 3 (TC₃). The metonymic target concept cluster 1 (TC₁) can be used as a source for the reduction (purple arrow) to the concept cluster 4 (TC₄). If the metonymic vehicle is repeated in the case of these two reductions, we have a textual metonymic chain, but if, on the other hand, we have a single metonymic vehicle associated with more than one metonymic target concept cluster (TC₃ and TC₄ here), we have a case of metaleptic metonymic indeterminacy.

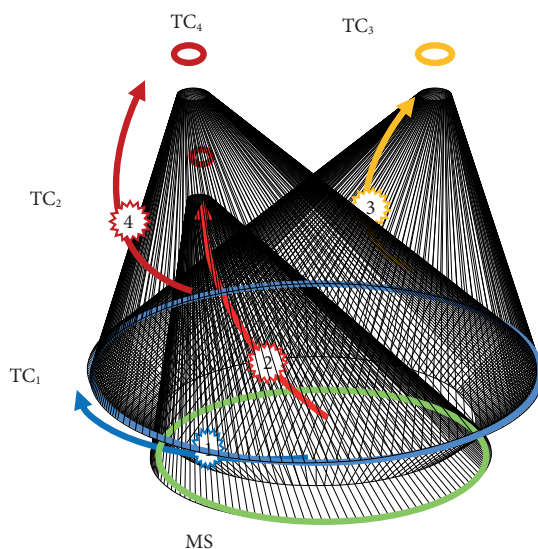


Figure 7. Metonymic expansion and reduction involving a case of multiple metonymic target concept clusters activated from the same metonymic source concept cluster

3. Note that no expression can be recognized as metonymy if it is decontextualized, i.e. the only way it can be understood metonymically is within a given co(n)text.

If we understand metonymy in this way, we are able to explain, in a very natural way, a number of facts observed in recent research. First of all, we see that metonymy is clearly an intra-domain phenomenon, and we do not get bogged down in the issue of identifying domains and subdomains and of shifting between them (cf. Panther, 2006, p. 157). Consequently, the problem of PART-FOR-PART metonymies, argued against in Ruiz de Mendoza and Díez Velasco (2002), disappears because in our approach only whole domains can be reduced and only parts of domains can be expanded. At the same time, we eliminate the need to assume that any mapping takes place at all in conceptual metonymy. On the other hand, we have an explanation of the fact that the metonymic source and vehicle, as a unit, are not necessarily permanently affected, i.e. that polysemy is not an automatic consequence of metonymy (although it may ensue as a result of entrenchment). Working with fluid mental spaces as metonymic targets makes it possible to switch between targets as the discourse unfolds, but also to keep more than one space open. This view also seems to be supported by recent work in computational linguistics and psycholinguistics (see Beekhuizen, Milić, Armstrong, and Stevenson, 2018; Klepousnitnou, 2007; Klepousniotou, Titone, and Romero, 2008). The fact that high-overlap polysemous words like metonyms seem to have a unified lexical representation with a rich core meaning subject to online modulation may also explain why metonymy often goes unnoticed.

4. Recapitulation and concluding remarks

Figurative processes can, in addition to being mixed, also be massed, and metonymies are no exception in this respect, i.e. they can interact in a number of interesting ways, although they are usually not very conspicuous and more than often pass undetected. In addition to relatively simple cases of successive use of several metonymic expressions authentic discourse can exhibit a lot of complexity in the use of metonymy, involving tiers and chains. This phenomenon testifies to figurative flexibility and leads to various rhetorical effects, sometimes resulting in figurative creativity, but very often producing metonymic indeterminacy which may go more or less completely unnoticed, as very many metonymies in general do.

Following an overview of some more or less well-known cases of metonymic interactions in complex networks in Part 2, we have identified and discussed three types of metonymic indeterminacy in Part 3. In the first subcase, there is a single conceptual metonymy with the alternation between the basic, non-metonymic, and the metonymically extended sense. In the second subcase, there are two metonymies involved. An utterance contains two expressions related to two related

but different conceptual metonymies, both compatible with the context, but only one of which can be activated at a time. In this case, the interaction between the two metonymies is rather virtual. Finally, we may have cases of genuine metonymic indeterminacy in context, where a single expression is simultaneously compatible with two or more metonymic interpretations, i.e. we can get more than one target for the price of one. We have demonstrated that this situation that is akin to the phenomenon of metalepsis or transgression in narratology is not rare, but actually usual, and even may obtain almost regularly in certain situations and domains.

Such metaleptic indeterminacy may lead to an increase of a second-order type of anisomorphy, but ultimately leaves space for dynamic and fluid meaning construal and makes texts more cohesive. We suggest that in order to accommodate this phenomenon, an approach to metonymy is needed that is based not on the notion of mapping but on the activation of the source conceptual cluster that opens up a related mental space. This space is dynamically expanded or reduced so as to come as close as possible to fitting the conceptual frame provided by the co(n)text of use. Working with fluid mental spaces as metonymic targets makes it possible to switch between targets as the discourse unfolds, but also to keep more than one space open.

Acknowledgements

We would like to extend our thanks (in alphabetical order) to John Barnden, Rachel Giora, Shir Givoni, Inés Lozano-Palacio and Francisco Ruiz de Mendoza for their thorough and insightful comments on a previous version of this chapter. Needless to say, all the remaining faults are our own.

Funding

Financed by FEDER/Spanish Ministry of Science, Innovation and Universities, State Research Agency, project no. FFI2017-82730-P and project no. PGC2018-101214-B-I00 (Researching conceptual metonymy in selected areas of grammar, discourse and sign language with the aid of the University of Córdoba Metonymy Database). This article has also been fully supported by the internal research grant UNIOS-ZUP 2018-77 Figurative language in health communication by the University of Osijek, directed by the second author.

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On verbal and situational irony

Towards a unified approach

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This chapter treats the notion of ironic echo as subsidiary to the broader notion of *epistemic scenario*, which applies to both verbal and situational irony. In verbal irony, the existence of an epistemic scenario takes the shape of a *pretended agreement* with someone's beliefs, which can be materialized in agreement expressions of various kinds including echoic mentions. In situational irony, the epistemic scenario is built on a generally reliable assumption about a state of affairs. Finally, situational irony can be embedded within a communicative context, an observation which allows for a classification of ironic types that overrides the traditional verbal irony-situational irony dichotomy. The resulting account provides a single unified framework for the study of irony.

Keywords: agreement scenario, attitudinal component of irony, epistemic scenario, irony, irony types, observable scenario, reasoning schemas, scenario-based account, situational irony, verbal irony

1. Introduction

A great deal of work has been devoted to irony in different approaches to linguistics (e.g. Clark and Gerrig, 1984; Sperber and Wilson, 1981, 1995; Attardo, 2000; Wilson and Sperber, 2012; Alba-Juez and Attardo, 2014; Athanasiadou, 2017ab, Barnden, 2017), psycholinguistics (Giora and Fein, 1999; Colston and Gibbs, 2002; Gibbs and Colston, 2012; Colston, 2017), and literary theory (Muecke, 1970; Booth, 1974; Colebrook, 2004). These accounts offer a wide array of perspectives, which not only differ from one another but are sometimes in sharp discrepancy, as is the case of Relevance Theory and Pretense Theory. Thus, relevance theorists claim that irony results from the speaker echoing a thought which clashes with whatever is the real situation while expressing an attitude towards such a thought (Wilson and Sperber, 2012). On the other hand, pretense theorists argue that being ironic involves an

act of pretense, associated with an attitude, which speakers want their audiences to discover (Clark and Gerrig, 1984). For example, from the relevance-theoretic perspective, shouting *Oh, nice!* in the face of an accidental mishap is ironic if the speaker echoes what he or she would be saying in the more comfortable situation which was to be expected. However, from the perspective of Pretense Theory, the speaker acts as if he or she liked the unfortunate situation while intending the hearer to discover both the pretense behind the act and the speaker's underlying attitude.

So far there have been some attempts to unify the relevance and pretense approaches (cf. Popa-Wyatt, 2014, for an overview and a proposal), but there is no truly unified account of verbal irony. Such an account should not only be able to find in-field convergences, but it should also bring together compatible analytical categories from different theoretical frameworks. In addition, it should develop a unified framework capable of dealing with both verbal and situational irony. So far, the tendency has been to focus on either type of irony to the neglect of the other, with much more attention having been paid to verbal irony in linguistics and a more balanced situation in literary theory.

One recent attempt to produce a comprehensive approach to verbal irony comes from work in Cognitive Linguistics. Ruiz de Mendoza and Galera (2014) and Ruiz de Mendoza (2017a) have argued in favor of a *scenario-based account*. This proposal brings together elements from Cognitive Linguistics and inferential pragmatics by recognizing the status of ironic echoes as cognitive operations used to build internally coherent conceptual scenarios in combination with other cognitive operations (see Ruiz de Mendoza and Galera, 2014, and Ruiz de Mendoza, 2017b). The scenario-based account has been further expanded by Ruiz de Mendoza and Lozano-Palacio (2019ab), who deal with a variety of topics: echoic complexity, echoic accuracy, felicity conditions, producer and interpreter types, and ironic uses. These developments also include the occasional examination of examples of what we will here call narrated situational irony (Section 4) by means of the same set of analytical categories which apply to common verbal irony.

The fruitfulness of this partial examination is suggestive of the possibility of further developing the scenario-based account along a fully integrative direction. In the present proposal, we do so by bringing together compatible elements from various cognitive and pragmatic approaches into a productive framework that applies to both situational and verbal irony (including fictional cases) while generating other analytically productive developments. Central to this task is the notion of *epistemic scenario*. This notion captures any state of affairs that is judged by the participants in the production or detection of irony to be entertained as likely, highly likely, or even certain by an individual or a collection of individuals, including the participants themselves. In this theoretical context, we claim that ironic meaning implications

result from a clash between an epistemic and an *observable scenario*,¹ which are made part of chained premise-conclusion reasoning schemas. In the case of the more communicatively sophisticated verbal irony, the epistemic scenario is based on a *pretended agreement* by the producer of irony (henceforth the *ironist*), which often takes the form of an echoic expression, of the kind postulated by Wilson and Sperber (2012), but which can also be expressed through agreement adverbials or other pretended agreement expressions functioning as the ironic vehicle. On the other hand, in situational irony, the epistemic scenario contains a solid assumption about the nature of a state of affairs, which clashes with what is observably the case.

This development of the scenario-based approach has required the compilation of an analytical database with 200 instances of irony consisting of examples of spontaneous and planned speech. The examples have been manually extracted from a variety of sources, such as daily speech, newspapers, political speeches, literary works, sitcoms, and movies. In addition, the database contains stock examples drawn from the specialized discussion on irony in academic literature (a selection of which has been treated in Ruiz de Mendoza and Lozano-Palacio, 2019a) and even examples arising from the authors' own observation of everyday language use. An initial version of this database, which contained only half of the examples, was described in Ruiz de Mendoza and Lozano-Palacio (2019b). One interesting feature of our compilation is that it specifies the context of production. This has allowed us to determine the potential target meaning of the various uses of irony and other factors such as the type of ironist and ironic target and to correlate these elements with specific linguistic mechanisms, especially agreement markers and echoic mention patterns (as discussed in Ruiz de Mendoza, 2017a, and Ruiz de Mendoza and Lozano-Palacio, 2019b).

The rest of this chapter is structured as follows: Sections 2 and 3 provide an overview of the main assumptions of existing approaches to situational and verbal irony, while assessing their potential role within an integrated approach to this phenomenon; Section 4 focuses on the integration of the compatible aspects of previous approaches into a broad account that can address a wide spectrum of fictional and non-fictional examples of irony. In this connection, the examples selected for discussion are representative of major classes of ironic uses. Finally, Section 5 outlines the main conclusions of the present study.

1. The observable scenario is only subjectively true from the speaker's perspective. Other observers of the situation addressed by the ironic utterance may differ with respect to its nature. However, what matters in irony is the speaker's own perception of what he or she thinks is the case.

2. Verbal irony

As noted in the introduction, there is disagreement among linguists as to how to account for verbal irony. Two well-known examples of competing approaches are *Relevance Theory* (e.g. Wilson and Sperber, 1992, 2012; Sperber and Wilson, 1990) and *Pretense Theory* (e.g. Clark and Gerrig, 1984; Currie, 2006; Kumon-Nakamura et al., 1995; Récanati, 2007; Popa-Wyatt, 2014; Yus, 2016; Barnden, 2017). In Relevance Theory verbal irony is based on the expression of an echoed assumption accompanied by an attitude of dissociation (i.e. of speaker's personal distance) from such an assumption (Wilson and Sperber, 2012, p. 125). By contrast, Pretense Theory builds on Grice's pragmatic remark that "to be ironical is, among other things, to pretend" (Clark and Gerrig, 1984, p. 121). Grice (1975) claimed that irony was essentially an ostentatious breach of the conversational maxim of truthfulness ("do not say what you believe to be false"), framed within his Cooperative Principle. Following this premise, Pretense Theory has claimed that in irony, the speaker (S) addresses the hearer (H) by pretending that he or she is S' speaking to H'. H' is supposed to take S' seriously but H should understand the elements of the ironic event. In essence, as put forward by Barnden (2017), being ironical involves the construction of a "world of drama" where the ironist is an actor. In the following sections we will first provide an overview of these two competing approaches, which we find to be complementary to each other. We will then discuss how they can be integrated into the pretended agreement account. Finally, we will deal with the inferential nature of verbal irony through an analysis in terms of chained reasoning schemas that exhibit important convergences with those postulated for implicature and illocutionary force in Ruiz de Mendoza and Galera (2020).

2.1 Pretense versus echo

The pretense approach claims that not all ironic expressions echo actual utterances and that the *echoic mention* theory (Sperber and Wilson, 1981; Sperber, 1984; Jorgensen et al., 1984) does not apply to the cases of irony based on implicit echoes (Clark and Gerrig, 1984). Consider the utterance *See what lovely weather it is* in a situation where the weather is foul. According to Clark and Gerrig (1984) Sperber and Wilson misinterpret Grice by assuming that he argued that ironists only use utterances like this to implicate the opposite of what they literally convey (i.e. that there is bad weather), which is problematic since ironic meaning goes beyond conveying the opposite of what is said. Sperber and Wilson claimed that this problem disappears if the ironist is assumed to be "mentioning" the words instead of "using" them. Interestingly, according to Clark and Gerrig, the problem also disappears if we think of the speaker as pretending to be a weather forecaster

using those words, which renders the use/mention distinction and its associated echoic account unnecessary.

More recently, Wilson (2006, 2013) has emphatically defended the echoic account of irony against the pretense approach. One argument she provides against the latter is that it postulates that irony arises from the speaker mimicking, imitating, or publicly pretending to perform a speech act. But the object of irony can be a thought too and it is not clear how one can imitate or pretend to perform a private thought. Wilson's argument is further strengthened by the fact that the object of irony can be a shared thought. It makes more sense for a speaker to pretend that something is the case when the speaker still holds a given belief than when both the speaker and hearer know that neither of them holds that belief any more. Wilson also argues that the pretense account cannot explain why ironic utterances do not necessarily preserve the speech act which they target. Imagine that Mary, who mistakenly thinks highly of her neighbor's daughter, Sally, makes the following statement: *Sally is really nice*. Mary's interlocutor, John, could be ironic about such an assertion through such acts as a question check (*Isn't Sally nice?*), a command (*Yeah, right, Sally, just keep being nice!*), and an agreement expression (*Yeah, right, Sally couldn't possibly be nicer!*), to name a few possibilities. By contrast, imagine that John, like Mary, does think that Sally is nice. In this context, *Sally is really nice*, although echoic, is not ironic. This assertion takes the form of an echoic endorsement which cannot be an act of pretense. As Wilson (2013) observes, imitation and pretense are different analytical realities. However, while we agree that they are analytically different, we contend that echoing and pretending are not necessarily mutually exclusive, as Wilson seems to suggest. Let us see how this can happen. We start with an overview of the integration proposal made by Popa-Wyatt (2014).

This scholar discusses the possibility of formulating weak hybrid views according to which either the notion of echo or that of pretense are sufficient for central cases of irony. However, the weak hybrid views are affected by the rather arbitrary dispute between central and peripheral cases. For this reason, it is better to find the conditions for a strong hybrid view. There have been several attempts in this direction. One is the *allusional pretense* account, put forward by Kumon-Nakamura et al. (1995). The notion of allusion is broader than that of echo since it also captures norms and expectations without necessarily echoing anything. A question like *How old did you say you are?* is not echoic but can be ironic through allusion. At the same time, it contains an element of pretense, since the speaker does know the answer. According to Popa-Wyatt (2014), another integrative attempt is found in Camp (2012), although with no explicit intention to combine the two theories. Camp claims that in irony speakers pretend to make an assertion of another speech act, based on some presupposed standard of evaluation, while implicating that this standard has been violated and that they feel negatively about this. Popa-Wyatt

(2014) favors the idea of postulating the presupposed standard of evaluation over the echoing of normative expectations, since a shared standard creates the grounds for the attitudinal ingredient to gain acceptance. But the proposal fails to show how a pretended commitment to an assumption evokes a related commitment to such a standard and why the related commitment becomes the target of the ironic attitude. In our own view, there is one further weakness in Camp's proposal. The idea of a presupposed standard of evaluation can certainly account for examples where speaker and hearer agree about the standard, but not for those situations in which they have differing views. For example, imagine that the speaker and hearer were both excited about the prospects of an outing with some good friends. However, after the event, they feel disappointed; as a result, the speaker remarks with irony: *Great outing with the Smiths!* In general, hearers have no special problem in understanding a speaker's attitude to the extent that they share the speaker's evaluative scale. But what if, in this specific case, the hearer disagrees? The same utterance would still carry an ironic attitude which the hearer could identify while not sharing it.

In an attempt to constrain a strong hybrid theory of irony, Popa-Wyatt proposes the integration of the similarities between the pretense and echo accounts into the core structure of a unified mechanism. This core structure has the following features: (i) dissociation from the vehicle of irony (often what is said); (ii) similarity between the vehicle of irony and the target thought; (iii) the implicit attribution of the target thought to an individual or people in general; (iv) the implicit expression of a dissociative attitude towards the target thought. In this framework, the pretended thought takes the form of an echo of what someone else has said or thought, in such a way that the pretense-echo is similar to what someone thought and in such a way that this thought may be (often tacitly) attributed to specific people or people in general. Popa-Wyatt argues that this approach imposes more precise constraints on the nature of the vehicle and target of irony. First, since pretense can apply to a wide array of vehicles (linguistic or not), it allows the relation of echoing to draw on richer resources than if the vehicle were just an utterance (e.g. people's attributed beliefs, social conventions and stereotypes, etc.). Second, the ironist pretends not only to make an assertion but to believe in it too, thus alluding to those that actually believe in it as a target of the ironist's dissociative attitude. Third, the resemblance between the vehicle and the target comes in degrees of pretense, which bears upon the degree of the ironist's dissociative attitude. For example, saying *Great outing with the Smiths!* involves a lesser degree of pretense than *We couldn't have had a greater outing than one with the Smiths!* The latter form of ironic vehicle expresses a stronger dissociative attitude because of the equally stronger degree of pretense.

Evidently, the main strength of Popa-Wyatt's integrative attempt over previous ones is not in the core structure that she postulates, since any of its elements might

be disputed. For example, it is not clear why dissociation from the vehicle and from the target should be differentiated if the vehicle echoes the target. Rather, the main strength of this account is to be found in the recognition of the existence of a “similarity” relation between vehicle and target and in the observation that this relation is grounded in an echo that is uttered in an act of ostentatious pretense which can be more or less manifest. This strength will serve as the point of departure for our own proposal, discussed in Section 2.3 below, which combines elements of the echo and pretense accounts with the cognitive-linguistic notion of scenario. We address this latter notion in the next section.

2.2 Verbal irony as a clash between scenarios

The initial analyses of irony carried out within Cognitive Linguistics have not taken the notion of echo into account. One proposal makes use of the insights provided by Blending Theory. Thus, Coulson (2005) argues that irony takes place in a blended space, which collects partial conceptual structure from several input mental spaces (Fauconnier and Turner, 2002). According to Coulson (2005), in the sentence *I love people who signal*, uttered by a motorist who has just been cut off in traffic, the ironic meaning arises from the convergence into a conceptual blend of the motorist’s expected reaction (chastisement of the driver’s behavior) and a counterfactual trigger (the pretended compliment). More recently, also within Blending Theory, Palinkas (2014) has argued that in Coulson’s example, the motorist does not actually signal, but the ironist pretends that he does, and that this implication arises from the speaker’s expression of irritation towards the driver’s misbehavior. In other words, the real conflict comes from the pretense that the driver is to be taken as a responsible one who is to be praised for his driving maneuver (Palinkas, 2014, p. 623). While the blending-theory approach aligns irony with other cognitive phenomena, it does not assign any role to the observable scenario (the fact that the driver has broken traffic laws) and it fails to explain the attitudinal element. This element is at the core of irony and it deserves more careful explanation than simply recognizing its existence, an issue which will be addressed in Sections 2.4 and 3.3. In addition, Coulson (2005), like Palinkas (2014), only deals with the conventional and counter-conventional dimensions of ironic situations, which, we contend, may well be integrated into either a relevance-theoretic framework or the refinement of this framework offered by the *scenario-based account*.

This account, which was initially outlined in Ruiz de Mendoza (2017a) and further developed in Ruiz de Mendoza and Lozano-Palacio (2019ab), brings together elements from pragmatics and cognitive modelling. It postulates that ironic meaning arises from a clash between an observable scenario and an echoed scenario in the ironist’s mind. In this account, the notion of echo, from Relevance

Theory, takes the status of a cognitive operation used to build a conceptual scenario. The echoing operation is thus more than the repetition of the target utterance or thought. It is a point of access to a more complex conceptual construct that contains all the elements which are necessary for the echoed representation to provide clashing counterparts for each of the elements in the observable situation. In the ironic utterance *Yeah, sure, Sam plays the guitar like a legend*, the echoed scenario consists in Sam playing the guitar with masterly ability to the delight and admiration of his audience. In the observable scenario, by contrast, Sam performs poorly, to everyone's dismay. Since the echoed scenario is manifestly untrue, as evidenced by the observable scenario, it follows that the speaker cannot believe in the truthfulness of his or her assertion. This reasoning process, which will be examined in greater depth in Section 2.4, underlies the feeling of speaker's dissociation typical of verbal irony. This observation involves a departure from the account provided by Relevance Theory, where the speaker's attitude is merely postulated to be attached to the ironic utterance. However, before we deal with this issue, we shall still propose another improvement of the scenario-based view of verbal irony. This improvement is based on the notion of pretended agreement, which we discuss in the following section. Later on, in Section 3.2 we will discuss how this notion is part of a broader epistemic-scenario account, which also covers situational irony.

2.3 Pretended agreement

Much in line with Popa-Wyatt (2014), who notes that echoes fleshing out similarity relations between the ironic vehicle and its target can be weaker or stronger, Ruiz de Mendoza (2017a) and Ruiz de Mendoza and Lozano-Palacio (2019a) have argued that echoes can be total or partial. They have also suggested that, although potentially present in irony, pretense could be epiphenomenal, i.e. a subsidiary phenomenon resulting from the activity of the more central ironic echo. However, a closer inspection of a broader array of data leads to the conclusion that the element of pretense is in fact essential to verbal irony. This is evident from the fact the greater degrees of pretense in formulating an ironic echo result in greater degrees of attitudinal impact, as noted in 2.1.

We postulate that in verbal irony the clash between scenarios (Ruiz de Mendoza, 2017a) involves an observable scenario and an agreement scenario. Since the ironist is only adopting a pose, the agreement scenario requires an element of pretense used to feign the ironist's agreement about a state of affairs.² Let us take an example

2. This pretended agreement, when the ironic meaning is worked out, is equivalent to a disagreement with the set of assumptions on which it is based, which clearly binds the notion of

extracted from the TV series *Friends* (S3 E18). Monica and Rachel are chatting in a restaurant. Monica complains to Rachel: *You know what? In the last year I've only gone out with two guys: Richard and Julio. You've gotta get me back in the game.* Rachel replies: *That shouldn't be a problem. I work in fashion. All I meet is eligible straight men.* Rachel pretends to agree with Monica's beliefs about Rachel's meeting many men and hence being able to introduce her to them. However, following a social stereotype, what Rachel actually means is that, since she works in fashion, almost the totality of men that she meets are neither straight nor eligible. Therefore, from her perspective, it is very unlikely that she will be able to solve Monica's problem. The question now is not whether verbal irony involves pretense, which it evidently does, but how the pretense ingredient interacts with the rest of the elements of the ironic act. We argue that one such element is agreement, i.e. the implicit or explicit convergence of beliefs or opinions, which is bound up with the notion of pretense into what we can call a *pretended agreement scenario*. This type of scenario contains knowledge on a certain topic, situation, or event, on whose nature speaker and hearer presumably concur. There are different ways of building the agreement scenario. The echo, which we have briefly addressed above, is one way to do so. Our approach thus takes the notion of echo as an agreement-building strategy subservient to the pretended agreement scenario. The ironist may echo a previously uttered statement to the letter (i.e. fully and accurately) or loosely (i.e. partially and/or inaccurately). As an example of a full echo, imagine a conversation where a husband, who has managed to find tickets for an exclusive concert, tells his wife: *Tomorrow we will have the loveliest day listening to the loveliest music.* Then, the following day, having disliked the concert, the wife says: *Yeah, sure, the loveliest day with the loveliest music.* A looser echo could, by contrast, take the following form, among other possibilities: *Sure, darling, the concert was a real blast.* Social stereotypes and norm-based assumptions can also be part of an echo within a pretended agreement scenario. In the example above, by saying that she works in fashion and only meets eligible, straight men, Rachel echoes the oversimplified belief that men in the fashion industry are mostly gay.

Echoic mention is, of course, only one way to express agreement. There are other non-echoic ways of constructing the pretended agreement scenario. Consider adverbial expressions, such as *yeah, sure, of course, right, absolutely, or totally*. These have been labelled *ironic markers* by Muecke (1969), but since they are not infallible in this role, they have been treated by Attardo (2000) as mere *indices of irony*.

pretended agreement with the attitudinal component of speaker's dissociation that has been postulated by relevance theorists as accompanying the speaker's echo (Wilson and Sperber, 2012). In Section 2.4 we argue that such attitudinal ingredient is derived inferentially from the clash between the pretended agreement and the observable situation.

Refining Attardo's observation, Ruiz de Mendoza and Lozano-Palacio (2019b, p. 134) have noted that, if treated as *echoic markers*, they do their work invariably. However, it is more accurate to say that their real function is broader than that of encapsulating an echo since they are used to convey agreement or consent. Finally, agreement or consent can also be expressed through idiomatic expressions. This is the case of *That shouldn't be a problem*, uttered as part of Rachel's statement above. This expression can be roughly paraphrased as 'Unless something goes wrong, I will be able to do as you say', which can be used in an ironic context to convey pretended agreement.

We may wonder about the difference between using echoic mention and adverbial agreement expressions or combinations of both. Sometimes the echoed thought can be replaced with an adverb of agreement. Let us turn to our previous example where a husband and wife have great expectations about their planned outing with the Smiths, but the outing turns out into a disaster. The expression *Great outing with the Smiths!* is echoic of these expectations. But imagine that someone comments non-ironically: *You must have had a whale of a time with the Smiths!* To this the couple replies: *Yeah, right, absolutely!* These three agreement adverbs do not echo the comment but simply pretend to agree with it, thus pointing to an ironic interpretation, which can of course be secured through a specific intonational or prosodic contour (e.g. a falling intonation, vowel lengthening), combined with other features of spoken language (e.g. an edge in the voice). This ironic strategy does not preclude the use of echoic mention, either alone or in combination with agreement expressions. Two alternative responses could have been: *A whale of a time!* / *Yeah, right, a whale of a time indeed!* The first one is a simple case of partial echoic mention and the second one brings together the echoic mention with several adverbial expressions of agreement (*yeah, right, indeed*) to reinforce the pretense part of the pretended agreement scenario. Note that, in non-ironic language, the combined use of more than one agreement marker strengthens the agreement function of the utterance. However, when the speaker manifestly pretends to agree, the addition of agreement markers cannot have an effect on the agreement function itself, since the speaker disagrees, but on the pretense effect of the utterance. The accumulation of agreement markers is potentially limitless, but our data so far point to an upper limit of two to three. An excessive accumulation of agreement markers in a pretense context may convey ill feelings including anger and contempt: *Yeah, of course, right!; absolutely right!; a whale of a time indeed!* These negative meaning implications result from focalizing excessively the pretense component strongly implying that the speaker is much more than simply skeptical about the target thought.

2.4 Chained reasoning schemas in verbal irony

Further elaborating on the initial insights provided in Ruiz de Mendoza (2017a), we adopt the notion of *reasoning schema* from Sperber and Wilson's (1995) discussion of situation-based implicature, to account for this form of inference. Before we see how this happens, we need to elaborate on the notion of reasoning schema.

A reasoning schema is a type of enthymeme, a syllogism or premise-conclusion pattern based on an unstated premise, where the conclusion is derived from the elements of the premise which are not instantiated by the linguistic expression (cf. Aikin, 2012). For example, the utterance *Mary didn't take the Mathematics exam* can implicate that Mary failed her Mathematics class on the basis of the premise that, in order to pass a class, one has to take the exam and do well on it. If Mary did not take the exam (which is the explicit meaning provided by the utterance), it follows that she did not pass the class (which is the conclusion extracted from the premise). As noted in Ruiz de Mendoza and Galera (2014, 2020), some implicatures require *chaining* reasoning schemas. This happens when the explicit meaning provided by the utterance is not capable of saturating or specifying the relevant part of the premise part of the reasoning schema. A small variation in the example above, where *take* is replaced by *show up*, can illustrate this greater degree of delicacy in the inferential process: *Mary didn't show up for the Mathematics exam*. The use of *show up* suggests that Mary did not take the exam. Evidently, this meaning implication is a conclusion derived from the premise that people who do not show up for an exam cannot take it. The chained schema takes this form:

Reasoning Schema 1

Premise 1: If people do not show up for an exam, it follows that they cannot take the exam.

Explicit meaning: Mary did not show up for the Mathematics exam.

Implicated conclusion: Mary did not take the Mathematics exam.

Reasoning Schema 2

Premise 2: If people do not take the exam for a class, it follows they may fail the class.

Explicit meaning (previous implicated conclusion 1): Mary did not take the Mathematics exam.

Implicated conclusion: Mary failed the Mathematics class.

In both schemas the premise is derived from world knowledge. However, the "explicit meaning" component of the two reasoning schemas has different sources. In the first reasoning schema, the "explicit meaning" is obtained from the linguistic expression, while in the second it is imported from the conclusion part of the first.

In both cases, the “if” part of the premise is saturated by the “explicit meaning” component of the reasoning schema, which instantiates the generic-level elements of this part of the premise (i.e. ‘Mary’ instantiates ‘people’ and ‘the exam for a class’ becomes the ‘Mathematics exam’). Also note that, as is the case with all implicatures, an implicated conclusion can be cancelled out. It is conditional on the accuracy of its corresponding premise.

Now, let us think of how ironic meaning effects relate to this form of reasoning. In our view, ironic meaning effects involve two chained reasoning schemas, which work under the same conditions of saturation, instantiation and cancellability as the ones described above. In the previous example, *Yeah, sure, Sam plays the guitar like a legend*, the first schema contains a premise based on someone’s erroneous belief, i.e. the idea that Sam plays very well, which, through a combination of echoic mention and agreement expressions, is presented as if it were agreed on by the speaker. However, this premise clashes with the observable scenario where Sam is noticeably a poor player. This observable scenario has the same function as the explicitly communicated meaning in implicature-derivation reasoning schemas. The clash between scenarios cancels out the initial premise thus leading to the conclusion that the speaker thinks that, since the premise is wrong, the hearer is wrong too. A second inferential schema is then activated. In this schema the premise is the cultural convention that we should not contradict other people, either explicitly or implicitly, unless we want to prove them wrong (which in some contexts is not acceptable) and/or dissociate ourselves from what they think. The explicated assumption is retrieved from the previous conclusion (i.e. the idea that the hearer was wrong). One possible conclusion is that the speaker wants to prove the hearer wrong and/or that the speaker is expressing the attitude of dissociation mentioned above. Because of the kind of attitude conveyed, it is only when this second type of conclusion is chosen by the hearer as relevant in context that the utterance from which it arises is taken to be ironic. Furthermore, this kind of attitude, which is initially an implicated representation, may take more specific forms through context-driven parameterization producing explicated meaning (cf. Sperber and Wilson’s, 1995, notion of explicature). Such a parameterized attitude could be one of skepticism, criticism, derision, wryness, etc., which are values commonly associated with irony by relevance theorists (cf. Wilson and Sperber, 2012) (cf. Ruiz de Mendoza and Galera, 2014, for a thorough discussion of the ubiquity of parameterization). The chained schema capturing this reasoning process is spelled out here:

Reasoning Schema 1

Premise (agreement scenario) 1: Sam plays the guitar very well.

Explicit meaning 1 (observable scenario): Sam is a poor player.

Implicated conclusion 1: The speaker thinks the hearer is wrong.

Reasoning Schema 2

Premise 2: We should not contradict other people unless we want to prove them wrong or express our dissociation from what they think.

Explicit meaning 2 (previous implicated conclusion 1): The speaker thinks the hearer is wrong.

Implicated conclusion 2: The speaker wants to prove the hearer wrong and/or the speaker is expressing dissociation.

As evidenced by this analysis, the difference between regular situation-based implicature derivation and meaning derivation in verbal irony lies in:

- a. The unique nature of the premise in the first reasoning schema, which is one of express speaker's agreement with a previous utterance or thought. This premise is drawn from an agreement scenario rather than from world knowledge.
- b. The cancelation of the premise, instead of the agreement with part of it which characterizes regular situational implicature. This cancelation occurs through a clash with the observable scenario (which can be constructed on the basis of the context or can be made linguistically explicit, as will be shown later on).
- c. The nature of the conclusion of the first reasoning schema, which is not an inference derived from the content of the premise based on the agreement scenario, but rather an inference on the speaker's judgment on the thought entertained by the hearer (or in other examples by the speaker himself or by a third party).
- d. The invariant nature of the premise of the second reasoning schema, which is taken from cultural conventions about the purposes of contradicting people.
- e. The generic nature of the conclusion part of the second reasoning schema, which needs to be parameterized, or pragmatically adjusted, on the basis of contextual features.

A very similar reasoning process is applied to situational irony. This will be treated in Section 3.3 below.

A word of caution is necessary at this stage. Sometimes it is not safe to postulate the activation of a meaning-derivation process based on reasoning schemas. In fact, there can be two situations where ironic meaning is unlikely to require any special inferential procedure. One is the case of ironic marking, which was mentioned in Section 2.3 above. It must be remembered that irony can be marked through the use of (often repeated) adverbial expressions conveying agreement and/or supported by intonation and gestures. Another is the existence of irony-prone constructions, where by "construction" we mean a form-meaning pairing which has become entrenched in our minds through its frequent use (Goldberg, 2006) or which can be readily recognized as meaningfully replicable by members of the same speech

community (Ruiz de Mendoza, 2013, p. 238). An example of this can be provided by expressions exploiting the pattern illustrated by the negative sentence *He's not the most organized student*, taken from Giora, Givoni, and Fein (2015). This sentence is easy to interpret as ironic by providing a point of contrast with someone's opinion, which has the status of an implicit echo supporting pretended agreement to create an epistemic scenario (cf. *So, he is very tidy, right? Well, let me tell you he's not precisely the most organized student*, which contains an explicit echo that contrasts with the also explicit observable scenario). The pattern *X is not (precisely/exactly) the most Y* is constructionally ambiguous between a mere case of litotes (which conveys the idea that the speaker thinks that the student is badly organized but less so than other students) and a case of irony grounded in litotes, where the speaker conveys his or her dissociation from someone's erroneous assumption that the student is tidy. Whichever the interpretation, the constructional nature of the underlying pattern calls for a direct interpretation where one or the two meanings can be active and adjusted according to contextual needs (see Givoni, Bergerbest, and Giora, this vol.). This observation is consistent with the experimental work carried out by Giora, Givoni, and Fein (2015), who found that participants take less time to read these negated statements when said of a disorganized student relative to their affirmative counterparts (in this case, *He's the most organized student*) in a similar context. This happened despite the fact that the affirmative version of the statement is shorter, a result which could well be conditioned by the underlying constructional shortcut into interpretation.

3. Situational irony

Situational irony arises from a noticeable discrepancy between a situation and what one would normally expect to be the case (Elleström, 2002, p. 51). This discrepancy may produce a sense of oddity in the person that detects it. For example, it is ironic for a marriage counselor to file for a divorce, for a police station to be robbed, and for a shoemaker to avoid mending his own shoes. In situational irony, unlike in verbal irony, there is no ironist or an ironic target. There is no interpreter, either, since any interpretive activity requires a communicative act. There is only a *perceiver* of the discrepancy noted above. The perceiver of the irony is the person who becomes aware of the existence of an ironical situation.

3.1 Previous accounts of situational irony

Situational irony has been exploited in literature across the centuries. Greek tragedy is a case in point. In this genre, fateful situations were depicted in such a way that only the audience – but not the characters – was aware of them. For example, in *Oedipus the King*, Oedipus's father, Laius, the king of Thebes, leaves his son on a mountainside to die. Laius wanted to avert the oracle of Delphi's prophecy that his own son would kill him. However, Laius is unaware that, through this preemptive action, he has in fact prepared the ground for the fulfilment of the prophecy. Oedipus is rescued by a shepherd and later raised by King Polybus of Corinth, who Oedipus thinks is his father. When Oedipus learns from the oracle that he would end up killing his father and marrying his mother, he tries to escape his fate and leaves for Thebes. Ironically, on his way, he has a quarrel with an old man, whom he kills without knowing that he is his biological father. On a further ironic twist of the story, once in Thebes, Oedipus wins the right to become the new king and marry the widowed queen, unaware that she is his mother.

The Greek drama exploitation of irony has led some literary theorists (cf. Lucariello, 1995) to note that irony can lead the audience to reflect on the vulnerability of human condition, while pointing to the intentionality and effect of situational irony on the audience. Lucariello (1994) and Lucariello and Mindolovich (1995) claim that in situational irony the opposition between what is expected and what takes place suggests a state of mockery of the world as it is (the “fitness of things”). They also point out that situational irony involves meta-representational reasoning since event representations must be manipulated to recognize and construct ironic events. Shelley (2001), on the other hand, claims that situational irony arises when a situation is characterized by so-called “bi-coherent” conceptual structure, adequate cognitive salience, and an appropriate configuration of emotions. A bi-coherent class of elements is one containing two elements that are inconsistent with each other. That is, an element in a set is coherent with the reverse of another element in the same set. For example, it is inconsistent to have a fire station – where professionals are trained to fight fires – going down in flames, but the opposite of extinguishing a fire is consistent with the fire station being in flames. All three approaches agree about the fact that situational irony has a dual and contradictory nature, where the opposite of what could be expected takes place. Lucariello and Mindolovich (1995) point out that situational irony must be recognized as such by the reader/spectator, the character, or by both; in other words, the contradicted expectations that occur unintentionally are not ironic without a perceiver.

3.2 The epistemic scenario

The approaches discussed above acknowledge the existence of a contradiction in a set of expectations for both verbal and situational irony to take place. Situational irony is identified as the perceiver realizes that he or she has been proven wrong with respect to some previously entertained assumptions. Likewise, verbal irony hinges on the identification of the contradiction between what someone believes to be the case and observable reality. This observation calls for an examination of the nature and the source of such broken expectations. One question is: where does the knowledge that clashes with the observable scenario come from? A related question is: what kind of knowledge is it?

To answer these two questions, let us first come back to the notion of pretended agreement. Consider an example of everyday use slightly adapted for expository convenience from a situation witnessed by one of the present authors. Two friends, let us call them Paul and Sean, engage in a friendly debate about the likelihood of the Manchester United Football Club winning the next match. Paul believes the team will indeed win, but Sean strongly disagrees. When Manchester United wins, Paul tells Sean: *Yeah, right, Manchester United; they're absolute losers!* Paul pretends to agree with Sean's belief by providing an echo of Sean's certainty that Manchester United would lose. Paul's utterance clashes with what is noticeably the case, consequently expressing an attitude of skepticism towards Sean's evidently erroneous belief. But note that Paul's echo of Sean's belief is more than a pretended expression of agreement. It has the function of evaluating the reliability of the expressed agreement against the facts arising from the observable scenario.

As argued by Sperber et al. (2010), on the basis of evidence from social, psychological, and philosophical studies, humans have developed *epistemic vigilance* mechanisms that allow them to assess the quality of the information that is accessible to them. This is done by matching any new item of information with previous assumptions related to it in the light of the reliability of the source of such information. Evidently, the notion of epistemic vigilance runs alongside the long-standing recognition of the existence of linguistic mechanisms whose purpose is to express the ironist's probability assessment of the likelihood of any given state of affairs. Languages have developed ways to express such probability assessments through modality systems (cf. Nuyts, 2001; Halliday and Matthiessen, 2004). We argue that the notion of epistemic vigilance applies to all kinds of irony, whether situational or verbal. Thus, detecting the ironic nature of situational irony requires the perceiver of the observable situation to set it against other previously held assumptions with which it clashes. These assumptions constitute what we call an *epistemic scenario*. We define the epistemic scenario as the conceptual correlate of a state of affairs which someone regards as highly likely or certain to occur. In verbal irony, as

exemplified by Paul's echoic remark. discussed above, the existence of an epistemic scenario is manifested through a pretended agreement with what one or someone else believes or believed to be the case (including social stereotypes), which can be manifested through agreement expressions of various kinds (vid. Section 2.3). In the case of the less sophisticated situational irony, the epistemic scenario takes the form of a solid assumption about a state of affairs. The stronger the discrepancy between this scenario and the observable scenario, the greater the ironic impact of the perceived situation. In verbal irony, we have a similar requirement. Here, the epistemic scenario is drawn from what ironists assume that someone (whether an individual or a collection of individuals) has communicated, with which they express their agreement. As with situational irony, the intensity of the clash between the epistemic scenario and the observable scenario determines the strength of the ironic act. It goes without saying that such strength is not necessarily the same for the ironist as for the interpreter since both may ascribe different degrees of reliability to the epistemic scenario or to its source. The notion of epistemic scenario is thus a broader category: it includes the echoed scenario as a subcategory of verbal irony and it brings together verbal and situational irony under the umbrella of a single paradigm.

As explained in Section 2.3, verbal irony is based on a pretended agreement of the ironist about a state of affairs. This pretense act is characteristic of the epistemic scenario in verbal irony and it can be manifested through an echo or an agreement marker. If we take again the example *Yeah, sure, Sam plays the guitar like a legend*, the epistemic scenario comprises the ironist's knowledge of the hearer's assumptions on Sam's guitar playing skills, which contrasts with the certainty that the former has that Sam is a poor player. The ironic act is built on the ironist pretending to agree with the hearer on Sam's skills. Less complex than in verbal irony, the clash in situational irony simply takes place between the perceiver's assumptions on a state of affairs and observable reality. In the example mentioned in Section 3.1, where a fire station goes down in flames, the epistemic scenario contains the assumption that fire stations are very unlikely to burn since they are the workplace of trained firefighters. Such an assumption may be a previously held one or it may be constructed *ad hoc* on the grounds of our knowledge about the function of fire stations.

Assumptions based on world knowledge come with varying degrees of strength. The stronger the confidence in a given assumption, the greater the likelihood for a potential clash between an epistemic scenario and an observable scenario to be detected. The degree of confidence in the certainty of a knowledge item may originate in world knowledge, in logical implications (deductive and inductive reasoning), or in implicational inference (in other words, in abductive reasoning) (cf. Givón, 1995, p. 19). The former includes all information that the participants in the ironic event may have gathered from their life experience or learned from a third party.

For instance, Lewis knows that his mother Annie does not like chocolate for dessert. Tongue-in-cheek, Annie tells Lewis: *Sure, I told your aunt, chocolate is the most delicious end to a nice meal!* With this utterance, through echoic mention, Annie exploits an epistemic scenario that she knows her son shares. She therefore expects her son to be able to interpret the ironic content of her remark to her sister. However, the ironic content of this utterance may be inaccessible to other people hearing it, which makes its felicity heavily dependent on the extent to which the hearers know how Annie feels about eating chocolate for dessert.

For irony to be possible, an epistemic scenario cannot be absolutely uncontestable. If the truthfulness of an epistemic scenario cannot be disputed, then there cannot exist any discrepancy with an observable scenario and no conditions for irony hold. However, ironist's or perceiver's certainty (i.e. full degree of confidence) and universal validity do not entail each other. For example, we all know that humans are mortal, so every human has to die. This knowledge is universally valid. However, the objective indisputability of this knowledge item would not preclude any ironist holding wrong beliefs on mortality and immortality from building an epistemic scenario in which someone, for example a great king or an emperor, is thought to be immortal. An epistemic scenario which is not universally valid can still be taken to be certain on subjective grounds. In such a situation, the epistemic scenario is subjectively uncontestable for the ironist or the perceiver and any discrepancy with observable reality could be the object of shock or reinterpretation. For example, the Roman emperor Caligula was officially worshipped as a god. If any Roman citizens really believed that the emperor was immortal, it must have been shocking for them to find that he was stabbed to death by conspirators. The clash between the epistemic and observable scenario in this case does not necessarily give rise to situational irony. But if any of those citizens, when confronted with the facts, dissociates him/herself from his/her previous beliefs, situational irony is the result.

It should be noted that the notion of agreement scenario, which is exclusive to verbal irony due to the absence of the ironist in situational irony, is a form of epistemic scenario. This is so because expressing agreement reassures the hearer on the ironist's certainty with respect to an opinion or a course of action. Here is an important point of convergence between verbal and situational irony, since in the latter, the perceiver of irony has a degree of certainty in his or her mind about the nature of a state of affairs. This other type of epistemic scenario is not constructed through the expression of agreement but through world knowledge or logical assumptions derived from such knowledge.

Another point of convergence is supplied by the awareness element. In both kinds of irony someone – whether the perceiver of irony in the situational type or the ironist and possibly the interpreter in the verbal type – realizes that a situation

is not what he or she thought it would be. In verbal irony, the ironist communicates this realization. This is not the case in situational irony, where the perceiver's reaction is one of mere awareness.

3.3 Chained reasoning schemas in situational irony

In Section 2.4 we accounted for the origin of the ironist's attitude in terms of a chained reasoning schema containing the clash between an agreement and an observable scenario. In situational irony, there is a clash between a more general epistemic scenario and an observable scenario. This clash gives rise to an attitudinal inference through a chained reasoning schema where the premise of the first schema is metacognitive and the premise of the second arises from the perceiver's reaction when realizing that he or she is wrong. The chained reasoning process for the burning fire station situational irony takes the form specified below, which we formulate it in the third person for ease of comparison with other reasoning schemas:

Reasoning Schema 1

Premise 1 (retrieved or constructed epistemic scenario): A fire station couldn't possibly burn down (since the fire specialists should be able to control the fire).
 Explicit meaning 1 (observable scenario): A fire station burns down.
 Implicated conclusion 1: The perceiver's premise is wrong.

Reasoning Schema 2

Premise 2: When people realize that they have made an erroneous assumption, they tend to dissociate themselves from such an assumption.
 Explicit meaning 2 (previous implicated conclusion 1): The perceiver's premise is wrong.
 Implicated conclusion 2: The perceiver dissociates himself or herself from the premise about fire stations.

It must be noted that there is no essential difference between the reasoning schema which gives rise to ironic overtones (the attitudinal component) in verbal and situational irony. The first reasoning schema in the chain is based on an epistemic scenario in both kinds of irony. And in the two types, the explicit meaning part is supplied by the observable scenario and the implicated conclusion of the first schema provides the input for the explicit meaning part of the second reasoning schema. A small difference is found in the parameterization of the second implicated conclusion, however. Since situational irony is not communicated (but only perceived), the pragmatic adjustment of this implicated conclusion can hardly be

one of mockery, wryness, skepticism, or the like, at least to the extent that such attitudes are generally intended to be communicated. The most likely parametrization of the perceiver's attitude of dissociation is one consistent with feelings of astonishment or bewilderment. In any event, the nature of this whole reasoning process hinges on the strength of the first premise. Thus, to the extent that the perceiver contemplates the possibility of a fire station being destroyed by fire, the first implicated conclusion will be weaker, and the weaker this conclusion, the lesser the need to engage on the second reasoning schema. For example, in a situation in which the perceiver only feels that it would be odd (but not by any means impossible) to see a fire station catch uncontrollable fire, witnessing the destruction of the fire station would cause the perceiver to realize that maybe such a situation is not as odd after all, or that, even if odd, it was still his or her lot to see it. In either case, there is no feeling of being wrong and consequently no dissociation from what is thought, but only a minor degree of pragmatic adjustment is required.

4. The unified approach: A common framework for verbal and situational irony

Sections 2 and 3 have evidenced the existence of important convergences and some divergences between verbal and situational irony. The convergences originate in the fact that irony is a single phenomenon involving a cross-scenario clash giving rise to an attitude of dissociation. The divergences are simply a matter of the communicative nature of verbal irony versus the non-communicative nature of situational irony, i.e. whether the dissociation is communicated or not. A basic distinction can thus be made between communicated and non-communicated irony.

Table 1. Irony types from a communicative perspective

Communicated			Non-communicated (situational)		
Verbal	Visual	Multimodal	Within a communicative context		Without a communicative context
			Narrated		
			Visually	Verbally	

In communicated irony the communicative context is formed by a producer of the irony, an ironic target, and an interpreter of the irony. This type of irony can be further subdivided into purely *verbal*, *visual*, or *multimodal* subtypes, depending on their mode of manifestation. Our previous example *John plays the guitar like*

a legend clearly falls into the verbally communicated subtype. Nevertheless, irony may also be built visually on the clash between an epistemic and an observable scenario. Let us take the work *Madonna with gun*, by British street artist Banksy. In the image, a woman dressed as Virgin Mary is depicted with a mystic expression. However, as if representing her thoughts, right above Virgin Mary's head, we see a bubble with a gun inside it. In this depiction, the irony arises from the clash between the connotations traditionally associated with the figure of Virgin Mary (e.g. virtue, generosity, goodness), which constitute the epistemic scenario, and what some people believe are the violent consequences of religion, for which the Virgin stands, which in Banksy's *Madonna with gun* are presented as the observable scenario. Visually-communicated irony is recurrent in Banksy's work, which conveys the artist's dissociation from what the interpreter and others think is the truth (the epistemic scenario) and what the artist and still others believe happens in society and is worth criticizing (the observable scenario).

Finally, irony can be built through multimodal communication. Take an image showing a woman looking through the round glass door of a washing machine, which, in this image, resembles an airplane window. Below, there is a text that reads *Women adventurers*. Through a metonymic shift, the combination of this text with the image of the glass door resembling an airplane window affords access to the epistemic scenario of a free, self-reliant and enterprising woman traveling either for business or pleasure. However, this scenario clashes with what the image portrays, the observable scenario, in which a woman unassumingly does the laundry as one of other possible household chores, thus complying with the housewife stereotype.

The non-communicated type is what has traditionally been termed situational irony, which, in the framework developed here, is unplanned, non-intentional irony arising from a perceiver detecting a clash between an epistemic and an observable scenario. In this case, there is no producer of irony, ironic target, and interpreter, but simply the perceiver of the ironic nature of a situation. Imagine the text *No dogs allowed* in red typeface on a notice in a park that is covered with dog's excrement. Anyone who sees the notice might identify it as ironic, since there is a clash between what one could imagine would be the reaction of dog owners when they read the warning and the observable situation, where the warning has obviously gone unheeded. It should be noted that the existence of a text in this ironic situation does not make it into a case of verbal irony, since there is no evidence of a pretended agreement. Rather, the textual ingredient simply acts as a pointer to an epistemic scenario specifying one of the City Hall regulations for dogs in parks.

Non-communicated (i.e. situational) irony can be made part of a communicative event. However, this does not affect its intrinsic non-communicated nature. For example, the "no dogs allowed" situation described above could provide the

material for a narrated joke in which the humorist introduces a law-abiding character who is shocked when walking into a park covered with dog excrement and sees a notice forbidding dogs. Here, an inherently situational irony is narrated to make the audience laugh. In the non-narrated version of this example, situational irony simply occurs, and a perceiver identifies it. In the narrated version, situational irony is part of a communicative context, which includes the humorist, i.e. the builder of the situational irony, and the interpreter of the joke.

Let us take another example extracted from the television series *Friends*. During a trip to the beach with Joey and Chandler, Monica gets painfully stung in the leg by a jellyfish, which makes it impossible for her to walk back home. To alleviate the pain and solve the situation, Joey proudly suggests that someone urinate on Monica's leg since he has learned on television that this is the most effective way of getting rid of the pain. The three characters explain this situation to the rest of their friends. Joey, who is expected to be the one in charge of urinating on Monica's leg, explains that he cannot do it because he was paralyzed due to what he calls "stage fright". This situation is ironic since Joey is an actor who is used to performing in front of big audiences in theatres in New York City. The irony takes place in a communicative context where Joey narrates the story to his friends, but he does not realize that the situation is ironic. Only the perceivers (his friends and the audience of the TV show) can detect that it is ironic that a professional actor has suffered from an episode of stage fright. The information about Joey's professional background (the epistemic scenario) is not explained in the scene since the audience is expected to have gathered this knowledge from previous episodes. What the audience encounters is only an observable scenario that will clash with their previous knowledge about Joey's professional background.

Situational irony has been largely exploited in artistic works with the purpose of fostering the engagement of the audience with the fictional story. The context of literary or theatrical communication adds complexity to situational irony by embedding it in a fictional context. By means of this embedding strategy the author of a literary piece can lead the audience to become perceivers of a situational irony. This is the case of dramatic irony (cf. Muecke, 1969). A straightforward example is Shakespeare's tragedy *Romeo and Juliet*, where, at the end of the play, Juliet ingests a sleeping potion that makes her look dead. The erroneous assumption that his lover is dead causes Romeo to commit suicide. Within the fictional communicative context, Juliet is the only one to perceive the irony. She realizes that Romeo has killed himself because he thought she was dead, and then she kills herself with Romeo's dagger. The audience, on the other hand, is aware of the irony of the situation from the start. Evidently, the irony in *Romeo and Juliet*, while being always available to the audience, is only perceived by Juliet once she wakes up from her sleep and sees her lover's dead body.

Embedded ironies are not exclusive to jokes or theatre plays. The tale of the *Sleeping Beauty* supplies another example of situational irony. In one its versions, a wicked fairy tells the parents of a princess that their daughter will die when she pricks her finger on a spindle. The king and the queen, terrified by the prospect of their daughter's death, get rid of all the spindles in the kingdom. In spite of these efforts, the prophecy is eventually fulfilled, but the princess, rather than dying, falls into a deep sleep. The readers of the tale are aware of the events which lead to the fulfilment of the prophecy, while the king and the queen are not. Situational irony arises from the clash between the king and queen's expectation that their daughter will be protected through their precautions and reality. As in the previous examples, we find a case of non-communicated (i.e. situational) irony embedded in the communicative context (a narration) created by the author-reader relationship.

Embedded situational irony allows for much flexibility in the development of ironic effects. This is illustrated by a common literary phenomenon, which we call *delayed situational irony*. Jane Austen's *Pride and Prejudice* provides an example through Darcy's derogatory remark made on the woman that he found unsuitable to dance with: "She is tolerable but not handsome enough to tempt me". This statement opens up an epistemic scenario, which, if remembered by the reader, will later clash with the observable scenario where Darcy falls in love precisely with this woman who he initially despised. *Delayed situational irony* is more likely to occur in connection with the embedding of irony within a communicative context. This is so because a communicative context, for example in a narrative or a theatrical play, can easily allow the communicator to activate the epistemic and observable scenarios at different stages of the development of the plot. By contrast, in the absence of an embedding communicative context, this epistemic scenario is retrieved from world knowledge at the moment of detecting the observable scenario.

An incidental phenomenon is found when we have a succession of ironic acts grounded in a common observable scenario. We may find sequences of non-communicative and communicative ironies, or of several communicative ironic acts. Let us take another example from the sitcom *Friends* (S3 E18). Phoebe's teenage brother, Frank, introduces his new girlfriend to his sister and her friends. His girlfriend turns out to be his school teacher, Mrs. Knight, who is in her 50s. When the teacher meets Phoebe, she utters in surprise: *You know, it's funny; Frank has told me so much about you but that's not how I pictured you at all*. Phoebe ironically replies: *Yeah, I'm a big surprise*. A situational, performed irony arises from Mrs. Knight finding Phoebe surprising without realizing her age gap with Frank could easily be found more striking. Mrs. Knight is unaware of the irony involved in this situation. However, this irony is evident to the interlocutor, the rest of the characters, and the audience. Then, Phoebe verbalizes this in a sequentially different ironic act by implying that Mrs. Knight is the one that really breaks expectations.

The result is a sequence of ironies consisting in one non-communicated irony (i.e. the odd situation described above), which acts as the basis for Phoebe's communicated verbal irony.

Interestingly, sequenced and delayed situational irony may be combined. This allows for lengthy intervals between the successive ironic acts. One example of delayed sequenced irony can be found in Kate Chopin's "The Story of an Hour". In the text, the protagonist, Mrs. Mallard, who apparently suffers from a heart condition, learns about her husband's death only to find out an hour later that he is in fact alive. There are different ironies that gravitate around Mr. Mallard's purported death in a railroad accident. These ironies are not detected as such until later on in the story. The first irony is Mrs. Mallard's false heart trouble becoming real only when she learns that her husband has not died, which thwarts her reveries of freedom. The second irony in the sequence is built on a previous preparatory irony that arises from the contrast between what people would expect to be Mrs. Mallard's reaction and her joy at her husband's death. At the end of the story, the observable scenario changes drastically when Mr. Mallard suddenly shows up thus becoming evident that he is alive. The third irony in the sequence happens when the reader finds out that the husband was alive and unaware of anything about the accident. The epistemic scenarios of the previously mentioned ironies are built sequentially. They all clash with the same observed scenario, which is only revealed at the end of the narration, thus giving rise to the delayed sequential irony.

5. Conclusions

The present study has shown that both communicated and non-communicated irony operate under the same basic set of mechanisms and may be analyzed through a single lens. Popa-Wyatt's (2014) insights into a strong hybrid account of verbal irony and Ruiz de Mendoza's (2017a) scenario-based approach provide an initial step to develop a still more ambitious unified approach to the phenomenon, which integrates communicated and non-communicated irony. In the fully integrated approach outlined here, all cases of irony are based on the identification of two scenarios that collide. The echoed scenario put forward in Ruiz de Mendoza (2017a) is now regarded as an epistemic scenario, a broader category in which we may find the exploitation of the possibilities of the echo as a tool to build the pretended agreement in verbal irony as one type of communicated irony. The element of pretense is then present through the pretended agreement scenario, exclusive to verbal irony. The communicative context is different in non-communicated (i.e. situational) irony, where the ironist is absent, and the interpreter becomes a perceiver whose certainty about a given state of affairs clashes with what is observably

the case. We further elaborate on the pragmatic notion of reasoning schema to account for the reasoning mechanisms behind the construction of irony. Finally, we have also provided a typology of ironies based on the way they are manifested. The division between communicated and non-communicated irony overrides the traditional verbal/situational dichotomy. Communicated irony, either verbally, visually or multimodally, requires a communicative context with an ironist and an interpreter, while non-communicated (i.e. situational) irony does not. Only when non-communicated irony is inserted into a communicative context, including narrated or performed irony as part of a fictional context, can it involve an ironist. Otherwise, non-communicated irony remains unplanned. All in all, our study not only presents a comprehensive and unified framework for the study of irony, both communicative and non-communicative, but it also introduces a degree of systematicity into the classification of irony according to the way in which it is manifested.

Acknowledgements

We are grateful to Dr. Alicia Galera (University of Almería) for her remarks on a previous draft of this work and to four anonymous reviewers for their valuable observations on the submitted draft. Any remaining weakness is the authors' own responsibility.

Funding

The research on which this chapter is based has been financed by FEDER/Spanish Ministry of Science, Innovation and Universities, State Research Agency, project no. FFI2017-82730-P.

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On figurative ambiguity, marking, and low-salience meanings

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This paper discusses the phenomenon of marked ambiguity, when more than one meaning of an ambiguity is simultaneously applicable, and outlines an account for such marking within the *Low-Salience Marking Hypothesis*. According to this hypothesis, ambiguity markers (e.g., *double entendre*, in the full sense of the word) boost meanings low on salience (Givoni, 2011; Givoni, Giora, and Bergerbest, 2013). Low-salience meanings are meanings less frequent, less familiar, less prototypical, and less conventional (Giora, 1997, 2003). Results from two experiments conducted in Hebrew support the hypothesis. They show that marking figurative polysemy results in higher preference and faster response times for less-salient meanings, challenging modular (Fodor, 1983), literal-first (Grice, 1975), and underspecification (Frisson and Pickering, 2001) accounts of lexical access.

Keywords: marking, figurativity, polysemy, salience, low-salience, The Low-Salience Marking Hypothesis, ambiguity processing, lexical access

1. Introduction – disambiguation vs. ambiguity

For over four decades, the processing of ambiguity has been a main focus of lexical access research within psycholinguistics. Whether studying homonymy, where a word's different meanings are perceived as semantically unrelated to one another, or polysemy, whose different meanings are perceived as related, the underlying assumption of behavioural as well as neuroscientific research has taken a dichotomous view of ambiguity. Under this view, it is often taken for granted that when a polysemy, such as *radiant*, is used, it will either refer to someone being 'happy' (i.e., its metaphoric meaning) or looking 'glittery/sparkling' (i.e., its literal meaning), but never to both these meanings *simultaneously*. Indeed, much of the literature has assumed that successful processing of ambiguity should end in *ambiguity resolution* or *disambiguation*; that is, the output of the processing mechanism should

result in a single (speaker-intended) meaning. With respect to the processing of ambiguity, the debate in the literature has therefore focused mostly on the factors that may modulate processing (e.g., immediate context, meaning frequency) and its time course.

A similar and parallel view has dominated the figurative language processing field within psycholinguistics, where ambiguities of interest relate to either figurative or non-figurative meanings, as in idiom (*he spilled the beans*), metaphor (*radiant*), or metonymy (such as *university* which can either refer to ‘a physical campus’ or ‘an institution’). Here too, the end result of a forced choice method in most studies has engendered the assumption that speakers only intend to refer to one possible meaning in a given discourse.

This research, however, focuses on a different end-result of processing ambiguity, i.e., that of *simultaneous ambiguity* or *ambiguation*, defined here as an output of the processing mechanism that results in more than one accessible and relevant meaning, *taken together*. Consider a happy, smiling actress (or actor) wearing a very sparkling necklace – a scenario that allows for multiple meanings of the word *radiant* to be applicable at one and the same time. Indeed, as will become clear from the naturally occurring examples below, ambiguation can either stem from speakers’ intentions or from contexts, discourses, or states-of-affairs that allow for more than one meaning to be simultaneously applicable. Consider Example (1) below (throughout, ambiguous phrases and marking appear in italics for convenience):

- (1) But this is not a democracy; it is a nation and a nation’s people *spoiled (in both senses of the word)* by a separate and unequal domestic regime and an occupation that has become a 43-year-old violent apartheid. And while we Israelis accept restraints even on our own freedoms, we reap the benefits of this regime every day. [Schaeffer, E. (2010). People are talking about BDS. *The only Democracy blog*]

In Example (1), by marking *spoiled* with *in both senses of the word*, the writer signals to the reader that the ambiguity should be interpreted in more than one way. Possible relevant meanings relate to ‘having impaired the disposition or character by overindulgence’, ‘having damaged seriously’, and even ‘plunder and robbery’ (all of which are listed as distinct meanings in the Merriam-Webster online dictionary). While the semantics of the marker may suggest the speaker may have only intended two of these, marking the ambiguity results in awareness of the ambiguation, allowing the reader to infer any number of these meanings. Note that ambiguation could have occurred even without marking, but marking makes it explicit.

While the study of ambiguity resolution is necessary in order to account for the underlying mechanism of ambiguity processing, as it so often occurs, this work explores what the processing of (marked) ambiguation reveals with respect to that

very same mechanism. This paper is part of a larger study whose main aim is the investigation of the effects of ambiguity marking on meaning comprehension and meaning activation in cases of ambiguity (Givoni, 2020; Givoni, Bergerbest, and Giora, in press). This phenomenon has hitherto remained understudied from a cognitive perspective. Specifically, the study here tests the predictions of theories of lexical access with respect to the processing of (marked) ambiguity when this process does not end in disambiguation.

In Section 2, we present and discuss ambiguity, using naturally occurring examples, while introducing the phenomenon of ambiguity marking, where ambiguity is explicitly cued by interlocutors. This presentation is not couched in a model-specific theoretical preconception with respect to meaning activation, and is aimed to give an overview of a phenomenon which has, for the most part, been overlooked. In Section 3, we discuss possible accounts from lexical access and figurative language processing models with respect to ambiguity marking, in order to explain naturally-occurring phenomena in terms of possible theoretical accounts. In particular, we present the *Low-Salience Marking Hypothesis* (Givoni, 2011; Givoni, Giora, and Bergerbest, 2013) which predicts that marking ambiguity boosts less-salient meanings (i.e., meanings that are less frequent, less familiar, less prototypical, and less conventional, see the Graded Salience Hypothesis, Giora, 1997, 1999, 2003). In Section 4, we detail two studies conducted to test this model and tease it apart from predictions of other lexical access models. Results are reported for one offline experiment – a meaning preference questionnaire, and one online experiment – a lexical decision task. In both, ambiguity was tested outside of context.

Results of these experiments lend support to the predictions of the hypothesis. They show that low-salience markers help bring to mind less-salient meanings by facilitating their activation, resulting in higher preference and faster response times, following marking relative to a control. In Section 5, we conclude while referring to additional related work testing marked ambiguity in context (Givoni et al., in press).

2. The phenomenon of marking multiple meanings

2.1 Why ambiguity? Why marking?

According to Piantadosi, Tily, and Gibson's (2012) information-theoretic account of ambiguity, rather than being a hindrance, ambiguity makes communication more efficient. They argue that this is so because the same form can be reused with little cost. There is one caveat, though, as they explain: "[...] any efficient communication system will necessarily be ambiguous *when context is informative about meaning*"

(italics added), further claiming that: “The units of an efficient communication system will not redundantly specify information provided by context” (p. 290). However, and as Example (2) clearly demonstrates, it is not the case that context is always informative about meaning, if informative is taken to mean *disambiguating*. In Example (2) below, Erin Robinson is talking about Kendall Jenner’s appearance at the Met Gala.

- (2) Erin Robinson: I have to say Kendall Jenner might be my favorite just because *she looked so hot* and I mean it as far as like a flame, like she looked like you couldn’t even touch her. She looked like a phoenix rising from the ashes and I don’t know that she’s ever looked better in her whole life so I have to give it to Kendall Jenner she really stole my heart tonight at the Met Gala.
 [Dirty Laundry, Best & Worst Dressed Met Gala 2019, *Clever Style YouTube channel*, May 7, 2019]

Upon encounter of the phrase *she looked so hot*, the first meaning that comes to mind is the metaphoric ‘she looked attractive’. In fact, this would likely be considered a disambiguating context for *hot*, had it not been for the text that follows. Indeed, it is often claimed that words are only ambiguous out of context but not so within context (again, consider Piantadosi et al., 2012). However, examples throughout will attest that this isn’t necessarily so. Here, the word *hot* is the origin for the ambiguousness of the phrase *she looked so hot*. Crucially, and as this example shows, the phrase retains its ambiguity despite using *hot* to describe a person’s looks. In fact, the speaker initially, and more specifically, wishes to convey that Jenner’s appearance resembles that of a fire, as is echoed in the context by her use of words such as “flame” and “ashes”. This meaning is made possible due to the dress worn by Jenner, which is an orange sparkling color, reminiscent of fire. Yet, the speaker seems to be aware that this literal meaning, related to the phrase *looked so hot*, and pertaining to ‘heat’, is unexpected, or requires an explanation when referring to a person. This awareness on the speaker’s part can be inferred from the speaker’s explicit prefacing of her explanation with “and I mean it as far as [...]”. Still, the speaker does not limit herself to this literal meaning of the ambiguity but also endorses the metaphoric meaning pertaining to looks, the one that immediately springs to mind upon first hearing or reading the ambiguous phrase. This is evident from her comments: “I don’t know that she’s ever looked better” and “she stole my heart”. In other words, she does not reject one meaning in favor of another, but entertains both. By using the same form to refer to two distinct meanings, the speaker in (2) is not being efficient, as is evidenced by her spelling out both those meanings, a consequence of the context, which allows for the ambiguity to remain

intact, and for the use of an ambiguity that aligns with the two possible meanings provided by that context.

Indeed, in their paper, entitled “Ambiguities we live by: Towards a pragmatics of polysemy”, Nerlich and Clarke (2001) argue that in real communication “one can observe how much people love juggling with ambiguities. They are less concerned with communicative efficiency and much more with the pragmatic ‘effects’ they want to achieve” (p. 4). The authors argue for three main pragmatic functions of ambiguity:

1. To inject language with subjectivity.
2. To jointly reappropriate language as a shared inter-subjective system for the expression of meaning.
3. To remotivate language so that we can go on using it for new communicative purposes.

In line with their view, consider cases where awareness of additional meanings becomes evident to interlocutors only as discourse unfolds. Efficient disambiguation seems even less likely in such cases. The following example is a case in point. It also exemplifies functions 1 and 2 above.

Example (3) is taken from an interview which takes place while both interviewer and interviewee are eating spicy chicken wings. The interviewer, Sean Evans, has just asked about the challenges of working as a weatherman, given that there’s no script to follow. The interviewee, Al Roker, responds as follows:

- (3) Al Roker: You know what, I don’t think about it and I think that’s why I’ve actually been able to fool people this long because it is basically an ad lib situation, you don’t write a script, your map [the weather map] is your script, so you just kind of *wing it*.

Roker then looks down at the chicken wings, and begins to laugh, going on to point at one of the wings. The exchange ends with the interviewer saying:

Sean Evans: Saw what you did there.

[Hot Ones, Al Roker Gets Hit by a Heat Wave of Spicy Wings, First We Feast YouTube channel, August 2, 2018]

In this interaction, then, it is only upon uttering the ambiguous phrase *wing it*, that the speaker realizes that what he has *meant* coincides with another contextually appropriate meaning, given what he has *said*. In other words, in spite of his intention to use the phrase *wing it* in its idiomatic meaning (i.e., ‘to improvise’), the speaker eventually realizes that its literal meaning (pertaining to ‘wings’) is also apt, given the situational context. The realization on the part of the speaker takes time; in fact, he looks down at the wings first, suggesting that this ambiguity is costly. However,

he then begins to laugh, indicating that, despite being costly, the ambiguation is pleasing. Finally, the speaker goes on to pick up the chicken wing and point at it, gesturing his realization to his interlocutor, who joins in, making clear that he too has understood the dual reference. The above example clearly demonstrates that the simultaneous consideration of more than one relevant meaning is costly (i.e., takes time) but it can also be gratifying (i.e., pleasurable).

Indeed, Brône and Coulson (2010) tested reading times and wittiness scores for double vs. single grounded metaphors in newspaper headlines. They looked at double grounded (i.e., ambiguated) headlines, such as *Boeing shares are going sky high since last February*, relative to single grounded (i.e., disambiguated) headlines, such as *Google shares are going sky high since last February*. Note that the former, *sky high*, metaphorically refers to an ‘exorbitant degree’, and literally, via the metonymic link to Boeing, the company’s airplanes going ‘high in the sky’. In the latter, however, the metonymic link does not exist and the literal meaning is not relevant. Indeed, findings show that participants took longer to read the double grounded headlines and that these items were rated higher on a wittiness scale than single grounded counterparts.

Not surprisingly, perhaps, speakers seem to be aware that entertaining more than one meaning is not easy. Can cooperative interlocutors offset the cost of additional work on part of the recipient by explicitly and succinctly marking instances of deliberate ambiguity (i.e., not having to spell them out, as in Example (2))?

Consider example (4a), which is a comment posted under a video. In this video, Whoopi Goldberg pitches her idea of a baby friendly airline to a panel of investors:

- (4) a. Insurance rates will be *sky high*. *No pun intended*.

[The View, Whoopi Goldberg Pitches ‘Baby Air’ to Cast of ‘Shark Tank’, The View YouTube channel, February 15, 2018]

Adding (*No*) *pun intended* to the ambiguous *sky high* results in the literal ‘high in the sky’ meaning becoming explicitly available in addition to the figurative meaning ‘exorbitant degree’. Now consider the unmarked minimal pair presented in (4b), following the exact same context:

- b. Insurance rates will be *sky high*.

While some readers of (4b) may have understood both meanings on their own, (4a) makes the ambiguation explicit. For readers of (4a), understanding only the figurative meaning would be insufficient, not so for readers of (4b). It would seem then that deliberate ambiguity can benefit from explicit linguistic and minimal marking.

This example illustrates that speakers can easily alert addressees to ambiguity without having to spell out the intended meanings.¹

In fact, a feature common to the ambiguity examples, shown so far, is that these instances of ambiguity are cued in some way. For instance, in Example (2), the speaker explicitly states “and I mean that as [...]” when adding the unexpected meaning; in Example (3), the speaker laughs and gestures when he recognizes an additional relevant meaning; in examples (1) and (4a) the speaker explicitly marks the ambiguity (using *in both senses of the word* and *(no) pun intended*, respectively). Such cueing of the ambiguous phrase may alert interlocutors to multiple meanings, so that additional relevant meanings are not lost in comprehension. In other words, while ambiguity does not have to be marked, marking draws attention to it and reflects speakers’ goals in discourse, rendering these cases a good starting point for the research of ambiguity. Marking can, therefore, be employed to disclose ambiguity in general and ambiguity in particular. Moreover, it is a useful tool to explore meaning comprehension and activation as well as a diagnostic to test out different theories of lexical access.

In what follows, we focus on minimal linguistic marking examples such as in (1) and (4a), leaving maximal linguistic marking (i.e., spelling out) such as in (2), as well as stylistic, gestural, or extra-linguistic marking, such as in (3) for future research. For the purpose of this study, these minimal linguistic markers make up a functional class and are referred to as such. Having said that, it is important to stress that we do not assume that the function of marking ambiguity is the exclusive or even the central role of these markers. Indeed, only a thorough corpora search would allow to make such a claim. We do, however, predict that these markers can be used in such a way. It is the function of marking ambiguity that is central here, the markers are but a means to test it. (For an argument in favor of viewing such markings as *dual* (or *multiple*) *meaning* operators, see also Nerlich and Chamizo Domínguez, 2003; Powell, 1992).

1. Note, that the negated marker (*no pun intended*) acts in a similar way to its non-negated counterpart (*pun intended*) because, by calling attention to the negated (literal) meaning, the marker boosts it, even if momentarily. In this way, though the final interpretation of the utterance may require discarding this meaning, it remains part of the representation at some point. It is worth mentioning that speakers often apologize for puns, probably because these are considered as a possible faux pas. “Excuse the pun” or “no pun intended” are therefore not necessarily about discarding one meaning but about pointing to the speaker’s stance (e.g., ‘I have not tried to be funny, it’s the language, not me’).

2.2 Is ambiguity the same as punning?

The phenomenon of ambiguity has predominantly received attention when it appears in the form of humour and puns (see, e.g., Attardo, 1994; Coulson and Severens, 2007; Doogan, Ghosh, Chen, and Veale, 2017; McHugh and Buchanan, 2016; Partington, 2009). Yet, ambiguity goes beyond punning, as far as punning has hitherto been characterized.

Indeed, unlike punning, ambiguity as presented here – a phenomenon benefitting from cueing – fosters *a connection* rather than an *opposition* between the meanings involved. Note that, in puns, one meaning is often eventually discarded in favor of another (consider also punchlines in jokes). Ambiguity, as exemplified here, calls for a single connected-only-for-this-instance meaning made of two (or more) distinct meanings that are not usually meant to be referred to in parallel, even if they are semantically related (consider again *hot* in Example (2)). This phenomenon requires speakers to negotiate (with themselves or others) a multitude of meanings, while *retaining* that multitude. Yet, the psycholinguistic research on lexical access and puns reflects the bias for puns of the disambiguating kind, as in Sheridan, Reingold and Daneman's (2009) paper, entitled "Using puns to study contextual influences on lexical ambiguity *resolution*: Evidence from eye movements" (italics added).

Additionally, as we have already seen (see Example (1)), ambiguity is not limited to humorous or attention-grabbing genres, such as puns in jokes, advertisements, or headlines. Consider Example (5), where ambiguity is not meant to be entertaining. In this example, originally in Hebrew, the writer is discussing side effects after giving birth. Note that, in Hebrew, the verb *lisvog* (lit. 'absorb') is commonly understood metaphorically meaning 'to put up with'.

- (5) True, it is possible to repair the damage of pelvic floor plummeting relatively easily, but in practice most women do not treat and *absorb* (*double entendre*) the leak. [Katzeer, Y. (2015). It's time to talk about it – side effects after giving birth. *Ha'aretz*]

Lastly, ambiguity does not have to be deliberate, intentional, or concocted on the part of the speaker – a feature which is considered a hallmark of punning by Attardo (1994) (but see Partington, 2009). Recall, for instance, Example (3) above, and see also Example (6) below, where the revelation of ambiguity happens across discourse units and across interlocutors. Ambiguity, is not always *intended* (or even scripted in the Partingtonian sense), rather, when it occurs, we may say that it is *revealed*. In Example (6), the speaker who utters the ambiguity does not cue an additional meaning. Instead, her interlocutor initiates a meaning negotiation via marking:

- (6) Carol McGiffin: So if you did, if you did leave The View, what do you think that you'd do? Would you go back to acting?
- Whoopi Goldberg: I'd probably go back to acting. And um I'm also *making clothing* these days
- Carol McGiffin: Making clothing?
- Whoopi Goldberg: Yeah
- Carol McGiffin: What *literally* yourself?
- Whoopi Goldberg: u:m
- Carol McGiffin: Sewing?
- Whoopi Goldberg: I'm not sewing it but I'm designing it. But my granddaughter is sewing stuff. She also is designing stuff.

[Loose Women, After The View Whoopi Goldberg Wants to Be a Fashion Designer *Loose Women YouTube channel*, October 12, 2018]

When McGiffin utters “What *literally* yourself”, there is a short breakdown in conversation. Goldberg had meant *making clothes* as ‘designing’. McGiffin, as her clarification in the next turn reveals, had understood this phrase to mean ‘sewing’ and perhaps finds it surprising that this is what Goldberg intended to do. However, by so doing, she exposes the potential for ambiguity. Indeed, Goldberg seizes upon this, maintaining the ambiguity, and incorporating it into her response. She could have just corrected the misunderstanding but she goes on to say that while she herself does not sew, but only designs, in her granddaughter’s case, *making clothes* means both. We see here that marking ambiguity in conversation helps to monitor comprehension.² The discourse monitoring behaviour on part of the interlocutors, shown in Example (6), goes beyond the scope of what is often the focus of the study of puns, where comprehending the pun itself takes precedence.

In sum, what ambiguity and punning have in common is that both phenomena are based on word-play, but the relationship between the different meanings involved and their contribution to discourse is not the same. Regardless, when figures (e.g., *wing it*) are explicitly marked, the result can be entertaining and pun-like.

As a final and tangential note, owing to examples such as (6) in this section and (8) in the following section, we refrain from previous terminology in the literature with respect to ambiguity such as *purposive ambiguity* (Kittay, 1987), *deliberate ambiguity* (Brøne and Coulson, 2010), *intentional ambiguity* (Nerlich and Clarke, 2001), or *twice-true metaphor* and *twice-apt metaphor* (Hills, 1997).

2. By drawing a difference between marking by the speaker and by the interlocutor, as in Example (6), a new aspect of the typology of marking comes to light, one which could be connected to the study of intersubjectivity. We thank the participants of the 4th Figurative Thought & Language Conference for their insights with respect to this example, and Herbert Colston in particular, as well as two anonymous reviewers.

2.3 Does ambiguity always involve a figurative meaning and a literal meaning?

Recall that all the examples, discussed so far, were instances of ambiguity that show a movement from a figurative meaning to a literal one. In fact, Brône and Coulson (2010) characterised *ambiguation* as involving “the activation of both a contextually dominant metaphoric interpretation and a metonymically guided literal reading” (p. 215). However, as we shall see in the following examples, other configurations are possible. Example (7) below shows a reverse pattern, namely a transition from a literal meaning to a contextually relevant metaphoric one:

(7) Jane Fonda: Because I think it’s hard for people, in this culture anyway, women in particular, to really become embodied, to own themselves, to know who they are, and to feel whole. It takes time [...]

Oprah Winfrey: Yeah but I just had an ‘A Ha’ epiphenal moment as you’re sitting there, I was thinking: Wouldn’t it be amazing if everybody whose hearing you right now, *really h-e-a-r-d* you and was able to make the shift to not have your life be about being successful or getting ahead [...]

[Jane Fonda on the Oprah Winfrey Show which aired on October 27, 2010]

Following the marking *really* of the polysemous verb *heard*, Winfrey extends the physical, here the literal meaning of *hearing*, having to do with ‘listening’, to additionally encompass its metaphoric meaning, related to ‘understanding’ or ‘internalizing’, as is echoed in her statement “able to make the shift”.

In Example (8), originally in Hebrew, the two meanings, enriching one another, are both metaphoric:

(8) Personally, I was thrilled to work with her because I had seen her play the best roles in the theatre. [...] And let’s not forget: She was a *star in the full sense of the word*. [...]

Working on the [TV] series involved physical effort, and after the injury, she had difficulties we were not always aware of. But she withstood it all heroically, as befits a professional actress. [She was] an outstanding comedienne. A *real star*.

[Shauli, Y. (2014). She [Hanna Maron] was a star in the full sense of the word, *Walla News*]

Initially, the writer refers to the actress as a star because she played “the best roles in theatre”; in other words, she was the ‘leading lady’. Ending the paragraph with the ambiguity *star*, he then marks it, using *in the full sense of the word*. The following

text reveals that this is not meant emphatically and therefore allows the writer to introduce an additional meaning, referring to ‘an outstanding talented performer’ (listed as an additional distinct meaning by the Merriam-Webster online dictionary). Interestingly, the writer adds an additional cue on the second reference to *star*, *real*, reiterating the ambiguity.

Marking does not, then, only involve a transition to figurativity or literalness from one to the other, but also from one figurative meaning to another. Note that the markers’ semantics will not prove to be a useful basis for answering the question: Which meaning is getting marked? If the semantics of marking mattered, it should be transparent to the reader, which of the two metaphoric meanings of *star* in the previous example, should be characterized as (the) “real” (one), and which can be characterized as the one that is somehow “fuller” than the other. However, that is not the case in Example (8). We cannot say that being the ‘leading lady’ is somehow less *real* than being ‘an outstanding talented performer’.

It may seem that each one of these markers, if taken separately, either induces metaphoricity or literalness (e.g., under such a view perhaps *in the full sense of the word* adds a metaphoric meaning while *literally* a literal one). However, consider previous examples, such as *wing it* for instance, followed by *in the full sense of the word*. This marking would also work in bringing a literal meaning to the fore. More notably, perhaps, is the observation that ambiguity can be used with markers such as *literally* even when two non-literal meanings are intended.

Consider Example (9), in which two radio show hosts are discussing rapper Kanye West’s support of U.S. president Donald Trump:

- (9) Charlamagne Tha God: [...] I think his [West’s] gift is the fact that he does go against the grain. When everybody goes left, he goes right. It’s just now *he went right literally*.

Angela Yee: Yeah, Alt.

[The Breakfast Club, Angela Rye Discusses The Omarosa Tape, Security In The White House + More, The Breakfast Club Power 105.1 FM YouTube channel, August 16, 2018]

Here, in addition to the idiomatic meaning ‘to go against the grain’ of “when everybody goes left, he goes right”, *literally* introduces a ‘going right *politically*’ meaning (as resonated by the second speaker’s reference to “Alt (right)”). Note that this is not the literal meaning of the phrase of *going right* which has to do with ‘directionality’, but an additional metaphoric meaning.

We, therefore, see that the semantics of marking is not transparent with respect to which meaning is getting marked (i.e., even in the case of *literally*, it is not necessarily a literal one; for more on this, see Givoni, 2011; Givoni et al., 2013 and references therein).

Note that examples (8)-(9) can be thought of as *figurative blends*, where more than one figurative trope is used in a single construction. One type of figurative language, which has been shown to easily combine with other forms of figurativity, is that of irony. Irony can blend with hyperbole (e.g., Colston and Keller, 1998; Popa-Wyatt, 2020), overstatement, or understatement (e.g., Colston, 1997), metonymy (e.g., Athanasiadou, 2017), metaphor (e.g., Barnden, 2020; Giora and Becker, 2019), and the list goes on. While marked ambiguity is a rather wide-reaching linguistic phenomenon, in that it combines with different forms of language, it seems to evade irony. A possible explanation for this would be that in blended irony, while more than one meaning is analytically available, and involved in the computation, these meanings seem to be ‘packaged as one unit’ in the final interpretation, whereas in ambiguity the meanings involved are easily teased apart in the final interpretation. Moreover, regardless of which theory of irony processing one adopts, whether blended with figurativity or not, the extensive and interdisciplinary investigation of irony has revealed that, while irony involves a duality of meaning for its derivation, it further requires opposition or contradiction within that duality. Ambiguity, however, does not. Indeed, in one of his illuminating accounts characterizing irony, Colston (2017) maps out the notion of *conjoined antonymy*. He argues that not only do the oppositional components or schemas involved in verbal, situational, and pictorial irony co-exist, *despite* contradicting one another, the ironic effect is enhanced, the more blatantly apparent the contradiction is perceived to be. Not so with ambiguity, where the two meanings involved do not have to be understood in terms of opposition (recall Section 2.2 above, comparing and contrasting ambiguity with puns), or even in relation to one another. Rather, ambiguity is accomplished when simultaneous distinct meanings are simply allowable. (For a discussion comparing and contrasting of ambiguity as discussed here with *amalgams* (Ruiz de Mendoza and Galera-Masegosa, 2011; Ruiz de Mendoza, 2017); *metaphtonomy* (Goossens, 1990) and *mixed metaphors* (e.g., Gibbs, 2016), see Givoni, 2020 Section 2.3).

Finally, marked ambiguity can connect between two literal meanings and is not limited to polysemy or figurative language. (For examples and discussion of marked homonymy, see Givoni, 2020). Moreover, ambiguity is not limited to established meanings but can be used when new meanings are created on the fly (for an example and discussion, see Givoni, 2020).

3. Ambiguity processing models and their predictions for marked ambiguity

3.1 Which meanings benefit from marking?

There are at least two ways in which marking could differentiate marked from unmarked ambiguity. We may say that in the case of ambiguities, marking the ambiguity only serves as a (non-disambiguating or ambiguating) cue, pointing to the nature of the marked utterance (i.e., the utterance should be understood as having more than one meaning). A stronger claim can, however, be made, one that would assign a computational function to marking, such that marking directs comprehension towards specific, marked meanings, meanings which would possibly be lost without marking.

If we assume the first option, that marking alerts addressees to the fact that ambiguity has been uttered, marking then functions as an extra-linguistic or meta-linguistic device, prompting awareness to a state of affairs or discourse, whereby disambiguation is not necessary. Cognitively speaking, marking could cue the processor to not follow through with a selection of a specific meaning.

As per the second option, according to which a marker benefits some (marked) meaning, marking functions on an inter-linguistic level, benefitting a specific meaning within the ambiguated utterance. In line with this view, in the regular unmarked ambiguity case, the processor follows the normal route of automatic meaning activation stage, resulting in meaning assignment. But if marking is involved, it allows this process to benefit an alternative meaning. It is likely that marking of additional meanings is required, either because without marking they would decay over time, or because without marking they may not even reach activation thresholds. Both of which would result in the loss of ambiguity.

Because ambiguity has been mostly overlooked, predictions for the effects of marked ambiguity on lexical access have not been suggested for most of the relevant theories. In what follows, we focus on figurative ambiguity and, in particular, on polysemy, taking into account possible predictions of the main lexical access models that have been proposed in the literature. (For a detailed discussion of the processing of marking of additional ambiguity types, such as metonymy and homonymy, see Givoni, 2020). We end by presenting our contribution to this new research program: *The Low-Salience Marking Hypothesis* (Givoni, 2011; Givoni et al., 2013).

According to a strict version of the modular view (Fodor, 1983), lexical access is exhaustive: All the meanings of a stimulus are accessed initially, regardless of context. This view predicts that all meanings of a word must be accessible immediately on encountering the word. While often tested using homonymous stimuli (e.g., Swinney, 1979), this view is in line with the Overspecification Model for

meaning access of polysemy (see Vicente, 2018 for an account). Since, according to these views, all meanings are expected to become available immediately, marking would be expected to have null effects on lexical access as marking cannot prompt any specific meaning.

For homonymy, dominance (i.e., frequency) of meaning has been shown to play a role in meaning activation and retention. When no preceding biasing context is provided, processing difficulty, as evidenced by longer gaze duration in eye-tracking measurements, emerges only in a late disambiguating region, where disambiguating information follows the ambiguity, and only if subordinate (i.e., less frequent) meanings turn out to be intended (Duffy, Morris, and Rayner, 1988). The longer gaze duration in the disambiguating region indicates that meaning assignment had to undergo a revision and that initially only dominant meanings were activated. However, such competition effects were not found for metonymic-polysemy (Frazier and Rayner, 1990). Indeed, according to the Underspecification Model, in the case of polysemous ambiguities, only one underspecified core meaning of a stimulus is activated initially (Frisson and Pickering, 1999; Pickering and Frisson, 2001). This underspecified meaning is compatible with all the senses of the polysemy. The model predicts that, after the activation of the underspecified meaning, context, rather than guiding selection of an established sense, helps to home-in on the contextually appropriate, narrowed down sense. The authors argue that: “[B]ecause the underspecified meaning is the same for all related senses of a word, there should be no need for alternative senses to compete for activation” (Frisson and Pickering, 2001: 159). In line with this account, their results show that prior disambiguating context, biasing the subordinate meaning, did not lead to a difference in gaze duration for verb phrases, headed by a polysemous (metaphoric) verb (*disarm* the rebel/the critic). Such contextual effects were found however for verb phrases headed by a homonymous verb (*ruled* the country/the line). According to the authors, these results are not in line with an Overspecification View of polysemy, which would predict that all meanings of a polysemy are activated regardless of context, on the basis that such an account would entail a competition between the meanings (leading to longer gaze durations, indicating competition or difficulty, when the subordinate meaning is instantiated).

What would the Underspecification Model predict, with respect to effects of marking on lexical access? Using the *disarm* example, consider a contrived marked ambiguity utterance: *He disarmed them, in the full sense of the word;* or *They’re disarmed, truly.* What could be more inviting of ambiguity than an underspecified core meaning? In fact, Frisson and Pickering go so far as to predict this when discussing the following example: “I’ve been reading that adulterer *Dickens* over the summer”. In this example, *Dickens* is understood both literally as the author/man and metonymically in reference to his works. “The possibility of multiple

senses at the same time for a word is most straightforwardly compatible with an underspecified account” (2001, p. 166). Yet, it is exactly due to the prediction of an underspecified meaning that the model would also predict null effects of marking on lexical access. After all, marking cannot narrow down an underspecified meaning on its own when context isn’t available. If a core meaning is accessed, in what way could *in the full sense of the word* or *truly* narrow it down to a specified sense? Recall that such senses are viewed as being refined, rather than selected by context. Under this view, a core underspecified meaning cannot be limited in any predictive manner, unless context is available. Even if senses were pre-established, marking cannot transparently choose between them. Recall that the semantics of the markers are not a reliable source of information, even in the case of *literally* (Section 2.3). But further still, the same prediction of null effects for marking would hold even if context preceded the marked expression. Marking cannot benefit either sense in particular, if both senses can be narrowed down by preceding context, regardless of marking. Under this view, then, marking can only function as an extra-linguistic or meta-linguistic device alerting the addressee that more than one meaning will be necessary.

However, some evidence against the Underspecification account comes from the study of metaphoric nouns and adjectives as opposed to verbs, while using lexical decision tasks as opposed to eye-tracking methods. In a lexical decision task, participants are presented with letter strings and their task is to decide, as quickly as possible, if the letter string makes up a word in their language or not. Often, letter strings (known as targets or probes) are presented after a prime, often a word, a sentence or a phrase. Lexical decision tasks build on the priming (i.e., facilitating) effect of semantically related primes. This effect is attributed to the automatic spread of activation between semantically related meanings in the lexicon. Findings from a study that used event-related potential (ERP)³ to underpin the brain processes underlying meaning activation and selection when performing the lexical decision task, are compatible with a representation of distinct, possibly hierarchic meanings rather than an underspecified core.

Indeed, Klepousniotou, Pike, Steinhauer, and Gracco (2012) recorded ERPs as participants completed a lexical decision task to targets related to metaphoric nouns (*arm* relating to ‘wrist’ or ‘couch’), presenting targets (e.g., ‘wrist’) 250 milliseconds (ms) after the onset of the prime (*arm*). A specific ERP component of interest in their study is the N400 (N for its negative polarity and 400 for its peak latency at about 400 ms after the onset of the stimulus). The amplitude of this component is understood to reflect semantic processing and is more pronounced (i.e., negative)

3. ERPs measure ongoing brain activity and can indicate differences at the neurophysiological level.

for semantically incongruous stimuli. Of note, the N400 effects for metaphoric nouns were scalar such that dominant-related targets showed a stronger N400 priming effect (smaller N400 amplitude) relative to subordinate-related targets, especially over the left hemisphere. In other words, even though both dominant targets and subordinate targets exhibited reduced N400 effects compared to unrelated controls, the dominant-related targets exhibited reduced N400 effects compared to subordinate targets. In this study, stimuli were presented out of context and yet results reflect a gradient activation of meanings, one that is less compatible with an underspecified core, which is yet to be homed-in by context.

Behavioural results, when stimuli are embedded in context, lend further support to this claim. Williams (1992) found that central meanings, defined as the first entry in the dictionary, of metaphoric polysemous adjectives (*firm* as in 'solid') remain active as late as 1100 ms following the prime onset, even when *irrelevant* contextually (*The teacher was criticized for not being firm*). Non-central meanings (*firm* as in 'strict') do not show activation when contextually irrelevant. This asymmetric pattern of activation challenges an underspecified core view. If context had still not homed-in on a specific sense in this long delay, then both meanings should have been primed in both conditions. Moreover, if both meanings had already been assigned, then only relevant meanings should have been primed. The effects of centrality of meaning suggest that while there is a gradience of meanings in polysemy, which is implicated in meaning retention, the meanings activated in polysemy need not be in competition. Central meanings linger, while subordinate ones decay faster.

Results from Klepousniotou et al. (2012) and Williams (1992), then, are in line with an ordered view of lexical activation, even for polysemy, suggesting that marked meanings are subordinate meanings. This view is in line with the *Low-Salience Marking Hypothesis* presented below.

Taking a different position, Katz and Ferretti (2001) introduced a Constraint-Based Model of non-literal language processing. According to this model, the most activated meaning (literal vs. figurative) is determined by the relative strength of different sources of information (i.e., constraints), that provide immediate probabilistic support for competing interpretations in parallel and over time. According to the Constraint-Based Model, competition duration is expected to be faster if the constraints point to the same interpretation, but slower if support for different alternatives becomes equal.

In a series of studies, Katz, Ferretti, and colleagues tested the role of explicit markers such as "literally speaking", "figuratively speaking", "proverbially speaking", and "in a manner of speaking" on the processing of proverbs (see Ferretti, Katz, and Patterson, 2006; Katz and Ferretti, 2003; Schwint, Ferretti, and Katz, 2006). Crucial to work on marking is their hypothesis that these markers should act as strong constraints on how people interpret the proverbs (i.e., whether literally or

figuratively). The studies found different effects for different markers, depending on proverb familiarity, whether context was presented, and which methodology was used (reading time vs. brain-imaging). For Katz and Ferretti, however, such markers do not function as ambiguity or ambiguity markers but rather as introductory formulae, signaling to the addressee the intended interpretation of an incoming proverb. Marking, therefore, acts as an additional constraint, providing support for a possible (literal vs. non-literal) interpretation. Moreover, the authors embedded markers in a dichotomous fashion. Thus, “proverbially speaking” only appeared in non-literal contexts, biasing a proverbial reading, and “literally speaking” only appeared in literal contexts, biasing a literal reading. This stimuli set-up reflects the assumption that markers *disambiguate* the proverb to the meaning provided in the context, which may happen to coincide with the semantics of the marker, effectively treating marking as an additional *contextual* constraint. (For additional types of marking that have been suggested in the literature, see Givoni, 2020 and references therein, e.g., *Not!* in the case of irony, as in Attardo, 2000).

Turning to the argument put forth by the Standard Pragmatic Model (Grice, 1975), the processing of figurative language is indirect, involving initial access of literal meaning. In line with this claim, Coulson and Van Petten (2002) found greater N400 effects for sentence endings that instantiated a metaphoric reading (*After giving it some thought, I realized the new idea was a GEM*), relative to literal endings (*The ring was made of tin, a pebble instead of a GEM*). The underlying assumption of this view is that literal language is easier to comprehend relative to figurative language. Therefore, according to this view, marking would be expected to benefit figurative interpretations.

However, other findings suggest that even in minimally biasing contexts of the *X is Y* form, metaphoric meanings are readily available. Blasko and Connine (1993) found that following familiar metaphors (e.g., *hard work is a ladder*), lexical decisions for target words related to literal meanings (‘rungs’) *as well as* figurative meanings (‘advance’) were faster to respond to than responses to unrelated target words (‘pastry’). Because the target words were presented immediately after the offset of the last word of a spoken metaphor, the authors concluded that the figurative meaning was rapidly available. When target words were presented 300 ms following offset of the last word of the prime, results were replicated, indicating that, at this delay, both meanings remain active. Note that these findings suggest that metaphoric interpretations can be processed rapidly even in the absence of cues or contextual support.

Other studies, such as Glucksberg, Gildea, and Bookin’s (1982), found that readers take longer to reject statements that are literally false but metaphorically true (*Some surgeons are butchers*), compared to literally false but non-metaphoric statements (*Some apples are oranges*). In fact, Gibbs (1994) argued that, in a realistic

social context, comprehension of the intended meanings of non-literal utterances can occur directly, such that interlocutors need not automatically analyze literal meanings before (beginning to) construct a figurative interpretation. While the Direct Access View was originally conceived of at the utterance level, we may think of this model as predicting that at the utterance level (*S/he's radiant* embedded in a real-life social context, mentioning a person's looks), a figurative interpretation could be computed just as quickly as, or even more quickly than, a literal one, indicating that a figurative interpretation is not optional nor cognitively harder relative to a literal one. The direct access account then might view marking as a contextual cue (directing comprehension on the basis of context). If marking is seen as a contextual cue, depending on the prediction assumed, marking can either benefit the meaning given in context, or follow the meaning not (or less strongly) provided in context. Recall that ambiguity contexts can support more than one meaning.

According to the Graded Salience Hypothesis (Giora, 1997, 1999, 2003) however, context cannot put a *salient* meaning down. The Graded Salience Hypothesis assumes that (figurative) language comprehension involves two distinct mechanisms that run parallel: A bottom-up lexical mechanism, that is encapsulated and stimulus driven, and a top-down, contextual mechanism, that is predictive, inferential, and integrative. The bottom-up, linguistic mechanism is lexicon-based, which is ordered hierarchically. Salient meanings are meanings foremost on our minds due to degree of exposure as well as cognitive factors. The more frequent, familiar, conventional, or prototypical a meaning the more salient it is.⁴ Less-salient meanings, albeit coded in the mental lexicon, are less prominent, because they rank lower on these factors. Lexical access is ordered: Salient meanings get activated unconditionally when the relevant stimulus is encountered; less-salient meanings are slower to get activated. Therefore, at times, their activation may not reach a threshold. Indeed, this theory makes the same predictions for any type of stimuli (homonymy, polysemy, and utterance level figurativity), where meanings lie on a continuum from coded, salient meanings to coded, but less-salient meanings, to non-coded, non-salient, meanings, which are novel and have to be created on the fly. Less-salient and non-salient meanings are meanings low on salience. Peleg, Giora, and Fein (2001) tested unfamiliar Hebrew metaphors (*delinquents*), embedded following a metaphorically biasing context: *Sarit's sons and mine went on fighting continuously. Sarit said to*

4. Note the difference between dominance and salience. While some meanings are frequent and therefore familiar, some meanings are familiar though not frequent, such as taboos (see also Gernsbacher, 1984). While a theoretical construct, salience must also be established empirically. Meaning salience may change over the course of a speaker's lifetime, depending on a person's history of use with a given word, as certain meanings become prevalent over others. Critically, however, salience does not refer to a meaning made salient by the immediate context.

me: “*These delinquents won’t let us have a moment of peace*”). They found that salient but contextually incompatible meanings (‘criminal’) were just as available as non-salient compatible meanings (‘kids’) compared to unrelated controls (‘painters’) immediately following the offset of the target. Such findings suggest that context could not block the output of the lexical module. Crucially though, and unlike the literal-first model, salience is not synonymous with literalness, such that salient meanings need not be only literal. Indeed, if a figurative meaning has become entrenched, as in conventionalized metaphors, it can become salient. In fact, Mashal, Faust, and Hendler (2005) have suggested that the right hemisphere is recruited for the processing of novel (non-salient) metaphors, but not for the processing of conventional (salient) metaphors (see also Mashal and Faust, 2009; Mashal, Faust, Hendler, and Jung-Beeman, 2007). Moreover, a coded figurative meaning (*sharp* as in ‘intelligent’) will be more salient than a non-coded ironic meaning (*sharp* as in ‘stupid’, which will be non-salient). Indeed, Colston and Gibbs (2002) found that utterances such as: *This one’s really sharp* took less time to read in metaphorically than in sarcastically biasing contexts. Additionally, Giora and Fein (1999) found that participants completed as many fragmented words related to an idiomatic meaning of familiar idioms embedded in literally biasing contexts as they did words related to the compositional meaning. These findings suggest that the idiomatic meanings of familiar idioms are salient (see also Van de Voort and Vonk, 1995). Due to the nature of the two readings of an idiomatic utterance, one coded and recognizable at some key stage of the idiom (whether it’s a word or the information making the idiomatic string recognizable, see Tabossi, Fanari, and Wolf, 2009; see also Cacciari, 2014) and one compositional and literal, the Graded Salience Hypothesis differentiates between a salient meaning and a salience-based interpretation, which, at times, may take longer to compute (consider the *wing it* example in Section 2). Note that for multi-word expressions, while *meanings* are listed in the mental lexicon, *interpretations* are construed on the basis of the coded, salient meanings of a stimuli’s components (Fein, Yeari, and Giora, 2015).

However, it turns out that some constructions have default interpretations that are not salience-based (Giora, Drucker, Fein, and Mendelson, 2015; Giora, Livnat, Fein, Barnea, Zeiman, and Berger, 2013). For this reason, Giora, Givoni, and Fein (2015) incorporated the Graded Salience Hypothesis into the Defaultness Hypothesis (see also Givoni and Giora, 2018). Note that default, non-coded interpretations, albeit constructed, are automatic responses to a stimulus. When applicable to a given construction, default interpretations will supersede salience-based alternatives. Giora, Givoni et al. (2015) found that participants preferred a sarcastic interpretation for constructions such as *He’s not the most organized student* even when out of context. In other words, they were more likely to comprehend the sentence as meaning ‘He’s messy’ rather than ‘He’s orderly but others are more

orderly'. They further found that such utterances were read faster in sarcastically biasing contexts than in (equally strong) literally biasing ones. Moreover, when embedded in sarcastically biased contexts, these utterances were read faster than their affirmative counterparts (*He's the most organized student*), the latter involving their literal interpretation in the process, which had to be discarded. (On irony, salience, and defaultness see Giora, Meytes, Tamir, Givoni, Heruti, and Fein, 2017; on pleurability and defaultness see Giora, Givoni, Heruti, and Fein, 2017).

The Graded Salience Hypothesis and the Defaultness Hypothesis, provide a framework that allows us to think about ambiguity in a more encompassing way, given that these theories make clear predictions for different types of stimuli. In the next section, we outline the predictions regarding marking, relevant to this framework.

3.2 The Low-Salience Marking Hypothesis

Givoni (2011) and Givoni et al. (2013) were the first to offer an explanatory function for ambiguity marking in terms of meaning salience. Givoni (2011) and Givoni et al. (2013) presented the *Low-Salience Marking Hypothesis*, housed within the Graded Salience framework. According to the hypothesis, given that salient meanings are accessed unconditionally, they do not rely on marking. These meanings can, therefore, be thought of as unmarked meanings. On the other hand, low-salient meanings (either less-salient or non-salient) lag behind salient ones. Low-salience meanings are, therefore, expected to benefit from marking. In other words, marking ambiguity can be thought of as marking meanings low on salience, in order to boost them, so that they are more likely to spring to mind.

3.2.1 Predictions

According to the *Low-Salience Marking Hypothesis*, then, the type of linguistic marking discussed here signals that the output of the automatic process of decoding (i.e., the selected meaning retrieved from the lexicon) should undergo a process of recoding, in order to arrive at an additional meaning, one that is lower on salience. Two predictions (A-B below) arise from the *Low-Salience Marking Hypothesis*:

- A. Low-salience marking will result in higher awareness of low-salience meanings.
- B. Low-salience marking will result in facilitating low-salience meanings.

Because salience is conceived of as orthogonal to figurativity, these predictions are expected to hold regardless of stimuli's figurativity; because the lexical mechanism is assumed to be encapsulated, these predictions are expected to remain constant, regardless of contextual bias.

3.2.2 Previous findings

Prediction A has been previously tested in two off-line experiments and a corpus-based study conducted in Hebrew. Givoni et al. (2013) showed that certain cues, termed low-salience markers, are used to prompt addressees' attention to meanings low on salience. In the two experiments, participants were presented context-less sentences, followed by a 7-point scale (not marked for numbers, where 7 = salient and 1 = not salient), with different (salient/less-salient) interpretations instantiated at its ends. They were asked to rate the proximity of the interpretation of the sentences to those displayed at the scale's ends. Items were identical, except for the inclusion or exclusion of a marker (such as *bimlo muvan hamila* (lit. 'in the full sense of the word'), *be'emet* ('truly' or 'really'), *literali* ('literally'), and *lo* (the negation marker 'no')). Items included familiar metonymy (e.g., *I love Amos Oz*, where the name can refer to the author/man but is more readily understood as referring to his books); conventionalized metaphor (e.g., *He's heavy*, which can refer to someone's physical appearance but is more often used to refer to their emotional traits); conventionalized irony (e.g., *He's a bleeding heart*, which in Hebrew is often intended sarcastically but can also sincerely refer to someone's sensitivity); as well as to idioms that are also compositionally sensible (e.g., *The writing was on the wall*); or understatements/overstatements (e.g., *I'll be done with it in a day or two*, which means 'in a short time' but has a compositional interpretation of 'in 24 or 48 hours'; or *I received thousands of letters*, which conveys receiving many letters, not necessarily more than 999).

Results show that ratings of items including a marker received lower mean scores compared to items not including a marker, indicating preference for low-salience meanings when a marker was present than when it was not. In the first of these studies, participants saw only one condition per item (with/without marking). In the second of these studies, participants saw both items together, in an attempt to force participants to draw a comparison. And, indeed, while the low-salience marking effect was found to be significant in both studies, the second form of presentation enhanced the effect. The markers, then, drew attention to the less salient meaning, regardless of non/literalness and the markers' semantics.

The corpus-based study was made up of items based on naturally occurring examples, in which concepts were followed by *tartey mašma* ('double entendre'). The procedure was the same as in the first two experiments, except for the fact that items never appeared with the marker. Results show that, in the absence of the marker, participants preferred salient meanings, further supporting the prediction that, in their natural environment, when they were modified by the marker, this cue was used to draw attention to the alternative, low-salience meaning.

To further test this prediction, three external judges were presented with the original naturally occurring environment. These naturally occurring texts were

the basis on which the stimuli of the questionnaire, described in the previous paragraph, had been created. These texts were then used to run a resonance study. According to Du Bois (2014), resonance pertains to “the activation of affinities across utterances”, when identical or similar syntactic structures or words are produced across turns in a discourse. This also includes echoing an utterance’s meanings and interpretations in the neighbouring context (see also, Giora, Drucker, and Fein, 2014; Giora, Givoni, and Becker, 2020; Giora, Raphaely, Fein, and Livnat, 2014). Givoni et al. (2013) found that agreement among the three judges was very high. Specifically, the judges found resonance (as per Du Bois, 2014) with the less salient meaning in 22 out of 23 items displayed, with only three non-unanimous decisions (where resonance was indicated by only two judges).

Within the terminology of the Defaultness Hypothesis, low-salience meanings (both less-salient and non-salient) are referred to as non-default meanings so as to equate the distinction between default and non-default interpretations. Still, we retain the salient/low-salient distinction here and onwards for ease whenever coded meanings are involved, using the defaultness terminology only when referring to interpretations. Crucially, the *Low-Salience (Non-defaultness) Marking Hypothesis* encompasses both meanings and interpretations.

In the following section, we present two additional experiments aimed at testing the predictions of the *Low Salience Marking Hypothesis*. Crucially, prediction B, relating to the facilitation of low-salience meanings, which requires online methodology, is here tested for the first time.

Before moving on to the experiments, a few words are in order, regarding the position of the markers. Previous experimental work on marking (e.g., Katz and Ferretti, 2003) presented their markers in sentence initial position, treating them as “introductory formulae”, as aforementioned. Of note, this sentential position is commonly reserved for discourse marking. However, following from naturally occurring examples, such as those presented in Section 2, where the markers in question appear following the ambiguity they modify, the studies reported here placed markers, such as *literally or in the full sense of the word* (in Hebrew), *following* the ambiguous utterance. Note that while some of the markers in the examples in Section 2 appear before the ambiguity (e.g., *really; truly*), these are also licensed, following the ambiguity (e.g., “She’s a star, truly”) – a position which may favor their effects as low-salience markers (or, more generally, ambiguation markers), rather than discourse markers. Moreover, in this way, all markers were presented in the same position, following the ambiguous phrase, thereby holding the syntactic manipulation constant.

4. Experiments

4.1 Experiment 1 – an offline study

Aim

The aim of this experiment was to test prediction A of the *Low-Salience Marking Hypothesis*, according to which low-salience markers draw attention to meanings low on salience. This prediction was tested using an offline questionnaire.

Recall that Givoni et al. (2013) tested low-salience markers only relative to a no-marker condition. However, according to the Graded Salience Hypothesis, less-salient meanings lag behind (or are less highly activated than) salient meanings. As a result, it is predicted that, if enough time is allowed, less-salient meanings may reach sufficient activation levels. Given this, an alternative hypothesis would be that it is not the markers per se that are boosting the less-salient meaning, but rather the time they allow for the continued processing of the ambiguity. In other words, the difference of +/- marker is confounded by the sheer difference in the orthographic and phonological length between the two conditions which might allow for additional processing (time) in a marked condition relative to an unmarked one. In order to eliminate this confound, allowing a better test of the *Low-Salience Marking Hypothesis*, it is therefore necessary to compare low-salience markers to some equivalent utterance, which would add processing time, without cueing meaning ambiguity. While the question of processing time is predominantly relevant for online measurements (Experiment 2), it is preferable to test stimuli using converging methodologies. Therefore, the present offline study tests low-salience markers relative to “fill-in” (control) markers. If results are compatible with Givoni et al.’s findings for the marker vs. the no marker condition, this study would replicate those findings, this time using a low-salience marker vs. a fill-in marker design.

Crucially, though, and like the no-marker condition, we may consider the fill-in marker (control) condition as the *unmarked* condition and the low-salience marker condition as the *marked* condition.

In terms of the stimuli tested, and again, as we have seen in Section 2, ambiguity is a productive phenomenon, occurring with all types of ambiguity, whether figurative or not, and involves different types of meanings, whether coded, conventionalized, or derived. In the offline studies conducted by Givoni et al. (2013), different types of stimuli were tested, but for the studies reported here, an attempt at homogenization has been made.

Coded ambiguities are ideal for testing the effects of marking on lexical facilitation, as meanings are stored and need to only be extracted. This stands in contrast to idioms or proverbs, where the figurative meaning must be stored but the literal or compositional meaning can be inferred. Coded figurative ambiguities are preferable

to utterances used metaphorically for the first time, where the literal meaning is activated but the metaphoric meaning has to be derived or created on the fly.

Additionally, for the purposes of this study, words cannot be the minimally relevant construction but rather sentences, such that allow maintaining the ambiguity (Consider *She's radiant* vs. *She/It's sharp*, where the sentential subject already excludes one of the meanings, as objects cannot be intelligent). We therefore focus on this minimal base form as the region of interest, rather than on the single word. This region allows a discussion that incorporates studies from lexical access as well as figurative language processing, and, in particular, theories relevant to utterance level. This is polysemy, but it is placed in an X is Y like constructions, where information about X is minimal.

Finally, Givoni et al. (2013) used double-sided scales, such that each end of the scale displayed a meaning, either a salient or a less-salient one. Even though participants were informed that the mid-score indicated choosing both meanings equally, it is possible that different participants developed different strategies to deal with the two-end scale. In order to simplify the participants' task, and, moreover, given that the *Low-Salience Marking Hypothesis* contends with less-salient meanings only, the scales used here were single-sided, presenting the less-salient meaning exclusively (i.e., salient meanings were not presented). The design of this study replicates Givoni et al.'s paired experiment (in which participants see both the marked and unmarked version of an item weighed against each other, allowing them to directly compare the two). The benefit of the paired design is that participants are forced to take note of the particular form of marking following the ambiguity.⁵ Note that, in Givoni et al.'s study, participants saw paraphrases rather than single probe-words as was the case here.

Participants

Sixteen students of Tel-Aviv University (8 women), mean age 25.69 ($SD = 3.00$), volunteered to take part in the experiment. All were native Hebrew speakers.

Materials

Materials included 28 polysemous sentences, 28 probe-words instantiating less-salient meanings, four low-salience markers, and four fill-in markers.

5. A pilot study that replicated the non-paired experiment of Givoni et al. (2013) revealed that participants began to ignore the low-salience and fill-in markers when they realized they could complete the task without paying attention to them. This strategy was probably developed as a result of not having any comparison to guide them, neither between marked vs. unmarked condition nor between the salient vs. less-salient meaning (on account of changing from double-sided to single-sided scales).

Sentences

Sentences containing a subject pronoun (I/she/he/it/they) followed by an ambiguous predicate were selected on condition that they allow both the salient and less-salient meanings to be simultaneously applicable to the same referent.⁶ In order to allow for enough items of this categorization, different part-of-speech words were used as predicates (nouns, verbs, and adjectives).⁷ All sentences were two words long,⁸ including mostly conventional metaphors,⁹ which have been shown to have two meanings (in Hebrew), differentiated in terms of degree of salience (e.g., *She's radiant*; salient meaning 'happy'; less-salient meaning 'glittery'; see Meaning relatedness, Meaning prevalence, and Online salience Pretests 1–3 below).

Probe-words

Each sentence was paired with a probe-word related to the less salient meaning of the polysemous sentence (for less-salient probe-words, see Appendix).

Markers

Four low-salience markers, established as such and previously discussed in Givoni et al. (2013), were paired with four fill-in markers, matched for word length and conventionality (see Table 1).¹⁰ Sentence and low-salience marking pairings were inspired by and, wherever possible, based on, naturally-occurring examples (for sentences and their marker pairings, see Appendix).

6. Recall that the various meanings of the polysemous *sharp*, cannot be simultaneously intended, since one meaning refers to objects (e.g., a blade) while the other to intelligence. In the sentence *She's sharp* the literal meaning cannot be intended; in the sentence *He's hot* ('warm'; 'sexy') both meanings can be intended.

7. Subject pronoun was also not a controlled factor in the design nor was the predicate part-of-speech. Furthermore, part-of-speech effects on ambiguity processing took less precedence (for these effects see e.g., Seidenberg et al., 1982). This meant that two items (*hu kore'a* -> he tears-> 'he rips/he's sidesplitting' and *hi horeset* -> she destroys -> 'she ruins/she's terrific' (similar to the idiom 'She's killing it' in English) exhibited a verb-adjective ambiguity. This ambiguity is productive in Hebrew when verbs are used in the present beynoni tense (for more on the beynoni see e.g., Siloni, 1995).

8. Note that in Hebrew, like in other Semitic languages, sentences containing syntactic subjects followed by an adjective or noun are characterized as nominal sentences which do not have verbal predicates (see e.g., Zewi, 1999; e.g., *hu leitsan* -> He clown -> 'He's a clown').

9. Of the 28 items, 26 were conventional metaphors and two were non-metaphoric polysemes where both meanings were literal. Again, precedence for the criteria of applicability of both meanings was established as the over-arching common factor.

10. Three of the markers were matched for syllable length as well, but one pair was not, with the fill-in marker having less syllables. In terms of conventionality, all markers that are more than a word long are familiar multi-word expressions.

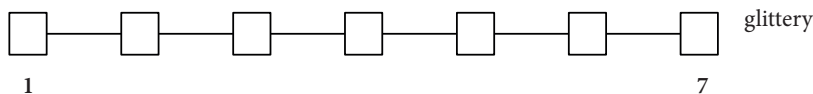
The four fill-in markers chosen can be characterized as intensifiers or emphatics in that they do not add semantically biasing, limiting, or blocking information, and do not affect coherence (see Livnat, 1995; Shaviv, 2018, see also Marking coherence Pretest 4 below). Intensifiers are a good choice for comparison, because they can, in theory, intensify whichever meaning is already available, whether it's the salient, the less-salient, or both.

Table 1. Low-Salience and Fill-in Markers

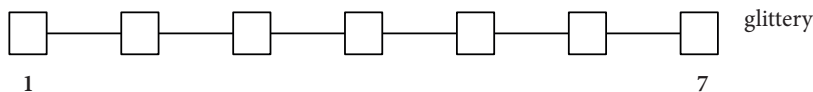
Pair #	Low-salience marker	Fill-in marker
1.	תרתי משמע tartey mašma double meaning 'double entendre'	חד וחלק xad vexalak clear and-smooth/straightforward 'clear-cut'/'clear and simple'
2.	ליטרלי literali – 'literally'	כידוע kayadu'a as-known 'as everybody knows'/'as is known'
3.	באמת be'emet in-truth 'really'/'truly'	לגמרי legamrey to-end 'completely'/'totally'/'entirely'/'utterly'/'quite'
4.	במלוא מובן המילה bimlo muvan hamila in-full sense the-word 'in the full sense of the word'	חבל על הזמן xaval al hazman waste on the-time (it's a waste of time) '(it's) out of this world' equivalent to: '(it's) out of this world'

Sentences, including either low-salience markers or fill-in markers, were presented in pairs, followed by a 7-point scale, instantiating the less-salient probe-word at its right-most end (given that Hebrew is read from right to left). For a translated version see Example (10):

(10) She's radiant, in the full sense of the word



She's radiant, it's out of this world



Two booklets were run such that in booklet A, within each pair, half of the items appeared with the low-salience marker first, and half with the fill-in first, and vice versa in booklet B. Thus, the order of (low-salience/fill-in) marking was counterbalanced across booklets. No fillers were used. Pairs appeared in a pseudo-random order such that the same low-salience/fill-in marking pair never appeared consecutively.

In order to arrive at the less-salient meaning, a series of pretests had to be run. Forty-four potential ambiguities and their paired meanings (salient/less-salient/unrelated) were ultimately narrowed down to 28 final items that met all the necessary criteria.

Recall that while salience is a theoretical construct within the Graded *Salience* Framework (meanings are thought of in terms of salience rather than dominance), it is also empirically characterized within that framework, and therefore testable. This characterization rests on the basis of experiential as well as cognitive factors (i.e., frequency, familiarity, conventionality and prototypicality). Due to this characterization, salient meanings, being prominent, or foremost on our minds, are expected to arise immediately upon encounter of the ambiguity, and therefore when utterances are presented in isolation, participants are expected to (1) judge such meanings as more prevalent, and prefer them, over *less*-salient alternatives, and (2) respond to such meanings faster than less-salient meanings. Recall that the activation of less-salient meanings is expected to lag behind, and may not even reach activation thresholds. As a result, less-salient meanings are expected to be (1) less prevalent and therefore less-preferred (Pretest 2) and (2) slower to respond to relative to salient meanings (Pretest 3). Note that before establishing that meanings are less-salient, it is nevertheless necessary to establish that a probe-word instantiating a less-salient meaning is perceived by native speakers as related to the meaning of the ambiguity relative to some unrelated meaning (i.e., that ‘glittery’ is perceived as more related to *She’s radiant* relative to a word such as ‘scholarly’, see Pretest 1). These pretests are described in detail in Givoni (2020), and are presented in short here.

Pretest 1. *Meaning relatedness*

To establish that probe-words, generated to instantiate related (salient/less-salient) meanings of the polysemous sentences, are indeed perceived as related by native speakers (i.e., favored over unrelated probe-words), an offline meaning *relatedness* questionnaire was administered to 31 native speakers of Hebrew, students of Tel-Aviv University (20 women), mean age 25.58 ($SD = 2.5$).

Following Coulson and Severens (2007), related words were selected if rated above 4 on a 7-point *relatedness* scale. Unrelated words were selected if rated below 3. If one word in a triplet (salient, less-salient, or unrelated) failed the pretest, the polysemous sentence associated with it, as well as the remaining two words in the triplet, were considered as not meeting the (un)relatedness threshold.

Pretest 2. *Meaning prevalence*

To establish which of the related meanings is favored over the other (i.e., is salient), 40 native Hebrew speakers, students of Tel-Aviv University (19 women), mean age 25.45 ($SD = 3.5$), volunteered to take part in a subjective meaning *prevalence* questionnaire. Such a questionnaire attempts to tap participants' personal usage/exposure. The underlying assumption being that the more frequent, familiar, prototypical, and conventional meanings should be perceived as more prevalent, and therefore preferred by the participants. Importantly, this would indicate which of the meanings is less prevalent, or less favored (i.e., the less-salient one). Participants were presented with polysemous sentences (*She's radiant*) followed by a single row, two column table with one related probe-word appearing in the left column and the other in the right column. They were asked to mark the word associated with the meaning of the sentence which they thought was more common/widespread/frequent.

Following Peleg and Eviatar (2009), a probe-word was considered as instantiating a prevalent meaning if it was selected by at least two-thirds of the participants as being the more prevalent one.

Pretest 3. *Online salience*

To establish that response times to prevalent meaning probe-words (as established in Pretest 2), are faster, compared to response times to less-salient counterparts, a lexical-decision task was administered to 57 native Hebrew speakers, students of Tel-Aviv University (35 women, 1 NA), mean age 24.58 ($SD = 2.97$), in exchange for compensation or credit. Materials were 40 of the polysemous sentences (presented without markers, e.g., *She's radiant*) and their respective probe-word triplets (salient, less-salient, and unrelated) that passed Pretest 1. Participants read instructions informing them that they would be presented with short sentences, each followed by a letter string in red, to which they would have to respond, as accurately and as quickly as possible, as to whether the letter string makes up a word in Hebrew or not. They were to indicate their response by pressing a 'yes' or 'no' key on the keyboard. The two-word sentences acted as primes (e.g., *She's radiant*). Each prime was displayed for 750 ms, based on the following calculation: 300 ms per word + 150 ms for wrap up. The primes were followed by a 250 ms blank inter stimulus interval (ISI, i.e., the time between the offset of the prime and the onset of the probe), and subsequently a probe-word was displayed until the participant pressed "yes" or "no". Then dashed lines appeared for two seconds followed by the next trial.

Twenty-eight items were selected which had passed Pretest 2, and which, when taken together, displayed the pursued response time data-pattern, whereby the mean response time to the salient probe-words is significantly faster than the mean response time to the unrelated probe-words, while the mean response time to the less-salient probe-word is not significantly faster than the mean response time to the unrelated probe-word.

Results of a one-way ANOVA for these 28 items showed the same trend in both participant (F_1) and item (F_2) analyses. Specifically, there was a main effect of probe-type ($F_1(1, 54) = 17.44, p < .001, \eta_p^2 = .24; F_2(1, 27) = 6.34, p = .02, \eta_p^2 = .19$). Follow-up pairwise comparisons reveal that, in both participant (t_1) and item (t_2) analyses, while the response time to the salient probes was significantly faster ($M = 603, SE = 13$) than to the unrelated probes ($M = 636, SE = 15; t_1(54) = 4.18, p < .001; t_2(27) = 2.52, p = .02$), response times to the less-salient probes ($M = 636, SE = 14$) did not differ significantly from the unrelated probes, ($t_1(54) = .09, p = .93; t_2(27) = .17, p = .87$).

Pretest 3 then further established degree of salience using online measures. These results further show that as early as 250 ms following prime offset, there is a differentiation of meaning for such polysemous sentences.

Probe pretests summary

Having controlled for meaning relatedness and meaning preference on a single item basis, the online salience pretest established response time patterns of meaning salience across items. Finally, recall that we are interested in the probe-words' instantiation of the meaning of an ambiguity and not the salience of the probe-word itself, which is irrelevant; namely, we do not want to show that words, instantiating a less-salient meaning, are not preferred because the words themselves are rare (infrequent) or overly complex (i.e., because of their length). Importantly, the final 28 triplets chosen were matched for word length in syllables (salient: $M = 2.64, SE = .13$, less-salient: $M = 2.61, SE = .11$, unrelated: $M = 2.68, SE = .10; F(1, 27) = .19, p = .66, \eta_p^2 = .007$) and orthographic probe-word frequency in occurrence per million words (salient: $M = 29.54, SE = 6.91$, less-salient: $M = 24.5, SE = 6.84$, unrelated: $M = 19.21, SE = 6.29; F(1, 27) = 1.26, p = .27, \eta_p^2 = .045$).¹¹ In other words, the salience pretest tapped meaning salience and not frequency of orthographic material or complexity effects. From here on, only less-salient probe-words were presented in the experiments.¹²

11. The word-frequency database for printed Hebrew (Frost and Plaut, 2001) consists of text downloaded from 914 editions of the three major daily Hebrew newspapers. The corpus totals 554,270 types and 619,835,788 tokens. Matched frequencies were also corroborated, based on the *HeTenTen* corpus, the largest corpus of Modern Hebrew available, which comprises about $10^9 \times 1$ tokens. The average length and frequency data are given for the final 28 items in the Probe Pretest Summary section below.

12. Twenty-three were of the same grammatical category of the polysemous word they were paired with (based on Rav-Milim Hebrew dictionary); seven exhibited a schematic meaning relation (i.e., co-occurrence relations) and 21 a categorical one (i.e., synonymous relations) and, 16 can be characterized as abstract and the rest as concrete (the latter two observations are based on the first author's judgements).

Of note, in 24 of the 26 metaphoric polysemes,¹³ the salient meaning was found to be the metaphoric meaning. This finding is in contrast with previous studies that have found, for words presented in isolation, a correlation between literal and salient meanings. Once again, the insertion of ambiguous words within the minimal context provided here, probably accounts for this pattern of results. Still, this finding cannot be accounted for by the Gricean literal-first model and therefore challenges the prediction that marking will benefit metaphoric meanings. These meanings are already available, and for the stimuli set tested here, all less-salient probe-words instantiate literal meanings.

Having established the less-salient probe-words, a final control remains. It is necessary to ensure that low-salience markers and fill-in markers are equally coherent following the polysemous sentences and that they equally allow the occurrence of the less-salient meaning.

Pretest 4. *Marking coherence*

To establish that, when presented following the polysemous sentences, the fill-in markers will still be as coherent as their low-salience counterparts, and thus assignable as controls, a coherence judgement was administered to ten external experts (8 women), acquainted with the concept of ‘text coherence’ (see Giora, 1985), who volunteered to act as judges. An additional aim of this pretest was to ensure that fill-in markers, while not expected to boost less-salient meanings, will nonetheless allow (i.e., not block) them. Twenty-eight polysemous sentences, selected on the basis of Pretests 1–3, were presented in two consecutive lists. In the first list, each sentence was followed either by a low-salience marker or a fill-in marker. In the second list, each sentence, followed by the same marker, was displayed together with the less-salient probe-word associated with it. For the first list, the judges were instructed to indicate, next to each sentence, whether it is coherent or not. For the second list, they were instructed to indicate, next to each probe-word, whether the sentence presented next to it, blocks its meaning or not. Blocking was defined as disallowing this meaning.

One (3.6%) response was N/A. Results show no difference in proportion of “coherent” responses between the low-salience marker condition ($M = .86$, $SE = .04$) and the fill-in marker condition ($M = .82$, $SE = .04$; $t_1(9) = .61$, $p = .56$; $t_2(27) = .81$, $p = .43$). Note that the aim of this pretest was not to ascertain that the items are (highly) coherent in and of themselves. Rather, we show here that the low-salience markers and fill-in markers are comparable in terms of coherence. Indeed, when presented out of context, some of these sentences may seem awkward, though we do encounter such utterances in real life, in the form of newspaper headlines (recall

13. See footnote 9.

Example (8) *She's a star in the full sense of the word*). Additionally, results show no difference in proportion of “nonblocking” responses between the low-salience marker condition ($M = .83$, $SE = .05$) and the fill-in marker condition ($M = .84$, $SE = .05$; $t_1(9) = .19$, $p = .86$; $t_2(27) = .14$, $p = .89$). Again, we aim here to show that low-salience markers and fill-in markers are comparable in terms of (non)blocking.

Having shown that the fill-in markers are comparable controls in that they do not introduce unwarranted confounds such as difference in coherency or meaning blocking, we move on to the procedure of the experiment at hand.

Procedure

Participants were asked to rate the relatedness of the word, instantiated at the scale's end, to the meaning of the sentence. The scale ranged from 1 = ‘There's no relation’, to 7 = ‘There's a strong relation’. Participants were given two examples along with the instructions.

Results

Twelve (1.43%) responses were N/A. Results show that the mean meaning relatedness score, in the low-salience marker condition, was *higher* ($M = 4.80$, $SE = .20$) than the mean score in the fill-in marker condition ($M = 3.62$, $SE = .15$; $t_1(15) = 5.71$, $p < .001$; $t_2(27) = 6.28$, $p < .001$), indicating a higher awareness of less-salient meanings following the low-salience marker.

Discussion

Results support the *Low-Salience Marking Hypothesis*. They show that low-salience markers allow meanings low on salience to spring to mind. Such markers draw participants' attention to meanings low on salience relative to fill-in markers, which, unlike a no-marker condition, allow for the ongoing processing of the ambiguity. These results are the first to show the effects of such marking on meaning preference, when compared to other types of modification (e.g., intensification).

Will these offline findings be replicated in online studies? To answer this question, Experiment 2 was run, in which the online effect of low-salience marking on meaning activation was tested.

4.2 Experiment 2 – an online study

Aim

The aim of this experiment was to test Prediction B of the *Low-Salience Marking Hypothesis*, according to which low-salience markers boost activation levels of less salient meanings of the stimuli within their scope, resulting in faster response times to probes related to the less-salient meaning, following a low-salience marker

relative to following a fill-in control marker. Specifically, the aim here was to test the effects of low-salience marking on meaning activation outside of a specific context. Recall that the strict modular view (Fodor, 1983), which predicts that all the meanings of a stimulus are activated automatically and exhaustively, and the Underspecified View (Frisson and Pickering, 2001), which predicts that an underspecified core meaning, compatible with all the utterance's senses, is activated until context helps the processor to home-in on a specific meaning, will not predict faster activation of less salient meanings, following a low-salience marker. Instead, according to these models, these meanings are expected to be activated, regardless of the marker's effect (the Modular View), or to be underspecified and therefore insensitive to the marker effects (the Underspecification View).

Participants

Twenty students of Tel-Aviv University (13 women), mean age 25.25 ($SD = 3.63$), took part in the experiment. They were paid 30 shekels for their participation. All were native Hebrew speakers, right-handed, with normal or corrected-to-normal vision, and with no (reported) language impairments.

Materials

Materials were as in Experiment 1.

Two online booklets were prepared, including all 28 sentences and all less salient related probe-words, with half the sentences featuring a low-salience marker in one booklet and with a fill-in marker in the other booklet, and vice versa. Thus, marker-condition (low-salience/fill-in) was counterbalanced across the two booklets. Each low-salience/fill-in marker pairing appeared with seven (25%) of the sentences.

An additional 102 filler sentences were presented. All were two words long, of which 69 were polysemous and nine were homonymous. Of these 102 filler-items, 60 were paired with non-words (such that a "no" response to the lexical decision task would be possible in about half of the trials; see *Procedure* below). Of these, 40 were polysemous and five were homonymous, such that ambiguity in and of itself did not necessarily predict that a real word was coming. Twenty-eight fillers were paired with unrelated probe-words so that it was not the case that if the probe-word was a real word it was necessarily related. Of these, 22 were polysemous and two were homonymous. The final 14 fillers were paired with related probe-words, so that non-ambiguous sentences also appeared with a related word. Of these, seven were polysemous and two were homonymous.¹⁴ Forty-six of the filler sentences

14. Not all polysemes were metaphoric, and some polysemes can also be categorized as homonyms. This is generally true and relevant for some of the critical items as well. Consider *bank* which is homonymous (relating either to 'a financial institution' or 'the rising ground bordering

were followed by low-salience or fill-in markers (23 of each) and were paired with either non-words (32 in total, four for each marker) or with unrelated words (14 in total, two for each marker). In order to avoid high repetition of the low-salience and fill-in markers (10 or less instances of each, including fillers), the remaining 56 sentences were followed by *other types of markers/modifiers*, different from both the low-salience and the fill-in markers. Eight such markers were used. These were mostly prepositional phrase modifiers that add semantic information (e.g., *in a weird way; in my opinion; from last year*). Filler markers were of different word length, as the critical markers (one word, two words, and three words). Of these 56 fillers, 28 appeared with non-words, 14 appeared with unrelated probe-words, and another 14 appeared with related probe-words. Matching all types of markers (low-salience, fill-in, and fillers) with different types of probes (related, unrelated, and non-word) ensured that participants were unable to associate between a specific marker and a certain type of probe.

Sentences were presented in a pseudo-random order such that the same marker never appeared in two consecutive sentences. A given probe-type (related/unrelated/non-word) appeared consecutively but the maximum consecutive presentation of a real word requiring a “yes” response was four trials. Of the fillers, five appeared as buffers at the beginning of the experiment.

Procedure

A lexical decision task was administered. Participants were seated in the lab, in front of the computer screen. The experiment was programmed and run with E-Prime Professional 2.0. Sentences and probe-words were always displayed on the center of the screen on a grey background (font type: Ariel, font size: 20, font color for sentences was black and for probe-words – red).

Participants read instructions, informing them that they would be presented with short sentences, each followed by a letter string in red, to which they would have to respond as accurately and as quickly as possible, as to whether the letter string makes up a word in Hebrew or not. They were to indicate their response by pressing a ‘yes’ or a ‘no’ key on the keyboard (L for ‘yes’, marked on a green sticker, and D for ‘no’, marked on a yellow sticker). They were instructed that, throughout the experiment, they were to leave their right-hand index finger on the ‘yes’ key and their left-hand index finger on the ‘no’ key. In order to ensure that participants read the sentences, they were informed that they would be asked several comprehension

a river’), but is also a metonymic polysemy, as the ‘financial institution’ meaning can refer to the bank as a location/building or the bank as an institution. All categorizations here are based on Rav-Milim Hebrew Dictionary. Indeed, most words are potentially ambiguous when presented out of context.

questions, following the presentation of all the sentences. Two such comprehension questions were presented but the responses were not recorded. The experimenter stayed with the participants until they completed two practice trials and answered any clarification questions that arose. After half of the trials, a 'This is a break' message appeared on the screen. The message also explained that participants could return to the experiment when they were ready to continue by pressing the 'yes' key.

Sentences including markers in final position acted as primes (e.g., *She's radiant, in the full sense of the word*). Each prime was displayed for either 1050, 1350, or 1650 ms, depending on the number of words in the marker (1, 2, or 3; see Table 1). The following times were based on the following calculation: 300 ms per word + 150 ms per wrap up. Crucially, display times of the low-salience marker condition and the fill-in marker condition were always the same for a given sentence, as the number of words were equated between each low-salience marker and its control fill-in marker. The primes were followed by a 1000 ms blank ISI, and subsequently, a probe-word was displayed until the participant pressed the "yes" or "no" key. Then dashed lines appeared for 2000 ms followed by the next trial (see Figure 1 for trial display).

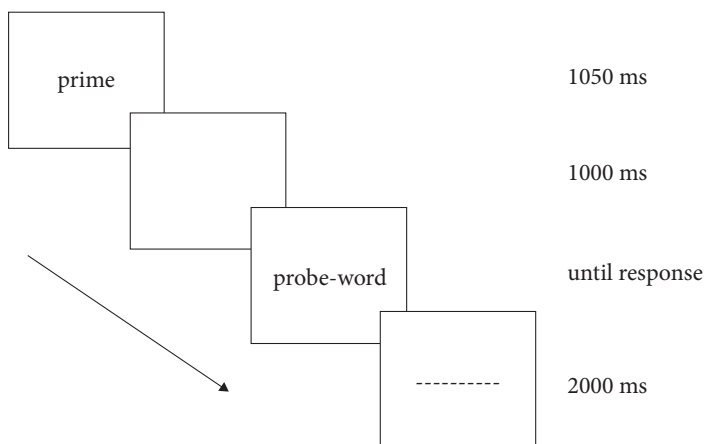


Figure 1. Trial presentation in Experiment 2 (for a single word marker), prime = sentence, marker. *Recall that the background was grey and the 'probe-word' appeared in red

Results

Twelve (2.14%) data points were discarded from the analysis because of errors in responding. Outliers were defined as response times above 2.5 SD from the mean of each participant across conditions. Seventeen (3.04%) such outliers were discarded from the analysis. Results show that the mean response time to the probe-word following the low-salience marker condition was faster ($M = 588$, $SE = 17$) than

the mean response time to the probe-word following the fill-in marker ($M = 614$, $SE = 18$; $t_1(19) = 2.15$, $p = .045$; $t_2(27) = 2.60$, $p = .015$), indicating facilitation of less-salient meanings by the low-salience markers.

Discussion

Results support the *Low-Salience Marking Hypothesis*. As predicted, they show that low-salience markers boost activation of meanings low on salience. This is the first study to attest to the online effects of low-salience marking. Low-salience markers facilitate (or allow the retention of) activation of less-salient meanings. These results cannot be explained by (unordered) exhaustive access accounts nor by the underspecification account.

5. General discussion

Much of the interest in linguistic ambiguity stems from the fact that it poses a challenge to the processor. When a speaker uses a word that conveys more than one meaning, her interlocutor must try to assign the correct meaning to her utterance, otherwise comprehension will be impeded. While any processing model must account for the mechanism of correct meaning selection, the task of holding on to multiple meanings also requires accounting for. This research puts the processing of (marked) ambiguity at its forefront. Its contribution is two-fold: It outlines the phenomenon more fully than has been done so far (Section 2), and presents a processing model that explains the mechanism underlying this cognitive process, namely – the *Low-Salience Marking Hypothesis* (Section 3).

According to the *Low-Salience Marking Hypothesis*, marking of the type tested here can boost low-salience meanings, i.e., meanings that are less prominent than salient counterparts, and, therefore, slower to spring to mind. This undertaking is novel and contributes to a greater understanding of how meanings of ambiguities are represented and accessed. It further allows the teasing apart of the ambiguity models which have been put forth in the literature. Two experiments, including four pretests, were run, in order to test competing models of ambiguity processing and tease them apart from the *Low-Salience Marking Hypothesis*. While this hypothesis was first suggested by Givoni (2011) and Givoni et al. (2013), it has been outlined here more precisely in psycholinguistic, rather than pragmatic terms (i.e., in terms relating to the cognitive function of marking and its effects on underlying (meaning) representation). In the process, we fleshed out the predictions of alternative models with respect to the phenomenon of marked ambiguity, as this has not been previously accounted for in the literature.

Result from two experiments support the *Low-Salience Marking Hypothesis* and a graded view of lexical access, showing that low-salience markers boost

low-salience meanings. These results cannot be accounted for by exhaustive lexical access accounts, overspecification accounts, nor by underspecification accounts. Moreover, because the stimuli tested showed figurative meanings to be salient, results cannot be accounted for by literal-first models either.

Results of Experiment 1 replicate the findings of Givoni et al. (2013) showing higher scores for low-salience meanings following marking relative to control counterparts. Still, they further expand on previous findings, as this time the no-marker condition was replaced with a fill-in marker condition, suggesting that not all markings (e.g., intensification) result in boosting low-salience meanings, yet *low-salience* markings do.

Results from Experiment 2 are unprecedented. They attest, for the first time, to the online effects of low-salience markers on meaning activation. Findings reveal that responses to low-salience meanings are faster when these are presented following low-salience marking relative to fill-in controls. Such results shed light on the importance of testing meaning activation models not only in disambiguating but also in ambiguating conditions. They show that when (mostly figurative) polysemy is marked, even when no additional context is available, marking results in facilitation of the additional meanings of the ambiguous expression. Specifically, when the figurative utterance is a coded (i.e., familiar) metaphor, as in polysemy, the marker will draw attention to its literal meaning, at times resulting in a pun.

Indeed, to further the understanding of marked ambiguity, Givoni (2020) and Givoni, Bergerbest, and Giora (in press) embedded the items, used in Experiments 1–2, in real-life like contexts which, while biasing one meaning more strongly than the other, still allow for the alternative meaning, such that the alternative meaning is not excluded. Their results show that, even when the salient meaning is biased, low-salience markers boost low-salience meanings, challenging interactionist accounts, such as the Direct Access view, as well as constraint-based accounts.

In conclusion, ambiguities need not always be resolved, and when they are marked by low-salience cues, low-salience meanings stand to benefit. The psychological reality of low-salience marking supports the graded access account of meaning activation as argued within the Graded Salience and Defaultness Hypotheses frameworks, and yet they show that, even if salient meanings cannot be blocked, low-salience meanings can be pushed to the fore, whenever they are called for. This phenomenon speaks to the ways in which underlying cognitive mechanisms can be exploited by speakers due to pragmatic and conversational motivations, resulting, not only in strengthening semantic links in a concept's representation, but also, as Nerlich and Clarke (2001) argue, in strengthening the social bonds between interlocutors.

Acknowledgements

We would like to thank four anonymous reviewers for their helpful suggestions. In addition, we wish to thank Herbert Colston for insightful comments and feedback and Augusto Soares da Silva for his support. Finally, we thank our lab members: Israela Becker, Adi Cholev, Inbal Jaffe, and Efrat Levant, as well as Orna Peleg, Director of the Language and Cognition Lab, and her Lab manager, Tal Norman.

Funding

This research was supported by the ISF grants (540/19 & 436/12) to Rachel Giora, as well as by sequential (annual) scholarships for outstanding graduate students awarded to Shir Givoni by the Rector of Tel-Aviv University.

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Appendix

Prime-sentences and less-salient probe-words are presented by marker pairs.

Items (1–7) appeared followed by *tartey mašma* ('double entendre'; low-salience marker) and *xad vexalak* ('clear and simple'; fill-in marker)

Item #	Prime-sentence	Probe-word
1.	היא מכשפה hi maxšefa 'She's a witch'	קסם kesem 'magic'
2.	הם חשופים hem xasufim 'They're exposed'	ערומים 'arumim 'naked'
3.	אני תפוס ani tafus 'I'm spoken for'; but also: 'I'm sprained'	נוקשות nokšut 'stiffness'

Item #	Prime-sentence	Probe-word
4.	זו אטימות zo 'atimut 'It's impenetrable (emotionally and physically)'	סגירות sgirut 'closing/closure'
5.	הם קשורים hem kšurim 'They're connected'; but also: 'They're tied'	חבלים xavalim 'ropes'
6.	זה מרעיש ze mar'iš 'It's sensational'; but also: 'It's loud/noisy'	מרגש merageš 'exciting'
7.	הוא קורע hu kore'a 'He's sidesplitting'; but also: 'He rips'	תולש tolesh 'tears off'

Items (8–14) appeared followed by *literali* ('literally'; low-salience marker) and *kayadu'a* ('as is known'; fill-in marker):

Item #	Prime-sentence	Probe-word
8.	הוא שרוט hu sarut 'He's scratched' [equivalent to: 'He's unhinged' (where 'scratched' refers to his mind)]	מצולק metsulak 'scarred'
9.	הוא ליצן hu leytsan 'He's a clown'	פורים purim 'Purim'*
10.	היא הורסת hi horeset 'She's devastating' [equivalent to: 'She's killing it/She's terrific]	משמידה mašmida 'destroying'
11.	הוא הבוס hu habos 'He's the boss'	מעסיק ma'asik 'employer'
12.	הם קולטים hem koltim 'They're receiving'; but also: 'They're integrating'	מקבלים mekablim 'accepting'
13.	זו התאבדות zo hit'abdut 'It's suicide'	מוות mavet 'death'
14.	היא מסלסלת hi mesalselet 'She's trilling'; but also: 'She's curling'	שיער se'ar 'hair'

* It is customary on this Jewish holiday to masquerade in costume and wear masks.

Items (15–21) appeared followed by *be'emet* ('really/truly'; low-salience marker) and *legamrey* ('completely/totally/entirely/utterly/quite'; fill-in marker)

Item #	Prime-sentence	Probe-word
15.	הוא דוגמן hu dugman 'He's a model'	אופנה 'ofna 'fashion'
16.	הוא נסחף hu nisxaf 'He got carried away'	טובע tove'a 'drowning'
17.	זה ויראלי ze virali 'It's viral'	מדבק medabek 'contagious'
18.	היא מצפצפת hi metsaftsefet 'She's chirping' [equivalent to: 'She's showing contempt']	צופרת tsoferet 'honking (a horn)'
19.	זה סדר ze seder 'That's order'	הגדה hagada 'Haggada'*
20.	זו הצפה zo hatsafa 'It's a flood'	רגש regeš 'emotion'
21.	הוא פוליטיקאי hu politikai 'He's a politician'	מושל mošel 'governor'

* The Haggada is read during the Passover Seder, a festive meal conducted in a given order/arrangement.

Items (22–28) appeared followed by *bimlo muvan hamila* ('in the full sense of the word'; low-salience marker) and *xaval al hazman* ('(it's) out of this world'; fill-in marker):

Item #	Prime-sentence	Probe-word
22.	היא קורנת hi korenet 'She's radiant'	מנצנצת menatsnetset 'glittery'
23.	הוא גדול hu gadol 'He's big'	גבוה gavo'a 'tall'
24.	הוא שבור hu šavur 'He's broken'	פצוע patsu'a 'injured'
25.	היא מרדימה hi mardima 'She puts to sleep'; but also: 'She's anesthetizes'	ניתוח nitu'ax 'surgery'

Item #	Prime-sentence	Probe-word
26.	הוא כבד hu kaved 'He's heavy'	רחב raxav 'wide'
27.	זה זהב ze zahav 'It's gold'	מתכתי mataxti 'metallic'
28.	זה חופש ze xofeš 'It's freedom'	חירות xerut 'liberty'

PART III

Usage and variation

Metaphor, metonymy and polysemy

A historical perspective

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Polysemy is a basic principle of the lexis of English, but the full range of senses of a lexeme and the ways in which these interact are not often considered in accounts of metaphor and metonymy. This paper presents a case study of the lexeme *dull*, which develops multiple meanings that do not appear to represent the kind of straightforward concrete > abstract metaphorical mapping that might be assumed. Rather, the complex semantic history of the word reveals gradual shifts in meaning involving metonymy, and change motivated by analogy. I argue that ignoring word histories risks synchronic ‘misreading’ of the relationship between their senses (Geeraerts, 2015), and that polysemy should be acknowledged more prominently in standard accounts.

Keywords: historical semantics, lexical semantics, metaphor, metonymy, polysemy, semantic change, analogy, lexical gaps, antonymy

1. Introduction

It is well-known that metaphor and metonymy are inseparable from polysemy. Metaphor and metonymy are generally accepted to be two of the most common mechanisms in meaning change (see, for example, Traugott, 2012); invariably, a new metaphorical or metonymical sense emerges alongside the existing sense – or often multiple senses – of a word, resulting in polysemy. In a relatively small number of cases, the earlier literal senses of words are lost over time,¹ but very often literal and conventional metaphorical or metonymical senses co-exist in a stable relationship for long periods. There are large numbers of examples of this kind of stable polysemy; for example, many studies of highly polysemous lexemes, such as Brugman and Lakoff’s (1988) detailed treatment of *over*, consider conventional meanings

1. See Allan (2014, 2015) for discussions of historical metaphor.

that have co-existed for several centuries. In many cases, semantically related lexemes show comparable patterns of polysemy. Allan (2010) discusses polysemous lexemes with conventional MATERIAL FOR OBJECT metonymical senses, including *chalk*, *glass*, *iron* and *paper*, and shows that many are polysemous from their earliest attestations in English, and retain the same senses across their recorded history. For example, *iron* is found from Old English (OE) onwards with both the sense ‘metal’ and the sense ‘an instrument, appliance, tool, or utensil’, along with a number of other metonymical senses, and *steel* shows a similar long-term range of meanings including ‘sword’, ‘rod for sharpening knives’ and ‘medicinal iron’. As these examples also show, a single concept can be a source for several different metaphorical or metonymical senses; when multiple mappings are made from one concept, the result can be a highly polysemous word. In Present Day English (PDE) the adjective *green* is commonly used to describe the color, but also covers a wide range of meanings including ‘verdant’, ‘fresh’, ‘unripe’, ‘immature’, ‘naïve’, and ‘jealous’, and all of these have been in use for several centuries (Kay and Allan, 2015, pp. 171–173). Other meanings like ‘environmentally friendly’ are more recent, but do not appear to have displaced longer-established senses.

Cognitive linguistic accounts of metaphor and metonymy have shown particular patterns in the direction of source-target mappings. As Coulson notes,

Directionality is thought to reflect the underlying cognitive operations in metaphor, in which an experientially basic source domain is exploited to reason about a more abstract target domain. Indeed, many entrenched metaphors involve the use of a concrete source domain to discuss an abstract target.

(Coulson, 2006, p. 34)

The kind of directionality that Coulson describes has both synchronic and diachronic implications. Novel, creative metaphor has been shown to follow the concrete > abstract pattern, but it is also generally understood that this pattern can be seen in the evolution of conventional metaphor through time. Steen et al. go as far as to say that

...it is one of the fundamental claims of contemporary metaphor theory that most of the historically older meanings of words are also more concrete, specific, and human-oriented... concrete meanings are typically also basic meanings from a historical perspective.

(Steen et al., 2010, p. 35)

However, a straightforward correlation between the synchronically “basic” sense of a word and its historically earliest sense cannot always be assumed. Some shifts in meaning are more surprising, and more problematic for cognitive linguistic accounts. As Geraerts notes,

In a TARGET IS SOURCE pattern, the meaning that is selected as the Source is very often taken to be the currently dominant literal reading, but that is not necessarily historically correct. (Geeraerts, 2015, p. 16)

Although the concrete > abstract shift which cognitive linguistics posits appears to be the most usual pattern historically, there are multiple examples which show complex and sometimes counter-intuitive semantic changes. For example, the “currently dominant” meaning of *slow*, which also appears to be the most experientially basic, is related to speed, and it might be assumed that this is the metaphorical source for the more abstract meaning ‘stupid’. Historically the sense development happens in the other direction, though, with the meaning ‘lacking speed’ attested several centuries later than ‘stupid’. In fact, the semantic field of speed is rich in terms of unexpected semantic histories, and most of the more usual terms in PDE have earlier meanings unrelated to physical movement or speed. *fast* means ‘fixed firmly’ in OE, and is not attested in *OED* with the meaning ‘rapid’ until the twelfth century; *quick* means ‘living’ in OE, and *OED* first records the meaning ‘moving with speed’ even later, in the fourteenth century. More investigation is needed in each case to establish the relationships between senses and account for the meanings that emerge, and also (more basically) to examine detailed evidence about whether dates of attestation are simply an accident of history or really do reflect the most likely semantic histories of each of these words. Either way, they illustrate Geeraerts’s argument that we must be careful to pay attention to the detail of the historical record.

Paying attention to polysemy across the history of a word also has the potential to solve semantic puzzles. Several scholars working within the cognitive linguistics paradigm have speculated on the motivation for the current meaning of *understand*, and assumed that this relates to *stand* ‘assume an upright posture’. Hough (2004) argues convincingly that this is not the case, and rather the meaning reflects a light metaphor; the word shows a development of a minor sense of *stand* found in OE, ‘shine’, which appears to survive into PDE only in this compound. Hough’s assertion is based on painstaking historical work which examines multiple examples of use and considers the sense history of cognates of *understand*, and she demonstrates convincingly that a view of metaphor or metonymy which does not take account of the semantic complexity of a word over its history is at risk of misinterpreting synchronic uses and misunderstanding diachronic developments.

2. The semantic history of *dull*

The semantic history of the adjective *dull* also provides something of a puzzle, since it appears to show a development counter to what cognitive semantics would predict. In PDE, *dull* is used in a number of senses, summarized as follows in the online *Lexico English Dictionary* (which reproduces entries from the *Oxford Dictionary of English*, based on evidence from the Oxford English Corpus):

1. Lacking interest or excitement
 - 1.1 *archaic* (Of a person) feeling bored and dispirited
2. Lacking brightness, vividness, or sheen
 - 2.1 (Of the weather) overcast; gloomy
 - 2.2 (Of sound) not clear; muffled
 - 2.3 (Of pain) indistinctly felt; not acute
 - 2.4 (Of an edge or blade) blunt
 - 2.5 (Of activity) sluggish or slow-moving
3. (Of a person) slow to understand; stupid
 - 3.1 *archaic* (Of a person's senses) not perceiving things distinctly
(abridged from lexico.com)

The first sense listed here, 'lacking interest or excitement', is the most frequently used in PDE, but a number of others are also common. Branch 2 covers the most concrete senses of the lexeme, and subsenses which appear to relate to these, though the relationship between them is not entirely straightforward; the way that *Lexico* lists them as subsenses of a general sense 'lacking brightness, vividness, or sheen' is rather striking, and different from the approach taken in some other dictionaries. Sense 2.1, which describes weather, plausibly shows narrowing from the more general sense 'lacking brightness'. 2.4 'blunt' seems rather different, but appears more closely related to 2.3, *dull* as used of pain. 2.3 is intuitively a metaphorical extension of 2.4, since the most usual way to describe pain is in terms of sharpness (Semino, 2010). The antonym *sharp* and many of its partial synonyms such as *acute*, itself used in the definition, share the same kind of polysemy in being able to describe both physical instruments and the kind of pain they might inflict, or a sudden strong pain, and this might even be described in terms of an INSTRUMENT FOR EFFECT metonymy.² 2.5 'sluggish or slow-moving' seems different again, and perhaps metonymically related to sense 1, in that one describes a feeling experienced, and the other an activity which provokes this kind of feeling. These two senses seem fairly difficult to separate in the example sentences provided, and not all synchronic dictionaries make such a clear distinction between them. For example, the *Collins*

2. A comparable case is Italian *spina*, which means both 'thorn' and 'acute pain' (with thanks to Esme Winter-Froemel for this example).

COBUILD Advanced English Dictionary provides a very similar definition to sense 1 (also numbered 1), though it explicitly recognizes use to describe a person: “If you describe someone or something as **dull**, you mean they are not interesting or exciting”. Branch 3 is also divided into a general and sub-sense, and these are closely related semantically, with one describing a person who lacks understanding and the other a person’s senses when unable to perceive clearly. Of all of the meanings listed in the entry, those in branch 3 are the least frequently used in PDE, and 3.1 is explicitly marked as archaic. Several of the senses listed therefore seem to be related by either metaphor or metonymy, and the arrangement of the senses in branch 2 of the entry encodes assumptions about the metaphoricality of its subsenses.

Sense 3 ‘stupid’ also seems intuitively likely to be metaphorical, particularly because the concept of stupidity is often expressed metaphorically (Allan, 2008), and the two most clearly concrete of the other senses are both sources for conventional intelligence metaphors. The first of these, INTELLIGENT IS BRIGHT (/STUPID IS DIM), is a conventional metaphor recognized by several scholars, some in slightly different forms – for example, the Master Metaphor list includes INTELLIGENCE IS A LIGHT SOURCE (Lakoff, Espenson and Schwartz, 1991) – and it relates to a more generally accepted mapping UNDERSTANDING/KNOWING IS SEEING (see further Allan, 2008, p. 45). Linguistically, the metaphor is exemplified by many expressions, including the following typical instances:

- (1) Depending on what your **bright idea** might be, opening expenses [for starting a business] could run to hundreds of thousands.
(<https://www.bbc.co.uk/news/business-44038501>)
- (2) ...I can always fall back on my razor sharp wit and **dazzling intellect**.
(<https://soulmates.guardian.co.uk/profile/508a654b900b034233776bb0>)
- (3) ...personality wise, well, are there any celebrities who are really cute but a bit **dim**?
(https://www.mumsnet.com/Talk/super_furry_animals/1801889-If-your-SFAS-was-a-celeb-who-would-they-be)

Similarly, another common metaphor to express intelligence is INTELLIGENT IS SHARP (/STUPID IS BLUNT). The examples below again show how pervasive this is (as does Example (2) above, which talks about *razor-sharp wit*):

- (4) The powerful presence, no-nonsense attitude and quick, **sharp** wit had swept away the familiarity of weekly questions about another defeat or an inability to hold a lead.
(<http://www.bbc.co.uk/sport/0/football/20172809>)
- (5) [The interviewer is] usually **incisive** with his analysis... Leahy’s most **penetrating** insight only comes towards the end of his reflections ...
(http://www.huffingtonpost.co.uk/thomas-morris/what-can-tescos-terry-teach-the-government_b_1974086.html)

- (6) [The policy] shows a deplorably **obtuse** and short-sighted outlook.
(<http://www.bbc.co.uk/news/education-18888210>)

However, the semantic history of *dull* as it is recorded in *OED* and early period dictionaries calls into question the idea of a concrete > abstract mapping from either the source meaning ‘not sharp’ or ‘not bright’. The *OED* entry is reproduced in Appendix 1; illustrative quotations have been omitted, but the earliest and latest dates of attestation have been given for each sense (where the latest date of attestation is later than 1880, no closing date is given, since the entry has not been fully updated since the relevant part of the first edition of *OED* was published in 1897). Strikingly, the sense ‘stupid’ is attested first, and significantly earlier than any other sense, with the first examples of use dating to the OE period. Example quotations include the following, from an OE riddle which appears to describe wine:³

- (7) OE *Riddle* 11 3⁴ Ic dysge dwelle ond **dole** hwette unrædsipa, oþrum styre
nyttre fore.
‘I harm the foolish and encourage the **stupid** on unwise paths, restrain others
from more useful travels.’ (translation from Dale, 2017, p. 149)

The early history of *dull* is slightly complicated by variant forms, and in this example the spelling is an inflected form of OE *dol*. In Middle English (ME) the spelling forms *dull* and *dul* are recorded, alongside northern dialect forms spelled with the medial vowels *-i-* and *-y-*, but there is no attested form in OE which can be the etymon for these forms; however, the form *dol* is attested with the same meaning. In the unrevised etymology section in the *OED* entry, *dol* is treated as a parallel form to an assumed reconstructed etymon **dyl(le)*, but the *Middle English Dictionary* (*MED*) treats it as simply a variant spelling. The inclusion of attestations featuring *dol* like the one above suggests that *OED* will adopt the same approach when it is revised for the third edition.⁵ ‘Stupid’ is therefore the only meaning attested in OE, and evidence in the *Dictionary of Old English* (*DOE*) suggests that this meaning is well-established in this period.

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3. Though not all scholars agree on this solution; see further Dale (2017, p. 149ff).
4. References for illustrative quotations are given in the same form as in *OED* or *MED*.
5. The inconsistency in the current *OED* entry, where some attestations for *dol* are placed in square brackets to indicate a separate but closely related form, and others have been added to the main quotation paragraph without square brackets, is specific to the online edition, which has not yet been fully revised but incorporates some changes. *OED2* consistently treats the form *dol* as a parallel form, and this explains why the etymology paragraph regards *dull* as attested first in ME.

By contrast, the evidence presented in *OED* and elsewhere appears to show that the concrete senses ‘not sharp’ and ‘not bright’ are not found until later. *OED* lists ‘Not sharp or keen; blunt (in literal sense)’ as sense 6, and the earliest attestation given at this definition is from the bilingual English-Latin dictionary *Proptorium Parvulorum*, dated c1440. Here *dull of egge* (‘edge’) glosses the Latin word *obtusus*. Earlier attestations for this sense can be found in *MED*, which draws from more recent scholarship. The first example given is from the *Ancrene Riwe*, which is dated c1230, and describes nails as *dull*:

- (8) c1230 *Ancr.(Corp-C 402) Idoluen wið þe **dulle** neiles... swa weren þe neiles **dulle** þer ha duluen his flesch.
 ‘Dug into with the **blunt** nails... the nails were so **blunt** that they dug into his flesh.’

This earlier date of attestation of c1230 for this sense is only a century after the end of the OE period, and therefore much closer to the date of attestation of *dull* ‘stupid’, and the relative lack of evidence in this early period means that it is problematic to conclude on this basis only that the sense ‘not sharp’ was definitely not found in OE. The sense ‘not bright’ is slightly more difficult to date from the evidence provided in *OED*, because it is lumped together with similar meanings in the definition ‘Of or in reference to physical qualities, as colour or luminosity, sound, taste: Not clear, bright, vivid, or intense; obscure, dim; indistinct, muffled; flat, insipid’ (sense 7a). As in *Lexico*, a close relationship between this meaning and a sense relating to the weather seems to be indicated by the organization of the entry: in *OED*, sense 7b is ‘Of the weather: Not clear or bright; cheerless, gloomy, overcast’. Unusually, the attestations for 7a and 7b are listed together in a single paragraph – again, this seems likely to change when the entry is revised – and the earliest quotation dates to c1430:⁶

- (9) c1430 J. Lydgate *Minor Poems* (1840) 151 Al is **dul** shadwe, whan Phebus is doun goon.
 ‘All is **dull** shadow, when Phebus has gone down.’

Since Phebus is the Greek god of the sun, this example is arguably best regarded as reflecting 7b, describing atmospheric conditions. A quotation from around a century later from Huloet’s 1552 *Abcedarium Anglico Latinum* (an English-Latin dictionary) describes ‘Dulle or sadde colour’ (glossing Latin *rauus*), and Shakespeare’s play *Cymbeline* includes a use more like ‘not shiny’:

6. In *MED*, the same quotation is given a manuscript date of c1460 and a composition date of a1449.

- (10) a1616 W. Shakespeare *Cymbeline* (1623) ii. iv. 41 Sparkles this Stone as it was wont, or is't not Too **dull** for your good wearing?
 'Does this stone sparkle as it used to, or has it not become too **dull** for to you wear?'

In this case, the evidence provided in *MED* does not significantly antedate this sense, so does not change the picture presented by the *OED* account. The closest definition it provides is 'not bright or intense, dark; of sound: low or lower in pitch, deep, flat', and it lumps this together with the phrase *maken dul* 'to lessen (heat) in intensity, moderate', which is attested in a quotation dated to ?c1425. Three other attestations are provided, including the same line from Lydgate found in *OED* and two uses describing sound. This strongly suggests that *dull* 'not bright' is not common in this period, since *MED* tends to include most surviving instances of all but the most frequently found words.

The sense 'not sharp' is therefore significantly earlier than 'not bright'; it is not attested in OE, though it is still plausible that it did exist during the period but is simply unrecorded in surviving texts. However, the etymology of *dull* provides a more convincing argument in favour of 'stupid' as the earliest sense. *OED* records cognate forms in Old Saxon, Dutch and Old High German which all share this mental sense, but are not recorded with either of the concrete senses, and suggests a common origin in Germanic *dul-*, ablaut-form of *dwel-* 'to be foolish'. This seems to provide definitive proof that, historically, the abstract mental sense of *dull* comes first, and it does not develop via a metaphorical extension of a concrete physical sense. Rather, an alternative account for the emergence of the senses 'not bright' and 'not sharp' is needed.

3. The emergence of the sense 'not bright'

'Not bright' is perhaps less problematic to account for than 'not sharp', since it can plausibly be explained as a development from other early senses by a series of semantic shifts. These are summarized in Figure 1 and explained below.

Alongside the OE sense recorded in *OED*, 'foolish, stupid, unwise', *DOE* records a narrowed use 'of those whom drink has made foolish' (sense A1). It seems possible that this gives rise to the sense recorded in *MED* as 3b 'sluggish, lethargic, inactive; apathetic, indolent; disinclined (to do sth.)', attested from c1390, for example in this quotation from Chaucer:

- (11) (c1390) Chaucer *CT.Pars.*(Manly-Rickert) I.706 Sompnolence..maketh a man be heuy and **dul** in body and in soule.
 'Drowsiness makes a man heavy and **sluggish** in body and in soul.'

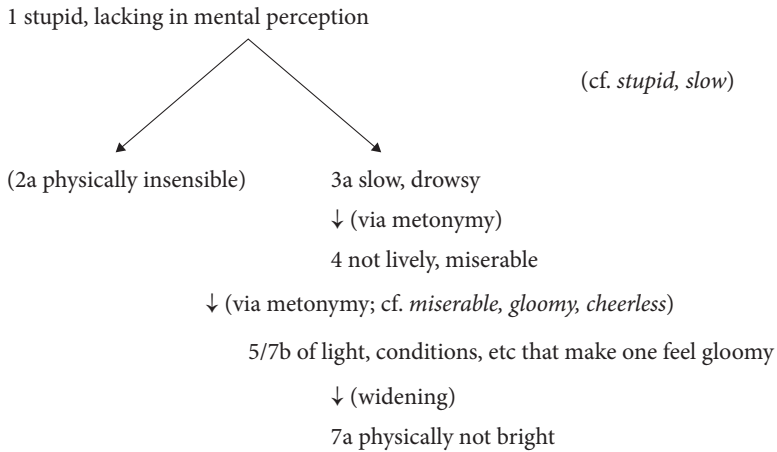


Figure 1. The semantic development of *dull* ‘not bright’

The adjective *stupid*, which *OED* records as borrowed from either French or Latin, shows similar polysemy; it is attested earliest in English with the sense ‘slow to learn, lacking intelligence’, and slightly later ‘In a state of insensibility or impaired consciousness, such as is caused by narcotic drugs, illness, intoxication, a blow, etc.’ (*OED*), reflecting the range of meanings found in classical Latin for *stupidus* ‘dazed, numbed, stunned, foolish, dull-witted’. As mentioned above, *slow* also seems comparable, since it is attested in OE with both the senses ‘Not quick or clever in apprehending or understanding a thing’ and ‘Naturally disinclined to be active or to exert oneself; constitutionally inert or sluggish; lacking in promptness or energy’. The semantic development of *dull* in turn shows a further shift to the metonymically related sense ‘not lively, miserable’ (*MED* 3c), attested around the same time, which seems a more clearly mental state often associated with lethargy and disinclination to act. *OED* gives a broader definition for this sense which perhaps does not separate physical and mental states quite so clearly: ‘Of persons, or their mood: Having the natural vivacity or cheerfulness blunted; having the spirits somewhat depressed; listless; in a state approaching gloom, melancholy, or sadness: the opposite of lively or cheerful’. A slightly later quotation from the mid-fifteenth century mentions the state of being *dull* in this sense alongside drinking too often, and although it does not clearly equate the two it perhaps provides further evidence for the validity of the account suggested above:

- (12) c1475 *Lerne or be Lewde* (Harl. 5086) in *Babees Bk.* (2002) i. 9 To **Dulle**, ne to Dredefulle, ne Drynke nat to offte.
 ‘[Don’t be] too **miserable**, or too worried, and don’t drink too much.’

Metonymy also appears to motivate the subsequent emergence of *OED* *dull* sense 7b ‘Of the weather: Not clear or bright; cheerless, gloomy, overcast’; in other words, this is the kind of weather than makes one feel cheerless or gloomy. In fact, the Lydgate poem quoted above, which is given as the first supporting quotation for the light sense in *OED*, seems to support this possibility, since *dull* here describes the atmospheric conditions but seems also to suggest a particular emotional state. Again, a parallel for this semantic shift is offered in another word history: *miserable* develops from meaning ‘distressed, unhappy’ to being used of weather described by *OED* as ‘cold, wet, depressing’. *Gloomy* and *cheerless* also show comparable polysemy. Finally, the emergence of *dull* ‘not bright’ seems to simply show a widening of meaning from uses to describe a relative lack of brightness in the sky to uses describing entities that do not reflect or emit much light.

In the account suggested here, metonymy is an important driving force in the semantic history of *dull*, and specifically in the development of a sense that otherwise seems surprising and perhaps unlikely. Though the sense ‘not bright’ intuitively looks basic from a synchronic viewpoint, it is rather the result of a series of shifts of meaning motivated by metonymy. Individually, these shifts do not show any obvious pattern, but their combined result is a change from an abstract meaning to one which is more concrete; it may be that metonymy plays an important role in similarly counter-intuitive semantic developments in other word histories, though this is a question for future work.

4. Motivation for the meaning ‘not sharp’

Taking account of the range of meanings across the history of *dull* therefore seems to offer a way to account for the emergence of the sense ‘not bright’. However, the emergence of the other concrete sense, ‘not sharp’, presents more difficulty. The motivation for ‘not sharp’ does not seem to be explicable as a development from one of the other senses of *dull*; correspondingly, cognates in other languages do not appear to be attested in this sense until much later than in English, and it seems likely that they borrow the meaning as a semantic loan from English. This means that an alternative account is needed.

As noted earlier, there are several lexemes that are semantically related to *dull*, either by synonymy or antonymy, which show very similar patterns of polysemy. In the *Historical Thesaurus of English* (*HTE*), *dull* appears in the same sections as *obtuse* and *blunt*, and all three are recorded with the meanings ‘stupid’ and ‘not sharp’. Additionally, there are several lexemes that are antonyms in both senses: *sharp*, *keen*, *acute*, *penetrant* and *incisive* are all recorded in the senses ‘clever’ and ‘physically sharp’. Though most of these synonyms and antonyms are attested in

English later than *dull*, it seems relevant to consider their semantic histories to see whether they develop in a similarly surprising way, and consider whether they might offer any clues about the emergence of the sense ‘not sharp’. Three cases, *obtuse*, *acute* and *penetrant*, are simply loanwords that reflect the polysemy of their Latin etymons, and their early meanings in English cannot be taken to be particularly significant; each one is recorded first with a meaning related to physical sharpness, but this does not seem significant because their ‘intelligence’-related meanings are also borrowed rather than developing within English. One other borrowed word, *incisive*, also has a Latin etymon *incisivus* ‘physically sharp, cutting’, and its use with the meaning ‘intelligent’ appears to be modelled on its French cognate *incisif*; the earliest OED attestation in English for this sense explicitly draws attention to French usage, describing talk as ‘what the French call *incisive*’ (a1850 M. F. Ossoli *At Home & Abroad* (1860) 239). This leaves three words, *keen*, *blunt* and *sharp*. *keen* is a native word found earliest in OE, and the evidence presented in *DOE* suggests that its core meaning is ‘bold, brave, daring’ (*OED* also notes that this is the ‘prominent’ sense during the period). In fact, though *OED* also lists the senses ‘wise, learned, clever’ and ‘fierce, savage’ with attestations in the OE period, *DOE* only lists subsenses of ‘bold’, and interprets the quotations supplied by *OED* differently. For example, the single quotation from Boethius which is considered by *OED2* to exemplify the meaning ‘wise’ in *OE* is not separated from the general sense ‘bold’ in *DOE*:

- (13) a1000 *Boeth. Metr.* x. 51 Se wæs uðwita ælces þinges **cene** and cræftig, þæm wæs Caton nama.
 ‘He was a philosopher of all things, **bold/clever** and skilful, named Cato.’

Whichever way this example is treated, the meaning ‘physically sharp’ is not attested until two centuries later, in the ME period, and *OED* describes the development of this sense as ‘obscure’, particularly because it is not found for cognates. However, in this case it again seems plausible that the meaning ‘sharp’ is simply a development from the earlier sense which emerges in a particular context. *MED* records the meaning ‘fierce, savage, cruel’, a sense which usually describes people, and it is possible that the same sense gave rise to the meaning ‘sharp’ when it began to be used of objects. In a quotation from the late thirteenth century, which *MED* treats as an attestation for the sense ‘sharp’, *keen* could certainly be interpreted in this way, and might provide evidence of a bridging context that could lead to a new sense:

- (14) a1325(c1280) *SLeg.Pass.*(Pep 2344)1423 Sharpe and **kene** were þe þornes.
 ‘Sharp and **cruel/keen** were the thorns.’

Further analysis of available examples would be needed to make a more confident claim about this kind of shift, but it casts doubt on the possibility that a comparison can be made between the way ‘sharpness’ senses emerge for *dull* and *keen*. *Blunt*

is still trickier, since its etymology is marked as ‘unknown’ in *OED*, and it has no recognized cognates; *MED* suggests it probably has an OE etymon, though none is attested. In ME it is recorded with two senses, ‘not sharp’ and ‘stupid’, but the surviving evidence gives little clear indication of which of these might be earlier. Both *OED* and *MED* include a first quotation from the *Ormulum*, dated to the late twelfth century or around 1200, but all other secure quotations for both senses are from the late fourteenth century or later, with the exception of a reference to the name *Ricardus Blundspure* in the *Peterborough Chronicle* in 1285. This final example suggests strongly that *blunt* is likely to have been used earlier than the example in the meaning ‘sharp’, so that the two senses may both have been used around the same time. Again, the known history of the word does not provide any clear parallel with that of *dull*, apart from their shared polysemy. Finally, *sharp* is native to English, and *OED* evidence suggests that it has both the senses ‘physically pointed’ and ‘clever’ as far back as it can be traced in English, since both senses are well-attested in OE. In this case no assumptions can be made about which meaning might be regarded as more “basic” or “literal”, historically speaking.

However, the polysemy shown by *sharp* early in its history, as well as by semantically-related Latin words including *obtusus* (< English *obtuse*) and *acutus* (< English *acute*), may provide a precedent for the use of *dull* (and possibly also *blunt*) to mean ‘not sharp’. In the OE period, both the physical (concrete) and mental senses of *sharp* were clearly well-established. *Dull* was clearly an antonym of *sharp* in the sense ‘clever’; a later quotation uses the two terms in direct contrast, showing that at least by this period they have a close semantic relationship:

- (15) (a1387) Trev.Higd.(StJ-C H.1)3.409 He lefte þe duller [vr. doller] men to kepe..
Macedonia, and hadde wiþ hym þe scharpest witted men.
‘He left the stupider men to look after Macedonia, and took with him the
sharpest witted men.’

It seems possible that, via proportional analogy, *dull* subsequently developed an additional sense ‘not sharp, blunt’ as an antonym to the other, physical sense of *sharp*: to use mathematical notation, ‘clever’ : ‘sharp’ = ‘stupid’ : ‘blunt’ (ie ‘clever’ is to ‘sharp’ what ‘stupid’ is to ‘blunt’). In a discussion which considers the role of antonymy in the structure of the lexicon, Lynne Murphy draws attention to precisely this possibility:

...the existence of contrast relations between words makes it likely that they will referentially drift apart and their contrast relation will be extended to other senses for those words. For example, *black/white* are contrasted as colour names, but also as racial terms that represent a complex of physical, genotypical, and cultural characteristics, and also mean ‘evil/good’ (*black/white magic*). These findings suggest that language users appreciate the relation as a relation between *words*, not just between senses...

(Murphy, 2006, p. 315)

The example Murphy gives here perhaps implies metaphorical extension of meaning in an expected direction, where a color term is used to refer to more abstract properties such as racial characteristics or moral qualities, but her argument about the way that speakers perceive relationships between words seems absolutely relevant to the history of *dull*. Adrienne Lehrer makes a similar point, but focuses on the conditions under which a new sense might emerge, arguing that

lexical antonymy is a plausible relation for explaining interpretations of novel uses [of] some words in appropriate contexts. For example, in isolation *cold car* is interpreted as a car that is cold to touch or one whose engine has been off. But in a sentence context like *He traded his hot car for a cold one*, two more senses emerge, based on conventional senses of *hot*: (1) 'he traded his fast, sporty car for an ordinary one, like a sedan' and (2) 'he traded his stolen car for an ordinary one'.

(Lehrer, 2002, p. 505)

Lehrer's example foregrounds the importance of context in this process, but it is difficult to find any instances of *dull* in the OE period which show the same kind of contextual motivation for the emergence of a novel sense. However, the polysemy of Latin *obtusus* and of *acutus*, the equivalent of English *sharp* which shares its range of meaning, might also be relevant as models: in this period knowledge of Latin was widespread, not only among the clergy and the learned, but also with anyone whose business or professional life required literacy. The existence of several existing forms which are either synonyms or antonyms of *dull*, and which themselves show the same kind of polysemy, might therefore 'attract' *dull* to conform to the same pattern.

There may also be an additional pressure from within the linguistic system which encourages the use of *dull* to mean 'not sharp', and this is the lack of any other term for the concept. According to *HTE*, there are no attested form in English with the meaning 'blunt' during the OE period; the earliest attested form is *dult*, which *MED* treats as the past participle form of the verb *dull*, itself derived via conversion from the adjective *dull* (and showing similar polysemy). The various antonyms of *sharp* that are available in OE contrast with other senses: for example, *unscearp* is used only of wine. In fact, across all word classes in the *HTE* Section 01.12.03.12 Bluntness, there are only two forms attested as early as OE, *ætstyntan* and *forstyntan*. Both are transitive verbs meaning 'to blunt, dull (something)', derived from the same verb *styntan*, and both appear to be relatively rare. In the sense 'to blunt', *DOE* lists only two supporting quotations for *ætstyntan* and one for *forstyntan*, and all three instances the words gloss Latin words in translations; each word is only attested twice more in other senses.⁷ All of the other entries in the *HTE* section

7. *styntan* may be more frequent, though its OED2 entry (with the headword *stint*, its reflex) suggests that it is also rare: 'the simple verb [*styntan*] occurs only once (in *Corpus Gloss.*, rendering Latin *hebetare*)'. *DOE* has so far only published entries for the first part of the alphabet, A-I, so has not yet collected together all of the relevant evidence.

date from ME or later. By contrast, the Section 01.12.03.11 Sharpness features a relatively high number of OE forms. These include three adjectives meaning ‘sharp’ at the most general, top-level category in the classification, *hwæs*, *tart*<*teart*, and *sharp*<*scearp*, but also several others in subsections further down the hierarchy. These are listed in Figure 2, along with the relevant subsection headings and their dates of attestation (words first attested later than 1150 have been omitted).

01.12.03.11 adj. Sharp

hwæs OE

tart < *teart* OE + c1500–1600

sharp < *scearp* OE-

Subcategories

02 very

heoruscearp OE

ungleaw OE

03 equally

efenscearp OE

04 of edge

geecgode OE

idig OE

scirecg OE

sharp < *scearp* OE-

sharp-edged < *scearpegede* OE-

04.01.01 two-edged

twibille OE

twiecge OE

twiecgede OE

twilafte OE

05 of point

sharp < *scearp* OE- also transf. & fig.

07 sharpened

mylenscearp OE

grounden < *gegrunden* OE–a1650

Figure 2. Adjectives meaning ‘sharp’ attested in OE, excerpted from HTE

There is some repetition within this list – *sharp* itself features in several subcategories, and some entries are essentially variant forms of one another – but it contrasts markedly with the category 01.12.03.12 adj. Blunt, and shows how striking the lack of an OE antonym is. Cruse talks particularly about ‘missing’ antonyms in his discussion of lexical gaps:

... not all lexical items are felt to have opposites... [but] The necessary absence of an opposite must be distinguished from an accidental absence... In the case of *agile* and *devout*, the opposite concepts are easy enough to grasp, but there happen to be no lexical items in English to express them precisely. We may legitimately speak in such cases of a lexical ‘gap’: *agile* and *devout* form ready-made positive terms operating on scales of AGILITY and DEVOUTNESS, respectively, but the corresponding negative terms, expressing relative lack of these properties, are missing.
(Cruse, 1986, p. 257–8)

The idea of lexical gaps is highly controversial, and relatively little work appears to have been done to explore whether they can be regarded as a trigger for lexical change, though the issue has been discussed by a number of scholars (for example, see Fischer 2000). But in the case of *dull*, it does seem plausible that the lack of a word to express the concept ‘not sharp’ in OE can be regarded as a lexical gap, and perhaps one which had become problematic by the ME period. Precisely why this might have been remains unclear, but the nature of language contact between English and Latin appears to be a contributing factor. Several of the early examples of *dull* ‘blunt’ are in translations or dictionaries (such as the *Promptorium Parvulorum* mentioned above), where *dull* is used to gloss *obtusus*; translators clearly needed to find an equivalent, and extending the meaning of *dull* on the model of existing semantically-related words appears to have supplied this need in some cases.⁸

5. Conclusion

This paper argues that the current meanings of *dull* can only be explained by considering its polysemy in different periods, and the polysemy of semantically related words in English and other languages, specifically French and Latin. While synchronically *dull* might be assumed to show a relatively straightforward metaphorical mapping from an experientially basic concrete concept to a more abstract concept, evidence from dictionaries and early texts appears not to support this kind of sense development. The meaning ‘not bright’ can plausibly be explained by a chain of semantic shifts, in which metonymy rather than metaphor plays a crucial role; in this particular development metonymy drives the apparently abstract > concrete direction of semantic change. The other “basic” sense (from a synchronic perspective) appears to be motivated by analogy, and to show the effects of systemic pressures within one semantic field.

8. For further discussion of the “necessity” of lexical innovation in a language contact situation, see Onysko and Winter-Froemel (2011).

The role of analogy in semantic change has long been of interest to linguists. Samuel Kroesch, a linguist in the Neogrammarian tradition who was interested in the lexis and semantics of the Germanic languages, argues for the central importance of analogy in a 1926 paper, suggesting that, in the most general sense, analogy might be considered the basis for all semantic change:

The existence of phonetic laws has made possible the recognition of the workings of analogy in word form, whereas the lack of any semantic laws and the difficulty of fathoming the infinite number of possible associations causing a change of meaning have made progress in this field baffling, to say the least. And yet undoubtedly every change of meaning is due to an association of some sort.

(Kroesch, 1926, p. 37)

Metaphor is sometimes considered to be one kind of analogy, but some changes are triggered by analogy between different forms rather than between concepts, and this bears out Murphy's (2006, p. 315) assertion that language users perceive relations between words as well as between senses. More recently, De Smet (2010) makes a similar point in a study of the grammaticalization of *out* and *forth*. He examines "Inter-particle semantic interference" between the two phrasal verb particles, both of which have early spatial senses, and argues that a non-spatial sense of *forth*, which appears not to follow from any of its earlier meanings or uses, develops by analogy with a non-spatial sense of *out*. This results from similarities between their meanings and distribution:

The result of this overlap is a strong paradigmatic tie... [consequentially] the collocational and semantic similarities between the two particles could come to serve as a basis for analogical exchanges by which *out* and *forth* copied each other's distribution and each particle extended its range of use into the territory of the other... Examples of inter-particle interference can be identified when some extension in the use of a particle appears to be undermotivated by the older use and meaning of the particle, yet closely resembles some use of the competing particle...

(De Smet, 2010, p. 90–1)

Crucially, the changes that these two particles undergo can only be explained by their relationship within the linguistic system: "it is the connectedness of the whole system that leads to interference" (ibid, p. 100). The same is true of the emergence of *dull* 'not sharp', which does not seem to be motivated by its earlier senses, but is triggered by analogy with related forms in tandem with systemic pressure.⁹

9. Interestingly, the need to consider individual semantic histories in the context of the linguistic system as a whole was the impetus for *HTE*, since the founding editor, Michael Samuels, believed that it would not be possible to account for semantic change "until it is possible to study simultaneously all the forms involved in a complex series of semantic shifts and replacements" (1972, p. 180).

The history of *dull* presents a challenge to cognitive accounts of metaphor, but it is not suggested here that it disproves the idea of directionality in metaphorical mapping; there are large numbers of examples that show the concrete > abstract tendency, and clearly the case of *dull* is an exception (though perhaps one of many). However, it shows that what looks like metaphorical polysemy does not always reflect “typical” patterns of semantic change, and cannot be assumed uncritically without recourse to the detail of a word’s history, and to the histories of related words. Semantic changes involving metaphor and metonymy take place within a historical context and within the linguistic system, and attention to both can inform and enrich our understanding of figures.

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Appendix. Abridged OED2 entry for *dull*Dull, *adj*

Forms: ME-15 **dul**, ME-15 **dulle**, (ME-15 **dol(e)**), 15 *Scottish doll*, ME-**dull**. See also *dill adj*.

Etymology: Middle English *dul*, *dull*, found once in 13th cent., but not usual before 1350; beside which *dil*, *dill*, *dylle*, is found in same sense 1200–1440. The two appear to point to an Old English **dyl*, **dylle* < **duljo-*, a parallel form to Old English *dol* foolish (< **dulo-*) = Old Saxon and Dutch *dol*, Old High German *tol* (German *toll*), from the Germanic *dul-*, ablaut-form of *dwel-* to be foolish.

1. Not quick in intelligence or mental perception; slow of understanding; not sharp of wit; obtuse, stupid, inapprehensive. In early use, sometimes: Wanting wit, fatuous, foolish. OE – 1833
- 2a. Wanting sensibility or keenness of perception in the bodily senses and feelings; insensible, obtuse, senseless, inanimate. In dialect use, *esp.* Hard of hearing, deaf. a1400 –
- 2b. Of pain or other sensation: Not keen or intense; slightly or indistinctly felt. 1725 –
- 3a. Slow in motion or action; not brisk; inert, sluggish, inactive; heavy, drowsy. 1393 –
- 3b. Of trade: Sluggish, stagnant; the opposite of *brisk*. Hence *transf.* of goods or merchandise: Not much in demand, not easily saleable. 1705 –
4. Of persons, or their mood: Having the natural vivacity or cheerfulness blunted; having the spirits somewhat depressed; listless; in a state approaching gloom, melancholy, or sadness: the opposite of *lively* or *cheerful*. c1393 –
5. Causing depression or ennui; tedious, uninteresting, uneventful; the reverse of exhilarating or enlivening. a1616 –
6. Not sharp or keen; blunt (in *lit.* sense). c1440 –
- 7a. Of or in reference to physical qualities, as colour or luminosity, sound, taste: Not clear, bright, vivid, or intense; obscure, dim; indistinct, muffled; flat, insipid. b. Of the weather: Not clear or bright; cheerless, gloomy, overcast. (Here there is app. some mixture of sense 5.) c1430 –
- 7c. Defining a grade of tobacco leaf. 1850

Psycholinguistic approaches to figuration

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Figurative language provides a testing bed for language processing in general, since it requires speakers to utilize a sophisticated range of linguistic, pragmatic and cognitive skills to derive an appropriate interpretation. The toolkit of psycholinguistics, where precise measurements of behavioural responses help to build a model of underlying cognitive processes, can enrich our understanding of this complex topic. Two techniques that have been fruitfully applied to the study of figurative language are cross-modal priming and eye-tracking. Drawing on a range of example studies from the literature, this chapter will demonstrate how figurative language research can benefit from the application of psycholinguistic techniques. It concludes with a consideration of how experimental results can be interpreted against existing theories and models.

Keywords: psycholinguistics, experimental methods, reaction times, cross-modal priming, eye-tracking, visual world paradigm, figurative language, idioms, metaphors, metonymy

1. Introduction

Psycholinguistics combines the disciplines of psychology – the study of mental processes that underpin human behaviour – and linguistics – the study of language and how it is used. Psycholinguists are therefore concerned with identifying and studying the processes and mechanisms that allow us to understand and produce language as a part of everyday communication. This includes the ability to perceive sounds as linguistically meaningful (i.e. hear phonemes) and use this input to activate entries in the mental lexicon (i.e. understand words), to parse and process complex syntactic structures, and to interpret complex information in a pragmatically appropriate way. Psycholinguistics is intimately connected to other disciplines such as, in one direction, Cognitive Neuroscience and Neurolinguistics, where the focus may be more on the biological or organic aspects of how the brain operates, and, in

the other direction, Cognitive Linguistics, which attempts to understand language in terms of general cognitive principles that lie outside of the domain of language.

Psycholinguistics sits in the middle of these and is as much concerned with the mind (as an abstract description of human thought) as it is the brain (as a physical organ). Its aim is to understand human cognition and its contribution to language in terms of specific, measurable mental processes, and as it relates to figuration, provides a way to describe and quantify the ways in which we are able to deal with and make sense of a wide range of pragmatically demanding uses, including idioms, metaphor, metonymy, irony, hyperbole, and any other examples where what is said is (to a greater or lesser degree) different from what is meant. A precise definition of what constitutes 'figurative' language remains elusive, not least because of the wide range of tropes and subtypes that are subsumed within this broad category, but for present purposes, 'figurative' is used to encompass anything that is not used in a strictly literal sense (notwithstanding the difficulty of deciding what constitutes a 'literal' meaning for any given proposition – see e.g. the discussion in Gibbs and Colston, 2012, Chapter 2).¹

As well as being a field of study in its own right, psycholinguistics also constitutes a set of methods, and the techniques adopted from the more general world of experimental psychology are a cornerstone of this approach. These techniques allow us to make and test hypotheses as a way of validating models of how language is processed in real time, and have been a vital part of the development of our understanding of how language is used. The focus of this chapter is to consider how an experimental psycholinguistic approach can help us to understand the mental processes that underpin figurative language, where the language user must somehow resolve the tension between a strict, literal understanding of what is said, and a figurative interpretation of what is meant. Two approaches will be considered in detail: cross-modal priming and eye-tracking. For each of these, a range of example studies from the literature will be used to demonstrate how the techniques can be applied, and what questions they have been used to address. These include studies that consider the range of linguistic factors that affect the processing of figurative language; studies that compare how first language (L1) and second language (L2) speakers deal with figurative phrases; and studies that have explored the contribution of individual differences to figurative understanding. The chapter will conclude with a discussion of how this research has contributed to our understanding of figurative language more generally, with particular reference to established models of figurative processing.

1. A further caveat to the definition of figurative language as 'non-literal' is to exclude pragmatic phenomena not based on figurativity, such as indirect speech acts or conversational implicatures.

2. Meaning activation and cross-modal priming

Cross-modal priming is an example of the more general set of priming and reaction time studies that have been applied in many areas of experimental psychology. Reaction times (or RTs) are used to test the speed with which a participant can respond to a given stimulus. In language experiments, speed of response is taken to be a reflection of processing time (longer responses = greater cognitive effort), and can be measured through tasks such as naming (speaking a written word out loud as quickly as possible, with the time to begin speaking taken as the RT), or can involve a metalinguistic judgement, such as in the lexical decision task (LDT). Here, participants are presented with a string of letters and asked to decide, as quickly as possible, whether what they see is a genuine word in the particular language under investigation, hence (in English) a string like *house* would require a 'yes' response, while a string like *touse* would require a 'no' response. Typically in an LDT the speed of response for real words ('yes' responses) is taken as a measure of speed of lexical access, and is known to be affected by a host of phonological, lexical and semantic variables (see e.g. Balota, Cortese, Sergent-Marshall, Spieler and Yap, 2004). In a 'primed' task, experimenters attempt to manipulate what is shown to participants prior to showing them the stimulus, in order to better understand underlying connections between words. For example, showing a word like *dog* (the prime) very briefly before presenting *cat* (the target) for a lexical decision speeds up responses (relative to no prime, or to an unrelated prime), because of the semantic relatedness of the two words. Meyer and Schvaneveldt (1971) were among the first to demonstrate the robust effect of semantic priming using a variant of this technique, and the approach has since been widely applied to the understanding of lexical access in general (see Balota, Yap and Cortese, 2006, for a review).

The cross-modal priming method, developed by Swinney (Swinney, 1979; Swinney, Onifer, Prather and Hirshkowitz, 1979), provides a way to apply this principle to the processing of words as part of sentences. Cross-modal priming utilizes different input modalities (visual and auditory) to investigate activation of meaning in real time. For example, a participant may hear a sentence played auditorily, then at a key point (defined by the researcher) would be presented with a visual representation of a word and asked to make a lexical decision on this target. Swinney (1979) used this method to investigate which meaning was activated first for ambiguous words such as *bug*. He played sentences containing the ambiguous word and presented targets related to the meaning of 'insect' (e.g. *ant*), related to the meaning of 'listening device' (e.g. *spy*), or unrelated to either meaning (e.g. *sew*). His results showed that both meanings were primed by the ambiguous word when presented immediately (experiment 1), but when presented four syllables later, only the contextually appropriate meaning was active (experiment 2). Swinney discussed

these results and what they mean for the process of lexical access during sentence comprehension, suggesting that although the initial stages of access are relatively unaffected by context, the language processor quickly assigns the most appropriate meaning based on the unfolding material.

2.1 Investigating figurative processing using cross-modal priming

Researchers have applied the same technique to figurative language, often focusing on the relative activation of figurative vs. literal meanings for the same word or phrase, or exploring the factors that contribute to this. For example, Cacciari and Tabossi (1988) used cross-modal priming to explore the processing of idioms, specifically to compare existing accounts such as the lexical representation view (Swinney and Cutler, 1979) and the Direct Access model (Gibbs, 1980, 1986, 1994). In three experiments they asked participants to listen to sentences containing Italian idioms, then to make a lexical decision to visually presented words that were related to either the figurative or literal meaning of the phrase, or to an unrelated control word. In experiment 1, sentences ending with familiar idioms (e.g. 'after the excellent performance the tennis player was *in seventh heaven*') showed significant priming for words related to the figurative meaning (e.g. *happy*), compared to both literal targets (e.g. *stars*) and control words (e.g. *respect*). In experiment 2, a second set of idioms was selected and a pre-test was used to ensure that all phrases were not predictable prior to the final word being seen (e.g. *to go to the devil*). Here, responses to literally-related words were reliably faster than those to figuratively-related words, which were no different compared to control words. In experiment 3, the same items were presented 300ms after the offset of the final word of the idiom, where responses to both figurative and literal targets were reliably faster than unrelated control words. Cacciari and Tabossi concluded that predictability plays a vital role in idiom processing, whereby for highly predictable idioms, only the figurative meaning was active by the end of the phrase, but for unpredictable idioms, only a literal meaning was available, with the figurative meaning emerging soon afterward. They used this finding to outline their Configuration Hypothesis, whereby idioms are recognized as known 'configurations', which triggers activation of the figurative meaning. They proposed that if the recognition point (what they called the 'key' of the phrase) is early (as in an example like *take the bull by the... (horns)*, where the idiom is strongly indicated even before the final word is provided), literal analysis stops and by the end of the idiom only a figurative meaning is active. For less predictable idioms, in particular verb phrase idioms where the initial verb allows for a range of continuations, this recognition (and therefore the activation of the figurative meaning) is delayed.

Other researchers have built on this work and utilized the same method to explore the multiple factors that contribute to figurative and literal processing in idioms. Tabossi and Zardon (1993) chose idioms that varied in terms of where the 'key' appeared, and used cross-modal priming to confirm that figurative activation was contingent on the point at which a phrase is recognized as an idiom. In a follow-up study, Tabossi and Zardon (1995) found no evidence that idiomatic meaning was available at the verb of short idioms (verb-(NP)-(PP), where at least one of the bracketed elements was present), and reiterated that activation of figurative meaning was contingent on the 'key' of the idiom being encountered. Titone and Connine (1994) further showed the importance of predictability in idiom processing using highly familiar, non-decomposable idioms (phrases where the figurative meaning is not predictable based on the literal words, e.g. *bury the hatchet*). Their experiment 1 found priming for figuratively related target words (e.g. *forgive*) at the offset of the phrase regardless of predictability and, for highly predictable idioms only, when the target was presented on the second to last word of the phrase (experiment 2). In a third experiment, they included a dimension of literalness and found literal priming at the end of the phrase for all conditions with the exception of high predictable-low literalness. These results reiterate the importance of predictability, but suggest that this may interact with other factors (such as how literally plausible a phrase is) in how long consideration of the literal meaning continues.

Other studies highlighting the importance of predictability include Tabossi, Fanari and Wolf (2005), who showed a difference between predictable and non-predictable Italian idioms. They found that the figurative meaning becomes available midway through a predictable idiom but at phrase offset in an unpredictable one (experiment 1), and also showed that predictable idioms inhibited recognition of a plausible literal completion, but unpredictable idioms did not (experiment 2). Cacciari, Padovani and Corradini (2007) found differences between 'fast responders' and 'slow responders' (based on average speed of response in the lexical decision task) when presented with unpredictable idioms: whereas fast responders responded equally quickly regardless of predictability, slow responders were faster when presented with predictable idioms than when presented with unpredictable ones, but once a response deadline was introduced, fast and slow responders both activated the meanings of unpredictable idioms equally quickly. Fanari, Cacciari and Tabossi (2010) found activation of figurative meaning in longer idioms regardless of predictability (experiment 1), then found that the inclusion of a short biasing context was also enough to activate figurative meaning for short, unpredictable phrases (experiment 2). Together, these studies suggest that different factors combine to determine what makes an idiom predictable, and therefore how quickly the figurative meaning may become available.

2.2 Interacting variables in idiom processing

More recently, Titone and Libben (2014) used cross-modal priming to investigate how different factors affect idiom processing, and to explore the time-course of figurative activation. They selected idioms that ranged in their familiarity, decomposability and literal plausibility, all measured as continuous ratings. Over two experiments they played short, non-biasing prime sentences with the idiom at the end (e.g. 'Fred *hit the sack*'), and presented participants with a figurative target (e.g. *sleep*) at either the offset of the penultimate word, the offset of the final word, or 1000ms following the offset of the final word. They compared responses to the same word presented following a control sentence (e.g. 'They liked the coffee') and found minimal priming at the penultimate position and the most priming at the 1000ms post-offset position, suggesting that for most idioms, figurative meaning develops over time, rather than being available all at once. In addition, they found that their variables of interest exerted an effect at different time points: familiarity facilitated idiom activation immediately at the offset of the phrase, but semantic decomposability exerted the opposite effect to their predictions, whereby at 1000ms post-offset non-decomposable idioms were primed to a greater extent than decomposable ones. Literal plausibility inhibited figurative activation prior to the end of the phrase, suggesting competition between the two meanings. This highlights that a vital part of figurative comprehension is the ability to inhibit or suppress the non-relevant meaning, as in language processing more generally (e.g. Gernsbacher and Robertson, 1999).

Building on this idea, Findlay and Carrol (2019) used the same paradigm to show that what constitutes 'literal plausibility' might be best seen as a complex of features, including aspects that draw focus to the literal meaning (e.g. degree of physical interaction, imageability) and therefore increase competition between figurative and literal meanings. They found that such properties led to inhibition of figurative meaning when targets were presented 500ms after the phrase (notably, much later than the same effects observed in Titone and Libben, 2014), but observed facilitative effects of familiarity, decomposability and also emotional valence, which is consistent with effects of this variable for single words (Kousta, Vinson and Vigliocco, 2009; Yap and Seow, 2014), and with the few studies that have specifically identified the relationship between figurative language and emotional engagement (e.g. Citron and Goldberg, 2014). These results for the effects of aspects of 'semantic richness' agree with work by Al-Azary and Buchanan (2017), which have shown the importance of features such as concreteness and semantic neighbourhood density in how metaphors are perceived. A closer consideration of such factors may provide a fruitful area for development in the study of figurative language.

The question of figurative vs. literal activation has also been explored in the context of language learning, where overall familiarity with figurative phrases is generally much lower than among native speakers. Cieślicka (2006) played advanced learners of English (L1 Polish) neutral sentences with English idioms embedded in them (e.g. 'Peter was planning to *tie the knot* later that month'), then presented figurative (e.g. *marry*), literal (e.g. *rope*) or control target words (matched with the figurative and literal targets, e.g. *limit* was the control for the figurative word and *ripe* was the control for the literal word) at either the penultimate position (100ms after the onset of the penultimate word) or final position (100ms after the offset of the idiom).² No priming for figuratively related words was observed in either position, but there was priming for literally related words at the penultimate position, which increased by the idiom final position. Importantly, all idioms were known to the learners (as established by a separate familiarity test), and Cieślicka used this finding to put forward her Literal Saliency Hypothesis, whereby an analysis of the literal meaning of an idiom remains an obligatory part of processing in a second language, even at higher levels of proficiency. This proposition has been further explored using eye-tracking, and we will return to a discussion of figurative processing in language learners later in this chapter.

Finally, an exploratory study by Cacciari, Corradini and Ferlazzo (2018) used cross-modal priming to consider the influence of individual cognitive and personality variables on the processing of predictable and unpredictable Italian idioms. As expected, they found priming for figuratively related words for both idiom types when they appeared in idiom-biasing contexts. They additionally found contributions of working memory and inhibitory control – two aspects relating to the ability to manage competing sources of information – and vocabulary size, or crystallized verbal intelligence, all of which contributed to faster responses to idioms. There was also some indication that personality components such as state anxiety and openness to experience contributed to the speed with which figurative meanings were activated. The authors suggest that individual differences may well play an important role in the processing of idioms, as well as other types of figurative language, and their results certainly provide justification for further investigation.

2. In this experiment 'neutral' sentences are ones where no clear bias towards a figurative reading of the string is provided prior to the phrase, e.g. 'Peter was planning to...' provides no indication that the idiom *tie the knot* will follow.

2.3 Cross-modal priming and metaphor processing

Although cross-modal priming has most commonly been applied to idioms, Blasko and Connine (1993) used this approach to investigate how people understood 'X is Y' metaphors, e.g. *hard work is a ladder*. Across a series of experiments they presented participants with metaphors embedded in neutral sentences (e.g. 'The belief that *hard work is a ladder* is common to this generation'), with figurative (e.g. *advance*), literal (e.g. *rungs*) or control words (e.g. *pastry*) presented at different points. Their results showed the importance of familiarity, with highly familiar metaphors showing activation of both literal and figurative meaning but less familiar metaphors showing activation only for literal meanings, at both immediate (experiment 1) and 300ms delayed (experiment 2) presentations. They also explored the influence of aptness (defined as how well each metaphor expressed its specific non-literal meaning) and found that even in less familiar metaphors, figurative and literal meanings were available immediately at the offset of the vehicle (the figurative image being brought in, e.g. *ladder* in *hard work is a ladder*) providing the metaphor was also rated as highly apt, whereas for less apt phrases, only a literal meaning was available (experiment 3). At a longer 750ms delay (experiment 4) they found some limited evidence of a small degree of activation for the figurative meaning even for less apt phrases. They also conducted a final experiment 5 to eliminate the possibility that the previous results were due to simple lexical priming by presenting only the topic and vehicle of the metaphor as an auditory prime, e.g. for the metaphor *the stars were snowflakes* the two words *stars* and *snowflakes* were played auditorily, followed by either a figurative target (e.g. *unique*) or a control word (e.g. *fifteen*). When this was the case, no activation of figurative meaning was observed for any phrase, regardless of level of familiarity or aptness.

2.4 Other approaches to priming in the study of figurative language

Investigations of figurative language are not limited to cross-modal priming, and other variations of sentence priming have also been fruitfully applied in this area. For example, Smolka, Rabanus and Rösler (2007) presented sentences containing German idioms visually one word at a time, with a visual target appearing 500ms after the final word. They found activation for literal meanings in both literal and figurative contexts, and argued that literal meaning is not 'switched off' once an idiom is recognized, but instead plays an ongoing and essential role in how idioms are processed (see Hamblin and Gibbs, 1999, for a similar argument about how the action of the verb in particular makes an important contribution to idiom meaning). Caillies and Butcher (2007) and Caillies and Declerq (2011) used the same method (visual sentence priming with word-by-word presentation) to show that semantic decomposability is an important factor in how French idioms and metaphors are

processed. In Caillies and Butcher (2007) the figurative meanings of decomposable idioms were available sooner than those of non-decomposable idioms, while in Caillies and Declerq (2011) decomposable idioms were processed more quickly than novel metaphors (e.g. *kill the song*). Van Ginkel and Dijkstra (2020) also used visual sentence priming and found figurative and literal priming for Dutch idioms for both Dutch native speakers (experiment 1) and German-Dutch bilinguals (experiment 2). They also found effects of idiom-final word frequency, transparency and literal plausibility in native speakers only, suggesting that bilinguals were less sensitive to these properties.

Taken together, cross-modal priming and visual sentence priming allow researchers to present stimuli as part of controlled sentences, allowing both naturalness and flexibility in how factors like context are utilized. In the case of cross-modal priming, the combination of auditory and visual stimuli also allows researchers to manipulate the timing of presentation as a way of understanding the dynamic nature of how figurative phrases are understood. Crucially, the studies surveyed above allow for the investigation of meaning activation in a relatively direct way. That is, for a figuratively-related word to show any degree of priming for a particular speaker, a connection between the idiom/metaphor and the figurative meaning must already exist in the mental lexicon, or must be generated very quickly. The results from Blasko and Connine (1993) highlight that access to meaning in metaphors is not entirely contingent on familiarity, and for less familiar or less conventionalized phrases, a novel or at least extended sense must be generated, which unfolds over a longer timeframe than for conventional, familiar metaphors, or for the idiom studies surveyed above.

In contrast to these methods, other approaches allow us to consider not just the meaning that is activated when a figurative phrase is encountered, but how this meaning is subsequently resolved as a part of overall text comprehension. Eye-tracking, as a sensitive measure of online processing, is one method to investigate this.

3. Resolving meaning in context: The use of eye-tracking

Eye-tracking is well-established as an essential tool in the study of how language is processed, focusing on reading as a window into the unconscious mind. The underlying assumption is that what is being looked at is what is being processed at any given time (Rayner and Pollatsek, 1989), hence length of fixation (times when the eye is stationary on a word and able to extract linguistic information) is a robust reflection of processing effort. In simple terms, shorter, high frequency, more predictable words tend to have shorter fixation durations, while longer, low frequency, unexpected or incongruent words tend to have longer fixations (see Staub and Rayner, 2007, for a review). By collecting different measures during the

reading of a piece of text – duration of initial and subsequent fixations, as well as information about the direction of a ‘saccade’, or jump from one fixation point to another – eye-tracking allows us to build up a detailed picture of how words are recognized and processed in real time, and how a particular meaning is integrated into the unfolding context. Although many measures can be reported and analysed in eye-tracking research, Table 1 outlines the most common. These are usually divided into ‘early’ measures, which reflect immediate lexical access and automatic recognition processes, and ‘late’ measures, which reflect post-lexical strategic effects such as integration of meaning into context (Altarriba, Kroll, Sholl and Rayner, 1996; Conklin, Pellicer Sánchez and Carrol, 2018; Inhoff, 1984; Paterson, Liversedge and Underwood, 1999; Rayner, 2009).

Table 1. Common eye-tracking measures reported in studies of figurative language. Processing is considered to be either ‘early’ or ‘late’, with the type of measure and description of how this is calculated also reported. Area of interest refers to the word, phrase or section of text under investigation

Stage of processing	Measure	Description
Early	First fixation duration	The duration of the first fixation made in an area of interest. Since phrases tend to include more than one fixation, this measure is more relevant to single words.
	First pass reading time / gaze duration	The sum of all fixations made on an area of interest prior to the gaze exiting to the left or right.
	Skipping rate	Whether a word is skipped entirely (receives no fixations) during first pass reading.
Late	Second pass reading time	Sum of all fixations made on an area of interest once the gaze has exited and then subsequently returned to that area.
	Total reading time	The sum of all fixations made on an area of interest during the whole trial (first pass reading plus any re-reading).
	Fixation count	Total number of fixations made on an area of interest during the whole trial.
	Regression path duration / go past time	Sum of all durations on an area of interest before the gaze exits to the right (including regressive fixations on preceding words).
	Regression rate / regression count	Whether the gaze returns to an area of interest from one further to the right, expressed either as a binary variable (is there or a regression, yes or no?) or a count (total number of regressions made to the area of interest).

Note: Some measures, such as regression path duration, are sometimes considered early and sometimes considered late. See Conklin, Pellicer Sánchez and Carrol (2018), Chapter 3 for a more detailed description of these measures.

3.1 Eye-tracking and the ‘idiom superiority effect’

Eye-tracking has been particularly applied in the study of idioms, focusing on the processing advantage provided by their status as formulaic as well as figurative phrases. That is, idioms are typically read, recognised or responded to more quickly than matched literal phrases (e.g. Swinney and Cutler, 1979; Tabossi, Fanari and Wolf, 2009) as a result of their predictable, familiar status. Tabossi et al. (2009) called this the ‘idiom superiority effect’ and concluded that it is the status of idioms as known expressions, rather than idiomaticity per se, that contributes to the advantage. In eye-tracking research various non-figurative formulaic expressions have been shown to behave in this way (e.g. Siyanova-Chanturia, Conklin and van Heuven, 2011; Sonbul, 2015; Vilkaite, 2016), and Carrol and Conklin (2020) showed a similar advantage in terms of faster reading compared to control phrases for idioms, binomials and collocations, driven primarily by distributional properties such as phrase frequency and predictability of the final word.

As with results from various priming studies, this effect is fairly consistent in native speakers but language learners show much more variable patterns. Siyanova-Chanturia, Conklin and Schmitt (2011) compared figurative and literal uses of idioms like *at the end of the day* with control phrases (e.g. *at the end of the war*), each embedded in story contexts that supported the intended meaning. They found that native speakers read both versions of the idiom more quickly overall than control phrases (although they found no effects in early measures such as first pass reading time), with no differences between the figurative and literal uses. In contrast, advanced learners of English as a second language (mixed L1s) showed no advantage for idioms compared to control phrases. Carrol and Conklin (2017) and Carrol, Conklin and Gyllstad (2016) found the same pattern, whereby native speakers showed an advantage (across all reading measures) for idioms but learners did not.³ However, they also found a clear effect of L1 knowledge, whereby phrases that were also idioms in the L1 did exhibit an idiom superiority effect, in terms of shorter overall reading times and in particular shorter reading times for the final word.

Closer inspection of these kinds of results suggests that the advantage for idioms may be less straightforward than is sometimes portrayed. Vainio and Nenonen (2007) found no immediate advantage for native speakers reading Finnish idioms compared to literal control phrases, but did find a delayed effect in the form of less re-reading for idioms, much like Siyanova-Chanturia, Conklin and Schmitt (2011) who found an advantage in late measures only. These results for late but not early

3. Carrol and Conklin (2017) first appeared online in 2015 prior to print publication in 2017, hence precedes Carrol, Conklin and Gyllstad (2016) in terms of research chronology.

measures suggest that the advantage may lie more in the relative effort required to integrate the overall meaning of the phrase, rather than in simply recognising known combinations. Other studies have shown that understanding 'fixed' expressions is not necessarily contingent on encountering a canonical version of a phrase. Geeraert, Baayen and Newman (2017) found that participants had little difficulty in reading lexical substitutions (*go through the ceiling*) or even idiom blends (*go through the roof + off the charts = go through the charts*), compared to a canonical form (*go through the roof*), providing that these at least partially maintained the same metaphorical meaning. Other variations showed different patterns, and the by-item variation in their results suggested that not all idioms were amenable to the same kinds of variation. In a similar vein, Kyriacou, Conklin and Thompson (2020) compared reading of canonical (*he kicked the bucket*) and passivized (*the bucket was kicked*) idioms and found no indication that this modification compromised their figurative meaning: total reading times for passivized idioms were longer than canonical phrases, as expected, but shorter than control phrases in both active and passive forms. They suggest that the figurative meanings of idioms are not dependent on a fixed, invariant form, even when the idiom is relatively non-decomposable.

3.2 Figurative vs. literal meaning in idiom processing

Various studies have also considered the relative ease with which the figurative or literal uses of idioms are understood during reading. Titone and Connine (1999) considered effects of context (biasing a figurative or literal meaning, and either preceding or following the idiom) and decomposability on how idioms are understood and found clear differences in reading times. Decomposable idioms (e.g. *save your skin*) showed no difference according to the location or nature of the context, whereas non-decomposable idioms (e.g. *kick the bucket*) were read more slowly when preceded by a context, regardless of whether this was figurative or literal. Titone and Connine suggested that this dissociation supported a dual route approach to how idioms are processed (parallel processing of a literal, compositional meaning and a phrasal, non-compositional one). When the two routes are complementary (i.e. analysis of the phrase also helps to arrive at the figurative meaning), as in the case of decomposable idioms, processing is faster. For non-decomposable idioms, where the literal and figurative meanings do not overlap, the presence of a prior context meant that more effort was required to integrate the contextually appropriate meaning, leading to longer overall reading times. This highlights that resolving the competition between figurative and literal readings is an important aspect of how idioms are understood, and Milburn and Warren (2019) suggest that this parallels competition between meanings in ambiguous words. In their data, idioms that were more biased toward a figurative reading were read more quickly

than those with balanced meanings, and a higher degree of relatedness between figurative and literal meanings (broadly equating to what other studies call decomposability) led to faster reading and less re-reading. There was also an interaction between dominance and relatedness, such that when figurative dominance was high, more related meanings led to slower reading and more re-reading, but when dominance was low (i.e. figurative and literal meanings were more balanced), the opposite effect (faster reading for more related meanings) was found.

Addressing both the issue of the idiom advantage and the interpretation of idiom meaning, Titone, Lovseth, Kasparian and Tiv (2019) considered reading of idioms compared to control phrases (e.g. *had a lark vs. saw a lark*), as well as comparing patterns when a following context rendered the idiom figurative or literal. Early measures showed a consistent advantage for idioms over control phrases, which was interpreted as clear evidence of direct recognition / retrieval at this early stage of processing. At later stages, reading times were affected by both familiarity and decomposability: when idioms were more familiar and less decomposable (what the authors call “more word-like”, p. 222), processing was faster than when idioms were less familiar and more decomposable. Readers were also more likely to show increased reading times for both the idiom itself and the following disambiguating region for literal interpretations of highly familiar idioms, which were assumed to have more strongly activated the figurative meaning on first encounter. Conversely, the difference between figurative and literal interpretations decreased for more decomposable idioms, indicating that these were less likely to be interpreted as figurative on first reading and leading to difficulty if a subsequent context revealed an idiomatic interpretation. Titone et al. (2019) went on to suggest that enhanced ambiguity between figurative and literal meanings may lead to greater competition in more decomposable idioms, highlighting the multiple factors that drive the recognition and understanding of idioms in a dynamic fashion. They concluded that both direct retrieval and compositional analysis play a part in idiom processing, consistent with hybrid models (e.g. Sprenger, Levelt and Kempen, 2006) or constraint-based models (see Section 4.1).

The studies discussed previously that investigate language learners also provide useful data here. Siyanova-Chanturia, Conklin and Schmitt (2011) found that literal and figurative uses were equally fast for native speakers, but for non-native speakers, figurative uses had significantly longer total reading times than literal. Carrol and Conklin (2017, experiment 2) also found longer reading times for figurative over literal uses of idioms for non-native speakers, but Carrol et al. (2016) found no such effect for figurative phrases compared to literal controls. They attributed the lack of a figurative disadvantage to the fact that language learners in their study were highly proficient, and likely to have been exposed to the English idioms many times as part of their language experience. Cieślicka, Heredia and Olivares (2014) found

that for Spanish-English bilinguals reading English idioms, effects of context (neutral or biasing context) and salience (idiom used in its more common figurative or less common literal sense) were modulated by language dominance. Figurative uses had consistently shorter total reading times when embedded in supportive contexts for both Spanish-dominant and English-dominant participants, and the presence of a supportive context in general led to fewer fixations and fewer regressions for both figurative and literal uses. Overall, English dominant speakers spent less time reading idioms and post-idiom regions, and in general an effect of salience was observed whereby figurative uses were more salient for English-dominant speakers, while literal uses were more salient for Spanish-dominant speakers, although this was not consistent across all conditions and areas of analysis. Cieslicka and Heredia (2017) also examined reading of English idioms by Spanish-English bilinguals and found that both relative transparency and cross-language overlap had an effect: opaque idioms in general took longer to read than transparent ones, and those where there was an equivalent in Spanish took longer to read, which the authors suggested was evidence of competition between the two languages.

Together, these studies highlight the wide range of speaker variables that must be considered in how figurative meaning is resolved. Siyanova-Chanturia, Conklin and Schmitt (2011) suggested that although their participants did know the idioms in their study (as indicated by a familiarity test), their figurative meanings may not be as strongly encoded as the literal, which is in line with the Literal Salience model (Cieslicka, 2006) discussed previously. In contrast, when idioms are genuinely unknown and therefore no figurative meaning is available to retrieve, language users must attempt to generate a plausible meaning, which clearly comes with a significant cost of its own. Carrol and Conklin (2017) and Carrol et al. (2016) both showed this effect for English native speakers reading translated idioms, e.g. in Carrol and Conklin (2017), when a native speaker read an idiom translated from Chinese such as *add oil and vinegar*, a figurative use (with the meaning of ‘embellish stories’) had much longer total reading times than a literal use (e.g. in the context of preparing a salad). This highlights the question of what longer reading times really mean, and suggests that this could reflect different processes: a meaning may be known but less strongly encoded, or for an unknown phrase, readers may have to actively engage in the process of working out a possible figurative meaning. In both cases, other factors may serve to make this process easier or harder. We return to this question at the end of this section and consider differences between types of figurative phrase, and the variables that contribute to this.

3.3 Eye-tracking and the processing of metaphor and metonymy

Although most widely applied to idioms, applications of eye-tracking in the study of metaphor go back as far as Inhoff, Lima and Carroll (1984), who compared the reading of metaphorical vs. literal versions of the same phrases, e.g. *the troops*, referring literally to soldiers, or figuratively to a group of children. They found that in a short, minimally informative context (experiment 1), the literal version was read with significantly shorter overall reading times (sum of all fixations on the sentence) than a figurative use. When a longer context was provided to help establish the metaphorical referent (experiment 2), differences between literal and figurative versions disappeared. They found a similar, although non-significant, pattern in reading times for the key words in each sentence. This early work highlighted both the use of reading times as a way of measuring the time taken to comprehend literal vs. figurative uses, and also to simultaneously pinpoint effects at specific points in the sentence, i.e. specific words or phrases that are assumed to be the locus of any observed effects.

Other studies to investigate metaphor using eye-tracking while reading have highlighted the importance of the factors discussed previously, such as conventionality, familiarity and context. For example, Blasko and Briehl (1997) compared high familiarity (e.g. *family is a rock*) and low familiarity (e.g. *a long distance swimmer is a warrior*) metaphors, and found evidence of an advantage for the familiar items across a range of measures (higher skipping rates, less chance of regressions, shorter first pass and total reading times for non-skipped items) compared to less familiar phrases. More recently, Genovesi and Vertolli (2016) showed that for conventional metaphors, a familiar use (e.g. *John is a bulldozer*, referring to a friend known to have a forceful personality) was read more quickly than an unfamiliar use (e.g. *Fido is a bulldozer*, referring to a pet dog). These results highlight the importance of disentangling overall effects of conventionality with more specific (and often more subjectively defined) uses.

Heredia and Cieřlicka (2016) considered reading patterns amongst bilingual speakers for metaphoric reference (e.g. *butcher* used in a literal sense, or to refer metaphorically to a reckless surgeon), and, as for idioms, found that language dominance modulated whether a figurative or literal reading was likely to evoke longer reading times (in particular, first fixation duration). In their results, English-dominant and balanced bilinguals showed comparable reading of figurative and literal uses, while Spanish dominant participants showed longer durations for figurative readings. They suggested that this was evidence that English-dominant and balanced participants initially considered both a literal and figurative meaning equally. Later measures showed a general advantage for literal meanings (for all participants), which Heredia and Cieřlicka suggested was evidence in favour of a

literal salience approach, and a need to suppress the contextually irrelevant meanings during later stages of processing.

Ashby, Roncero, de Almeida and Agauas (2018) considered reading patterns for metaphors and similes that contained the same topic-vehicle pairings (e.g. *knowledge is a river* vs. *knowledge is like a river*), to investigate how the form of comparison contributed to ease of processing. For the three eye-tracking measures used (gaze duration, go-past time and proportion of regressions out), similes had a consistent advantage over metaphors, which continued into the spillover region (the word immediately following the phrase). Familiarity was included in the analysis as a continuous variable, and showed some effects whereby less familiar metaphors required more re-reading in general than more familiar items, although this result was not replicated in a second study. They suggested that the difference between metaphors and similes is, in effect, the same as for metaphors and literal statements, in the sense that similes are literally true while metaphors are not. They further concluded that metaphorical effects emerged very quickly in their data, and that even when readers did not initially activate a metaphorical meaning, they were able to quickly revise and reinterpret this prior to moving on in the text.

Eye-tracking has also been used to study metonymy, with similar findings to those outlined above in terms of the effects of familiarity and conventionality. Frisson and Pickering (1999, experiment 1) considered reading of place-for-institution metonymic expressions (e.g. *answer to the convent*) compared to literal uses of the same expressions (e.g. *purchase the convent*). They found effects only when the metonymy was less familiar (e.g. if a noun like *the stadium* needed to be interpreted as an institution), in which case there were longer first pass reading times and more first pass regressions once readers encountered the critical noun. In experiment 2 they replicated the finding with place-for-event metonymies, e.g. *Vietnam* referring to the war, rather than the country. In these examples, difficulty with the less familiar metonymies (e.g. *Finland*, which has no obvious metonymic referent) was evident later on, considerably after the critical noun, and also in later measures reflecting re-reading and further analysis of the material. Frisson and Pickering (2007) followed this up with a study to compare producer-for-product metonymies (e.g. *Dickens* referring to the works he wrote rather than the person himself). They found overall shorter reading times for familiar names compared to unfamiliar ones (e.g. *Dickens* compared to *Needham*), and found that familiar names were read as easily in their metonymic forms as their literal (i.e. *Dickens* was read as easily as a product or a person). Although unfamiliar metonymies showed slower reading for metonymic uses over literal ones, the presence of a brief preceding context was enough to 'license' the underlying metonymy. In other words, establishing *Needham* as an author in a prior sentence was enough to remove any disruption when this referent was subsequently used metonymically. Frisson and

Pickering suggest that this shows how language users are adept at using additional information (such as context) to extend known rules, even when these are applied to previously unheard examples.

3.4 Individual differences in the processing of figurative language

Like Cacciari et al. (2018) did with cross-modal priming, two studies are notable in that they have used eye-tracking to consider the effects of individual differences in cognitive skills on figurative processing. Olkonemi, Ranta and Kaakinen (2016) compared reading for sarcastic, literal and metaphorical sentences embedded in story contexts, all written in Finnish. The study also used measures of verbal working memory capacity (WMC), use of emotion in decision making and need for cognition (NFC, which measures a participant's tendency to enjoy the process of thinking deeply). In their data, metaphorical sentences generated longer first pass reading times, compared to both literal and sarcastic items, whereas sarcastic sentences showed a later effect, principally in re-reading and likelihood of regression, as well as less success in answering inference-based questions about sarcastic statements. Both WMC and NFC affected reading times for metaphorical sentences: low WMC seemed to increase the likelihood of re-reading the metaphors, while high NFC had the same effect. WMC also seemed to affect processing of sarcastic statements (low WMC increased the likelihood that participants would look back to the target sentence, while high WMC led to greater likelihood in re-reading the sarcastic items toward the end of the experiment). Ability to use emotional information (i.e. how efficiently participants were able to make use of the emotional content of an utterance in real time) was reflected in a tendency for participants with low scores to look back more often, suggesting that they were less able than participants with higher scores to infer the sarcastic intention during first pass reading, instead relying on context to resolve the meaning. Whilst irony is not the main focus of this chapter, Filik and colleagues (Filik and Moxey, 2010; Filik, Brightman, Gathercole and Leuthold, 2017; Filik, Leuthold, Wallington and Page, 2014; Turcan and Filik, 2016) have also used eye-tracking to investigate this area. Briefly, results support an overall cost for irony, but show interactions with both familiarity and whether the irony was interpreted as being critical or amusing, which paint a similarly complex picture as for the other figurative subtypes discussed here.

Columbus et al. (2015) also considered the effect of cognitive skills, focusing on executive control (which reflects abilities such as planning and selective attention) in their study of reading times for noun-verb phrases used metaphorically (e.g. *'the textbooks snored on the desk'*) and literally (e.g. *'the sailor snored in his hammock'*). They also compared the presence or absence of a preceding adjective to provide context (i.e. *unopened textbooks* and *tired sailor*), and compared high

and low familiarity metaphors. They found differences in gaze duration for the verb, whereby for low familiarity items the literal use was significantly shorter than the metaphorical, but for high familiarity items there was no difference between metaphorical and literal uses. The authors found an interaction of context and executive control whereby readers with high executive control read both literal and metaphorical verbs more slowly when the prior context was available, and also an effect for the total metaphor region (noun and verb combined) whereby participants with high executive control read metaphors as quickly as literal sentences when the preceding context was included, but in all other cases people read metaphors more slowly than literal phrases. For sentences where the additional context was provided, the probability of regressing back to re-read the context was higher in those with low executive control, in particular for sentences where the verb was used metaphorically, consistent with the finding for readers with low working memory scores in Olkonieni et al. (2016).

Columbus et al. concluded that an important aspect of metaphor processing is the ability of readers to evaluate possible meanings in real time, and that both linguistic variables (familiarity and context) and individual cognitive characteristics affect this. Readers with higher executive control spent longer considering possible meanings of the verb during first pass reading, and subsequently were better able to integrate either a literal or figurative meaning, even for low familiarity items. For readers with lower executive control, initial reading times were shorter, and this subsequently led to more regressions to the context to resolve difficulty, notably when the verb was used in an (unexpected) metaphorical way. An interesting comparison was performed in a second study where the same variables were compared for idioms. Here, executive control had no effect, and only higher familiarity led to faster reading of idioms compared to literal control phrases (e.g. *bite your lip* vs. *cut your lip*). The authors concluded that the highly lexicalized status of idioms (i.e. their formulaicity, as discussed above) accounts for the differences compared to metaphors, although in both studies familiarity had a clear effect on reading patterns.

3.5 The importance of familiarity and conventionalization in figurative processing

The work surveyed above confirms the importance of familiarity and conventionalization in how figurative expressions are understood. Research by Carrol and Littlemore (2020) has shown the clear distinction between highly familiar idioms (commonly known to English native speakers, e.g. *play with fire*), less well-known idioms (translated from other languages, therefore unfamiliar to English native

speakers, e.g. *gather your hammers*) and highly conventional ‘A is B’ type metaphors (e.g. *humour is a medicine*). All phrases (previously normed for familiarity and transparency in Carrol, Littlemore and Dowens, 2018) were embedded in sentence contexts and were compared to literal paraphrases in the same contexts (e.g. for *play with fire* a literal paraphrase would be *do risky things*; for *gather your hammers* a literal paraphrase would be *get ready to leave*). Reading times for familiar idioms showed a clear advantage (relative to literal paraphrases) in late measures such as regression path duration and total reading time, and for unfamiliar idioms showed a clear disadvantage in all measures (first pass reading time, regression path duration, total reading time and number of regressions in). Metaphors showed no difference compared to literal paraphrases for any measure. This underlines the different characteristics outlined above, whereby idioms are both familiar and formulaic, hence demonstrate an advantage compared to ‘novel’ phrases; conventional metaphors are easy to understand because of the idea underlying them is established in the language, although are generally not recognized any more quickly than literal equivalents; and unknown idioms are neither formulaic nor familiar, hence readers must invest more effort in attempting to work out the figurative meaning (just as seen for language learners, in the studies discussed previously). Importantly, relative transparency only had a significant effect for the unknown idioms, suggesting that when phrases are fundamentally familiar, this plays a very limited role in how they are processed in real time.

3.6 Eye-tracking in other contexts

Whilst reading has been the predominant application of eye-tracking, other uses can help to shed light on the processing of language, using a method not dissimilar to the cross-modal priming approach. In the visual world paradigm (first introduced by Cooper, 1974), a participant hears an auditory stimulus at the same time as being presented with a visual display, typically featuring a selection of pictures or, in some cases, words. Researchers can observe what elements in a display participants look at whilst they are processing the auditory stimulus, and how this develops over time. For instance, Tanenhaus, Spivey-Knowlton, Eberhard and Sedivy (1995) used this technique to study the process of spoken word recognition, demonstrating very early effects of syntactic assignment on how we interpret unfolding sentences. (See Huettig, Rommers and Meyer, 2011, for a review of this methodology.)

In the study of figurative language, Holsinger (2013) used a visual-world approach to study how idioms are interpreted. In his first experiment he compared lexical substitutions (*kicked the bucket* vs. *kicked the pail*) and presented items in either syntactically available (*kicked the bucket*) or syntactically unavailable (...*kicked*).

The bucket...) conditions. Participants heard sentences containing idioms in each of these conditions and were presented with a visual display containing four printed words: a figurative target (e.g. *death*), a literal target (e.g. *foot*), and two unrelated distractors. Participants had an initial preference for the literal meaning (more looks to the literal word than either the figurative or the distractors in an early time window), with competition between literal and figurative meanings later on (more looks to both, relative to the distractors, in a later time window). Syntactic modification did not prevent this (i.e. there was still late consideration of the figurative meaning), but lexical substitution did. A second experiment showed that context had a clear effect, whereby idioms embedded in either figurative or literal biasing contexts led to consideration of only the contextually appropriate meaning in an early time window. In a later time window, figurative contexts also showed some consideration of the literal meaning. Lexical substitutions did show some evidence for figurative meaning consideration in both early and late time windows, suggesting that the biasing context was enough to support this even when the idiom was changed.

Kessler, Weber and Friedrich (2020) also used eye-tracking in this way. They used German idioms up to the final word (e.g. *let the cat out of the...*) and presented participants with either the correct completion (e.g. *bag*), a semantically related word (e.g. *basket*), or an unrelated word matched to the correct and related words (e.g. *stomach*, *arm*). Participants saw the four words on a screen and heard spoken idioms with the final word removed, at which point they had to indicate which word completed the phrase. As well as showing a very early predictive effect for correct completions (participants began fixating correct completion words on average 460ms prior to the offset of the auditory stimulus), the results also indicated rapid consideration of the semantically related word. This emerged at the same time as looks to the correct word but diminished quickly. Kessler et al. (2020) interpreted this as evidence that their participants (adult native speakers of German) were predicting and activating multiword representations, but also quickly activating component words and their semantic associates. In the same paper, follow up studies using EEG (electroencephalogram) supported the pattern for spoken (but not written) idioms, whereby processing involves both holistic recognition/activation and decomposition.

Coulson, Davenport, Knoeferle and Creel (2015) also used the visual-world paradigm to consider processing of adjectives that could have figurative or literal meanings, e.g. *shocked* meaning either 'surprised' or 'electrocuted'. They compared conditions where a sentence biased the figurative (*shocked* as a result of the report card) or literal (*shocked* as a result of the electrical socket) meaning, with conditions featuring an unambiguous adjective ('surprised as a result of the report card' and 'electrocuted as a result of the electrical socket'). Eye movements were

monitored whilst participants heard the sentences played auditorily and viewed four images on a screen (related to the figurative meaning, related to the literal meaning, and two distractor images). The researchers also established the 'preferred reading' for each adjective, using a pre-test to establish the more salient of the two meanings. Overall, results showed competition in real-time (looks to both figurative and literal meanings), with a bias toward the preferred reading (listeners showed a strong tendency to fixate literal targets for literal preferred readings, and vice versa for figurative preferred readings) prior to disambiguating information being encountered. Once disambiguating information was heard, looks were consistently to the intended target only. The authors suggest that their results fit best with a constraint-satisfaction model (see Section 4.1), where language users exploit all available information to make sense of incoming material (see e.g. Altmann and Kamide, 1999, for similar results using the visual-world approach to study literal words, where participants make incremental predictions based on the unfolding sentence).

The visual-world paradigm offers an alternative use of eye-tracking to complement the other methodologies discussed here. Other uses have included work to investigate the processing of 'fictive motion' where verbs are used to depict motion in stationary objects (e.g. *the road runs along the side of the cliff*). Richardson and Matlock (2007) and Mishra and Singh (2010) have used eye-tracking to explore how participants view the path (on a visual scene) when presented with such examples (see also a review by Huette and Matlock, 2016). Aside from these, the visual world methodology in general represents an under-utilized approach in the study of figurative language, but is one that has the potential to help us to understand, in particular, the unfolding nature of language processing and the time-course of how figurative language is understood.

4. Conclusions

The aim of this chapter has been to introduce two key methodologies that have been very successfully applied in the study of figurative language. The research reviewed above (see Appendix for a list of the experimental studies considered) helps to demonstrate the complex and dynamic nature of how this is processed and understood, and often the aim of any experimental study is to explicitly test extant models or theories to see how well these explain the data that is obtained.

The cross-modal priming approach helps to provide a direct way of measuring meaning activation: that is, how much a figurative meaning is directly accessed, or quickly generated, and what factors may affect this. The use of the visual-world paradigm in eye-tracking studies provides similar data, but with the added advantage

that researchers can observe the unfolding nature of this, i.e. by considering how patterns of looking may change over time. Results from these studies have been particularly useful in the study of idioms, highlighting the importance of predictability (e.g. Cacciari and Tabossi, 1988; Tabossi and Zardon, 1993; Titone and Connine, 1994), competition with the literal meaning (e.g. Coulson et al., 2015; Findlay and Carrol, 2019; Holsinger, 2013; Titone and Libben, 2014), holistic and compositional processing (Kessler et al., 2020), and, above all, familiarity (all studies). For metaphors, familiarity, conventionality and aptness all contribute to how a figurative meaning is activated or generated (Blasko and Connine, 1993).

Eye-tracking while reading provides a different kind of data, and the inferences that can be drawn are consequently not the same as for priming studies. Longer or shorter reading times need to be interpreted according to the parameters of the particular research question, hence in many of the studies discussed here, the finding is that highly familiar, formulaic expressions are processed more quickly than comparable literal phrases (Carrol and Conklin, 2017, 2020; Carrol et al., 2016; Siyanova-Chanturia, Conklin and Schmitt, 2011). For non-idioms, at least for native speakers, figurative uses present no more difficulty than literal, assuming that these are conventional and/or familiar (Columbus et al., 2015; Frisson and Pickering, 1999, 2007) or when context is supportive (Inhoff et al., 1984). In contrast, we see longer reading times when figurative uses are less familiar (Columbus et al., 2015; Frisson and Pickering, 2007), and in particular when idioms are unknown (Carrol and Conklin, 2017; Carrol et al., 2016; Carrol and Littlemore, 2020). We also see clear effects of competition between literal and figurative meanings (Titone and Connine, 1999), and of the relative dominance of the two interpretations (Milburn and Warren, 2019), and an indication that both direct retrieval and compositional analysis may be involved in processing, albeit operating differently at early and late stages (Titone et al., 2019).

4.1 Implications for theories of figurative processing

Taken as a whole, the results help us to evaluate a number of theoretical positions regarding figurative processing. Overwhelmingly, a literal first or indirect access view (e.g. Grice, 1975; Searle, 1979) is not supported (nowhere does literal processing enjoy a blanket advantage over figurative), although a strong version of this has not been advocated for some time now. Other positions such as Direct Access models (Gibbs, 1980, 1986, 1994) are only partially borne out, since there is ample evidence that figurative meaning can be directly accessed, but that the process is dynamic and affected by many speaker-specific and linguistic variables. The Graded Salience Hypothesis (GSH – Giora, 2003) suggests that a figurative/literal distinction is less meaningful than a distinction between more and less salient meanings.

Again, results summarized here seem to broadly support this, albeit with different ways of assessing what constitutes ‘salience’ (Coulson et al., 2015; Milburn and Warren, 2019) that may not be entirely in line with the GSH.

Bowdle and Gentner (2005) have proposed a fundamentally different process for more and less conventionalized expressions, whereby novel uses must be worked out via comparison (active consideration of the underlying figurative meaning), whereas more conventional uses can be understood via a process of categorization based on existing knowledge: they give the example of *my job is a jail*, where *jail* is easily recognized as a prototypical example of ‘any situation that is unpleasant and confining’. Given the clear importance of conventionality shown by the studies discussed in this chapter, their Career of Metaphor hypothesis is generally supported. Although the model does not specifically encompass idioms, it could easily accommodate these at the most highly conventionalized end of the scale, where little effort is required to actively work out the figurative meaning (i.e. a process of categorization / recognition is at work, in comparison to lesser known phrases where more effort is required to actively work out a meaning).

A model proposed by Frisson and Pickering (2001) also seems to fit much of the data discussed here. They outlined an under-specification model, whereby in the early stages of lexical access, the language processor activates a single, non-specific meaning, with context allowing the language user to quickly home in on the most appropriate sense. This may explain the more consistent effects in later reading measures seen throughout the eye-tracking studies surveyed here, and Frisson and Pickering point out that other aspects such as salience may only be important during this later, sense-selection process. They also point out that their model accounts for sense ambiguities/polysemy (contrasting metaphorical/metonymic vs. literal uses of a word) rather than meaning ambiguities/homonymy (where words have multiple unrelated meanings, such as *ball*). They highlight that a key part of this approach is that it can only account for senses that are fundamentally known (see also Pickering and Frisson, 2001), hence a different process must be at work for novel or creative uses.

Finally, constraint-based approaches offer the most flexibility in accounting for the multitude of competing variables that are seen to be at play in resolving figurative meaning. These have been proposed for idioms (e.g. Libben and Titone, 2008; Titone and Connine, 1999) but apply equally well to the other subtypes discussed here, as well as to language processing in general (e.g. MacDonald and Seidenberg, 2006). Briefly, such approaches allow for the dynamic interaction of multiple variables in how language is understood, based primarily on probabilistic information extracted from prior experience. As well as linguistic or distributional factors, the inclusion of speaker-specific cognitive differences (Cacciari et al., 2018; Columbus et al., 2015; Olkonieni et al., 2016) may represent a further avenue to develop here,

and is in line with a growing interest in individual differences in language processing more generally (e.g. Kidd, Donnelly and Christiansen, 2018).

The models briefly surveyed here are far from an exhaustive account of the field, and likewise the methods discussed in this chapter represent just some of the ways that figurative language can be investigated. The hope is that in outlining the applications of some of these techniques, it is clear that (regardless of the methodology used) robust, well-planned psycholinguistic experiments can contribute much to our study of how we deal with figurative language as a part of everyday communication.

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Appendix. List of experimental studies

Authors	Method	Type of figurative language
Ashby, Roncero, de Almeida & Agauas (2018)	Eye-tracking while reading	Metaphors/similes
Blasko & Briihl (1997)	Eye-tracking while reading	Metaphors
Blasko & Connine (1993)	Cross-modal priming	Metaphors
Cacciari & Tabossi (1988)	Cross-modal priming	Idioms
Cacciari, Padovani & Corradini (2007)	Cross-modal priming	Idioms
Cacciari, Corradini & Ferlazzo (2018)	Cross-modal priming	Idioms
Caillies & Butcher (2007)	Visual sentence priming	Idioms
Caillies & Declerq (2011)	Visual sentence priming	Idioms/metaphors
Carrol & Conklin (2017)	Eye-tracking while reading	Idioms
Carrol & Conklin (2020)	Eye-tracking while reading	Idioms
Carrol & Littlemore (2020)	Eye-tracking while reading	Idioms/metaphors
Carrol, Conklin & Gyllstad (2016)	Eye-tracking while reading	Idioms
Cieślicka (2006)	Cross-modal priming	Idioms
Cieślicka & Heredia (2017)	Eye-tracking while reading	Idioms
Cieślicka, Heredia & Olivares (2014)	Eye-tracking while reading	Idioms
Columbus, Sheikh, Cote-Lecalbare, Hauser, Baum & Titone (2015)	Eye-tracking while reading	Idioms/metaphors
Coulson, Davenport, Knoeferle & Creel (2015)	Eye-tracking (visual world)	Metaphors
Fanari, Cacciari & Tabossi (2010)	Cross-modal priming	Idioms
Filik & Moxey, 2010	Eye-tracking while reading	Irony
Filik, Brightman, Gathercole & Leuthold, 2017	Eye-tracking while reading	Irony
Filik, Leuthold, Wallington & Page, 2014	Eye-tracking while reading	Irony
Findlay & Carrol (2019)	Cross-modal priming	Idioms
Frisson & Pickering (1999)	Eye-tracking while reading	Metonymy
Frisson & Pickering (2007)	Eye-tracking while reading	Metonymy
Geeraert, Baayen & Newman (2017)	Eye-tracking while reading	Idioms
Genovesi & Vertolli (2016)	Eye-tracking while reading	Metaphors
Heredia & Cieślicka (2016)	Eye-tracking while reading	Metaphors
Holsinger (2013)	Eye-tracking (visual world)	Idioms
Inhoff, Lima & Carroll (1984)	Eye-tracking while reading	Metaphors
Kessler, Weber & Friedrich (2020)	Eye-tracking (visual world)	Idioms
Kyriacou, Conklin & Thompson (2020)	Eye-tracking while reading	Idioms
Milburn & Warren (2019)	Eye-tracking while reading	Idioms
Mishra & Singh (2010)	Eye-tracking (visual world)	Fictive motion
Olkoniemi, Ranta & Kaakinen (2016)	Eye-tracking while reading	Metaphors/irony
Richardson & Matlock (2007)	Eye-tracking (visual world)	Fictive motion
Siyanova-Chanturia, Conklin & Schmitt (2011)	Eye-tracking while reading	Idioms
Smolka, Rabanus & Rösler (2007)	Visual sentence priming	Idioms

Authors	Method	Type of figurative language
Tabossi & Zardon (1993)	Cross-modal priming	Idioms
Tabossi & Zardon (1995)	Cross-modal priming	Idioms
Tabossi, Fanari & Wolf (2005)	Cross-modal priming	Idioms
Titone & Connine (1994)	Cross-modal priming	Idioms
Titone & Connine (1999)	Eye-tracking while reading	Idioms
Titone & Libben (2014)	Cross-modal priming	Idioms
Titone, Lovseth, Kasparian & Tiv (2019)	Eye-tracking while reading	Idioms
Turcan & Filik, 2016	Eye-tracking while reading	Irony
Vainio & Nenonen (2007)	Eye-tracking while reading	Idioms
Van Ginkel & Dijkstra (2020)	Visual sentence priming	Idioms

The fabric of metaphor in discourse

Interweaving cognition and discourse in figurative language

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The overall aim of this chapter is to contribute to the debate around the controversy of what might be approached as a conceptual or a local/situated metaphor, by elaborating on a distinction between two theoretical levels. On the one hand, at the level of the conceptual system, we have high-order, *off-line* representations, such as conceptual metaphors, and, on the other, at the level of use, there are episodic, often deliberate, *on-line* conceptualizations, such as *situated metaphors*. Within a cognitive-discursive perspective, it is argued that these two levels are articulated, in a coherent and systematic way, in figurative language in use. An analysis of an extended situated metaphor explored in an argumentative text illustrates the way this articulation may be woven in discourse.

Keywords: conceptual metaphor, situated metaphor, metaphor niche, deliberateness, discourse, local mappings

1. Introduction

During a conference lunch, a Portuguese colleague told me an anecdote about an episode, involving the use of figurative language, which had taken place at a dentist's office in Curitiba, a city in the South of Brazil. As the dentist was examining her sore tooth, he made the following comment:

- (1) I can see your tooth is moving; it is *sambing*. In fact, your tooth is *dancing the fado!*

A number of cultural and pragmatic factors seem to be at play in the episode. The dentist used the Brazilian Portuguese verb *sambar* (to dance samba), in its gerund form, to refer to the movement of the tooth. This use is clearly figurative, as teeth do not dance, unless they are personified, as is the case here. The appeal to a specific

kind of movement, a type of dance, more specifically, the samba dance, to refer to particular ways of moving is not uncommon in Brazilian Portuguese. A quick search in the Google Platform reveals that this figurative use of the source domain *samba* is associated with particular action-oriented target domains: the movement of objects, or parts of objects, which are attached to the latter, but are momentarily loose. This could be the case of a leg of a chair, of a table or of a sofa, handles in general and teeth, which, when loose, can feel *sambando* (moving, shifting) when touched. This metaphor, which maps the body movement typical of the samba dance (stepping forward and backwards with no significant dislocation in space) onto the shifting of the tooth, seems to be quite appropriate to conceptualize that specific kind of movement, and it is likely to be understood by Brazilian Portuguese speakers, apparently with little or no cognitive effort.

The dentist's decision to substitute *sambing* for *dancing the fado* might be interpreted as an empathic gesture to invoke the patient's cultural background, supposedly with the intention to please her. However, the apparent insufficient background knowledge about the fado – typically, it is a type of music which is only sung and not danced – on the dentist's part seems to have had a more humorous than flattering communicative effect.

This anecdote – which, without doubt, might receive multiple interpretations –, could be further analyzed in greater detail, as it seems to adequately illustrate the cultural and pragmatic dimensions of metaphor in use, as well as the metadiscursive act which somehow deconstructs a seemingly conventionalized metaphor – or, in Müller's (2008) terms, "awakens" it. Nevertheless, the challenge to metaphor analysts who align themselves with the cognitive approach to metaphor would likely be to infer, from the figurative expression identified in the verbal interaction, the conceptual metaphor underlying the linguistic metaphor or the vehicle.

The firm commitment to finding underlying conceptual metaphors in recent metaphor research seems to have been triggering some apparently misleading analyses, in such a way that the following conceptual metaphors, underlying the dentist's episode narrated above, could be proposed:

(2) *A MOVING TOOTH IS A (SAMBA/FADO) DANCER

*THE MOVEMENT OF A LOOSE TOOTH IS A SAMBA/FADO DANCE

This hypothetical example of what can be meta-metaphorically perceived as the result of a "quest for conceptual metaphors" illustrates what seems to be a lack of analytical and/or theoretical rigor towards the very conceptualization, and therefore, identification, of conceptual metaphors. Possible underlying text-based or local metaphors, which can be inferred from the identified metaphoric linguistic expression, do not necessarily constitute conceptual metaphors. This also seems to

be the case of “image metaphors”, which, according to Lakoff and Turner (1989) do not emerge from mappings of concepts, but from mental images – like that of the *samba dance*. What can be seen as instances of misinterpretations of the notion of conceptual metaphor and the role it plays in its linguistic realizations and, more generally, in the conceptual system as a whole seems to be a consequence of the “metaphor wars” discussed by Gibbs (2017). Since the author put forward his claim that we should take “metaphor out of our heads and put it into the cultural world” (Gibbs, 1999), a significant amount of research (for example, Cameron and Maslen, 2010; Low et al., 2010; Gola and Ervas, 2016) has focused on aspects of metaphor *in use* (Steen, 2006), attempting, mostly, to explore two interrelated questions: what role does metaphor play in the construction of meaning in discourse and, conversely, what role does discourse (or features of discourse) play in the construction of metaphorical meaning? This research trend, therefore, can be characterized as the recent “cognitive-discursive turn” in metaphor studies, which addresses one of the criticisms of conceptual metaphor theory (CMT): that it views metaphors as “highly conventional static conceptual structures” (Kövecses, 2010), which, though supposedly underlying all instances of metaphor (creative or conventional) in language use, do not seem to adequately account for the more dynamic nature of metaphor in discourse.

Thus, the recent tendency toward the contextual dimension of metaphor in use has sought to formulate, theoretically and analytically, concepts and units of analyses (to be discussed in greater detail later in this chapter), which could guide investigations within a cognitive-discursive perspective. A challenge to be faced by such an approach is to establish a systematic articulation between the conceptual and the linguistic/discursive levels of metaphor in use. To treat, analytically, local or situated metaphors as conceptual metaphors, signalling this identification, either explicitly or through the use of small caps, is becoming a somewhat frequent procedure in metaphor studies.

The aim of this chapter, thus, is to contribute to the debate concerning the controversy of what might be approached as a conceptual or a local/situated metaphor, by elaborating on a distinction between two theoretical levels: on the one hand, *off-line* representations, such as conceptual metaphors, frames, and idealized cognitive models (Lakoff, 1987), and, on the other, at the level of use, *online*, local and context-dependent conceptualizations, like “situated metaphors”. This discussion will be illustrated with an example of an analysis of metaphorical language in use found in an internet article.

2. Concepts and units of analysis of metaphor in use

One of the most important contributions to the understanding and development of empirical analyses of metaphoric language in use (i.e., empirical analyses of authentic samples of language, as opposed to the often criticized resort to invented examples, typical of early studies in CMT) is the concept of “systematic metaphor”, proposed by Cameron et al. (2009). This notion plays an important analytical role in “metaphor-led discourse analysis”, which was developed as a response to the authors’ criticism of CMT:

Cognitive theory seriously downplays the influence of language on metaphor, and the importance of the specifics of the language-using situation in which metaphor occurs. It is more concerned with metaphor at the conceptual level across whole speech communities than with the complex dynamics of real-world language use in social situations, and thus of limited help in understanding the specifics of social issues. (Cameron et al., 2009, p. 63)

To illustrate the procedure, a transcription of a focus group discussion was used as the analysis corpus. Linguistic metaphors were then identified, coded and, from the coded data, patterns of metaphor were found. These patterns supposedly revealed “systematic metaphors”, which were defined as a “dynamic collection of connected linguistic metaphors, a trajectory from one metaphor to the next over the dynamics of talk”. (Cameron et al., 2009, p. 78).

Figure 1 is an example of one of the extracts analysed, in which a linguistic metaphor (*a flaw in the system*) was identified and, together with twelve other MACHINE metaphors found throughout the data, would form the systematic metaphor SOCIETY IS A MECHANICAL SYSTEM.

Although the same metaphor seems to transcend the dynamics of that particular communicative situation, belonging to the conceptual system characteristic of larger speech communities when talking and thinking about society or social experiences in general, Cameron et al. argue that, being a systematic metaphor, “it is not a conceptual metaphor; at least it is different theoretically and ontologically”.¹

The *locus* of the systematic metaphor, then, is not the conceptual system constitutive of distributed cognition, but the specific and context-dependent speech events from which, through a series of semantically connected linguistic metaphors, it occurs.

Another theoretical and, at the same time, analytical notion which has been proposed (Vereza, 2013) to investigate metaphor in use is the “situated metaphor”.

1. Rigney (2001), in *Metaphorical Society*, discusses the pervasiveness of the SOCIETY AS MACHINE metaphor.

Extract 2
 870 Phil when that Twin –
 871 Phil .. Twin Towers er,
 872 Phil .. happened,
 873 Phil it, 874 Phil ... (1.0) put a flaw in the system.
 875 Phil ... someone's never done that before.

Figure 1. Systematic metaphor (Cameron et al., 2009)

Like systematic metaphors, situated metaphors belong to the communicative dimension of figurative language in use, since they are phenomena pertinent to a specific discursive event.

Nevertheless, as opposed to systematic metaphors, which do not necessarily imply a deliberate use of metaphoric language, situated metaphors are mostly used deliberately. To what extent a metaphor can be considered “deliberate” has been the subject of heated debate among metaphor scholars, particularly Gibbs (2011) and Steen (2011). While the former questions the very existence of deliberate metaphors, raising the possibility that it is not different from other types of metaphor, the latter suggests that when a speaker or writer uses a metaphor deliberately, i.e., uses a metaphor to make the interlocutor deliberately understand a thing in terms of something else, the sender forces the recipient to perceive the source domain as a domain outside the current sphere of speech and, consequently, see the target from that perspective (Steen, 2011).

By “deliberate”, in the case of situated metaphors, it is meant that the use of figurative language is the focus of a metalinguistic or metadiscursive strategy, which constructs the object of discourse with reference to another domain of experience (the source domain). This characteristic of situated metaphors is, as Steen (2011) suggests, a characteristic of all deliberate metaphors. Such strategy is often employed to develop, discursively and cognitively, an argument or point of view on a particular topic (the target domain), leading the reader/listener to “see the target from that perspective” (ibid, p. 55). In other words, deliberate metaphors are “not only seen as the linguistic expression of an underlying metaphorical structure in thought, but also as a matter of communication between language users” (Reijnierse et al., 2018, p. 8).

Situated metaphors can be implicit or explicit, that is, linguistically evident or not. When they are explicit, they coincide with their linguistic realizations, like in Figure 2, in which the situated metaphor (*language is a weapon*), is developed textually, through a local mapping or entailment (“keep it honed”), which also specifies the kind of weapon language is: a bladed weapon, which, as such, can be “honed”, or sharpened.

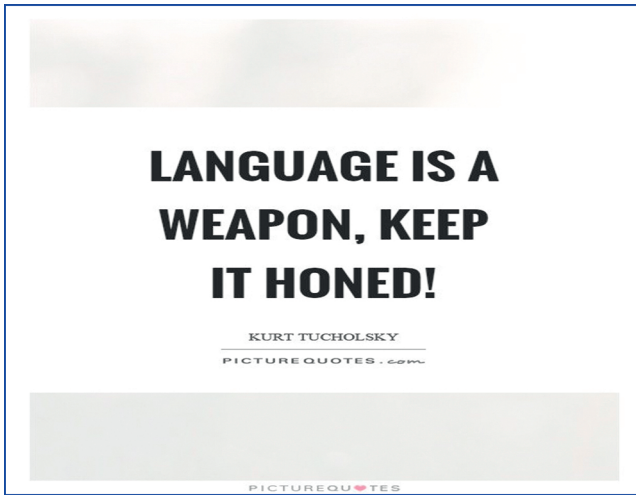


Figure 2.² Explicit situated metaphor *language is a weapon*

In this particular case, the situated metaphor seems to be consistent – representing one of its possible mappings – with the conceptual metaphor ARGUMENT IS WAR, the first example of cognitive metaphors discussed in the very first page of the seminal book *Metaphors we live by*, by Lakoff and Johnson (1980).

Situated metaphors can also be implicit, as in Figures 3 and 4. Here, the situated metaphor *words are weapons* is not explicit in the canonical format A=B, but it is somehow cognitive and discursively presupposed, and can, therefore, be inferred from its local propositional entailment: if words are weapons, they can hurt.



Figure 3.³ Implicit situated metaphor *words are weapons*

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2. Available in: < <https://www.quotemaster.org/language+as+a+weapon>>. Access 25 Jul 2019.
 3. Available in: < <https://www.plu.edu/dcenter/my-language-my-choice/>>. Access 25 Jul 2019.

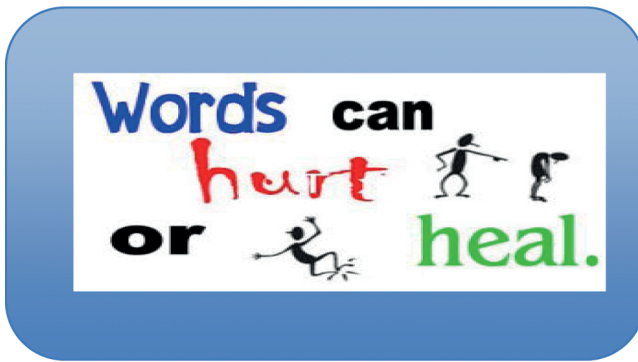


Figure 4.⁴ Implicit situated metaphors *words are weapons* and *words are healers*

In examples of Figures 2, 3 and 4, the situated metaphors are clearly deliberate, performing an argumentative function by weaving a particular point of view concerning the potential aggressive and/or healing effect of language: from the perspective of the aggressor (Figure 2) or the sufferer or beneficiary of the aggression or healing, respectively (Figures 3 and 4). In Figures 2 and 4, however, the deliberateness of the metaphor is more evident due to different discourse factors, which make the metaphoricity of the utterances more vivid. In Figure 2, there is the addition of the somehow unexpected and less conventional mapping (“keep it honed”) in the utterance, whereas, in Figure 4, an opposing attribute of “language”, besides the fact that it hurts, is introduced: it “heals”. In Figure 3, on the other hand, the deliberateness of the implicit situated metaphor is not so evident, but, following Reijnierse et al’s criterion⁵ for determining the potential deliberateness of a metaphor in language use – “the source domain referent is [...] part of the referential meaning of the utterance” (Reijnierse et al., 2018, p. 32) – the term “hurt” should count as deliberate.

Situated metaphors are at the same time deliberate and cognitive, but, with reference to the latter aspect, they are not cognitive in the same way conceptual metaphors are. Gibbs (2017), in *Metaphor Wars*, introduces the notion of “conceptual metaphor” by means of a discussion of the metaphoric language used by an American political commentator, Chris Matthews, in a TV program called *Hardball*, to refer to the debate between President Obama and his opponent, Mitt Romney, in 2012. An extract of the passage quoted and discussed by Gibbs (2017, p. 2) follows:

4. Available in: < <https://cyacyl.com/2018/03/16/are-you-a-mentor-cheerleader-or-destroyer>>. Access 08 Aug 2019.

5. Reijnierse et al’s model for identifying potentially deliberate metaphors follows a semiotic (text-based) approach and not a behavioural (focus on metaphor processing) one.

[...] I think Romney will take some hard shots; he may spend the whole 90 minutes blasting away at the President, serving him with one indictment after another, hoping that something will stick. I think Obama will play with him, parry the assaults, block the blows, try to keep his head clear so he can avoid getting hurt. I think it will start slow with both men trying to be cautious, neither able to land a punch, not hard enough to register with the tens of millions watching [...]

According to Gibbs (2017, p. 2),

many words and phrases give evidence of the POLITICAL DEBATES ARE BOXING MATCHES metaphor, including “Romney will take some hard shots,” and will be “blasting away at the President, and “Obama will play with him, parry the assaults, block the blows, try to keep his head clear so he can avoid getting hurt,” even if both men may not be “able to land a punch.” (Gibbs, 2017, p. 2)

Despite the fact that Gibbs does not refer to the superordinate metaphor he identified (POLITICAL DEBATES ARE BOXING MATCHES) explicitly as a “conceptual metaphor”, metaphor analysts would infer, particularly on the basis of Gibb’s option to use small caps, that this is the way the author has characterized that particular metaphor. In a later passage, Gibbs (2017, p. 4) states that this metaphor, around which Chris Matthews’s commentary was developed, would be “a more specific instantiation of the ARGUMENTS ARE WARS conceptual metaphor”.

Whether or not the POLITICAL DEBATES ARE BOXING MATCHES metaphor can adequately be characterized as a conceptual metaphor or not will depend on its pervasiveness or ubiquity in a particular language and culture, as well as on the number and degree of conventionalization of linguistic metaphoric expressions “licenced” by it. In Brazilian Portuguese, for example, there seems to be very few conventional expressions referring to political debates as boxing matches; rather, what seems to be more dominant in this scenario are expressions referring to WAR and FIGHT in general, as well as FOOTBALL, Brazil’s favourite sport, which is pervasively conceptualized as WAR (Rocha, 2017). The boxing metaphor, in this context, would be likely to be understood by most Brazilians, but probably as a situated metaphor (*political debates are boxing matches*), and not as a conceptual one (POLITICAL DEBATES ARE BOXING MATCHES). Though more specific than ARGUMENT IS WAR, the boxing metaphor, in American culture, seems to be, in fact, a potential candidate for the category “conceptual metaphor”, because of the well-known popularity of the sport in that culture and the significant number of conventionalized expressions in the English language (Chen, 2019).⁶

One possible alternative would be to approach it as a “low-level mapping”, a concept introduced by Wehling (2016). The author, in her discussion of the

6. See also < <https://sites.google.com/site/sportingmetaphors/match-stats> > for examples of boxing metaphors in English.

metaphors IMMORALITY AS CANCER and IMMORALITY AS BODILY FILTHINESS, argues that these are structured on the basis of a specific frame in the source domain, “which is drawn from our direct experience with and common knowledge about different types of disease”. (Wehling, 2016, p. 196). Low-level mappings, therefore, are characteristic of more specific conceptual metaphors, in the same way that the POLITICAL DEBATES ARE BOXING MATCHES metaphor is more specific than the “higher-level mapping” conceptual metaphor ARGUMENT IS WAR and perhaps the “intermediate-level mapping” metaphor DEBATES ARE SPORTING CONTESTS.⁷ The more specific nature of lower-level metaphors, which seems to account for what Kövecses (2005) refers to as “metaphor variation”, seems to result from the specificities of particular cultural contexts (football in Brazil; boxing in the U.S.A., for example), which highlights the close relationship between metaphor and culture (Lakoff and Johnson, 1980; Kövecses, 2005, 2009). The low-level mapping metaphors, however, are not the same as situated metaphors: like the higher-level metaphors, they are conceptual, and not necessarily specific to a particular communicative event and structured by local mappings, like situated metaphors.

In sum, the most relevant characteristics of situated metaphors, which differentiate them from conceptual metaphors, systematic metaphors and linguistic metaphors are the following:

- a. Unlike conceptual metaphors, situated metaphors are local and context/text-dependent, underlying one particular communicative event in which metaphoric language plays a role;
- b. unlike systematic metaphors – which share, with the situated metaphor, the characteristic in “a” – situated metaphors are, at least potentially, deliberate;
- c. unlike metaphoric linguistic expressions, situated metaphors need not be textually (verbally or visually) explicit, but they can be inferred from local mappings textually developed (for example: “words can hurt”, in Figures 3 and 4). However, when explicit, they often coincide with their linguistic instantiations (for example: “words are weapons”, in Figure 2).
- d. unlike both conceptual and systematic metaphors, situated metaphors have a clear rhetorical function as they conduct, through local mappings, a particular point of view. In this way, situated metaphors interweave, as the title of this chapter suggests, the cognitive and discursive levels of metaphor. A model of the possible ways these two levels interconnect in metaphor use and of the elements involved in this articulation will be explored in the following section.

7. The conceptual metaphor DEBATES ARE SPORTING CONTESTS seems to draw on the pervasive conceptualization of COMPETITIVE SPORTS in general as WAR (Lakoff, 1991), which motivates its coherent association with the more general, higher level, ARGUMENT IS WAR metaphor.

3. *Online and off-line levels of metaphor in use*

As noted earlier in this paper, discourse-based notions and units of analysis, such as systematic and situated metaphors,⁸ have emerged from the increasing uneasiness on the part of metaphor researchers towards what was felt to be the inadequacy of Conceptual Metaphor Theory to account for the more dynamic aspects of metaphor in use, since it presupposed a view of metaphor as a “systematic web of mental connections, realized through language in a uni-directional relationship” (Cameron and Deignan, 2006, p. 674). A crucial challenge that recent discourse-oriented studies inevitably face is to combine, in their analyses, the two levels, the cognitive and the discursive, in a relatively systematic way. That this challenge needs to be confronted seems, in my view, to be beyond doubt. On this issue, I share Beate Hampe’s view, expressed in the preface of her book *Metaphor: Embodied cognition and discourse* (2017):

Metaphor theory has shifted from asking whether metaphor is ‘conceptual’ or ‘linguistic’ to debating whether it is ‘embodied’ or ‘discursive’. Although recent work in the social and cognitive sciences has yielded clear opportunities to resolve that dispute, the divide between discourse- and cognition-oriented approaches has remained. (Hampe, 2017, p. i)

The epistemological, theoretical and analytical gains, promoted by CMT, regarding the understanding of metaphor, particularly the way the *locus* of metaphor shifted from language to thought, and even to action, should not to be overlooked or discarded by the recent discourse-oriented trends. This would be the same as “throwing the baby out with the bath water”, as the old saying goes. Though it is true that CMT, particularly in its early years, turned to language with the primary aim to unveil underlying conceptual metaphors (after all, language was regarded merely as a container of linguistic evidence of what really mattered in thought), it is important to keep in mind that most (though not all) approaches to metaphor previous to CMT were constrained by the “ornamental” view of metaphor, a figure of speech whose reign was confined to poetic and rhetoric discourses. Expanding

8. Another relevant concept introduced in the metaphor literature concerning the way metaphor emerges from complex systems, characteristic of the overall situational context, is the *metaphoreme* (Cameron and Deignan, 2006), which, according to the authors “represent the coalescence of linguistic, semantic, affective, and pragmatic forces into attractor states in the discourse system, appearing in discourse as relatively stable bundles of patterns of use”. This notion is not explored in this chapter as it is approached from a theoretical perspective (multiple complex dynamics system) different from the more semiotic-oriented one adopted here.

metaphor beyond the realm of language, highlighting its cognitive force and its embodied and cultural nature, has been an invaluable and hopefully no-turning back breakthrough promoted by CMT.

The notion of situated metaphor advocated here, though not unprecedented in its modest contribution to the study of metaphor in discourse, has the potential to, when used in metaphor analysis, yield relevant insights into the way the cognitive and discursive dimensions of metaphor interact.

Though occurring at the discourse or episodic level, situated metaphors draw on more stable, *off-line* levels of meaning construction, such as conceptual metaphors, frames (Fillmore, 2006) and Idealized Cognitive Models (ICM – Lakoff, 1987). The stable and episodic levels are interwoven in metaphor in use and can only be separated by the language analyst, for theoretical and analytical purposes.

Figure 5 presents a schematic model, or diagram, of the elements belonging to the stable/*off-line* and episodic/*online* dimensions. The starting point of the “model”, or, simply, the diagram, was the conceptually relevant distinction, introduced by Steen (2006), between metaphor in “system” (in thought and in language) and in “use” (in thought and in language). This distinction was further elaborated into levels and their specific elements. Within this perspective, it is argued that metaphor in use results from the combination of these levels and elements.

At the stable, or *off-line* level, there are mental representations, such as conceptual metaphors and other cognitive models (*off-line* frames, ICMs, image schemas); conceptual mappings (such as those constitutive of conceptual metaphors); and

STABLE DIMENSION / SYSTEM (<i>off-line</i> , high-order)	EPISODIC DIMENSION / USE (<i>online</i> , low-order)
Conceptual metaphor (including primary metaphors)	Situated metaphor Systematic metaphor Metaphoreme
Conceptual mappings	Local mappings
<i>Off-line</i> frames; ICMs; cultural models; image schemas	<i>Online</i> frames
Discourse/ideologies/worldviews	discourse/ point of view/stance
Distributed social cognition	Situated cognition



Figure 5. Stable and episodic dimensions of metaphor in use

shared worldviews (Underhill, 2013), which can be approached as “ideologies” (Goatly, 2007; van Dijk, 2009), or “pre-discourses” (Paveau, 2013), characteristic of widely distributed sociocultural cognition.

At the episodic or *online* level, on the other hand, there are situated /systematic metaphors, local mappings (like the one in Figure 2: *keep it honed*), specific points of view (or discourses, with the letter “d” in lower case, in the diagram), which are developed in particular communicative events.

This schematic model of metaphor in use has as its primary purpose to situate or guide metaphor analyses which aim to combine the cognitive with the discourse perspectives on metaphor. Moreover, it seems to be important, at the outset of research on metaphor, to establish within which dimension the research questions and the units of analysis recruited for the study lie.

Analysis of metaphor niches can best illustrate how the model may be used in the analysis of metaphor in language use. A “metaphor niche” (Vereza, 2010, 2013) can be defined as a textual cluster of inter-related linguistic metaphoric expressions, which can be seen as cognitive and discursive entailments of a superordinate metaphoric proposition (a situated metaphor), usually present (or inferred) in the co-text itself.

According to Vereza (2013), the term ‘niche’ is based on its use in the ecological domain. Accordingly, “the following notions, mapped from this domain onto the metaphoric-discursive one (the “metaphor niche”), can be highlighted: inter-relationship, functioning and adjustment on the whole (Vereza, in press).

The analysis of figurative language present in metaphor niches, due to their somewhat evident cognitive-discursive nature, has the potential to shed light on the way the elements of the stable/*off-line* domain of meaning production interact with those of the episodic/*online* domain.

4. Exploring local mappings in a metaphor niche

Text 1. The *work is water* situated metaphor

Work Is Like Water

By Karen Rinaldi

¹ [...] My life as a subpar surfer has brought me many gifts. Sometimes that gift comes in the form of a wave. More often, it's in the freedom from having to surf well or meet any expectations or goals. The very opposite of our work lives.

² [...] Work, like the water I spend so much of my time in (or wishing I were in), quickly spreads and flows to fill spaces. Without the proper barriers to keep it in its place, water's special qualities help it to find the path of least resistance, and before you know it, it has traveled into unwanted and unexpected spaces where it can erode and destabilize otherwise sound environments or structures.

³ The properties of fluid dynamics make water difficult to control or predict. All surfers are confronted with this each time we paddle out. With the relatively recent we-can-work-from-anywhere mind-set that modern technology encourages, work is becoming more like water: harder to manage and protect against. Before we notice it, work's demands have permeated time we should have for our families, our communities and ourselves. Like water, it is stealthy and powerful. It can crack or wear away the strongest foundations. When work is like water, it can erode and destabilize our lives.

⁴ [...] When I am in the ocean and surfing, I am fully human. When work pushes past the tide line and blends with my salty haven – a conference call on the beach, for example – what do I become? What am I if I am not a human being in the fullest sense of the word?

<https://www.nytimes.com/2019/06/22/opinion/work-is-like-water.html?searchResultPosition=6>

This opinion article, by writer Karen Rinaldi, published in the *New York Times* in June 2019, is a prototypical example of a metaphor niche. The extended situated metaphor (*work is water*) is made explicit in the very title of the article, through a simile: work is like water.

In this chapter, I do not differentiate between simile and metaphor in terms of their categorizing and/or comparing attributes. As in most cases of situated metaphors, the two domains involved belong to different categories of experience (WATER and WORK), which seems to suggest that the mappings involved are of a metaphorical and not intracategorical nature.⁹

The frame of WATER recruited in paragraph 1 evokes, metonymically, some pleasant sensations: wave (water in movement) is framed as a *gift*; and surfing (a water activity) promotes a feeling of *freedom*. Thus, the source domain which is described (and not merely presupposed) is evaluated positively. The last sentence

9. For a discussion on the debate involving similarities and differences between metaphor and simile, see Barnden (2016).

(“The very opposite of our work lives”) of this paragraph indicates that the mappings to be developed will somehow project positive elements of the source domain (WATER) onto contrasting elements of the target domain. However, this expectation is broken as the locally and textually constructed mappings, established throughout paragraphs 2, 3 and 4, end up invoking not the positive but the more neutral (physical qualities of water) or potentially negative elements of the WATER frame which are projected upon the target domain, as shown in Figure 6.

WATER	WORK
<i>spreads and flows to fill spaces</i>	<i>hard to manage and protect against</i>
<i>finds the path of least resistance</i>	<i>work's demands have permeated time we should have for our families.....</i>
<i>traveled into unwanted and unexpected spaces</i>	<i>It can crack or wear away the strongest foundations.</i>
<i>it can erode and destabilize sound environments or structures.</i>	<i>it can erode and destabilize our lives.</i>



Local mappings

Figure 6. Local mappings of the situated metaphor *work is water*

The elements of the source domain (WATER) of the situated metaphor, which are highlighted through the local mappings, are those which relate to the following physical qualities of water, particularly when in contact with another material: permeation, penetration, pressure, erosion and, eventually, destruction. Other attributes such as soothing, refreshing, freeing, satiating thirst, nurturing etc., which have positive effects on life in general, are not present in the mappings, as these are construed to serve the communicative purpose of the article, which is to put forward and develop a particular point of view concerning the overwhelming effect, or hazards, of (excessive) work in our lives.

Situated metaphors are, thus, always view-pointed, and the mappings which are established by them direct the process of meaning construction towards this aim. It is this feature of metaphors in general, i.e., highlighting and hiding, discussed by Lakoff and Johnson (1980), which is drawn upon in metaphor in use, being largely responsible for the argumentative nature of metaphor in discourse. The local, episodic, mappings in Figure 6, then, are established on an *online* basis. However, an integrated approach to metaphor in use, like the one presented in Section 3, cannot overlook the role which more stable, *off-line*, instances of cognition play in these mappings. Several conceptual metaphors – and possibly primary metaphors – like those in Figure 7, for example, seem to be evoked in these local mappings.

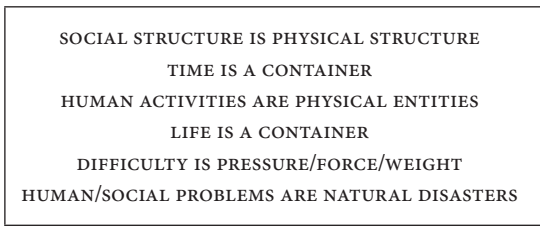


Figure 7. Conceptual metaphors underlying *work is water*

Image schemas, other types of *off-line* representations, also seem to be at play in the local development of the *work is water* situated metaphor. Among those image schemas proposed by Johnson (1987), the ones which seem to be most significant in this context are: CONTAINMENT, TRAJECTORY, FORCE (COMPULSION) and RESTRAINT. The highly physical nature of the mappings in Figure 6 highlights the importance of image schemas in their conceptualizations.

The high-order conceptual metaphors and image schemas proposed above, unlike the low-order situated metaphor *work is water* and its local mappings, are not specific to particular communicative events. Rather, like all conceptual metaphors, they are pervasive in a particular culture and language, and are instantiated and, at the same time, evidenced by conventionalized linguistic expressions (the TIME IS A CONTAINER conceptual metaphor, for example, licences linguistic expressions used to refer to periods of time: *in a minute, year, month, etc.*). In specific communicative acts, on the other hand, they represent the stabler conceptual dimension of metaphor in use, interweaving with situated metaphors and local mappings.

Finally, the point of view or thesis which conducts the metaphoric-oriented argumentation of the text (something like “excessive work is harmful to a happy and balanced life”) also finds cognitive support in broader “hidden ideologies” (Goatley, 2007), “pre-discourses” (Paveau, 2013) or even cultural models regarding “work” (capitalism and work, for example), family and leisure. These *off-line* cultural and ideologically-based models constrain the more situated, textually constructed argumentation.

This brief analysis of a metaphor niche serves to illustrate how the integrated model, based on the articulation between episodic and stable levels of metaphor in use, in Figure 5, may be used to reveal at least part (the “tip of the iceberg”) of the meaning construction processes involved in metaphor in use. Needless to say the metaphor niche selected was quite conducive to this type of analysis, as it displays the local mappings verbally, in a very explicit manner. Its choice, therefore, was motivated by its potential to illustrate more adequately the way the model can inform analyses of metaphor in use. Local mappings are, generally, more implicit and covert, and need to be inferred by the analyst. In this case, the adoption of a metaphor identification methodology, such as the MIP (metaphor identification procedure),

or its later development, MIP-VU, developed by Steen, Dorst, Herrmann, Kaal, Krennmayr and Pasma (2010), could provide more rigour and consistency to the analysis. The overall guiding analytical units and categories to be used, though, can still be those drawn from the model in Figure 5, as these reflect the integrated approach proposed in this chapter, which implies the articulation between the *online* and the *off-line* dimensions of metaphor.

5. Conclusions

This article started out with a discussion concerning the complexity involved in the identification of conceptual metaphors underlying instances of metaphor in use. It is argued that although conceptual metaphors can be at higher or lower levels within the continuum of specificity/generality, they cannot be identified as “conceptual” when metaphor is situated and performs a particular function within a specific communicative event. In such cases, the notion of “situated metaphors” seems to be more adequate, being in the interface between cognition and discourse.

Situated metaphors, though, should be distinguished from systematic metaphors (Cameron et al., 2009). Both are context-dependent, but the former are deliberate and, through local, textually woven mappings, participate in the argumentative thread of the text (verbal, or multimodal), while the latter are not necessarily deliberate and connect different parts of the text through a discursive-cognitive connection of their linguistic realizations.

Situated metaphors can be explicit, coinciding with their linguistic realizations, or implicit, having to be inferred, through local textualized mappings, by the analyst. The most evident use of situated metaphors is the “metaphor niche”, when they are extended by means of explicit local mappings, which direct *online* discourse cognition towards a particular point of view. Another characteristic of situated metaphors is their on-going articulation with more stable cognitive representations, such as conceptual metaphors, frames, ICMs, image schemas and cultural/ideological models. These representations are evoked or drawn upon in metaphor in use. In order to explore the way the elements of the episodic/*online* level and those of the stable/*off-line* level of metaphor can be interconnected more systematically in metaphor-in-use analyses, a model is proposed in Section 3.

The analysis of a metaphor niche, which explores and develops a particular point of view through a number of local mappings, from the situated metaphor source domain (WATER) to the target domain (WORK), evidences the way the two levels of metaphor meaning production are articulated. A particular aspect involved in this articulation which stands out as an issue to be further investigated is the way local mappings highlight specific features of the source domain and hide others. Though Lakoff and Johnson, as early as 1980, already stressed this feature

of metaphor, the selectivity involved in situated metaphors, differently from conceptual metaphors, is somehow deliberate and it plays a crucial role in “argumentation by analogy” (Walton, 2006). A potentially productive way this question can be explored is by looking at Langacker’s concept of “construal” (Langacker, 2013), or, more specifically, of “profiling”, in order to examine how it can shed light on the way local mappings contribute to construct a point of view.

I conclude by expressing the hope that attempts, such as the one presented in this chapter, to combine the cognitive and the communicative (Gola and Ervas, 2016) dimension of metaphor, instead of strengthening the *Metaphor Wars* described by Gibbs (2017), may modestly contribute to furthering the (peaceful) debate around this complex but increasingly stimulating topic.

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Sources of verbal humor in the lexicon

A usage-based perspective on incongruity

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Lexical items with a ludic potential have not been systematically studied up to now. The aim of this paper is thus to explore sources of humor in the French and Italian lexicon and to investigate to what extent the notion of incongruity can explain the humorous effects and ludic usage of lexical items. Incongruity will be reinterpreted from a usage-based perspective, stressing the interactional dimension of communication (see also Kotthoff, 1998; Onysko, 2016), which defines the relative inappropriateness and pragmatic markedness of the items. In addition, the semantic distance and (in)compatibility of the meanings as well as the semiotic nature of the relevant reference entities will be taken into account, and a typology of relevant subtypes of incongruity will be proposed.

Keywords: creativity, inappropriateness, incongruity, lexical borrowing, lexical innovation, lexicography, ludic deformation, ludic usage, markedness, verbal humor

1. Introductory remarks on investigating verbal humor in the lexicon

“You’ll never get that rust off without some elbow grease.” Some utterances in everyday language convey effects of verbal humor arising from the use of lexical items such as E. *elbow grease*. Depending on the items and the specific context of use, the hearers’ reactions can range from a smile to laughter, possibly followed by a metalinguistic comment or a response that also contains verbal humor. However, this effect is not exclusively a discursive and pragmatic phenomenon, but there is already a certain humorous potential in the lexical item *elbow grease* itself. This is confirmed by the entry in the OED where the item is marked as “humorous”:

- (1) **elbow-grease**, n. [...] *humorous*. Vigorous rubbing, proverbially referred to as the best unguent for polishing furniture. Hence *allusively*, energetic labour of any kind. (OED)

The fact that the dictionary uses the lexicographic label “humorous” confirms the theoretical and practical relevance that needs to be accorded to the ludic dimension from a lexicological and lexicographic perspective. A quick search in the OED confirms the existence of numerous other lexical entries containing this label, e.g.:

- (2) **bumpology**, *n.* [...] Chiefly *humorous*. Now *hist.* The pseudoscientific study of bumps on the skull; phrenology. (OED)
- (3) **au reservoir**, *int.* [...] Etymology: Humorous alteration of AU REVOIR *int.* after RESERVOIR *n.* *humorous*. (OED)

Similar observations can be made for other languages, e.g. French. Here, an important lexicographic label is “plaisant” (abbreviated as “plais.”), as illustrated by F. *trotte-menu* MICE – a compound based on the verb *trotter* SCURRY and the adverb *menu* SMALL – and F. *flémिंगite* EXCESSIVE LAZINESS:

- (4) **trotte-menu** [trɔtməny] adjectif invariable ÉTYM. 1488 ◇ de *trotter* et *menu*. VX OU PLAISANT Qui trotte à petits pas. « La gent trotte-menu » (La Fontaine): les souris. (PR)
- (5) **flémिंगite** [flemɛ̃ʒit] nom féminin ÉTYM. 1879 *flemmingite* ◇ de *flemme*, avec finale de *laryngite*, *méningite*... PLAIS. Flemme (considérée comme pathologique). *Crise de flémिंगite aiguë*. (PR)

In spite of being well attested in everyday language and in standard lexicographic sources, however, lexical items having a humorous potential have not been systematically studied in the domain of lexical innovation and language change up to now. They thus still need to be established as a domain of investigation in its own right. This also becomes clear if we look at other lexical items that may convey similar effects of verbal humor but are characterized by other lexicographic labels than the ones cited above in standard lexicographic sources, e.g.

- (6) **cool** [kul] adjectif ÉTYM. 1952 ◇ mot anglais « frais » [...] 3 FAM. (langage des jeunes) Agréable, excellent; sympathique. *C'est trop cool, les vacances!* □ VAR. FAM. *coolos* [kulɔs] adj. (PR)
- (7) **pucier** [pysje] nom masculin ÉTYM. 1611 ◇ de *puce*. ARG. VIEILLI Lit. (PR)

For F. *coolos*, only the lexicographic label “VAR. FAM.” (“variante familière”), which primarily points to lectal markedness – more specifically, diaphasic markedness (register / style) – and the existence of the “normal” or lesser marked item F. *cool* hint at a special pragmatic effect which may arise from the use of this form. In the case of F. *pucier*, derived via suffixation from F. *puce* FLEA, we find different lexicographic labels that indicate that the form is lectally marked (“argotique”) – here, by a

diastratic markedness (the *argot* representing a sociolect) – and obsolete (“vielli”).¹ The partly unsystematic lexicographic treatment of potentially humorous forms is also confirmed by the following entry in the OED:

- (8) **au revoir**, *int.* (and *n.*) [...] An expression implying farewell for the present; hence as *n.*, a farewell of this kind. Also occurs in slang abbreviations *aurev.*, *au ’voir*, and as a malapropism in the form **AU RESERVOIR** *int.* (OED)

While the entry for *au reservoir* explicitly indicates the humorous potential by the use of the standard lexicographic label (see Example (3) above), this entry characterizes the altered form more specifically as a “malapropism” (defined in the OED as “The ludicrous misuse of words, esp. in mistaking a word for another resembling it; an instance of this.”). In addition, further lexicographic labels such as “jocular”, “playfully”, or “playful alteration” can be mentioned (see Examples (9), (10), and (11)). An advanced search gives 1,298 (“humorous”) against 378 (“playful”), 132 (“playfully”), and 145 (“jocular”) results respectively.²

- (9) **Anno Domini**, *adv.* and *n.* [...] b. *jocular colloq.* as *n.* Advanced or advancing age. Also *attrib.* (OED)
- (10) **baggage**, *n.* and *adj.* [...] 7. Used familiarly or playfully of any young woman, especially in collocation with *artful*, *cunning*, *sly*, *pert*, *saucy*, *silly*, etc.
- (11) **bargoen**, *n.* [...] Playful alteration of **BARGAIN** *n.*¹ (OED)

These examples show that the quantitative and qualitative importance of this domain may be even bigger than suggested by the numbers of items marked by the “standard” labels. At the same time, verbal humor in the lexicon represents a domain with fuzzy boundaries for which a more systematic investigation appears necessary. An important question that needs to be addressed in this context concerns the limits between lexical innovation and wordplay in discourse: Are items such as E. *elbow-grease* and F. *trotte-menu* to be considered as lexical innovations, or do they only represent instances of ludic language use? Related to this question we may also ask to what extent figurative language in general has a humorous potential, and whether it is possible to identify sources of verbal humor in figurative

1. On the different levels of variation in a language distinguished here, see e.g. Coseriu (1981) and Koch and Oesterreicher (2011).

2. The results would need to be checked in more detail as they contain false hits in which the expressions are part of the meaning definition of the entries, etc.

language (cf. recent contributions of Cognitive Linguistics to humor research, for an overview, see Brône, 2017).³

The research question of this paper brings together humor studies and lexicology, expanding previous research foci: while there is a strong focus on discourse, conversational humor and canned jokes in humor research (see e.g. Attardo and Raskin, 1991; Raskin, 1985, 2017), the following reflections are interested in the conventionalization of verbal humor in the lexicon. At the same time, the humorous or ludic dimension⁴ of lexical items has not been addressed in standard typologies of lexical innovation focusing on semantic and morphological aspects. The aim is thus to gain insights into the importance of verbal humor in the lexicon and to learn more about the relationship between figurativity and verbal humor and about further sources of verbal humor.

First investigations suggest that lexical items with humorous potential represent a highly dynamic domain, and that there are different sources from which effects of verbal humor may arise, including imagery, pseudoscientific discourse, alteration and language contact (Winter-Froemel, 2016a, 2018). This is also illustrated by the examples given above: E. *elbow-grease* and F. *trotte-menu* are word formations based on unexpected conceptual associations that creatively express a certain target concept. E. *au reservoir* and F. *coolos*, on the other hand, show ludic deformations of borrowed items (cf. E. / F. *au revoir*, F. / E. *cool*). E. *bumpology* and F. *flémिंगite*, in turn, combine native items of everyday language (E. *bump*, F. *flemme* LAZINESS) with items of Latin and Greek origin. Taking this heterogeneity of phenomena as a starting point, the aim of this paper is to analyze the broad range of potential sources of humor in the lexicon and to investigate to what extent the notion of incongruity, which is a well-established, but also a controversially discussed concept in humor research (see e.g. Attardo, 1994; Forabosco, 2008) can serve to explain the different subtypes of verbal humor and ludic usage. As it can be assumed that the sources of verbal humor are differently exploited in various particular languages, French and Italian data will be analyzed in order to provide some contrastive perspectives and gain first insights into language-specific

3. These questions were also addressed in the project “The Dynamics of Wordplay” (2013–2018), financed by the German Research Foundation. See <http://www.romanistik.uni-wuerzburg.de/mitarbeiter/winter-froemel/dynamik-des-wortspiels/>.

4. I will use both terms interchangeably in this paper, abstracting from the differences between these notions which emphasize the state of mind and emotional state of the speaker or hearer (“humorous items” / “humorous potential”), and their playful behaviour and the rules of verbal exchange as a joint playful action (“ludic items” / “ludic potential”), respectively.

tendencies and divergences with respect to the importance of different sources of verbal humor in the lexicon.

After discussing a previous study by Kang (2016) on the humorousness of nominal compounds in German (2), I will give an overview of French and Italian lexical items with humorous potential based on standard lexicographic sources (3). In a next step, I will analyze these items by turning to the notion of incongruity, which will be reinterpreted from a usage-based perspective (4), taking into account semantic and pragmatic aspects, and stressing the social and interactional dimension of meaning and communication. Moreover, I will argue for a broad approach that allows us to integrate different subtypes of incongruity depending on the semiotic nature of the reference entities, as well as concepts from cognitive semantics and pragmatics such as semantic distance and (in)compatibility, inappropriateness and pragmatic markedness. The conclusion will briefly summarize the main aspects of a usage-based approach to incongruity and verbal humor in the lexicon (5).

Before starting these analyses, however, a basic issue needs to be addressed: Can verbal humor, which represents by definition a discourse phenomenon (occurring in the *parole* in the Saussurean sense), be studied at the level of the lexicon (which means that we are looking at the language system or *langue* in the Saussurean sense), or is this research focus fundamentally flawed? In my view, a possible answer to this question lies in the transitions between the two levels and in the complementarity of the notions. The special pragmatic or stylistic value of the lexical units in the lexicon needs to be seen as a conventionalized feature of their previous usage in discourse, and we can thus identify an interaction and transition from *parole* to *langue*. Conversely, once it has been conventionalized, verbal humor in the lexicon represents a potential source for further humorous usage, i.e. for verbal humor in discourse, when the items are actualized and used in concrete utterances. This means that we can also observe an interaction and transition from *langue* to *parole*. Both types of interaction thus point to the close relationship between the two domains and to the insights to be gained from an investigation of conventionalized and metalinguistically described humorous items in the lexicon.

2. Nominal compounds and the humorousness of metaphor

A previous study on verbal humor in the lexicon can be found in Kang (2016). The paper focuses on the humorousness of nominal compounds in (current) German and is thus highly relevant for the concerns of this paper. In this section I will examine the categories he proposes and comment on his examples and analyses. Assuming that the lexeme is “the smallest unit by which humorousness can be

achieved” (2016, p. 377),⁵ Kang takes the general language dictionary *Duden* (in the 2012 edition) as a starting point to investigate humorousness in the German lexicon. The standard lexicographic label used in the dictionary is “scherzhaft” (‘humorous’ / ‘jocular’), and a query for this label results in more than 2,200 words and phrasemes. Among these Kang identifies 710 nominal compounds, of which 430 are metaphor-based. 230 of these nominal compounds are additionally marked as “umgangssprachlich” (‘colloquial’) and relatively widely used; only these are the main focus of Kang’s survey. Kang’s basic assumption is that the humorous effect they can provoke arises from the coexistence of the conventional (figurative) and the literal meaning. More specifically, he introduces the term “static incongruity”⁶ to refer to the “perceived oddity of the unnatural interaction and coexistence of the literal and conventional meanings” (Kang, 2016, p. 363) that can be observed in humorous references. If this incongruity is actualized in humorous expressions in discourse, it gives rise to a “static-presentational incongruity” (on presentational incongruity, see also Ritchie, 2004), “which is regarded as entailing a certain ‘semantic distance’ between the conventional meaning of the humorous expression and its literal meaning” (Kang, 2016, p. 364).

Moreover, Kang assumes that the compounds can be classified into six basic meaning construction types, as illustrated in Figure 1.⁷

In my view, some of Kang’s examples require further discussion. For reasons of space, I will only briefly discuss selected examples here. For instance, the semantic relation between the constituents of the compound *Kupfer Nase* could also be interpreted as a relation between the object (NOSE) and its material (COPPER), that is, a classical relation of contiguity. In this sense, the compound would represent a metaphorization of the whole literal meaning AB (the nose of an individual being compared to the nose of, e.g., a copper statue). Moreover, the distinction between A→B and A(→X)-B would become clearer if the target meaning of the compound

5. In my view, however, this assumption requires further discussion. In cases such as E. *bum-pology*, the effect of humorousness depends on morphological units below the word level (here, the borrowed origin of *-ology*; see also the suffix replacements mentioned in Section 4, III., where the humorousness arises from the divergence of the “incorrect” suffix with respect to the conventional form). Verbal humor can also be based on features at even lower levels, as illustrated e.g. by monovocalic texts (containing only one vowel, see e.g. Ernst Jandl’s poem *ottos mops* [Otto’s pug dog] and the continuations by Robert Gernhardt *Annas Gans* [Anna’s goose], *Gudrun’s Luchs* [Gundun’s lynx], *Gittis Hirsch* [Gitti’s deer] and *Enzensbergers Exeget* [Enzensberger’s exegete], see Gernhardt, 2000, pp. 208–211).

6. Kang coins this term to distinguish the incongruity in lexical items from the “dynamic incongruity” Ritchie observes in jokes (Ritchie, 2004).

7. The source and target concepts are indicated in small caps here.

Abbreviation	Meaning construction type	Example
AB(→Z)	Metaphorization of the whole literal meaning AB	<i>Bohnenstange</i> (BEAN + POLE) ‘tall and thin woman’
A→B	Metaphorical mapping from A to B	<i>Korkenzieherhose</i> (CORKSCREW + PANTS) ‘unironed pants with horizontal wrinkles’
A←B	Metaphorical mapping from B to A	<i>Geldregen</i> (MONEY + RAIN) ‘windfall’
A(→X)-B	Conceptual combination of metaphorical A and literal B	<i>Kupfernase</i> (COPPER + NOSE) ‘red nose’
A-B(→Y)	Conceptual combination of metaphorical B and literal A	<i>Nasenfahrrad</i> (NOSE + BICYCLE) ‘glasses’
A(→X)-B(→Y)	Conceptual combination of metaphorical A and B	<i>Gummiadler</i> (RUBBER + EAGLE) ‘tough roast chicken’

A, B = conceptual domains evoked by constituents A, B; AB = conceptual domain evoked by literal meaning of compound; X, Y, Z = target domains; A, B, AB = source domains

Figure 1. Basic meaning construction types according to Kang (2016, p. 365)

(which I label here as C) were systematically taken into account. For example, for *Korkenzieherhose*, there is not only a “visual similarity between A and B”, as Kang (2016, p. 366) states, but also a similarity between A and C (UNIRONED PANTS WITH HORIZONTAL WRINKLES resemble a CORKSCREW). This would also provide a more detailed description of the compound *Schnittlauchlocken* (CHIVES + CURLS) ‘straight hair’, which is analyzed by Kang as another example for the A→B type. What is central here, however, is not only the metaphorical mapping, but the inherent contradiction between CURLS and the visual appearance of CHIVES. *Schnittlauchlocken* are precisely *no* type of CURLS, and the humorous effect arises from the conceptual contrast between the meaning of B and the target meaning STRAIGHT HAIR. We can thus assume an additional processing effort for the expression *Schnittlauchlocken*. The expression functions as a riddle that needs to be resolved by the hearer. If s/he succeeds in decoding the expression, an effect of relief and self-affirmation as well as a fraternization with the speaker results.

Similarly, for some of the examples of the A(→X)-B type, alternative or more fine-grained analyses could be proposed. For example, *Poposcheitel* (BUTTOCKS + PARTING) ‘middle parting’ could be analyzed as a parting that makes the head resemble a pair of buttocks (cf. the A→B type). For *Spagatprofessor* (SPLITS + PROFESSOR) ‘professor attending two universities’, the highly frequent collocation *schwieriger Spagat* – which is not registered in the *Duden*, but which can be analyzed as a semi-idiom expressing a SITUATION IN WHICH CONTRADICTORY REQUIREMENTS

NEED TO BE SATISFIED, seems to represent the starting point for the formation of the compound. For *Atombusen* ‘big boobs’, analyzed by Kang (2016, p. 366) as NUCLEAR + BREASTS, it should be stressed that is not the literal meaning (ATOM)⁸ of the first constituent that is central, but its use in other compounds such as *Atombombe* ATOMIC BOMB. This latter meaning immediately explains the intended effect of the humorous compound (to express a big and powerful appearance), which remains unexplained by the literal meaning of *Atom*, which entails a very small size. In addition, it can be assumed that the compound *Atombombe* also influenced the formation of *Atombusen* on the formal level, that is, the humorous effect also arises from the similarity of the word forms and the unexpected “deformation” of the existing lexical item *Atombombe*.

Without going into more detail and discussing further examples, let us now turn to the findings and additional analyses of Kang. The most important meaning construction type in his survey is A-B(→Y), where the head is metaphorically used and combined with a literal modifier.⁹ This type can be observed in approximately 60% of Kang’s data. Further examples that illustrate this category are *Wüstenschiff* (DESERT + SHIP) ‘camel’, *Stubentiger* (ROOM + TIGER) ‘cat’ and *Ohrenschmaus* (EARS + FEST) ‘treat for the ears’.¹⁰

Yet Kang points out that the structural descriptions provided for the different construction types still do not explain why “not all metaphors are humorous and not all humorous expressions are metaphorical in nature” (Kang, 2016, p. 368). To explain this effect, Kang adopts an incongruity-based approach and refers to the way in which the expressions need to be processed: “humor [...] involves the perception of incongruity by the simultaneous presence of seemingly incompatible elements, and the subsequent incongruity resolution” (Kang, 2016, p. 368). Three basic steps and aspects can be distinguished: (1) the hearer¹¹ perceives an incongruity, (2) s/he follows an interpretative reasoning leading to incongruity resolution, (3) but due to the limited nature of the metaphorical mapping, a certain inappropriateness is still

8. In the sense of a unit “which cannot be further divided into smaller particles all having the properties of that element” (OED, s.v. *atom*, 4.).

9. The description of the construction types depends on the right-hand head structure of German compounds. For French and Italian, the description would have to be adapted, as nominal compounds are left-headed in the Romance languages. Moreover, the Romance languages have additional patterns of word formation, e.g. V+N compounds and syntagmatic compounds or lexical(ized) syntagms containing prepositional components (e.g. French *chemin de fer* RAILWAY).

10. Another example given by Kang is *Drahtesel* (WIRE + DONKEY) ‘bicycle’. However, to my mind, the first constituent is not used in a literal sense here.

11. Both oral and written communication are included here, i.e. “speaker” includes speakers and writers, “hearer” includes hearers and readers.

perceived. It is this latter aspect that is crucial to distinguish humorous metaphor from non-humorous metaphor:

The resolution of incongruity does not involve a sudden logical match between the contradictory nature of the two parts, but rather a perspective by which the incongruousness may be regarded as justified or believable.

(Kang, 2016, p. 369, see also Attardo, 1994, p. 144–145)

More specifically, Kang distinguishes between four different types and sources of incongruity. The first type arises when there is a substantial inappropriate incongruity between conceptually different source and target domains (“inter-domain conceptual incongruity and limited-mapping incongruity”). Examples are cases of dehumanization by objectification or animalization, where human beings are presented as objects or animals, such as *Allzweckwaffe* (ALL-PURPOSE + WEAPON) ‘someone who can do any type of work’ and *Treppenterrier* (STAIRS + TERRIER) ‘a person who uses the stairs often as a part of the job’. This schema can also be applied to animals that are objectified, e.g. *Hafermotor* (OATS + ENGINE) ‘horse’. Conversely, human beings can also be deified and thus presented in an inappropriately “high” way, e.g. *Küchenfee* (KITCHEN + FAIRY) ‘female cook’.

Kang insists on the fact that conceptual distance is not a requirement for humorous metaphor, as there are also cases with an incongruity between conceptually similar domains. These represent the second type in his survey, “exaggerating and understating / degrading metaphor”. The first subtype is illustrated by *Bierleiche* (BEER + CORPSE) ‘a person too drunk to control / move him/herself’, the second by *Wohnklo* (LIVING + TOILET) ‘very small studio’¹² and *Duftbesen* (SCENT + BROOM) ‘great bunch of flowers’. Again, additional factors contribute to the humorous effects observed here. For *Bierleiche*, in my view, it is not only the similarity with respect to the feature of INACTIVITY that is foregrounded (see Kang, 2016, p. 372), but the strong contrast between LIFE and DEATH and the violation of a taboo, when a (heavily drunk) human being is represented as no longer exhibiting its central (vital) feature of being alive. For *Wohnklo*, there is simultaneously an exaggeration and a degradation: the description of the size of the apartment is exaggerated, foregrounding again a taboo (here, of bodily functions representing the second key necessity besides LIVING that defines the requirements of an apartment). In this way, the target concept C and the referent are denigrated. The same holds for *Duftbesen*, where there is a semantic contrast between the target concept (LARGE) BUNCH OF FLOWERS – a beautiful, fragrant object of luxury in a large sense – and the source concept BROOM which represents a cleaning tool and evokes necessary

12. However, the first constituent in *Wohnklo* is a verbal stem, and the example thus does not represent an N+N compound.

and typically unwelcome activities as well as displeasing dust and dirt (see also Kang, who speaks of “conflicting aspects” here). If we look for occurrences of this expression in internet searches, we find many instances in which a bunch of flowers is described as a somehow inadequate gift that is not appreciated by its addressee. In that sense, the expression can also be qualified as being disrespectful, exhibiting an elementary inappropriateness.

The third type of incongruity identified by Kang is characterized by a pattern of structural-functional analogy. To illustrate this type, he discusses the compound *Wüstenschiff* (DESERT + SHIP) ‘camel’, which is based on the analogy SEA : SHIP = DESERT : CAMEL (the SHIP representing the source concept B, the DESERT representing the source concept A, and the CAMEL representing the target concept C). Again, to obtain a humorous effect, the analogy needs to be perceived as being relatively inappropriate. This shows that the structural pattern of analogy can combine with the two types described above, e.g. by objectifying an animal as in the present case. As Kang’s non-humorous examples of analogies confirm (e.g. *the evening of life* for OLD AGE), the special humorous effect does not arise from the pattern of analogy itself though, but rather from these further aspects.¹³

Kang’s final category is “incongruous / pseudo-congruous literal meaning and reinterpretation”. Two subtypes can be distinguished here. The first subtype is illustrated by *Winterspeck* (WINTER + BACON) ‘bacon to eat in the winter (or made in winter) ⇒ the object that was made in the winter and resembles bacon (fat gained over winter)’ and *Campusmaut* (CAMPUS + TOLL) ‘a toll that needs to be paid to go through the university campus ⇒ a payment resembling a toll that should be paid to study at a university (university tuition fee)’. Examples for the second subtype are *Hungerturm* (HUNGER + TOWER) ‘1. a prison in a tower where the prisoner almost starves’ ⇒ 2. a person who is tall like a tower and thin as if they had been starving’ and *Goldfisch* (GOLD + FISH) ‘1. goldfish ⇒ 2. a wealthy partner who has gold (wealth) and can be drawn like a fish (wealthy partner)’. For Kang, the first subtype is characterized by the fact that a literal interpretation would be possible, and the figurative interpretation is thus obtained by re-interpreting this literal meaning according to the A-B(→Y) format. Yet the first example appears to be questionable, as the constituent *Speck* alone can already be used in a jocular way to refer to (human) FLAB. There is thus no need to assume an interpretative process based on a literal interpretation of the compound, as the figurative interpretation of the second constituent is easily available from the outset (see also the entry for this item in the *Duden*). The modifier and the compound structure are thus not responsible for the humorous effect here, and the basic pattern of incongruity is

13. In addition, for some of the examples given for the previous categories, analyses in analogical terms would equally be possible, e.g. for *Hafermotor*, FUEL : MOTOR = OATS : HORSE.

once more an animalization. For *Campusmaut*, the objection could be raised that a CAMPUS is typically conceived of as an area and not associated with spatial transition. The example could thus be alternatively explained by an analogy MOTORWAY : TOLL = CAMPUS / EDUCATION INSTITUTION : TUITION FEE. Moreover, the interpretation of the compound relies on the link between two contiguous meanings of *Campus*, the CAMPUS / UNIVERSITY AS A SPATIAL OBJECT / AREA and the CAMPUS / UNIVERSITY AS AN EDUCATION INSTITUTION. This means that metaphorical and metonymic relations are combined here.

The reinterpretations of the second subtype, in contrast, represent a genuinely new pattern that is different from the types discussed above. In these cases, the compounds already exist with a lexicalized (idiomatic or non-idiomatic) meaning, but the humorous use uncovers a further meaning potential which requires the hearer to go back to the constituents' literal meanings and construe a new interpretation. Understanding these items thus requires a fundamentally different interpretative scheme, leading to a new interpretation of a conventional expression (see the first meanings of the items indicated by Kang). This corresponds exactly to what has been described by the term "transmotivation" in previous research on wordplay (Käge, 1980; Heibert, 1993, p. 62–66; Winter-Froemel, 2009, p. 1430), and it can be assumed that an additional processing effort arises in these cases. Interestingly, once again we can find here additional instances of an objectification and animalization of human beings (which are presented as a TOWER and a FISH, respectively). In both cases, the resulting effect of inappropriateness arises from the disrespectfulness with which human beings are referred to (their reified physical appearance or their lack of freedom of action and autonomy). Moreover, the first example relies on a metonymic relation as well (HUNGER – STARVING), and for the second example, the idiomatic use of *ein großer / dicker Fisch* (literally, 'a big / fat fish') for AN IMPORTANT PERSONALITY represents an alternative or at least additional basis for the hearer's interpretative reasoning.

Summing up, Kang's survey confirms the importance of incongruity for verbal humor in the lexicon. At the same time, we have seen that this notion and its possible realizations in humorous lexical items still need to be defined in more detail.¹⁴ The discussions of Kang's categories and examples have shown that it is not only metaphorical relations of similarity that are active in humorous items in the lexicon, but relations of contiguity / metonymy and contrast play an important role as well. Moreover, the target concept that is expressed by the humorous items also plays a

14. Similarly, the cognitive effort required to interpret the different types of humorous items represents an important topic requiring further research (see e.g. the career of metaphor hypothesis which assumes that metaphors are processed differently depending on their degree of conventionality and their linguistic form, Bowdle and Gentner, 2005).

fundamental role. This can easily be explained if we recall that the lexical items are actualized in concrete situations of communicative exchange where the speaker intends to express a certain concept and designate a certain referent. In this sense, the referent and the target concept are often easily accessible for the hearer, who has certain expectations about the content of the speaker's utterance. Further research would also need to take into account the varying degrees to which the referential meaning is expectable in the concrete utterance.

This leads us to the interactional dimension of communication. We have seen that structural descriptions and categorizations alone are not sufficient to explain the humorous potential of the items, but we ultimately need to resort to further semantic, pragmatic and interactional aspects. Up to now, the basic question raised at the beginning of this paper still remains unclear: Why are items such as *Korkenzieherhose*, *Bierleiche* and *Nasenfahrrad* usually perceived as being humorous, while similar effects are absent from items such as *Marmorkuchen* (MARBLE + CAKE) and *Nasenflügel* (NOSE + WING) 'ala of the nose / alar wing of the nose'?¹⁵

The descriptions of the interpretation of a compound by referring to incongruity and its resolution with respect to the concepts A, B, AB, X, Y, and Z (and additionally C) provide only part of the picture. We also need to take into account the interactional dimension and different kinds of conventions and knowledge that shape the hearer's expectations. This is also suggested – but not further developed – in Kang's conclusion, where he states that humor introduces an attitude of value assessment towards the referent of the compound (Kang, 2016, p. 376), and that the unexpectedness of the conceptual association is more important than the conceptual distance between the source and the target domain. This aspect is not foregrounded in his survey, but interestingly, it also points to the fundamental importance of the speaker's and hearer's knowledge and expectations. To reconsider the semantic and pragmatic aspects of incongruity in an interactional and semiotic framework, the following sections will present data from French and Italian, which will allow us to get a broader view on sources of verbal humor in the lexicon, including other types of figurative relations beyond metaphor as well as further types of incongruity based on structural contrasts. The following section will briefly discuss methodological issues and give an overview of the results of the two queries.

15. See also Dynel (2009) and Attardo (2015), who addresses the same question as Kang (2016) – “why some metaphors are humorous and some are not” (Attardo, 2015, p. 91) – and comes to the conclusion that it is not possible to give a simple answer to this question, as no unified account of “humorous metaphors” is possible, and different approaches need to be combined to account for different subtypes of humorous metaphors.

3. Verbal humor in the French and Italian lexicon

Similar to Kang's survey, the French and Italian data presented here is also based on lexicographic sources, and more specifically, on authoritative general language dictionaries (for first observations on the lexicographic treatment of humorous items in French dictionaries, see also Preite, 2007). There is thus no direct match to authentic usage, as the data has been gathered and filtered by lexicographers. Nevertheless, the dictionaries aim at representing the lexical items of current French and Italian usage. At the same time, the dictionary data offers considerable advantages for a survey on the importance of verbal humor in the lexicon since they provide stable data which is relatively established in language use, and they permit an exhaustive analysis for the items identified by the relevant lexicographic labels. Some caution has to be exercised as to how exhaustive the data is since a certain number of false negatives have to be assumed, and the quantitative importance of these missing items can currently not be evaluated.¹⁶ Yet the search results contain few false positives, and they thus provide first insights into a clearly defined subset of humorous items.

As a basic source for the French data, the 2016 edition of the dictionary *Le Petit Robert* (PR) was selected (cf. Winter-Froemel, 2016a, 2018). This general language dictionary contains approximately 60,000 entries. The lexicographic label used for potentially humorous lexical items is "PLAIS. (= plaisant), PAR PLAIS. (= plaisanterie)", defined as "emploi qui vise à être drôle, à amuser, mais sans ironie" ("usage which aims at being funny, at amusing the hearer, but without irony"; translation EWF). From the entries that contain this label it becomes clear that it may refer to both synchronic and diachronic aspects, i.e. the label can indicate current usage effects in the sense of particular stylistic and pragmatic effects as well as a playful origin of the items.

A search for this label identifies 344 words and uses,¹⁷ which corresponds to roughly 0.6% of all the entries. However, the label has certain affinities with other labels that characterize items which can be used with stylistic / pragmatic intentions (cf. the remarks on labels such as "familiar" / French "familier" in the introduction to this paper), and there are several other labels pointing to special pragmatic effects in the use or etymology of the items, the most important being the ones indicated in Table 1.

16. As discussed in the introduction to this paper, it can be easily shown that the lexicographic marking of humorous items in the dictionaries is at least to some extent unsystematic, as different labels are used, and for some items, no specific labels indicating the humorous potential of the items are used at all.

17. This number was obtained after exclusion of clear cases of false positives of entries containing the string "plus" instead of "plais", and cases where the label only appears in a cross-reference to another entry (e.g. in the entry for *réflexion*, we find a cross-reference to "PLAIS. *cogitation*"; in these cases only the entry *cogitation* was counted, where the label appears again).

Table 1. Relevant lexicographic labels in *Le Petit Robert* (2016) besides PLAIS. / PAR PLAIS.

ALLÉGOR. (= allégorique)	EXCLAM. (= exclamation, exclamatif)
ALLUS. (= allusion)	FIG. (= figuré)
ANTIPHHR. (= par antiphrase)	(PAR) HYPERB. (= (par) hyperbole)
(PAR) DÉNIGR. (= (par) dénigrement)	(PAR) MÉTAPH. (= (par) métaphore)
EMPHAT. (= emphatique)	MÉTON. (= (par) métonymie)
(PAR) EUPHÉM. (= (par) euphémisme)	ONOMAT. (= onomatopée ou formation expressive, onomatopéique)
(PAR) EXAGÉR. (= (par) exagération)	

Moreover, if we look at the entries that are marked accordingly, the strict boundary between playful usage and ironic usage can be questioned, as the items exhibit basic similarities (Winter-Froemel, 2016a, p. 255; 2018, p. 236). We can thus assume that the quantitative importance of verbal humor in the lexicon is higher than 0.6%, even if we cannot give any reliable estimation for the number of further ludic items that would need to be added to our corpus.

Having made these preliminary remarks, I will now present some general observations that emerge from an exhaustive analysis of the entries containing the label “plaisant / par plaisanterie”. The label is used to characterize lexical items and specific uses of these items, i.e. it refers to different kinds of units: (1) simple or complex lexical items that are entirely humorous (these are mostly monosemic), (2) particular meanings of a lexical item (with other meanings of the lexical item not being humorous), (3) lexicalized syntagms, (4) phrasemes. The lexicalized syntagms represent items of the French lexicon, although they cannot be formally recognized as such, as their structure corresponds to the structure of free combinations. The latter group, in contrast, represents uses of the items in specific utterances. The four categories can be illustrated by the following examples.

Table 2 informs about their relative importance, and shows that all of the categories are well represented, and that there are no strong correlations between humorous effects and particular kinds of units in the dictionary. These results thus contradict the findings of Preite (2007), who considers lexical items that are entirely humorous to be marginal.

Lexical items that are entirely humorous

- (12) *cicérone* ‘talkative guide’ (borrowed from Italian *Cicerone*, the humorous meaning being motivated by the fact that Cicero is generally considered to be one of Rome’s greatest orators)

- (13) *pipi-room* ‘toilet’ (a nominal compound formed by the component *pipi* ‘wee’, which is itself marked as familiar, and the component *room*, which is of English origin and does not exist as an independent noun in French)

Particular meanings of a lexeme

- (14) *appendice* ‘long nose’ (which also has the non-humorous meaning ‘appendix’, from which the humorous meaning is derived)
- (15) *cuir* ‘skin’ (derived from the non-humorous meaning ‘leather’)
- (16) *mulot* ‘computer mouse’ (derived from the non-humorous meaning ‘field mouse’, with an additional analogy to the semantic change of French *souris* ‘mouse’, which has acquired the additional meaning of ‘computer mouse’)

Lexicalized syntagms

- (17) *honorable compagnie* ‘honourable company’
- (18) *amours ancillaires* ‘liaison with an attendant’ (formed by *amour* ‘love’ and the adjective *ancillaire* ‘related to servants’, which is marked as obsolete or literary in contemporary French)
- (19) *bien jambé / mal jambé* ‘with pretty / ugly legs’ (the participle *jambé* is derived from *jambe* ‘leg’, but is used only in these two expressions)

Phrasemes

- (20) *chacun sa chacune* ‘always a boy and a girl together’ (*chacun* ‘everybody’, with a nominalization of the indefinite pronoun; the literal meaning of the phraseme is ‘everyone [male] with his [female] everyone’)
- (21) *désigner un volontaire* ‘determine a voluntary’

Table 2. Relative importance of different types of humorous units in the French lexicon

Category	Number of items	Relative frequency
Entirely humorous lexical items	96	27.9%
Particular meanings of a lexical item	100	29.1%
Lexicalized syntagms	46	13.4%
Phrasemes	102	29.6%

In addition to the French data, I investigated verbal humor in the Italian lexicon. The basic source chosen here was the CD-rom edition of the etymological dictionary DELI / *Dizionario Etimologico della Lingua Italiana* (1999), which contains approximately 47,000 entries and permits a straightforward search for the lexicographic label “scherz.” (= scherzoso, scherzosamente), which represents the basic label for humorous items in that source. The search criterion identifies 213 entries

or lexical units, which corresponds to roughly 0.4% of the entries. Again, this number includes entire lexemes and particular uses of the items; for polysemous items with several humorous meanings, these were counted as different lexical units. As we have already observed for the French dictionary, the label refers to both synchronic and diachronic aspects, i.e. to stylistic and pragmatic effects as well as to the etymological dimension. In the DELI, the difference between the two dimensions is more explicitly marked, as the label may appear either in the synchronic or the diachronic part of the entries.

Moreover, the label also has some affinities with other lexicographic labels pointing to specific pragmatic, stylistic or etymological aspects, the most relevant labels being the ones indicated in Table 3. Again, we can thus assume that the quantitative importance of verbal humor in the Italian lexicon is higher than 0.4%. In addition to the intersections between the labels, we can also observe combinations of several labels, e.g. “fig. scherz.” or “fam. scherz.”

Table 3. Relevant lexicographic labels in *Dizionario Etimologico della Lingua Italiana* (1999) besides *scherz.*

alter. (= alterato, alterazione; ~ ‘modification’)
antifr. (= antifrasi)
anton. (= antonomasia)
dispr. (= dispregiativo; ‘deprecativ’)
enf. (= enfatico, enfaticamente)
euf. (= eufemismo, eufemistico)
infant. (= infantile)
inter. (= interiettivo, interiezione)
iron. (= ironico)
pegg. (= peggiorativo)
pleon. (= pleonasma, pleonastico, pleonasticamente)
raff. (= rafforzamento, rafforzativo; ‘reinforcing’)
sott. (= sottinteso; ‘implied’)
spregr. (= spregiativo, spregiativamente; ‘contemptuous’)
vezz. (= vezzeggiativo; ‘tender / term of endearment’)

If we compare the labels used in *Le Petit Robert* and in the DELI, we can find various labels that appear in both dictionaries (e.g. “par antiphrase” / “antifrasi”, “par dénigrement” / “dispregiativo”, “emphatique” / “enfatico, enfaticamente”, “par euphémisme” / “eufemismo, eufemistico”, “ironique, ironiquement” / “ironico”),¹⁸ but also language-specific labels such as “allusion”, “par hyperbole” / “infantile”, “rafforzamento, rafforzativo”, “sottinteso”, “spregiativo”). The differences between

18. Interestingly, the DELI makes no clear-cut distinction between irony and verbal humor.

the dictionaries confirm the challenges of studying verbal humor in a contrastive perspective as well as the necessity to establish verbal humor in the lexicon as a field of investigation in its own right by discussing basic methodological issues and delimitating this domain from neighbouring fields. The contrastive approach points to various important questions that need to be addressed in further research.

4. Reinterpreting incongruity from a usage-based perspective: A semiotic typology

In the discussion of Kang's survey (2016, cf. Section 2), we have already seen that in spite of the abstract nature of dictionary data, the interactional dimension remains fundamental for explaining the humorous effects of the lexical items. This section therefore aims at analyzing in more detail the French and Italian data described in Section 3 by adopting a usage-based approach and by focusing on the semantic, pragmatic and interactional dimension of the items and their usage (for further discussions on the potential of interactional and usage-based frameworks for analyzing verbal humor and wordplay, see also Kotthoff, 1998; Onysko, 2016; Winter-Froemel, 2016b). In addition, I will occasionally give further examples from German and English (based on the *Duden* and the OED) that confirm the general tendencies and principles that have been identified. For the French data, first analyses are provided by Winter-Froemel (2016a, 2018; see also Moulin, 2018 for a parallel survey on lexical innovations in contemporary German and in the (Early) Modern Period).

To organize the factors that can explain humorous effects in the lexicon from a usage-based perspective, I propose to adopt a complex semiotic framework that permits us to bring together and analyze the different types of semiotic entities and knowledge the speaker and hearer are concerned with in a concrete situation of communicative exchange (see Figure 2). As the previous analyses have already shown and as will be confirmed by further examples discussed in the remainder of this paper, extra-linguistic conceptual information and language-specific knowledge both need to be taken into account. Consequently I would like to argue for a combination of structuralist and cognitive semantic approaches which, in my view, leads to a mutual enrichment and a more comprehensive understanding of situations of communicative exchange. This means that the framework includes the basic entities of the semiotic triangle (see among others Ogden and Richards) with the symbol and the referent as the entities that are actualized in a concrete semiosis (representing a phenomenon of *parole* in the Saussurean sense) – these entities are labelled here “phonic or graphic sequence (of signs)” and “communicative referent”. In addition, the framework integrates the concept as an abstract, extra-linguistic

entity representing the necessary link between the sequence of signs and the referent. Moreover, the speaker and hearer also rely on their knowledge of the linguistic system, or of several linguistic systems (e.g. French, Italian, German, i.e. *langues* in the Saussurean sense), which can be characterized as complex conventional systems containing a certain repertoire of signs, the value of these signs being determined with respect to their form and content (see the Saussurean terms of signifier and signified, abbreviated here as “Sant” and “Sé”; “S” stands for the Saussurean “sign”, understood as the basic lexical unit of a particular language).

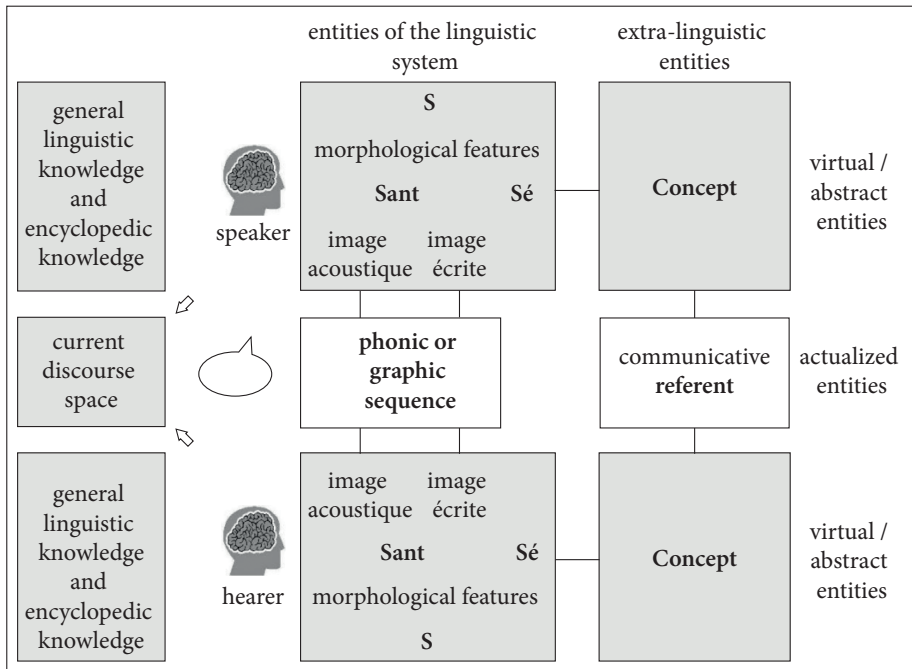


Figure 2. A comprehensive semiotic framework (cf. Winter-Froemel, 2011, p. 261)

The framework includes the speaker and hearer, who process the same kinds of semiotic entities. It is important to stress, however, that the communication partners only have joint access to the actualized entities (the phonic or graphic sequence of signs and the communicative referent), whereas they do not have direct access to the abstract semiotic entities that form part of the other's knowledge. This latter aspect introduces the possibility of diverging usage and interpretation, which can be exploited for playful purposes. Moreover, there are various types of knowledge in a broad sense that contribute to determine the way in which the speaker formulates the utterance and the hearer interprets it. This includes abstract linguistic and extra-linguistic knowledge (i.e. knowledge of the particular language system,

conceptual knowledge and general world knowledge), and concrete knowledge and interactional aspects related to the situation of communication (e.g. pragmatic aspects such as the speaker's intentions, the social relation between the speaker and hearer, etc.).

The previous research on verbal humor (e.g. Kang) can be described as having a strong focus on incongruity at the conceptual level. This level represents an important source of verbal humor and will thus be (re-)discussed as a first factor here (I.). In addition, however, we can identify further sources of verbal humor, which will be divided into five groups according to the semiotic entities and processes they relate to: II. the signified as being part of the linguistic convention of a particular language, III. the signifier as being part of the linguistic convention of a particular language, IV. the phonic or graphic realization of the sequence of signs, V. pragmatic factors related to the referent, VI. pragmatic factors related to speaker-hearer interaction. As the following discussions will show, these factors are not to be understood as being mutually exclusive, and many cases of verbal humor in the lexicon are motivated by various factors at the same time.

I. Conceptual aspects as a source of verbal humor

As we have seen in the preceding sections, the incongruities that are observed at this level include cases of a mismatch between several source concepts / domains and cases of an inappropriate (and unprecedented) conceptualization, i.e. a mismatch between a source concept / domain and a target concept / domain. Kang's survey provides many examples for nominal compounds in German which follow this pattern (e.g. *Korkenzieherhose* CORKSCREW + PANTS; see also E. *elbow-grease*), and where the incongruity between different source domains brought together creates effects of verbal humor (see e.g. G. *Drahtesel* WIRE + DONKEY, *Wüstenschiff* DESERT + SHIP). In the latter examples, there is not only a semantic distance, but even a clash in particular semantic features of the constituents ([– alive] for WIRE vs. [+ alive] for DONKEY, [+ arid] / [– abundance of water] for DESERT vs. [+ travelling on water] / [+ requiring abundance of water] for SHIP).

The data from French and Italian shows, however, that not only compounds can be included in this group, but similar effects arising from the semantic distance between the source and target concepts can also be observed in semantic innovation, see e.g. F. (*deuxième*) *bureau* CONCUBINE (literally SECOND OFFICE), I. *boccia* HEAD (< BALL),¹⁹ *bolide* CORPULENT PERSON (< METEORITE), *feluca* A KIND OF HAT

19. “<” stands for “comes from”. I will use this notation in the remainder of this paper to refer to source concepts / domains and particular meanings as well as to etymological antecedents, i.e. lexical items from which the humorous items are formed.

(< *feluca* A KIND OF SHIP), *lanterne* EYES (< LANTERNS), *lucignolo* TALL AND THIN PERSON (< WICK), *mazzo* MANY PEOPLE TOGETHER (< BUNCH OF FLOWERS). The examples also show the importance of additional factors such as taboo, taboo violation / denigration, and deviation from the linguistic convention (e.g. I. *boccia* and *lanterne* introduce new expressions for the highly frequent conventionalized items of the Italian lexicon *testa* and *occhi*, respectively, cf. II. below).

While the previous examples are strongly based on the unexpectedness of the conceptual associations, in other cases it is their (perceived) inappropriateness that explains the humorous potential. Kang's survey has already highlighted the importance of patterns of "de-humanization", and we can more specifically describe this pattern as a source concept from the domain of OBJECTS OR ANIMALS (OR ANIMAL BEHAVIOUR, ANIMAL BODY PARTS etc.) being associated with a target concept representing a HUMAN BEING (OR HUMAN BEHAVIOUR, HUMAN BODY PARTS, etc.). Examples in the data are I. *miagolare* TO LAMENT (< TO MEOW), *frogia* NOSE (< NOSTRIL (OF A HORSE ETC.)), *groppa* BACK (< BACK OF ANIMALS), *moscerino* VERY SMALL PERSON (< MOSQUITO) (see also G. *Flosse* HAND (< FIN), G. *Pfote* HAND (< PAW)).

In still other cases, the inappropriateness becomes manifest in the association of a source concept expressing a certain taboo with a different, "innocent" target domain. In this case, the special pragmatic effect of the humorous expression can thus be explained by its potentially offensive character, arising from the "unnecessary" violation of a taboo, as in G. *Eierschaukel* BICYCLE (< *Eier* TESTICLES + *Schaukel* SWING). Interestingly the data from Italian contains various humorous expressions in which the source concept is related to the domain of religion: I. *messale* DOORSTOPPER (VERY THICK BOOK) (< MISSAL), *ora canonica* MEALTIME (< HOUR OF PRAYER), *urbi et orbi* EVERYWHERE (< PAPAL ADDRESS).

II. The signified as a source of verbal humor

The next group of humorous items can also be explained by their semantic features, but with the existing linguistic convention of the particular language playing a crucial role. What is central here is that a new expression is introduced alongside an existing (near-)synonym, e.g. G. *Stubentiger* (< ROOM + TIGER) is introduced alongside *Katze* CAT, which means that there is a new, unprecedented conceptualization of a referent for which there is already another designation and conceptualization available. In this sense, the use of the unexpected expression can be interpreted as being incongruous with the "normal" realization of the utterance with the unmarked synonym. For both languages studied, many examples can be given here, among others F. *flémिंगite* besides *flemme* LAZINESS, *pipi-room* besides *toilettes* TOILET, *bésicles* besides *lunettes* GLASSES, *baba* besides *postérieur* BOTTOM,

dextre besides *main droite* RIGHT HAND, *mulot* besides *souris* COMPUTER MOUSE, I. *idem* besides *ugualmente* SIMILARLY, *frogia* besides *naso* NOSE, *vetrine* besides *occhiali* GLASSES. We can thus observe a relative markedness of the humorous items compared to their near-synonyms.

Typical target concepts in innovations that follow this pattern are concepts of everyday language and high exposure, and some concepts such as GLASSES or BICYCLE appear to represent “centres of attraction” motivating the introduction of various humorous expressions:

- GLASSES: G. *Nasenfahrrad* (< NOSE + BICYCLE), *Intelligenzprothese* (< INTELLIGENCE + PROSTHESIS), *Nasenquetscher* (< NOSE + SQUEEZER), *Spekuliereisen* (< SPECULATE + IRON), I. *vetrine* (< SHOP-WINDOWS, SHOWCASES);
- BICYCLE: G. *Drahtesel* (< WIRE + DONKEY), *Stahlross* (< STEEL + STEED), *Eierschaukel* (< TESTICLES + SWING), F. *hétéromobile* (in analogy to F. *automobile*).

The humorous effect of these items thus arises from a specific onomasiological pattern. For a certain concept, several expressions are available, differing in their relative markedness, with the more strongly marked and less expected forms conveying effects of verbal humor. In addition to this onomasiological pattern, there is also a semasiological pattern which is characterized by the coexistence of several interpretations for a certain expression. Here, the verbal humor is based on the deviation from a conventional semantic interpretation of the linguistic item, and there is an incongruity between the interpretation of the expression in discourse and its conventional meaning. This pattern can be observed when lexicalized idiomatic expressions are remotivated (when their original motivation is foregrounded again), transmotivated (when an alternative, semantically plausible interpretation is introduced), or pseudo-motivated (when a new interpretation is proposed for an existing item in a way which involves the violation of constituent boundaries, as illustrated by the ludic reinterpretation of G. *Posaunen* TROMBONES as *Po-Saunen*, i.e. being composed of *Po* BOTTOM and *Saunen* SAUNAS). The three options have been introduced and discussed in previous research on wordplay, where they represent basic processes of creating humorous effects (Käge, 1980; Heibert, 1993; see also the alternative label of “deidiomatization” in wordplay). No examples were found in the French and Italian data, but the transmotivations of G. *Goldfisch* and *Hungerturm* discussed in Section 2 of this paper show that this pattern may also occur in humorous items in the lexicon.

III. The signifier as a source of verbal humor

Another important source of verbal humor lies in the signifier and its relative markedness. More specifically, we can distinguish various patterns here. Effects of verbal humor can arise for borrowed or obsolete items, or they can be obtained by combining heterogeneous constituents or by deforming existing lexical items.

For borrowed items the following examples can be given: F. *in petto* INWARDLY (< I. *petto* CHEST), I. *gang* CLIQUE (< E. *gang*), *madama* LADY (< F. *madame*), *madamigella* MISS (< F. *mademoiselle*, see also E. *damsel*), *marmocchio* CHILD (< F. *marmot*), *tampoco* NOT EVEN (< Spanish *tampoco* NEITHER). At least for some of these items, their foreign origin still is clearly perceptible, e.g. by the presence of non-native features of spelling, pronunciation, inflection and morphological structure (see e.g. the pronunciation, spelling and word endings of F. *in petto* and I. *gang*). This means that they can be perceived as being to some extent “special” and therefore “suitable” for being playfully used.

Moreover, the existence of an alternative and less marked expression can act as an additional factor favouring a humorous interpretation of the items (see the discussion in II. above). A special case are situations where several variants of one loanword that exhibit different degrees of loanword integration coexist in the recipient language. Humorous effects may arise here for both unusually strong loanword integration (e.g. I. *ganga*, *ghenga* vs. less marked *gang*, F. *pipole*, *pipeul* vs. *people*, or F. *niouses* vs. *news*, the strongly adapted variant *niouses* being attested in Internet sources) and unusually weak loanword integration (e.g. F. *shocking* besides *choquant / choquer* TO SHOCK, which was borrowed from Dutch or English at an earlier stage in time, with an adaptation of spelling). The relative markedness of these items in the recipient languages strongly depends on what is considered to be an adequate degree of loanword integration, with different choices being possible for particular languages and periods.²⁰ For both unusually strong and unusually weak loanword integration, an incongruity with respect to the “normal” degree of loanword integration can be observed though.

Another type of structural markedness can be observed for obsolete items, as illustrated by the following humorous items (in cases where the items coexist with a clearly less marked equivalent, the alternative form is given as well): F. *occire* KILL (vs. *tuer*), *damoiseau* BEAU, *moult* MUCH / MANY (vs. *beaucoup*), *n’y voir goutte*, *n’y entendre goutte* (EMPHATIC) NEGATION (vs. *ne ... pas*). These items all existed as unmarked elements of the French lexicon in earlier periods of time, but can nowadays be considered to be obsolete, which may give rise to ludic usage. For example, the

20. The question of the most common degree of loanword adaptation in a particular language represents a highly complex issue that cannot be commented on in more detail here for reasons of space.

humorous dimension is illustrated by cases in which another person is referred to as “mon joli damoiseau” / “mon beau damoiseau”, or where the speaker presents a certain decision made by introducing the sentence with “après moult réflexions” (‘after many reflections’) in an informal communication, or exclaims “C’est moult compliqué à expliquer!” (‘This is very difficult to explain!’).

Another interesting example is the humorous item F. *couvre-chef*^{HAT} (< *couvrir* COVER + *chef* HEAD). This compound is based on the old meaning of F. *chef*, attested from Old French to the 17th century, but only maintained in very few conventionalized expressions after that period, whereas the item has otherwise been replaced by F. *tête*. Ludic uses of F. *couvre-chef* can be illustrated e.g. by occurrences on the internet, where the compound is frequently found when ridiculous headpieces are commented on.

Similar observations can be made for I. *messere* MISTER (with a semantic change, the form being originally used as a courtesy title), which coexists with the unmarked item *signore*. From the dictionary data analyzed here, the ludic use of obsolete items appears to be less important for Italian though.

For French, in contrast, the humorous potential of obsolete forms emerges as being particularly important, and we can find a high percentage of items that are described by the dictionary as being both humorous and obsolete: 39.7% of the entries of the humorous items also contain the label “vieux” (old, obsolete) (*Petit Robert*).

Another correlation that emerges from the French data concerns the label “littéraire”, which appears in 23.8% of the entries of the humorous items. Similarly, “difficult” learnt items of Greek or Latin origin or items which are not transparent with respect to the native lexicon (not being integrated into word families and not being morphologically productive) can also produce effects of humor, e.g. F. *cacographie* FAULTY WRITING (with an additional allusion to the more frequent item *cacophonie*), *cogitation* MEDITATION (compared to less marked *pensée*, *réflexion*), I. *bipede* HUMAN BEING (compared to less marked *uomo*), *imberbe* IMMATURE (cf. Lat. *imberbem* WITHOUT A BEARD). We have already observed in the introduction to this paper that various kinds of lectally marked items may be interpreted in a humorous way as well, even if the dictionaries do not explicitly indicate this potential for humorous usage (e.g. F. *coolos*). However, it is difficult to evaluate the ludic potential of diatopic, diastratic and diaphasic variants in general based on our dictionary data, as there is a very high number of lectally marked items that would need to be checked. It would thus be necessary to combine the lexicographic study conducted here with further methodologies (e.g. corpus studies, discourse analysis or experimental surveys) to gain more insight into the ways in which humorousness interacts with lectal markedness, when the speakers use the forms in order to convey verbal humor in concrete situations of communicative exchange and interaction.

Lectal markedness is also relevant for humorous items of another type though, which can be more easily extracted from the dictionary data, i.e. internally heterogeneous items containing several morphemes of different etymological origin and / or different registers or other lectal dimensions. Among the French and Italian data, we can find various items that combine familiar or colloquial constituents with prestigious, erudite and “difficult” constituents, e.g. F. *baisodrome* LOVE NEST (< *baiser* FUCK + *-drome* RUNNING, RACETRACK, from Ancient Greek, cf. *hippodrome*, etc.), *pipi-room* TOILET (< *pipi* WEE + E. *room*), *flémिंगite* (< *flemme* LAZINESS + *-ite*, of Latin and Greek origin and expressing a disease caused by an inflammation), G. *Scheißeritis* DIARRHEA (< *Scheiße* SHIT + Lat. / Ancient Greek *-itis*), E. *bumpology*.

The humorous effects of these forms can be explained by what has been labelled “*héroi-comique*” in French. The examples show that the combination of “high” and “low” elements represents an important source of humor that can be exploited not only at the level of dramatic characters in comedy, but also at the lexical level. As shown by the examples, learnt elements of Greek and Latin origin are strongly represented in the dictionary data. This can be explained by their great importance for the Romance languages’ vocabularies, where they represent “difficult” items that are typically not combined with native items of “low” status. The combinations above can therefore be perceived as “conspicuous” and potentially humorous.

Moreover, as the examples show, in many cases, the “low” source concept or the target concept express a certain taboo, e.g. sexuality or excretion, which equally contributes to the humorous effect of the expressions.

Another aspect that appears to be important for some of the structurally marked items is their formal similarity to existing items in the lexicon. Previous research has shown that suffix replacements can systematically generate verbal humor (e.g. F. *maquillation*, *habillation*, *coiffation* instead of *maquillage*, *habillage*, *coiffage*, see Dal and Namer, 2018, p. 216) and that phonetic alternations represent a basic strategy to circumvent verbal taboos. For example, to avoid the expressions I. *per Dio!* OH MY GOD! or G. *Scheiße* SHIT, speakers may opt to pronounce I. *perdiana*, *perdinci*, or *perdirindina* and *Scheibenkleister* (< *Scheibe* WINDOW PANE + *Kleister* GLUE), which leads to literally nonsensical utterances (see also the alteration of E. *au revoir*, which can be realized as “pseudo-French” *au reservoir*). These examples suggest that deformations of existing items represent another potential source of verbal humor in the lexicon (cf. Winter-Froemel, 2016b, p. 38–42). Further research is necessary to gain more insights into the specificities, the importance and potential restrictions that hold for ludic deformations and pseudo-word formations (see also F. *cool* → *coolos*, I. *godimento* → *goduria* LUST).

IV. The phonic or graphic realization of the sequence of signs as a source of verbal humor

In other cases, it is the pure phonic (or graphic) realization of the expression that is exploited for humorous purposes, that is, the humorous effect is not primarily related to the language system of the particular language (although the expressions are of course conventionalized), but the effect appears to be mainly based on the phonic structure of the utterance. Here we typically find longer strings of syllables or words that contain repetition structures, phonic similarities and rhyme effects, e.g. F. *Sois poli si t'es pas joli*. 'Be polite if you are not pretty', *À la tienne, Étienne!* 'To your health, Étienne!' (formula for cheering or toasting s.o.), *Tu parles, Charles!* AS IF!,²¹ *patati, patata* BLAH, VERBIAGE, *bobonne* TERM OF ENDEARMENT, I. *perdindirindina* OH MY GOD! Further research is required to determine to what extent the graphic realization of the items may be exploited for humorous purposes as well.

V. Verbal humor related to the referent (and the target concept)

In addition to semantic and structural factors, the reference of the expressions also plays a fundamental role for verbal humor in the lexicon. For a first set of examples, the humorous effects can be attributed to the expression of pragmatically loaded contents, and it is thus the communicative referent and the target concept that are of fundamental importance. Two main groups of humorous items emerge from the data: on the one hand, expressions that violate certain taboos (e.g. by referring to the domains of SEXUALITY, EXCRETION, OR RELIGION), on the other hand, expressions that contain value judgments and are thus potentially offensive.

For instance, violations of sexual taboos can be found in F. *copulation*, *fornication*, and *sport en chambre* SEXUAL INTERCOURSE, *les parties* MALE GENITALIA, *baisodrome* LOVE NEST, *amours ancillaires* LIAISON WITH AN ATTENDANT (cf. Lat. *ancilla* SERVANT), I. *vizio solitario* MASTURBATION (< *vizio* VICE + *solitario* SOLITARY). The domain of excretion is illustrated by F. *baba* BOTTOM and *pipi-room* TOILET (see also G. *Flitzeritis* (< *flitzen* TO DART / TO FLIT + *-itis*), and *Scheißeritis* DIARRHEA, G. *Hintergestell* BOTTOM (< *hinter* REARWARD + *Gestell* RACK), *Kehrseite* BOTTOM (< *Kehrseite* REVERSE, FLIP SIDE), *verlängerter Rücken* BOTTOM (literally, 'extended back'), *vier Buchstaben* BOTTOM (literally, 'four letters', probably referring to the expression *Popo*, and mainly used in utterances that express a strong command to

21. *Tu parles!* can also be used alone and express a strong refusal. By adding the name that creates the rhyme effect the speaker gives the utterance a humorous nuance.

sit down: “Setz dich auf deine vier Buchstaben!”), the domain of religion by I. *perdiana*, *perdinci*, *perdindirindina*.

The group of items expressing offensive meanings and value judgments is equally important, as illustrated by F. *appendice* LONG NOSE, *réformette* SUPERFICIAL REFORM, *antédiluvien* ANTIQUATED, *les grandes eaux* EXCESSIVE WEEPING, *bien jambé / mal jambé* WITH PRETTY / UGLY LEGS, I. *antidiluviano* ANTIQUATED, *macello* DISORDER, DISASTER (< *macello* SLAUGHTERHOUSE), G. *Gummiadler* TOUGH ROAST CHICKEN. Strikingly, it is mostly negative value judgments that are found here, with very few exceptions (e.g. F. *bien jambé*, I. *ugola d'oro*²² GREAT SINGER (< *ugola* UVULA + *oro* GOLD). As the examples show, the expressions can refer to the appearance of human beings or their actions, as well as to objects which are closely related to humans and human actions (e.g. *antédiluvien* may refer to a car, cf. PR). From a quantitative perspective, personal reference appears to be an important subgroup, see e.g. F. *cicérone* TALKATIVE GUIDE, *roitelet* UNIMPORTANT KING (< *roi* KING), *bourreau des cœurs* HEARTBREAKER (< *bourreau* HANGMAN, EXECUTIONER + *cœur* HEART), *budgetivore* PERSON LIVING FROM STATE AID (< *budget* BUDGET + *-vore*, of Latin origin and characterising the diet of a certain organism), I. *bolide* CORPULENT PERSON (< METEOR, EXTRATERRESTRIAL BODY), *lucignolo* TALL AND THIN PERSON (< WICK), *moscerino* VERY SMALL PERSON (< MOSQUITO), *tappo* SMALL AND RATHER CORPULENT PERSON (< PLUG, BUNG) (see also G. *Bohnenstange* TALL AND THIN WOMAN).

VI. Pragmatic factors of verbal humor that are related to speaker-hearer interaction

The embedding of the humorous items in social situations of speaker-hearer interaction represents the last source of verbal humor in the lexicon that will be discussed here. It is of fundamental importance, and it generally combines with one or several of the preceding factors. While in the preceding examples the (pragmatically loaded) referential value of the expressions is of key importance, verbal humor in the lexicon can also follow the pattern of a riddle, functioning as a game between the speaker and the hearer. The speaker chooses a “difficult” way to express the intended meaning, e.g. by using G. *Schnittlauchlocken* to refer to straight hair, and thus intentionally deviates from the hearer’s expectations and from a hearer-friendly way of expressing the message. At the same time, the speaker demonstrates her or his creativity and command of language. We can assume that this causes an increased processing effort: In order to interpret the speaker’s utterance, the hearer needs to

22. DELI indicates *ugola d'oro* (s.v. *ugola*), which I correct into *ugola*.

access different kinds of linguistic and extra-linguistic knowledge (e.g. of previous meanings of the lexical items), and if s/he succeeds in decoding the utterance, this can result in gratification, self-affirmation and fraternization with the speaker. The joint engagement in posing and solving a linguistic riddle can thus result in an in-group effect (cf. also the French term of *connivence*).

This pattern can be applied to uses of F. *flémingite* (in order to successfully decode this expression, the hearer may think of other items of the French lexicon such as *laryngite*, *méningite*, etc.) or F. *pipi-room* (where the hearer may refer to F. *living-room* or E. *room* to successfully decode the expression). Further examples which clearly illustrate the speaker's deliberate choice to cause an additional processing effort are F. *capillotracté*, a pseudo-Latin translation of the French phrase *tiré par les cheveux* FAR-FETCHED (literally, 'pulled by the hair'), and F. *hétéromobile* for BICYCLE (with F. *automobile* providing the key to solve the riddle). This pattern can also be found in the Italian paraphrases *in costume adamitico* NAKED (literally, 'in Adam's costume') and *lavorare di mascelle* EAT, CHEW (literally, 'to work with the jaws').

Again, this source of verbal humor offers much potential for further research, e.g. with respect to settings and target concepts which favour the introduction of "difficult" paraphrases and innovations functioning as riddles posed to the hearer(s), and with respect to specific traditions of verbal humor in which the speakers and hearers may engage (e.g. joke telling, riddles, commemorative speech, trumping games; cf. Veale, 2003). For example, we can observe that high frequency items and highly predictable settings such as traffic jam information on the radio seems to favour the introduction of new items such as German *Stoßstangenkuscheln* TRAFFIC JAM (< *Stoßstange* BUMPER + *Kuscheln* CUDDLING) and *Anstehen* (< QUEUING), which can become distinctive marks for a certain radio station or announcer.

At the same time, it can be assumed that frequent usage of the unexpected items diminishes their pragmatic impact: If the expressions are already partly conventionalized and form part of the hearer's mental lexicon, the hearer can directly identify their intended meaning, and the expressions do no longer function as riddles. Again, this issue represents an important question that needs to be investigated in further detail.

The fundamental importance of the interactional dimension of verbal humor also confirms one of the basic assumptions about humor in Henri Bergson's seminal study *Le rire*: "Il n'y a pas de comique en dehors de ce qui est proprement *humain*." (There is no humor outside of what is genuinely human. – Bergson 1999 [1940], p. 2). As we have seen, this dimension includes both referentially oriented verbal humor (e.g. in cases of denigration and violation of taboos) and communicative exchanges where the joint action is fundamental, with combinations of both types being possible.

5. Conclusion

The previous sections have shown that verbal humor in the lexicon represents a highly complex domain of investigation in its own right, which has not been systematically studied in previous research. The notion of incongruity, understood as a perceived mismatch which is resolved but still felt to be to a certain extent “problematic”, represents a good starting point to analyze the dictionary data. However, this notion needs to be defined more broadly as a deviation from expected patterns in order to be applied to various subtypes of phenomena that can be observed in the data. At the same time, the fundamental importance of interactional factors has been highlighted. To systematize the sources of verbal humor in the lexicon, I have proposed to relate them to different kinds of semiotic entities that account for the humorous effects. Both semantic and pragmatic / interactional aspects have been taken into account in the approach proposed here. This paper thus argues that both *cognition* – the speaker’s and hearer’s linguistic, extra-linguistic and situation-related knowledge, and their processing of the linguistic items / utterances, and *communication* – understood as a joint action of the speaker and hearer, need to be included in a comprehensive approach to verbal humor in the lexicon.

With respect to the issues raised in the introduction of this paper, we can conclude from the previous analyses that lexicographic data points to an important role of verbal humor in the lexicon, which needs to be confirmed and explored in more detail, by integrating other methodological approaches such as corpus linguistics, discourse analysis or experimental surveys. We have seen that figurative language has humorous potential, but the interactional dimension is fundamental to determine the ways in which this potential may become actualized. As to the sources of verbal humor in the lexicon, incongruity frequently represents an interface phenomenon, and we have seen the complexity and internal variety of relevant manifestations of incongruity.

Moreover, from a contrastive perspective, some language-specific tendencies have emerged, e.g. with respect to the importance of religious taboos in Italian or with respect to (pseudo-)scientific discourse and learnt lexical items in French. The analyses presented here thus point to general tendencies as well as to specific patterns that are especially important for particular languages. Follow-up studies should therefore also focus on the importance of specific aspects and factors for verbal humor in the lexicon of individual languages and in specific periods of time.

Acknowledgements

I would like to thank the editor of this volume for his wonderful work. In addition, I would like to thank Alexander Onysko, Kathryn Allan, Solange Vereza and Gareth Carrol for their helpful suggestions and comments on an earlier draft of this paper.

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Measuring the impact of (non)figurativity in the cultural conceptualization of emotions in the two main national varieties of Portuguese

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This chapter investigates the impact of conceptual metaphor on the cultural variation of emotions in European and Brazilian Portuguese (EP/BP). Adopting a usage-based, sociocognitive view of language and applying a corpus-based and profile-based methodology, this study combines a multifactorial usage-feature and metaphorical profile analysis of 1,100 examples of ANGER and PRIDE with their subsequent multivariate statistics modeling. BP seems more connected with complaining anger and the metaphorically unrestrained and perceptible manifestation of anger. Also, BP is closer to self-centered pride and the metaphorically visible manifestation of pride. In contrast, EP seems more akin to violent and interpersonal anger and the metaphorically profiled somatization of anger. Also, EP is more associated with other-directed pride and the personification of pride as an honored person. These statistically significant associations are consistent with the more individualistic, indulgent, and emotionally expressive culture of Brazil and the more collectivistic and restrained culture of Portugal.

Keywords: emotions, conceptual metaphor, intralinguistic cultural variation, collectivism vs. individualism, behavioral profile approach, multivariate statistic modeling, anger, pride, Portuguese

1. Introduction

The starting point of this study is the hypothesis that emotions have a biological basis but are socially and culturally constructed. As culturally conditioned and intersubjectively manifested bodily physiological experiences, emotions are sensitive to social variation and cultural influences. The specific ways in which emotions are perceived, experienced, (un)regulated, manifested and evaluated can vary across

cultures. The sociocultural variability of emotions is inherent not only to the emotions that imply social awareness and cognitive effort, such as pride, but also to the so-called basic or universal emotions, which are accurately recognized across cultures in terms of the facial expressions associated with it, such as anger.

The consistent and productive way in which we speak figuratively – especially metaphorically and metonymically – about emotions says a lot about the way we conceptualize the emotional experience, as stressed by conceptual metaphor theory since its very beginning (Lakoff and Johnson, 1980; Lakoff and Kövecses, 1987; Kövecses, 1986, 1990). Conceptual metaphor and conceptual metonymy are not only constitutive of emotional experience, but they are also grounded in our individual, collective, and cultural experience, thus being fully contextualized, both socio-culturally situated and discursively constructed.

Some studies, especially from social psychology and cognitive linguistics, have shown that emotions and their metaphorical (and metonymic) conceptualization are profoundly linked with culture and that they are experienced and construed in different ways across societies and historical periods. For example, Geeraerts and Grondelaers (1995) and Gevaert (2005) have demonstrated the high influence of the medieval folk theory of the four humors, which dominated medical thinking in Western Europe for several centuries, on the conceptualization of anger and other emotions, and Yu (1995) highlighted the importance of the folk emotion theory of the five elements in Chinese medicine. Cross-cultural emotion psychology suggests that in collectivistic cultures, as compared to individualistic cultures, anger is predominantly viewed as more negative and socially disruptive and is reported with a lower emotional intensity (e.g. Markus and Kitayama, 1991; Matsumoto, Yoo and Chung, 2010). In the same vein, Fischer, Manstead and Rodriguez Mosquera (1999) showed that pride was characterized more by negative feelings and less frequent and more controlled expression by the relatively more collectivistic Spanish participants than by the more individualistic Dutch participants. Performing a quantitative corpus-based analysis of anger metaphors in English, Spanish and Russian, Ogarkova and Soriano (2014) showed the differences in appraisal, expression, regulation, and the saliency of physiological aspects of anger in the three languages. However, these cross-cultural studies of emotions have analyzed the differences between (very) dissimilar and geographically separated cultures and languages. Only a few studies have dealt with cultural differences in experiencing and communicating emotions within a single country or a single language (see Mortillaro et al., 2013 and Soares da Silva, 2020 on the emotion of pride).

The present study explores the cultural variability of emotions, particularly how it is affected by (non)figurativity in the context of a *pluricentric* language (different national geographic centers within the same language – Clyne, 1992; Soares da Silva, 2014), namely the two main national varieties of Portuguese, European

Portuguese (EP) and Brazilian Portuguese (BP). It adopts a usage-based, socio-cognitive view of language as stressed by Cognitive Linguistics (Langacker, 1990; Geeraerts, 2016), and the current trend of conceptual metaphor theory (extended from the Lakoff and Johnson's, 1980 standard view), especially the usage-based and socioculturally contextualized approach to conceptual metaphor (e.g. Stefanowitsch and Gries, 2006; Semino, 2008; Steen, 2011). The study performs a corpus-based and behavior profile-based analysis of the emotions ANGER and PRIDE in the EP and BP varieties, more specifically a multifactorial usage-feature analysis and a metaphorical profile analysis of these two different emotions, combining the detailed qualitative analysis of corpus data with subsequent multivariate statistics modeling in order to identify and quantify complex patterns in usage. The analysis was also inspired by work on emotions in social psychology, especially the GRID componential method (Fontaine, Scherer and Soriano, 2013). The data comprise 610 occurrences of five noun lexemes expressing ANGER in Portuguese – *raiva* 'anger', *fúria* 'fury', *ira* 'anger/wrath', *cólera* 'anger/wrath', and *irritação* 'irritation' – and 486 occurrences of two noun lexemes expressing (authentic and hubristic) PRIDE in Portuguese – *orgulho* 'pride' and *vaidade* 'vanity' – extracted from a corpus of blogs consisting of personal diaries about love, sex, family, friends, violence, etc.

Three complementary research goals are pursued in this study. Firstly, we intend to identify and quantify the cultural factors and profiles described as clusters of usage-features that are relevant in the conceptual structuring of ANGER and PRIDE in the two national varieties of Portuguese. Secondly, we aim to identify and quantify the role of figurativity, particularly of conceptual metaphor, described as behavioral profiles of conceptual metaphors in the conceptual structuring of ANGER and PRIDE in the two national varieties of Portuguese. Due to space constraints we will not address conceptual metonymy in this study, although metaphor and metonymy generally combine in the conceptualization of emotions. Thirdly and more importantly, we intend to show how the experiences of anger and pride vary across EP and BP varieties as a result of being intrinsically related to cultural collectivism vs. individualism and to power distance differences between Portuguese and Brazilian societies. We also intend to determine the precise impact of conceptual metaphors in the cultural variation of ANGER and PRIDE in Portuguese.

We will first briefly review some psychological and linguistic evidence of the cultural variability of ANGER and PRIDE, focusing on underlying individualistic and collectivistic cultural influences. Subsequently, we will present the corpus data and introduce the behavioral profile methodology, specifically multifactorial usage-feature analysis and metaphorical profile analysis, and multivariate statistics modeling, in particular multiple correspondence analysis and logistic regression techniques for the identification, quantification and comparison of the feature clusters and conceptual metaphors of ANGER and PRIDE in EP and BP varieties. Finally,

we will carry out the qualitative multifactorial usage-feature and conceptual metaphor analysis of the corpus data and perform a quantitative multivariate analysis to determine whether and how the conceptualization of ANGER and PRIDE differs between the two national varieties of Portuguese and to what extent conceptual metaphor influences the intralinguistic cultural variation of the two emotion concepts.

2. Cultural variability of ANGER and PRIDE and cultural differences between Portugal and Brazil

Anger and pride are different emotions in nature, anger being considered a basic (e.g. Ekman, 1999) and typically negative emotion and pride a social, self-conscious (e.g. Lewis, 1993), typically positive emotion. However, both anger and pride are sensitive to social variation and cultural influences. As a self-conscious emotion implying social awareness, cognitive effort and culture-dependent standards, rules and goals, pride is extremely sensitive to cultural influences. Anger is also a social, interpersonal emotion (Glynn, 2014a), and is therefore experienced in different ways across societies and historical periods.

Psychological research, particularly from social psychology, and linguistic research, especially from cognitive linguistics, have shown that culture influences emotions in many different aspects (e.g. Markus and Kitayama, 1991; Russell, 1991; Mesquita, Frijda and Scherer, 1997; Eid and Diener, 2001; Damásio, 2004; Matsumoto, Yoo and Chung, 2010, for psychological research on emotions in general and also on anger and pride; Geeraerts and Grondelaers, 1995; Gevaert, 2005; Glynn, 2014a, 2018; Ogarkova and Soriano, 2014; Wilson and Lewandowska-Tomaszczyk, 2017, for language research on anger and pride).

One of the ways in which culture influences emotions has to do with the well-known opposition between individualism and collectivism. Hofstede's (1980, 2001) original work led to the mapping of world cultures based on individualism versus collectivism. Societies can be described in terms of how much they focus on individuals (*individualism*) rather than on society as a whole (*collectivism*), and this distinction reflects the extent to which identity is defined by personal choices and achievements (the *independent* self) or by the character of collective groups to which one is more or less permanently attached (the *interdependent* self). Although individualism and collectivism are both present in every society, there are societies in which individualism predominates and others where collectivism does. In the former, people perceive themselves as individual, autonomous entities with individualized goals and achievements; in the latter, people are not supposed to be independent from each other but should harmoniously fit into the societal organization of roles and duties.

Individualism versus collectivism and power distance, which captures the extent to which social inequality within a society is generally tolerated by its members (Hofstede, 2001), are the main factors that potentially influence the variation of anger and pride across cultures. In collectivistic cultures, anger is predominantly viewed as more negative and socially disruptive and as an emotion that challenges social order and harmony, and thus, should be regulated and not externally manifested. In contrast, individualistic cultures see anger as a relatively more positive and more socially acceptable emotion, thus being more favorable towards its open and unrestrained manifestation (see Ogarkova, Soriano and Gladkova, 2016, for an overview). As for power distance, experiencing or showing anger towards higher-status people is undesirable and even socially condemned in societies with high power distance. Ogarkova and Soriano (2014) developed a corpus-based cognitively (conceptual metaphor theory) oriented linguistic study on the metaphorical conceptualization of anger in English, Spanish and Russian, showing that metaphors emphasizing the negativity and enhanced regulation of anger are more salient in the more collectivistic Russian and Spanish societies than in the more individualistic English culture.

As for pride, in societies where individualism prevails, the experience of pride tends to refer to personal achievements, self-related appraisals and the resulting personal satisfaction, and therefore pride is likely to be more salient, accepted, and positive and even pleasurable and desirable. Conversely, in those societies in which collectivism prevails, pride tends to be seen in terms of the emphasis placed on the achievement of in-group harmony and the control of the outward expression of emotions, and therefore this emotion is likely to be less salient, less openly expressed and more negative because it is perceived as being socially disruptive or as if it separates individuals from each other. Specifically, self-centered pride and positive pride tend to be more characteristic of individualistic cultures; conversely, other-directed pride and negative pride tend to be more typical of collectivist cultures (see Fischer, Manstead and Rodriguez Mosquera, 1999). Regarding power distance, van Osch et al. (2013) found that the greater the acceptance of the power-inequality of a nation, the more negative pride is experienced. Another relevant cultural dimension is religion, particularly Christianity, in which pride is a mortal sin and is opposed to humility, which is seen as the utmost human virtue. This conceptual restructuring of pride around one negatively evaluated prototypical center is reinforced by the natural link between Christianity and collectivism. Tissari (2006) and Fabiszak and Hebda (2010) showed how the concept of pride evolved in English, from a negative moral concept – initially seen as a sin and later as a sin and vice – to a positive emotional concept approaching self-esteem in meaning.

Let us see now where Portugal and Brazil stand in terms of individualism versus collectivism. Both Portugal and Brazil represent collectivistic cultures, but there are

some differences in the cultural collectivism of the two countries. Seeking to present a synthetic panorama of Portuguese history and culture and integrating both mythical visions and positivist, modernist and post-modernist theses, Real (2017, pp. 193–201) points out as “fundamental traits of the Portuguese culture” (reiterating characteristics already referenced by other scholars of Portuguese culture as Saraiva, 1972 and Lourenço, 1978) collectivistic aspects such as the values of gregariousness and generosity, solidarity, and fellowship, the spirit of self-sacrifice, the culture of dialogue – in short, the search for the Other as a defining aspect of one’s own identity. Santos (1993) argues that the Portuguese culture is a “border culture”, not because there is a no man’s land beyond Portugal, but rather a sort of personal void that is filled by craving what is outside of it, a longing for the Other. Another complementary attribute of the Portuguese people is their lyrical-sentimental or emotional character, well reflected in the long history of Portuguese literature. The expression of emotionality is more extroverted and more direct in Brazilians than in the Portuguese. In fact, Brazilian culture is in general more emotionally expressive than other cultures, and Brazilians are especially regarded as “warm and very open” people (cf. Freyre, 1933; Hollanda, 1936).¹

1. In an article published in the BBC Brazil newspaper entitled “Povo emotivo? Por que choramos, rimos, vamos e ficamos furiosos intensamente na Rio 2016” (‘Emotional people? Why we cried, laughed, boomed and were furious intensely in Rio 2016’), which asked sociologists and anthropologists why Brazilians are seen and perceived as “emotional people”, anthropologist Claudia Barcellos Rezende, co-author of “Antropologia das Emoções” (‘Anthropology of Emotions’) (2010), emphasizing the role of emotion in Brazilian culture, answers: “O pensamento social brasileiro, toda tradição de Sérgio Buarque de Hollanda e Gilberto Freyre, a partir da década de 1920 e 1930, começou a construir essa visão da emotividade do brasileiro como algo característico nosso” (‘Brazilian social thought, the whole tradition of Sérgio Buarque de Hollanda and Gilberto Freyre, from the 1920s and 1930s, began to build this vision of the Brazilian’s emotionality as something characteristic of us’) and “ao longo do século passado, a gente viu a construção da identidade nacional com essa ideia de que o brasileiro expressa a emoção mais facilmente, de uma maneira mais explícita e espontânea, e que isso é do brasileiro, diferentemente de outras sociedades e culturas” (‘throughout the last century, we have seen the construction of a national identity with this idea that Brazilians express emotion more easily, in a more explicit and spontaneous way, and that this is typical of Brazilians, unlike other societies and cultures’). In the same article, sociologist Alberto Carlos Almeida, author of “A Cabeça do Brasileiro” (‘The Brazilian Head’) (2007), highlights the greater acceptance of the demonstration of emotions in Brazilian society compared to other countries by stating that “nossa socialização não é tão rígida no controle das emoções” (‘our socialization is not so rigid in the control of emotions’). (<https://www.bbc.com/portuguese/brasil-37137162>)

Hofstede's (2001) cross-cultural comparison model shows cultural differences between Portugal and Brazil.² With a score of 27 on the individualism (-collectivism) scale, Portugal is more collectivistic in relative terms than Brazil, which has a score of 38. According to Hofstede's model, the Portuguese collectivism manifests itself in a close long-term commitment to the member 'group', be that a family, extended family, or extended relationships. Furthermore, loyalty is paramount and overrides most other societal rules and regulations. Another relevant cultural dimension to the comparison between the two countries corresponds to what Hofstede (2001) refers to as *indulgence*, which is defined as the extent to which people try to control their desires and impulses, based on the way they were raised. Relatively weak control is called *indulgence*, while relatively strong control is called *restraint*. Portugal scores 33 on this dimension and therefore has a culture of restraint, whereas Brazil's relatively high score of 59 indicates that the country has an indulgent society. As for the cultural dimension of power distance, there are fewer differences between the two countries, with Brazil (69) exhibiting a slightly higher degree of power distance as compared to Portugal (63). However, those results must be interpreted with caution: besides the fact that Hofstede's cross-cultural framework is being seen with criticism nowadays, the cultural comparison between Portugal and Brazil was originally made in the 1970s (although there were more updated versions of the model), at a time in which especially the Portuguese society was very different from what it is today. Even so, the results from Hofstede's model are still in line with some of the fundamental features of Portuguese and Brazilian cultures.

On the basis of these cultural differences between Portugal and Brazil, we can formulate the hypothesis that there are small but significant differences in the cognitive models and conceptual metaphors of ANGER and PRIDE between these two national varieties of Portuguese. Specifically, in the relatively more collectivistic and restrictive culture of Portugal a violent response type of anger caused by norm violations and immoral behavior, other-directed pride, enhanced regulation and controlled, less overt expression of anger and pride would be more saliently profiled. Conversely, the unrestrained and overt manifestation of anger and pride, the uncontrolled irritated kind of anger caused by inanimate objects and inconveniences and self-centered pride would be more prominently represented in the relatively more individualistic, indulgent and emotionally expressive culture of Brazil.

2. The comparison between Portugal and Brazil with respect to individualism and to other dimensions of national culture (power distance, masculinity vs. femininity, uncertainty avoidance, long term vs. short term orientation, and indulgence) is available at <https://www.hofstede-insights.com/country-comparison/brazil,portugal/>

3. Corpus data and methodology

3.1 Data

The data for the present study were extracted from a 750,000-word corpus of blogs in EP and BP compiled from 2013–2015, especially designed for the study of emotions in both varieties, and comprising personal diaries about personal events, love, sex, family, friends, work, opinions about politics, football, religion, books, and movies. Despite this diversity of subjects, we selected blogs that were comparable, not only in terms of topics but also in terms of language register for both countries. Blogs with markedly literary or philosophical content were left out and texts written in an informal register were favored. Blogs are particularly apt for a study about emotions because emotions are frequently discussed at a personal-experiential level on blogs, and the language is often narrative in structure (Glynn, 2014a).

We analyzed 610 contextualized occurrences of five noun lexemes expressing the emotion of anger in Portuguese, namely *raiva* ‘anger’, *fúria* ‘fury’, *ira* ‘anger/wrath’, *cólera* ‘anger/wrath’, and *irritação* ‘irritation’. The lexemes *raiva* and *fúria* are the most frequent nouns for expressing the emotion of anger, and *raiva* works as a hypernym of the emotion of anger. The *fúria*, *ira* and *cólera* lexemes generally express a higher degree of angry agitation, while *irritação* generally expresses a less intense anger emotion. The lexemes *cólera* and *ira* are terms used in formal register. The terms *raiva* and *cólera* can also refer to infectious disease caused by viruses. We also analyzed 486 contextualized occurrences of the emotion of pride expressed by nouns in Portuguese, both *authentic* or proper pride (which is associated with genuine self-esteem), expressed by *orgulho* ‘pride’, and *hubristic* or conceited pride, expressed by *orgulho* and, more typically, *vaidade* ‘vanity’. Table 1 presents the number of hits found for each anger noun and pride noun in our corpus for the two national varieties of Portuguese.

Table 1. Frequency of ANGER and PRIDE nouns in the corpus

	EP	BP	Total	
ANGER	<i>cólera</i>	9	15	24
	<i>fúria</i>	106	103	209
	<i>ira</i>	20	28	48
	<i>irritação</i>	29	23	52
	<i>raiva</i>	138	139	277
	Total	302	308	610
PRIDE	<i>orgulho</i>	167	171	342
	<i>vaidade</i>	71	77	146
	Total	238	248	486

We only analyzed ANGER and PRIDE nouns and not adjectives such as *furioso* ‘furious’, *irado* ‘angry’, *irritado* ‘annoyed, angry’, *zangado* ‘angry’, *orgulhoso* ‘proud’, *vaidoso* ‘vain’, or verbs such as *irritar-se* ‘become angry’, *orgulhar-se* ‘to be proud of’, *envaidecer-se* ‘to boast’, because emotion nouns better summarize the corresponding emotion than do other parts of speech. Nouns such as *aborrecimento* ‘annoyance’, *indignação* ‘indignation’, and *frustração* ‘frustration’ were not analyzed because they express more specific or different concepts than the anger concept. Quasi-synonyms of *orgulho/vaidade*, such as *altivez* ‘haughtiness’, *presunção* ‘presumption’, *arrogância* ‘arrogance’ and *soberba* ‘arrogance’, were not analyzed because they express more specific concepts than *orgulho/vaidade* – particularly concepts that are more moral than emotional – and because these are terms that are used in the formal register (which is why these formal terms do not occur in our corpus).

3.2 Multifactorial usage-feature and profile analysis

The present study combines a detailed qualitative analysis of corpus data with subsequent multivariate statistics modeling. We adopt the so-called *behavioral profile* approach, which combines multifactorial usage-feature analysis and multivariate statistical modeling to identify and quantify complex patterns in usage (Geeraerts, Grondelaers and Bakema, 1994; Gries, 2003, 2010; Divjak, 2010; Glynn and Fischer, 2010; Glynn and Robinson, 2014; Glynn, 2018). In this section, we report the multifactorial usage-feature analysis for the five ANGER nouns and the two PRIDE nouns; in Section 3.4, we will present the multivariate quantitative methods that we used to model the results of the qualitative usage-feature analysis.

The contextualized occurrences of ANGER and PRIDE nouns were subjected to meticulous manual annotation for a range of semantic, pragmatic and sociocultural factors.³ The feature analysis is, in part, inspired by questionnaires developed for the GRID componential model in social psychology on cross linguistic emotion research (Fontaine, Scherer and Soriano, 2013), particularly the studies by Mortillaro et al. (2013) and van Osch et al. (2013) on pride and Soriano et al. (2013) on anger, as well as Kövecses’s (1986) lexical approach to the structure of anger, pride and other emotion concepts and Glynn (2014a) and Wilson and Lewandowska-Tomaszczyk’s (2017) on anger and pride, respectively.

Tables 2 and 3 present groups of cultural-conceptual factors and the resulting features of ANGER and PRIDE emotions. The ANGER event frame includes four

3. The annotation was conducted by the author of the present paper with the collaboration of a scholarship holder (Roxana Elena Ghimpe, MA in Portuguese Linguistics), who also helped to build the corpus of blogs and to extract the data for this study. To ensure inter-rater reliability, 10% of the data was reanalyzed by another rater, and the result was a high degree of inter-rater agreement (Kappa value = 0.81, $p < .000$).

Table 2. Cultural-conceptual factors of ANGER

Cultural-conceptual factors	Features
Emoter type	Speaker: M, Speaker: F, Speaker: us, M, F, Collective, Inanimate object, Unknown
Emoter behavior	Violence: physical, Violence: verbal, Violence: gesture, Complain, Social expression, Self depreciation, No expression
Emoter engagement	Yes, No, Unknown
Emoter aggression	Maximum, Medium, Minimum
Emoter control	Yes, No, Unknown
Cause type	Behavior (immoral), Intrinsic quality, Feelings, Event, Illness, Work, Missing, Other inconvenience, Inanimate object, Unknown
Cause: norm violation	Yes, No, Unknown
Cause injustice	Yes, No, Unknown
Cause: affect	Emoter, Others, Everybody
Cause: predictability	Yes, No, Unknown
Responsible type	Self, Known person, Family, Friend, Lover, Unknown person, Unspecified person, State of affairs, Inanimate object, Unknown
Responsible: social status	Superior, Inferior, Equal, Unknown, Not applied
Responsible: intention	Yes, No, Unknown
Responsible: participant	Cause, Other
Receiver type	Self, M, F, Collective, Unknown, Inanimate object
Receiver: social status	Superior, Inferior, Equal, Unknown, Not applied
Receiver: behavior	Withdrawal, Aggression, No expression
Receiver: participant	Responsible, Other
Evaluation	Positive, Negative, Neutral

arguments or participants, namely the Emoter or the person who experiences the emotion of anger; the Cause, which is typically an event or situation and needs to be distinguished from the Responsible, who is typically an animate argument associated with the Cause and is optional; and the Receiver, who typically overlaps with the Responsible but may be distinct and is often overtly referred to as such. Either way, the Receiver of the emotion of anger and the receiver or addressee of the utterance or blog need not be the same person. An additional factor for the concept of anger is evaluation. As for PRIDE, there are also the Emoter, the Cause and, additionally, other factors, such as the pleasantness for the self/other; personal/communal success and the responsibility for the success; self/other benefits; excessive pride relative to its cause (when the Emoter feels more pride than is justified by the cause of his/her pride – Kövecses, 1986, p. 47); incongruence with the Emoter's own standards and ideals; violation of laws or norms; axiological evaluation and social acceptance; and interconnections with (personal) satisfaction vs. admiration (of another).

Table 3. Cultural-conceptual factors of PRIDE

Cultural-conceptual factors	Features
Emoter type	Speaker: M, Speaker: F, Speaker: us, M, F, Collective, Unknown
Emoter: orientation of focus	Self, Other: person, Other: collective
Emoter manifestation	Physiological effects, Behavioral reactions, Both, No expression
Emoter role	Direct role, Indirect role
Emoter expressivity	High, Normal, Low
Emoter control	More controlled, Less controlled, Unknown
Cause type	Achievement: self, Achievement: other, Possessions, Physical quality: self, Physical quality: other, Mental quality: self, Mental quality: other, Moral quality: self, Moral quality: other, Appearances, Belonging to a group, Family, Social position
Cause relevance	For Emoter, For other
Cause value	Individual value, Social value
Cause control	Controllable, Uncontrollable
Pleasantness	Pleasant feeling for self, Pleasant feeling for other, Unpleasant feeling for self, Unpleasant feeling for other
Success	Self, Other person close, Other person not close, Other collective close, Other collective not close
Responsibility (for success)	Self: specific aspect, Self: global, Other
Beneficial	Self, Other(s), Both
Excessive pride	Yes, No
Incongruent with own standards and ideals	Yes, No
Violated laws or norms	Yes, No
Evaluation	Positive, Negative
Social acceptance	Accepted well, Accepted poorly
Interconnections	& satisfaction (personal), & admiration (of another)

Different aspects of the Emoter and the Cause are distinguished. Regarding the Emoter, we annotated the following aspects: the gender, individuality (individual vs. collective), and identification (or lack thereof) with the speaker (Emoter type); physiological or behavioral expressions of the emotion; control in the expression of the emotion; engagement with Responsible and degree of aggression with regard to the anger emotion; self- vs. other-oriented pride ('other' being a person or a group); direct vs. indirect role in the possible cause for pride; and degree of intensity of pride. The Cause includes the particular causes of anger/pride (Cause type) and, in the case of anger, determines whether the cause breaks social norms and results in injustice; whether it is predictable for the Emoter and whether it affects the Emoter, others or everybody; and, in the case of pride, the cause relevance for the Emoter vs. for others, the individual vs. social value of the cause, and the (un)controllable

nature of the cause. In the case of anger, the Responsible and the Receiver were also annotated for different factors, such as gender and other identity details, social status, intention, behavior, and event participant.

We will now illustrate this multifactorial usage-feature qualitative analysis with examples from our corpus. Due to space constraints, we are not going to illustrate all the factors and their corresponding features presented in Tables 2 and 3 here.⁴

Consider Examples (1)–(6) for the emotion of ANGER.

- (1) *João saiu desvairado, vermelho como um pimentão, a bufar e a praguejar como nunca ouvira. Suava em bica e gesticulava dando murros no ar, pontapés nos pneus, em profunda cólera. [...] Fomos roubados!* (Portugal, twihistorias.txt)
‘John came out raving, red as a paprika, snorting and cursing like you never heard before. He was sweating profusely and gesticulating, punching in the air, kicking the tires, in deep anger. [...] We were robbed!’
- (2) *Estou com muita raiva da dona do luartizados eu sei que ela tem a vida dela mais vc ta pensando que so pq essa menina que ta ai que vamos combinar que a web é horrivel mais vc tem que saber que nem todo mundo le a web dela a gente entra aqui e so ve aviso e web dessa matraca porra* (Brazil, luartizados.txt)
‘I’m very angry with the *luartizados* writer, I know she’s got her life but if you’re thinking that just because this girl, whose web is horrible, let’s face it, is there... you have to know that not everybody reads her web, we come in here and all we see are warnings and that magpie’s web, damn it’
- (3) *Fiquei vermelho de raiva, pensei até em dar um pequeno sermão sobre o assunto, mas depois ponderei e percebi que ele também se empenha em mudar.*
(Brazil, jornaldecaruaru.txt)
‘I became red with rage, I even thought of giving a little sermon on the subject, but then I pondered and realized that he also strives to change.’
- (4) *Alice vê no computador o seu extrato bancário, ficando muito nervosa por ver que tem pouco dinheiro. [...] Cada vez mais irritada, decide ligar para Romão, mas sem sucesso. Alice grita, num acesso de fúria*
(Brazil, novelasebiografias.txt)
‘Alice sees her bank statement on her computer and becomes very nervous to see that she has little money. [...] Growing irritated, she decides to call Romão, but without success. Alice screams, in a fit of rage’

4. See Soares da Silva (2020) for a detailed multifactorial usage-feature analysis of PRIDE in Portuguese.

- (5) *Lembra-te daqueles dias em que estavas naquele inferno [violência doméstica] e não tinhas como escapar. Agora és livre, goza estes momentos pois são de vitória... E para seguíres em frente, transforma a tua raiva em força... e serás o que sempre foste... uma mulher!!!* (Portugal, albergueespanhol.txt)
 ‘Remember those days when you were in that hell [domestic violence] and you had no way out. Now you are free, enjoy these moments because they are moments of victory... And to move on, turn your anger into strength... and you will be what you have always been... a woman!’
- (6) *Agora estava simplesmente com raiva de mim própria por ultimamente ter um dom especial para me pôr em perigo eminente.* (Portugal, andrusca95.txt)
 ‘Now I was simply angry with myself for having a special gift to put myself in imminent danger lately.’

The Emoter responds behaviorally to the event with verbal, gestural and physical violence in (1) and (4); verbal complaint in (2); social expression, i.e. she speaks without violence about her anger, in (3) and potentially in (5); and self-depreciation in (6). Physiological manifestation of anger, such as in Examples (1), (3) and (4), will be analyzed in the following section. The Emoter is engaged with the Responsible of the anger event in (2), (3) and (6), but not in the other examples, because the Responsible is not specified or is unknown. In an example such as *a chuva dá-me raiva* ‘the rain makes me angry’, the speaker speaks of him/herself being angry as in (2), (3) and (6), but there is no clear Responsible participant in the event. The degree of Emoter aggression in the experience of anger is maximum in (1) and (4), medium in (2) and (6), and minimum in (3) and (5). He/she seeks (or in some way has) control in order to change the cause of anger in (5) and potentially in (1), and he/she has no control in (2), (4) and (3). The Emoter control is unknown in (6).

The emotion of anger can be induced by different causes, such as the Responsible’s immoral behavior (1, 5), intrinsic quality or behavior (6, 3, 2), and inanimate object (4 and partially 2), as missing something or other inconvenience. The cause of anger constitutes a norm violation in (1) and (5). It affects the Emoter in all of the examples. The cause event is unpredictable in (1)–(4) and predictable in the continued norm violation context of Example (5). The cause predictability is unknown in (6).

The Responsible participant of the anger event is an unknown or unspecified person in (1), an inanimate object in (4) and a known person in the other examples. He/she has superior status with regard to the Emoter in (5) and (2), equal status in (3) and (6), and his/her status is unknown in (1). He/she is the cause of anger in all of the examples, except in Example (4), whose Responsible is unknown. Receiver and Responsible overlap in all of the examples, except in (4) and partially in (5).

Finally, the experience of anger is positively evaluated in (5) and negatively evaluated in the other examples.

Let us now look at some examples for the emotion of PRIDE.

- (7) *Cheios de orgulho, nunca passam despercebidos, mal entram numa sala tornam-se imediatamente o centro das atenções; não precisam de dizer nada de especialmente inteligente ou interessante para serem os reis da festa*

(Portugal, sinusitecronica.txt)

‘Filled with pride, they never go unnoticed, they barely enter a room and immediately become the center of attention; they don’t need to say anything particularly smart or interesting to be the kings of the party.’

- (8) *Ao olhar para aquele perfil majestoso, não vi Nero. Eu me vi, um monumento à minha própria vaidade. O orgulho de Nero não passava de um reflexo do meu. Eu era o pior tolo. Era exatamente o tipo de pessoa que colocaria uma estátua nua de trinta metros de mim mesmo no meu jardim.*

(Brazil, bloglivroson-line.txt)

‘When I looked at that majestic profile, I didn’t see Nero. I saw myself, a monument to my own vanity. Nero’s pride wasn’t but a reflection of mine. I was the worst fool. I was precisely the type of person that would put a 30-meter, naked statue of myself in my garden.’

- (9) *Por trás de minhas respostas polidas a você no embate e fragor daquela discussão, existiu, e não vou negar, um sentimento de orgulho em querer ser o dono da verdade.*

(Brazil, levibronze.txt)

‘Behind my polite answers to you in the clash and roar of that discussion, there was, and I won’t deny, a feeling of pride in wanting to be right [lit. the owner of the truth].’

- (10) *Seu comentário me comoveu, juro. Fiquei inchado de vaidade, defunto afogado que desce o rio, boiando um sorriso bobo na boca. Ficarei assim encharcado uns bons dias.*

(Brazil, armonte.txt)

‘Your comment moved me, I swear. I was swelling with vanity, a drowned corpse floating down the river, a silly smile on its lips. I’ll be soaked like this for a good few days.’

- (11) *Quem pelo talento, mérito, disciplina e trabalho, muito trabalho, com brio e profissionalismo atinge aqueles níveis tem todo o direito ao orgulho, um conceito cada vez mais deteriorado pela negativa (e inveja) em Portugal.*

(Portugal, albergueespanhol.txt)

‘He or she who, by talent, merit, discipline and work, much work, with panache and professionalism, reaches those levels has all the right to be proud, a concept that is becoming increasingly deteriorated by negativity (and envy) in Portugal.’

- (12) *Honra e orgulho pelos Soldados de Abril, que fizeram renascer, com amor e entusiasmo, a Democracia e a Liberdade!* (Portugal, albergueespanhol.txt)
 ‘Honor and pride towards the Soldiers of April, who revived, with love and enthusiasm, Democracy and Freedom!’

The Emoter experiences self-centered pride in (7)–(11) and other-directed pride in (12). He/she reacts behaviorally in different ways, mainly expressing feelings related to power and dominance, such as showing off and wanting to be the center of attention in (7), telling people about one’s achievements, ostentatious/theatrical behavior in (8), thinking that one is unique or the best in (9), feeling happy and vain (10). Physiological manifestations of pride are exemplified in (10) and, less overtly, in (7) and (9). In all those examples, the Emoter has some direct role (as agent, owner, member, etc.) in the corresponding causes for pride.⁵ The Emoter expressivity degree in the experience of pride is high in Examples (7)–(10) and normal in (11)–(12). The low degree occurs when the Emoter contains him or herself and tries to avoid being interpreted as being proud of his or her attributes or accomplishments, as is potentially so in (11).⁶ The Emoter control in the expression of pride consists of regulation strategies in expressing pride: all examples exhibit more control, because the Emoter exaggerates the expression of pride, as in (7)–(10), calls for the expression of pride, as in (12), and potentially decreases or hides the expression of pride, as in (11).

The emotion of pride is induced by different causes, namely appearances in (7)–(8), mental quality in (9), moral quality in (10), self-achievements in (11), and achievements by the other in (12). Additionally, the cause for pride is relevant for the Emoter in (7)–(11) and for another person in (12), and the things that are causes of pride have built-in social values in (12) and can be assigned an individual value by the Emoter in (7)–(11). Moreover, the cause of pride is controllable in (9) and (11), insofar as the Emoter can change this cause, and uncontrollable in other examples.

5. He/she can have an indirect role, as in *descoberta que encheu de orgulho e prazer a minha costela de ecologista empedernido* ‘a discovery [120 new species in the Berlengas islands] that filled with pride and pleasure my hardcore ecologist’s rib’ (Portugal, jmadureira.txt).

6. It is important to note that cultural norms on the expression of pride differ across cultures, especially the question of to what extent pride is an emotion that should be expressed or kept to oneself (see van Osch et al., 2013, pp. 380–382).

Pride is a pleasant feeling for oneself in (7)–(11) and expectably for others in (12).⁷ It is associated with situations of personal success in (7)–(11), and of another person's success, specifically a close group in (12). Personal success stems from some specific aspect of the self, be it an action or a state, which can be paraphrased by "I did well", as in (10)–(11). In Examples (7)–(9) by contrast, it results from narcissism, presumption and the vanity of the self, which can be paraphrased as "I am good".

The emotion of pride is excessive in (7) and (8) because the Emoter feels more pride than is justified by the cause of his or her pride (Kövecses, 1986, p. 47). Therefore, an intense pride may not be excessive, as in (10). Pride is unjustified when it is incongruent with the Emoter's own standards and ideals, or when it violates laws or norms.

Finally, pride is considered positive in (11) and (12), being related to dignity, honor and, often, to justified self-esteem, and negative in (7)–(10), taking on the meanings of conceit, vanity, and arrogance. Positive pride is usually well-accepted socially, but the pride that is considered positive by the Emoter can be poorly socially accepted, as in (8)–(10). Pride is closely connected with related emotion concepts, to the point where we can analyze these interconnections as pride features. It is the case of the relationships among pride, satisfaction and admiration. Although joy and satisfaction may be understood as inherent concepts of (self- or other-oriented) pride, pride entails joy and satisfaction, as in (11), (7) and (9), to the extent that pride arises from achievements and capabilities or skills. Pride can also be related to admiration, but only in cases of other-oriented pride, as in (12).

3.3 Conceptual metaphors and the profile-based approach

We will now apply the same *behavioral profile* approach to the analysis of figurativity, especially conceptual metaphors. A *metaphorical profile* for a particular target concept such as the anger or pride emotion is the set of alternative metaphorical patterns used to designate that target, together with their relative frequencies. The onomasiological profile-based perspective on metaphor involves, therefore, the selection of the preferred metaphorical sources for a given meaning/concept. Many previous studies on the cognitive/cultural model of emotions provide an onomasiological approach to metaphor and to lexical semantics in general, with an emphasis on how an emotion is expressed metaphorically in different cultural and historical contexts (e.g. Geeraerts and Grondelaers, 1995; Gevaert, 2005; Soriano, 2005, 2013; Ogarkova and Soriano, 2014).

7. Pride can be an unpleasant feeling for oneself or for others, as in *Ninguém sente qualquer tipo de orgulho em ser um bardamerdas que trabalha muito e é explorado* 'Nobody feels any kind of pride in being a nobody who works a lot and is exploited' (Portugal, jmadureira.txt).

The method for metaphor identification is based on Stefanowitsch's (2006) metaphorical pattern analysis. This method consists of searching for metaphorical expressions which contain words from their target domains. The metaphorical expressions to which the target concepts and lexical items belong are identified as metaphorical patterns. On the basis of the metaphors they instantiate, groups of conceptual mappings are established. The identification of a *metaphorical pattern* is based on the syntactic/semantic frame in which the target lexeme occurs. For the metaphor classification, we followed the ANGER and PRIDE metaphors seminal classifications as proposed by Kövecses (1986) and Lakoff and Kövecses (1987), and in particular the revision of the original inventory for ANGER metaphors proposed by Soriano (2005, 2013) and Ogarkova and Soriano (2014).

Metaphorical patterns of ANGER and PRIDE were manually extracted from the corpus and classified into conceptual metaphors. We started by searching for all the hits of the five aforementioned ANGER nouns (*cólera* 'anger/wrath', *fúria* 'fury', *ira* 'anger/wrath', *irritação* 'irritation' and *raiva* 'anger') and of the two PRIDE nouns (*orgulho* 'pride' and *vaidade* 'vanity') in the corpus. We then eliminated the literal uses and isolated all the hits constituting metaphorical patterns in the sense given above. Every metaphorical pattern was individually analyzed, taking into account the mapping established across the source and target domains, and was subsequently classified under a specific conceptual metaphor according to its source domain.

Due to space limitations, we have restricted the analysis of the figurative conceptualization of ANGER and PRIDE to metaphor, thereby excluding metonymy or other figurative expressions. However, it should be reminded, as was shown by Kövecses (1986), that the figurative conceptualization of anger and pride as well as of emotions in general usually combines metaphor and metonymy (cf. the generic metonymy THE PHYSIOLOGICAL EFFECTS OF AN EMOTION STAND FOR THE EMOTION), thus being an emblematic example of *metaphonymy* (Goossens, 1990), i.e. the interaction of metaphor and metonymy.

Here follow a few more observations regarding the identification and the classification of the anger and pride metaphors. First, we considered cases such as *ter raiva/orgulho* 'to feel anger/pride', *estar/ficar com raiva/orgulho* 'to be/to become angry/proud', *causar raiva/orgulho* 'to cause anger/pride', *muita raiva/muito orgulho* 'a lot of anger/pride', *(ai) que raiva!* 'I'm so angry!' (lit. 'such anger!') as non-metaphorical(/metonymic) and literal. Indeed, although these uses can be metaphorical (instantiating the metaphors ANGER IS A PHYSICAL ENTITY, INTENSITY IS QUANTITY, THE BODY IS A CONTAINER FOR ANGER), they are strongly conventionalized and generalized expressions and, most importantly, do not contain any word that could trigger a metaphorical use (in contrast to *estar cheio de raiva/orgulho* 'to be full of/ filled with anger/pride', *ter uma raiva/um orgulho enorme* 'to have a great anger/pride'). Moreover, we did not want to inflate the frequency of the

anger/pride metaphors. Secondly, there are degrees of figurativity in the metaphorical expressions of anger/pride and thus there is a continuum of conventionality/novelty (Kövecses, 2010) of anger/pride metaphors from more conventionalized or well-entrenched metaphors (such as *estar cheio de raiva/orgulho* ‘to be full of/filled with anger/pride’) to newer or creative ones (such as *ficar roxo/branco de raiva* ‘turning purple/white with anger’ compared to *ficar vermelho de raiva* ‘turning red with anger’). Thirdly, it is important to remember that the ANGER and PRIDE metaphors analyzed in this study are expressed by the nouns mentioned above, so that some of the conceptual metaphors identified in this study are instantiated in expressions that do not contain these nouns, such as *cabeça quente* ‘hothead’ instantiating the same metaphor as *vermelho de raiva* ‘red with anger’, *a ferver de raiva* ‘boiling with anger’, and *peito inchado* ‘swollen chest’ instantiating the same metaphor as *inchado de orgulho* ‘swollen with pride’. Fourthly, the conceptual metaphor inventory, displayed in Table 4 below, is organized in two levels, as proposed by Soriano (2005) and Ogarkova and Soriano (2014) for ANGER. The higher level embraces “root” metaphors heading a cluster of sub-metaphors. The sub-metaphors constitute the lower level of the inventory and comprise entailment (E) sub-metaphors and special case (S) sub-metaphors. Finally, in cases when an expression can be interpreted according to more than one metaphor, the highest level of the hierarchy or the more comprehensive metaphor was used. For example, *a fúria dele limpou tudo o que estava à frente* ‘his fury wiped out everything that was ahead’ was classified as FORCE rather than FORCE OF NATURE. However, when the metaphoric expression involves a specific imagery source domain invoking a complex and detailed scenario, that expression is classified as belonging to a more specific conceptual metaphor rather than a more generic one. This is the case, for example, of the FIRE metaphor with respect to the FORCE or the FORCE OF NATURE metaphor, and of AGGRESSIVE ANIMAL or DEVIL with respect to LIVING ORGANISM or SUPERNATURAL ENTITY.

Table 4 presents the salient conceptual root metaphors of ANGER and PRIDE that we found in the corpus as well as their entailments (E) and special cases (S).⁸

8. The metaphors found in the corpus could be grouped differently. For example, more generic categories of source domains could be used, like animate vs. inanimate entities, concrete vs. abstract concepts. Some metaphors are more atomic (fire, force, devil) and others more complex (pressurized fluid in the body container). Force of nature could be considered as a special case of force, just as fluid could be classified as a special case of physical entity, more directly of substance. The metaphorically conceptualized substance in the body container does not necessarily have to be a fluid, it can also be a gasiform substance. We prefer, however, to follow the classification of Ogarkova and Soriano (2014), which comprises an inventory organized into well-defined categories (root and subtype metaphors, and specific and generic metaphors), as well as the seminal classification of Kövecses (1986).

Table 4. Root and subtype conceptual metaphors of ANGER and PRIDE

	Root metaphor	Subtype metaphor
ANGER/PRIDE IS A	PRESSURIZED FLUID IN THE BODY-CONTAINER	E RISE
		E HOT
		E PRESSURE
		E COUNTERPRESSURE
		E CONTENTION
		E COMING OUT
		E EXPLOSION/BURST
	FIRE	
	OPPONENT IN A STRUGGLE	S CONTROLLER
	FORCE OF NATURE	
	FORCE	E ENERGY
	PHYSICAL ENTITY	E POSSESSION
		E VISIBLE/HIDDEN
		E MOVING OBJECT
		S SOLID OBJECT
S SUBSTANCE		
	S OTHER	
LIVING ORGANISM	S PLANT	
	S ANIMAL	
	S HUMAN	
THE BODY IS A CONTAINER FOR ANGER/PRIDE	S CHEST	
	S EYES	
	S FACE	
	S HANDS	
	S HEAD/MIND	
	S HEART	
	S SOUL	
	S VOICE	
S OTHER		
ANGER IS A	ILLNESS	
	INSANITY	S BLINDNESS
	AGGRESSIVE ANIMAL	S EMOTER IS ANIMAL
	WEAPON	
	LOCATION	S CONTAINER
	DANGER/THREAT	
	DEVIL	
	IDEA	

One of the most salient conceptualizations of anger and pride in the folk model of emotions is the metaphor of a FLUID inside the body container, especially a HEATED AND PRESSURIZED FLUID in the case of anger, as exemplified in (13)–(18). The entailment sub-metaphors are more elaborated for the emotion of anger than for that of pride. When the intensity of anger increases, the fluid rises in the Emoter (13) until there is no more space and it begins to exert pressure on the walls of the container, the fluid heats up and can even boil (14). The Emoter can resist the pressure, exerting a counterpressure or containing/refraining the emotion (15), thus keeping the anger inside. Otherwise, he/she can lose control over the emotion, failing to stop the anger fluid from boiling over or exploding (16). As for pride, the fluid can also rise, fill up the body container, make it swell and even burst or explode, as in (17). The Emoter can also contain/refrain the emotion and keep the pride inside, as in (18).

- (13) *Senti uma raiva a crescer dentro de mim, como nunca tinha sentido por ninguém.*
(Portugal, andrusca95.txt)
'I felt an anger growing inside me like I had never felt for anyone.'
- (14) *De cada vez que o meu sangue começa a borbulhar de irritação por alguma malfetoria, mentira, distorção ou golpe baixo [...]*
(Portugal, albergueespanhol.txt)
'Every time my blood starts to boil from irritation from some malfeasance, lie, distortion or low blow'
- (15) *apesar dos flavienses, e dos restantes portugueses, estarem animados de uma fúria contida, ela não vai permanecer assim indefinidamente*
(Portugal, jmadureira.txt)
'although the Flavians and the rest of the Portuguese are animated by a contained fury, it will not remain so indefinitely'
- (16) *Descarreguei meus sentimentos de raiva, dor e medo que represava desde criança, devido a uma educação preconceituosa!*
(Brazil, amoscaqueperturbaoteusono.txt)
'I discharged my feelings of anger, pain, and fear that I had been repressing ever since I was a child, due to a prejudiced upbringing!'
- (17) *Eu, euzinha, estou a rebotar de orgulho – e nem estava muito à espera de tal isto... A rebotar de orgulho! E sabem quando ficamos assim inchadíssimos de orgulho? Pois é assim que eu estou.*
(Portugal, donadecasa.txt)
'Me, myself, am bursting with pride – and I wasn't even expecting this... to be bursting with pride! And you know when we get like this, absolutely swollen with pride? Well, that's what I am feeling.'

- (18) *O silêncio esconde o orgulho e a prece: “Prendo-te óh irreverente sentimento? Guardo-te dentro de mim ou não?”* (Portugal, amartinsr.txt)
 ‘The silence hides the pride and the prayer: “Do I imprison you oh irreverent feeling? Do I keep you inside me or not?”’

Anger and pride are also conceptualized as a FIRE inside a person that can be stirred up, be ablaze and manifest itself in flashes in the Emoter’s eyes, as in Examples (19) and (20).

- (19) *Sua pose arrogante atíça a ira do espectador* (Brazil, cineugenio.txt)
 ‘His arrogant pose stokes the wrath of the spectator’
- (20) *Os homens são clarões de orgulho e raiva e prometem combater sem descanso contra o inimigo.* (Portugal, jmadureira.txt)
 ‘Men are flashes of pride and anger and they promise to fight relentlessly against the enemy.’

Still under the same cultural metonymic model of the physiological effects of anger that can also harm the Emoter and those around him/her, anger can be conceptualized as an ILLNESS to which one is not immune (21) and, most prominently, as a psychological disorder that leads to irrational and violent behavior, especially as INSANITY, as in (22). Irrationality and violence are also elaborated by the conceptualization of anger as an AGGRESSIVE ANIMAL inside the Emoter, evoking the “beast inside” (Kövecses, 1990, p. 62), the instinctual part of our nature that is neither dominated nor domesticated and overrides the purely rational and moral one. A special case sub-metaphor leads one to be conceptualized as a dangerous animal manifesting all sorts of aggressive animal behavior, as exemplified in (23). The ideas of control and danger that the lack of control evokes are further elaborated by a very recurrent metaphor in which anger is personified as an OPPONENT IN A STRUGGLE that must be fought or controlled, as in Example (24). Also associated with the situation of no control or being out of control is the conceptualization of anger as a powerful NATURAL PHYSICAL FORCE that floods the Emoter (*ondas de fúria* ‘waves of fury’) and leads him/her to violent and dangerous behavior, which can also constitute a means for the Emoter to face and overcome other forces, as in (25). This last case is elaborated by another quite frequent metaphor highlighting the high-power emotion in which anger is conceptualized as a WEAPON that the Emoter uses efficiently against a target (26).

- (21) *Seguravam-no no cargo arames apenas – institucionalmente o Presidente, aliás não imune aos protestos e à temida fúria das gentes.* (Portugal, corta-fitas.txt)
 ‘He was held in office only by wires – institutionally the President, incidentally not immune to protest and the feared fury of the people.’

- (22) *Viu nos olhos dele uma loucura que nunca tinha visto antes. Uma raiva incontrolável. Viu nos olhos do filho uma cegueira sem retorno.*
(Portugal, falarsobretudooemaisalgumacoisa.txt)
'He saw in his eyes a madness he had never seen before. An uncontrollable rage. He saw in his son's eyes a blindness with no return.'
- (23) *Com isto a fúria dobrou de tamanho. E o delegado escumava pela boca feito fera do mato.*
(Brazil, jornaldecuaruaru.txt)
'With this the anger doubled in size. And the police chief, foaming at the mouth, was like a wild beast.'
- (24) *Apaixona-se por Carlos Daniel, onde enfrentará a fúria de Estephanie, a rivalidade com Leda e principalmente o ódio de Paola Bracho.*
(Brazil, novelasebiografias.txt)
'She falls in love with Carlos Daniel, where she will face Estephanie's fury, a rivalry with Leda and especially the hatred of Paola Bracho.'
- (25) *Você tem que ter a força de um leão e a fúria de um vulcão para vencer, ou você acaba cedendo a eles.*
(Brazil, amoscaqueperturbaoteusono.txt)
'You have to have the strength of a lion and the fury of a volcano to win, or you end up giving in to them.'
- (26) *Os alvos de seus ataques de fúria são qualquer pessoa que se atreva a contestar suas idéias mirabolantes e criticar sua maneira estapafúrdia de governar.*
(Brazil, raimari9.txt)
'The target of his rage attacks is anyone who dares to challenge his nonsensical ideas and criticize his foolish way of governing.'

The emotion of pride can also be conceptualized as an OPPONENT IN A STRUGGLE that must be fought or controlled or, on the contrary, should be stimulated to beat opponents, as in (27)–(28), and as a powerful NATURAL PHYSICAL FORCE, as in (29).

- (27) *Em cada história há um apelo para que não esqueçamos os outros e para que não nos deixemos tomar pela vaidade.*
(Portugal, e-cultura.txt)
'Each story urges us not to forget the others and not to let ourselves be taken over by vanity.'
- (28) *É verdade que o post não era brilhante, talvez apenas mau, mas falta aqui um certo orgulho lutador: quando se insulta há que insultar com pertinência, com arrojo, com bravura*
(Portugal, sinusitecronica.txt)
'It's true that the post wasn't brilliant, maybe just bad, but it lacks a certain fighting pride: when you insult, you have to insult with pertinence, with boldness, with bravery'

- (29) *A tal vaidade e petulância vêm todas da mesma origem. De uma nascente que verte lama disfarçada, mas que se penetra em todos os cantos deste mundo*
(Portugal, milrazo.es.txt)
‘What we call vanity and petulance all have the same origin. They come from a spring that pours mud in disguise, but which penetrates every corner of this world.’

Finally, anger and pride can be conceptualized based on more generic domains, such as (i) FORCE and, by entailment, ENERGY, as in (30)–(31), (ii) PHYSICAL ENTITY and, by entailment, POSSESSION, typically a valuable object in the case of pride (32), VISIBLE/HIDDEN OBJECT (33), MOVING/MOVED OBJECT (34) or, by specification, SOLID OBJECT and SUBSTANCE (35)–(36), (iii) as LIVING ORGANISM, especially PLANT (37) and PERSON, typically good or bad person in the case of pride (38)–(39), (iv) as LOCATION and, by specification, CONTAINER (40). Not emotion as such, but a salient part of it can be the target of a metaphorical conceptualization, as is the case with BODY as container of anger/pride and, by specification, any of its parts either visible (eyes, face, voice, etc.), as in (22)–(23) and (17), or internal (chest, head, veins, etc.), as in (13)–(14).⁹

- (30) *percorre os EUA de lés a lés, movido por um sentimento de raiva e de vingança pelo que perdeu, o amor da sua vida.* (Portugal, corta-fitas.txt)
‘He travels the U.S. from coast to coast, driven by a feeling of anger and revenge for what he has lost, the love of his life.’
- (31) *as pessoas parecem precisar de novas causas, que estimulem o orgulho de pertencer a algo distinto e vencedor* (Portugal, albergueespanhol.txt)
‘people seem to need new causes, which stimulate the pride of belonging to something distinct and successful’
- (32) *sorrisos e momentos de orgulho que valem este mundo e o outro*
(Portugal, gato_pardo.txt)
‘smiles and moments of pride that are worth this world and the other’

9. This is why we distinguish ANGER/PRIDE IS A PRESSURIZED FLUID IN THE BODY-CONTAINER and THE BODY IS A CONTAINER FOR ANGER/PRIDE, which could be considered as different perspectives of the same FLUID/CONTAINER source domain and therefore of the same physiological metaphor. Later, in Sections 4.3 and 4.4, we will establish a distinction for both metaphors between internalized expression and external manifestation. It is important to note that this distinction is not co-extensive to the distinction between control and uncontrol, since the outpouring or the explosion of the fluid can be a controlled, intentional act of the Emoter.

- (33) *e, na conversa, Lula não escondeu a irritação com as acusações feitas pelo operador do mensalão.* (Brazil, landisvalth.txt)
 ‘and, during the conversation, Lula did not hide his irritation with the accusations made by the *mensalão*’s operator.’
- (34) *Enquanto dirigia, continuava mudando de raiva para aceitação e de volta pra raiva de novo.* (Brazil, colonadamorenarosa.txt)
 ‘As he drove, he kept changing from anger to acceptance and back to anger again.’
- (35) *O fato daquela manhã se constituíra na gota d’água que fizera extravasar neles o veneno da raiva.* (Brazil, levibronze.txt)
 ‘The morning’s fact had been the drop of water (“the straw that broke the camel’s back”) that had caused the poison of anger to overflow in them.’
- (36) *Mesmo o orgulho por seu primo era misturado com uma pontinha de vergonha de si mesma* (Brazil, bloglivroson-line.txt)
 ‘Even her pride in her cousin was mixed with a hint of shame on herself’
- (37) *Uma das muitas inflorescências de tal fúria é a história do “certificado energético”* (Portugal, irritado.txt)
 ‘One of the many inflorescences of such fury is the story of the “energy certificate”’
- (38) *Obrigado F.C. Porto por seres o nosso orgulho, o orgulho das nossas Gentes* (Portugal, albergueespanhol.txt)
 ‘Thank you F.C. Porto for being our pride, the pride of our People’
- (39) *Ele vendeu a irmã a Mortmain, você sabe. Por apenas um punhado de prata, foi. Por apenas alguns afagos à sua vaidade.* (Brazil, bloglivroson-line.txt)
 ‘He sold his sister to Mortmain, you know. For only a handful of silver, he did. For just a few strokes to his vanity.’
- (40) *Na sua fúria apenas residia o medo da perda.* (Portugal, milrazaes.txt)
 ‘In his fury resided only the fear of loss.’

3.4 Multivariate quantitative methods

The observational data extracted from the corpus identified in Section 3.1 and annotated through the detailed qualitative usage-feature and metaphorical profile analyses presented in Sections 3.2 and 3.3 were submitted to statistical modeling. The usage-feature patterns and the metaphorical profiles of *raiva* ‘anger’, *fúria* ‘fury’, *ira* ‘anger/wrath’, *cólera* ‘anger/wrath’ and *irritação* ‘irritation’, and of *orgulho* ‘pride’ and *vaidade* ‘vanity’ in the two national varieties of Portuguese were modeled using

multivariate statistical techniques. Two types of quantitative methods were employed: exploratory, in the form of correspondence analysis, and confirmatory, in the form of logistic regression.

Correspondence analysis is “a multivariate exploratory space reduction technique for categorical data analysis” (Glynn, 2014b, p. 443). It reveals patterns of language use that are typical of a linguistic expression relative to its linguistic and sociocultural context of use. In this study, the method identifies and visualizes “frequency-based associations” of usage features and conceptual metaphors that are related to the five ANGER nouns and the two PRIDE nouns. This is represented in “the form of configuration biplots, or maps, which depict degrees of correlation and variation through the relative proximity of data points” (Glynn, 2014b, p. 443). We employed *multiple* correspondence analysis to account for the complex interactions of the aforementioned ANGER and PRIDE nouns relative to EP and BP and the range of usage features and metaphorical profiles identified in Sections 3.2 and 3.3. This exploratory method allows us to identify and visualize clusters of feature and conceptual metaphor associations that are relevant in the conceptual structuring of the aforementioned ANGER and PRIDE lexemes.

Logistic regression analysis serves to determine the descriptive accuracy and predictive power of the usage-feature and metaphorical profiles obtained from multiple correspondence analysis. This confirmatory method allows us to see which conceptual features and conceptual metaphors are significant predictors for EP and BP.

4. Results

4.1 Multiple correspondence analysis: Feature clusters of ANGER and PRIDE

To apply the multivariate quantitative methods mentioned above to the results of the multifactorial usage-based qualitative analysis of our dataset, we had to reduce the number of factors and features presented in Tables 2 and 3. We did so for two reasons. First, the feature ‘unknown’ is not compatible with multivariate statistical modeling. Second, some variables proved to be irrelevant, such as Emoter type (we have not found any differences in the conceptualization of anger and pride associated with the Emoter’s identity), reproducing the results of other variables, such as social acceptance regarding evaluation in the case of pride (social acceptance and evaluation yield the same results). Regarding ANGER, 7 factors and their correspondent features (29 features) were included in the multivariate statistical analysis, namely

- Emoter control: E_Control_Yes, E_Control_No
- Emoter behavior: E_Violence, E_Complain. E_Social expression, E_Self depreciation, E_No expression
- Cause type: CT_Behavior, CT_Immoral, CT_Quality, CT_Feelings, CT_Event, CT_Inconvenience (illness, work, missing, other inconvenience), CT_Object
- Cause as norm violation: C_Norm viol_Yes, C_Norm viol_No
- Cause as injustice: C_Injustice_Yes, C_Injustice_No
- Responsible type: R_Self, R_Known person, R_Family, R_Friend, R_Lover, R_Unknown person, R_Unspecified person, R_State of affairs, R_Object
- Evaluation: Eval_Pos, Eval_Neg

As for pride, 10 factors and their correspondent features (31 features) were included in the multivariate statistical analysis, namely

- Emoter orientation of focus: E_Focus_Self, E_Focus_Other
- Emoter role: E_Dir_role, E_Indir_role
- Emoter manifestation: E_Manif_Physiol effects, E_Manif_Behav reactions, E_Manif_Both, E_Manif_No
- Cause type for self/other: CT_Achiev_Self, CT_Quality_Self, CT_Possess, CT_Appear, CT_Social pos; CT_Achiev_Other, CT_Quality_Other, CT_Group, CT_Family
- Cause relevance: CRel_Emoter, CRel_Other
- Success: Success_Self, Success_Other close, Success_Other not close
- Responsible (for success): Resp_Self spec, Resp_Self global, Resp_Other
- Excessive pride: Excessive_Yes, Excessive_No
- Evaluation: Eval_Pos, Eval_Neg
- Interconnections: &_Satisfaction, &_Admiration

The results of the multiple correspondence analysis (MCA) are presented in two parts. First, we consider the feature associations without considering the distinction between the two national varieties of Portuguese. Second, EP and BP varieties were projected onto the dimensions after the original analysis on the variables of interest was carried out. Their position on the graph allows us to see how the primary variables of interest – features – relate to these supplementary variables.¹⁰

10. The main analyses were conducted using IBM SPSS Statistics 25, but the figures were created using the packages “FactoMineR” and “factoextra” available in R due to their superior graphical features.

4.1.1 Three clusters of ANGER

Figure 1 presents the plot of the eigenvalues by dimension number, usually known as a “scree plot”.

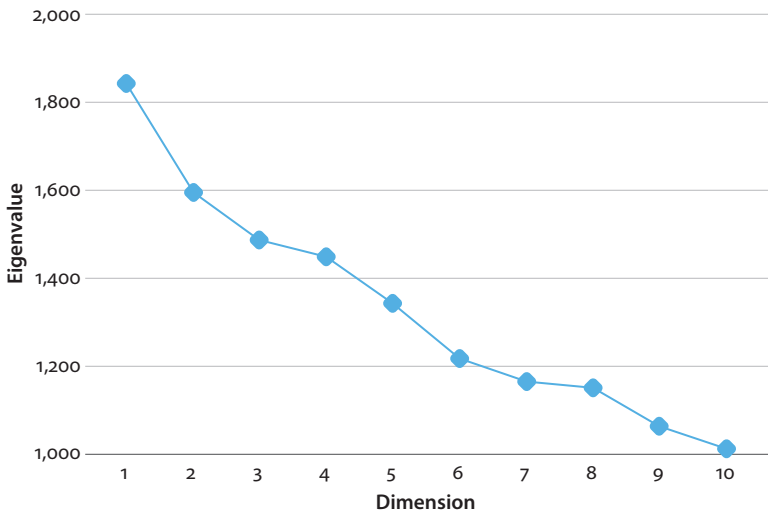


Figure 1. Plot of the eigenvalues by dimension number (scree plot) – ANGER

The inspection of the scree plot suggests the existence of a two-dimension solution. The results shown in Table 5 indicate that the first dimension explains 26.3% of the variance (inertia = .263) and the second dimension explains 22.8% of the variance (inertia = .228). Cronbach’s alpha was .534 and .435, respectively. Although a minimum value of .70 is usually desired, a smaller value is acceptable in exploratory research where a small alpha score can be due to heterogeneous constructs (Johnson and Wichern, 2007), as it is the case in this study.

Table 5. Results for multiple correspondence analysis – ANGER

Dimension	Cronbach’s alpha	Variance accounted for		
		Total (Eigenvalue)	Inertia	% of variance
1	.534	1.844	.263	26.341
2	.435	1.595	.228	22.786
Total		3.439	.491	

Figure 2 presents a multiple correspondence analysis (MCA) map accounting for the interrelationships between the usage-features of ANGER identified above independently of the variation between EP and BP. The contribution of the features to the dimensions is indicated by the color in the map: features that contribute the most are in orange.

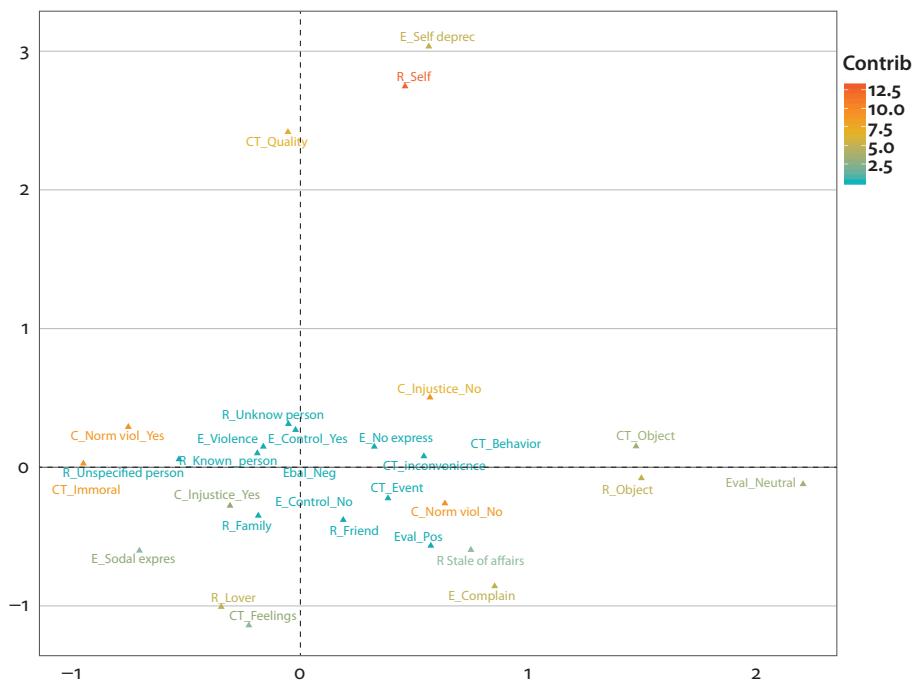


Figure 2. MCA map of ANGER

The plot reveals three clusters of features. In the left-hand part of the plot, there is a cluster structured by ‘immoral behavior’ (CT_Immoral) and ‘norm violation’ (C_Norm viol_Yes) as the specific causes of ANGER, and by the Responsible as ‘unspecified person’ (R_Unspecified person). Also relevant to and coherent with this cluster, although not so closely associated with it, is the Emoter’s response of ‘violence’ (E_Violence) as well as his/her ‘control’ in order to change the morally or socially unacceptable cause of anger. This cluster constitutes, therefore, the *violent* type of ANGER associated with immoral behavior and norm violation.

Distinctly displayed in the right-hand part of the plot lies a cluster structured around ‘inconveniences’ (CT_Inconvenience) as the cause of anger (specifically illness, work, missing something, or other inconvenience) and, accordingly, around the Emoter’s response of ‘complain’ (E_Complain). Coherently, there is neither norm violation (C_Norm viol_No) nor injustice (C_Injustice_No). Other

distinctive features in this cluster are ‘state of affairs’ (R_State of affairs) and ‘inanimate object’ (R_Object) as the Responsible for the anger event, ‘inanimate object’ (CT_Object) and ‘event’ (CT_Event) as alternative causes of anger and, interestingly, ‘positive evaluation’ (Eval_Pos), thus justifying the experience of anger in the face of inconveniences or adversities. This cluster represents the *complaining* or irritated kind of ANGER associated with inconveniences and inanimate objects.

Between these two clusters but closer to the cluster of norm violation and immoral behavior causes of anger is a third cluster whose most important feature is the Emoter’s response of ‘social expression’ (E_Social expres). Accordingly, other central features in this cluster are ‘feelings’ (CT_Feelings) and ‘injustice’ (C_Injustice_Yes) as being the causes of anger, as well an Emoter’s ‘family’ member (R_Family) or ‘lover’ (R_Lover) being the Responsible for the event. This cluster represents a more *interpersonal* ANGER associated with the behavior of family or loved people. Interestingly, the Emoter’s ‘non-control’ over the event (E_Control_No) lies between this cluster and the complaining anger cluster. This suggests a similarity between the two types of ANGER and, at the same time, a dichotomy between these ‘non control’ complaining and interpersonal kinds of ANGER and the violent, ‘control’ ANGER clustered in the left-hand part of the plot (cf. Glynn, 2014a, p. 77 on the same patterns of ANGER in English).

Moving to the top of the plot, we can see another cluster, smaller and restricted in associated features (only three features) and removed from the three clusters identified. Its most important feature is the ‘self’ as the Responsible for the anger event (R_Self). Another distinctive and very coherent feature is the Emoter’s response of ‘self-depreciation’ (E_Self_deprec). Here, the fact that the Emoter responds to the event with self-criticism and self-hatred is frequent in the data. Consistently, the cause of self-anger is the Emoter’s intrinsic qualities (CT_Quality).

Figure 3 shows that the five analyzed ANGER nouns are relatively equally close to the three main clusters of anger, but there are some differences. Expectedly, the lexemes *fúria* ‘fury’ and *ira* ‘anger/wrath’ are closer to the violent, controlled anger cluster. Unexpectedly, however, *cólera* ‘anger/wrath’ rather than *irritação* ‘irritation’ is closer to the complaining anger cluster. The hypernym *raiva* ‘anger’ seems to be more closely associated with non-controlled anger structures, i.e. interpersonal and complaining kinds of anger.

Let us now see how the feature clusters of ANGER relate to the EP and BP national varieties. Figure 4 shows that EP and BP are equally close to the three feature clusters previously identified, which suggests that there are many similarities in the conceptual structuring of ANGER in both national varieties of Portuguese. Even so, EP tends more towards the left-hand part of the plot, thus being closer to the cluster of norm violation and immoral behavior causes of anger and to the cluster of interpersonal anger associated with the behavior of family or loved people.

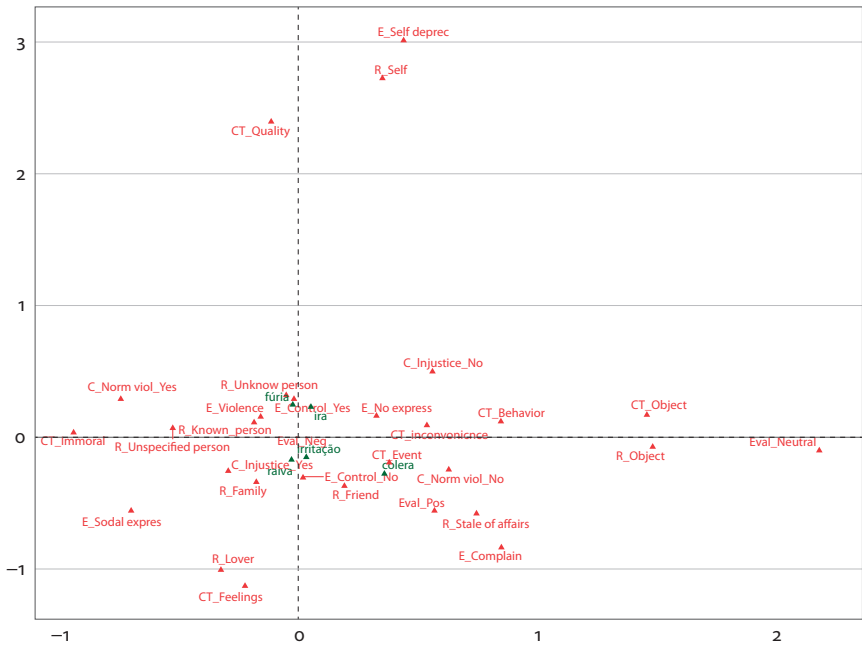


Figure 3. MCA map of ANGER, with the five lexemes *raiva*, *fúria*, *ira*, *cólera*, *irritação*

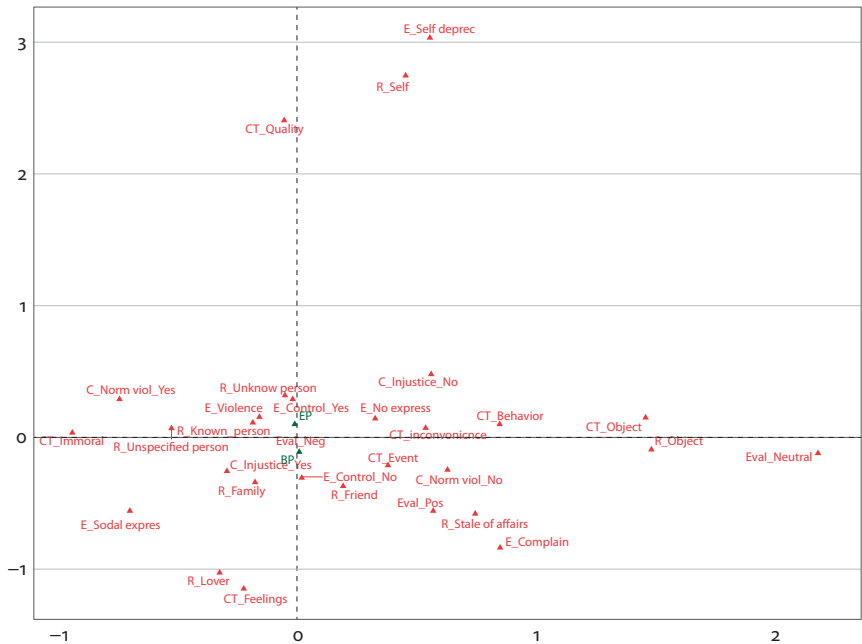


Figure 4. MCA map of ANGER, with EP and BP varieties

4.1.2 Two clusters of PRIDE

Figure 5 presents the plot of the eigenvalues by dimension number.

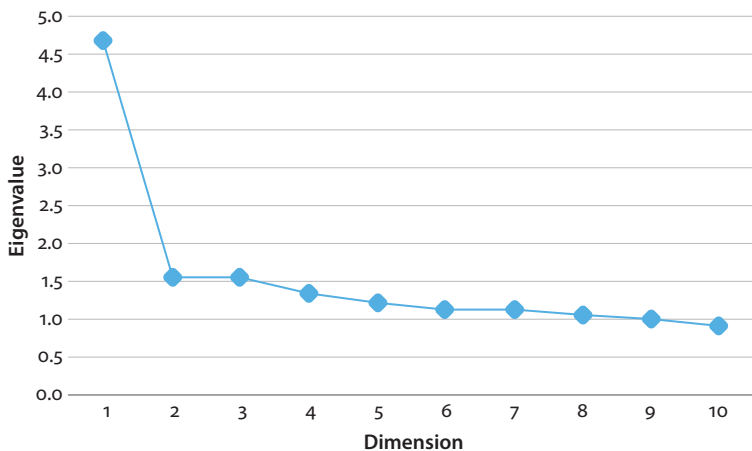


Figure 5. Plot of the eigenvalues by dimension number (scree plot) – PRIDE

The inspection of the scree plot suggests the existence of one main component in the data. The results shown in Table 6 indicate that this component explains 46.8% of the variance (inertia = .468) and has a very high Cronbach's alpha value, given that a minimum value of .70 is desirable (Hair et al., 2009).

Table 6. Results for multiple correspondence analysis – PRIDE

Dimension	Cronbach's alpha	Variance accounted for		
		Total (Eigenvalue)	Inertia	% of variance
1	.874	4.678	.468	46.782
2	.399	1.561	.156	15.606
Total		6.239	.624	

Figure 6 presents a MCA map accounting for the interrelationships between the features identified above. The plot reveals that most of the features are grouped around the first dimension (horizontal axis). This finding is consistent with the numerical output, which indicated that one main dimension explains a large percentage of the variance. However, the inspection of the plot also indicates that there are two clusters of features that are located on opposite poles of the continuum.

In the left-hand part of the plot, there is a cluster structured by *self-centered* pride. This cluster consistently includes central features such as 'self-orientation of focus' (E_Focus_Self) of pride, '(personal) satisfaction' (&_Satisfaction), and 'negative evaluation' (Eval_Neg). Important to the cluster and in perfect harmony with

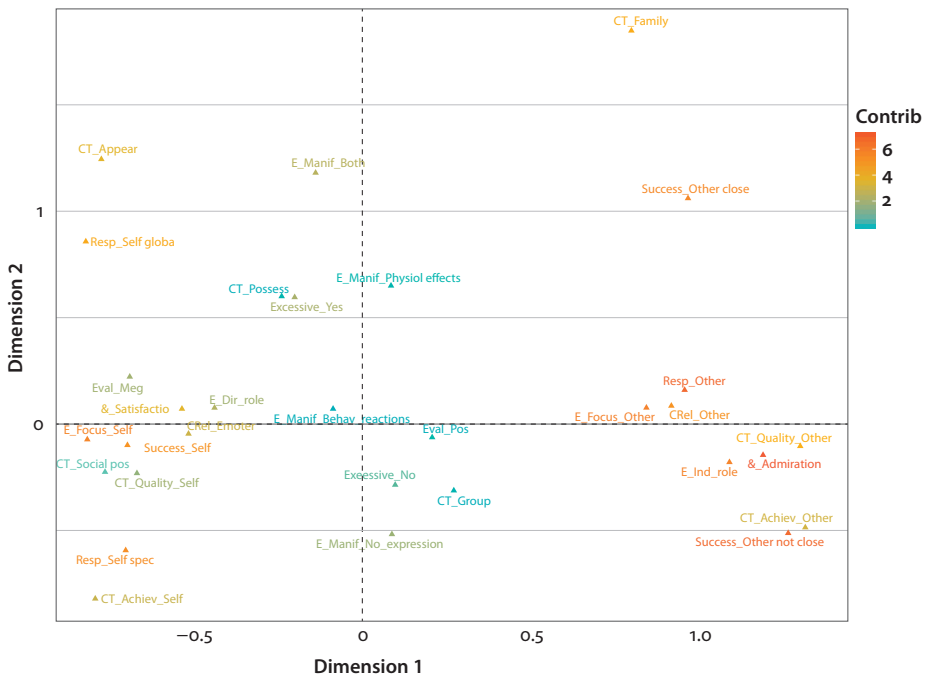


Figure 6. MCA map of PRIDE

these three features are self-centered features related to the cause of pride, namely, ‘self-quality’ (CT_Quality_Self) and ‘social position/status’ (CT_Social pos), as well as the cause relevance ‘for Emoter’ (CRel_Emoter). Naturally associated with this cluster are the features ‘self-success’ (Success_Self) and, accordingly, ‘specific aspect self’ (Resp_Self spec) (“I did well”) and ‘global self’ (Resp_Self global) (“I am good”) as the responsible entity for personal success, and the Emoter’s ‘direct role’ (E_Dir_role) in the cause of the pride. ‘Behavioral’ Emoter manifestations of pride (E_Manif_Behav reactions) and ‘excessive pride’ (Excessive_Yes) are also more closely associated with a more personal (pride about oneself) rather than collective (pride about others) type of pride.

The cluster in the right-hand part of the plot is structured by *other-directed* pride. Accordingly, this cluster associates central features opposed to those of the previous cluster such as the ‘other-orientation of focus’ of pride (E_Focus_Other), ‘admiration (of another)’ (&_Admiration), and ‘positive evaluation’ (Eval_Pos), although this last feature is already a little distant from the center (which also makes sense, given that self-centered pride can also be positive). Also, relevant to and coherent with this cluster are the *other-directed* features related to the cause of

pride, namely, cause relevance ‘for other’ (CRel_Other), cause being ‘other quality’ (CT_Quality_Other), ‘other achievement’ (CT_Achiev_Other) and, although it is a little distant from the center, ‘belonging to a group’ (CT_Group). Other important features of this cluster are ‘other’ as the responsible entity for success (Resp_Other), ‘success of another not close’ (Success_Other not close), and the Emoter’s ‘indirect role’ in the cause of pride (E_Indir_role).

Multiple correspondence analysis thus offers a clear and consistent distinction between self-centered and other-directed clusters of features. These two clusters of features arguably represent conceptual structures of the *orgulho* and *vaidade* emotions, as depicted in Figure 7.

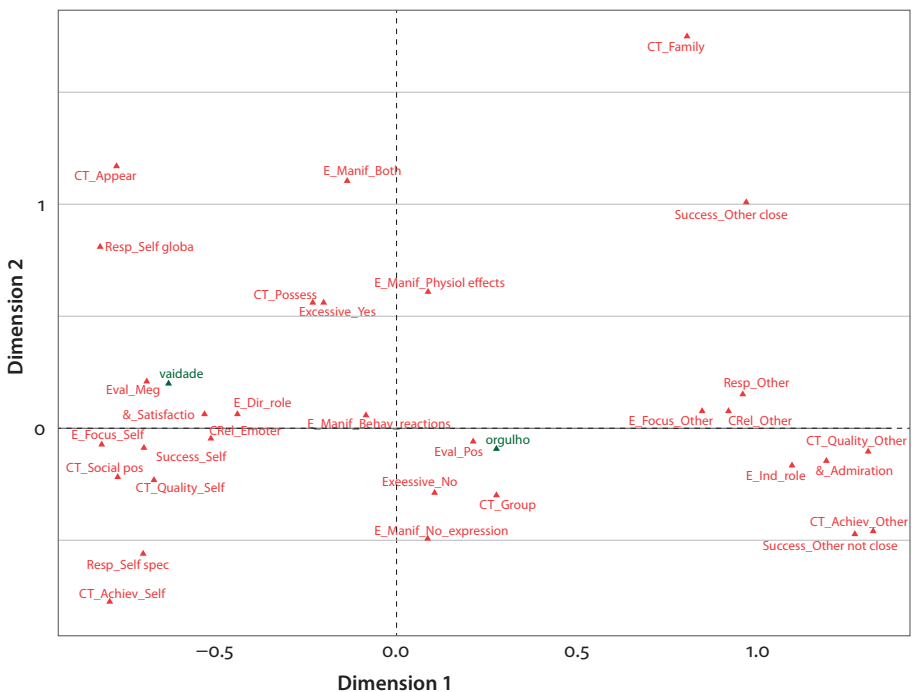


Figure 7. MCA map of PRIDE, with the two lexemes *orgulho* and *vaidade*

Let us now see how both feature clusters relate to the EP and BP national varieties. Figure 8 shows that EP and BP are equally close to the two feature clusters previously identified, which suggests that there are many similarities in the conceptual structuring of PRIDE in both national varieties of Portuguese.

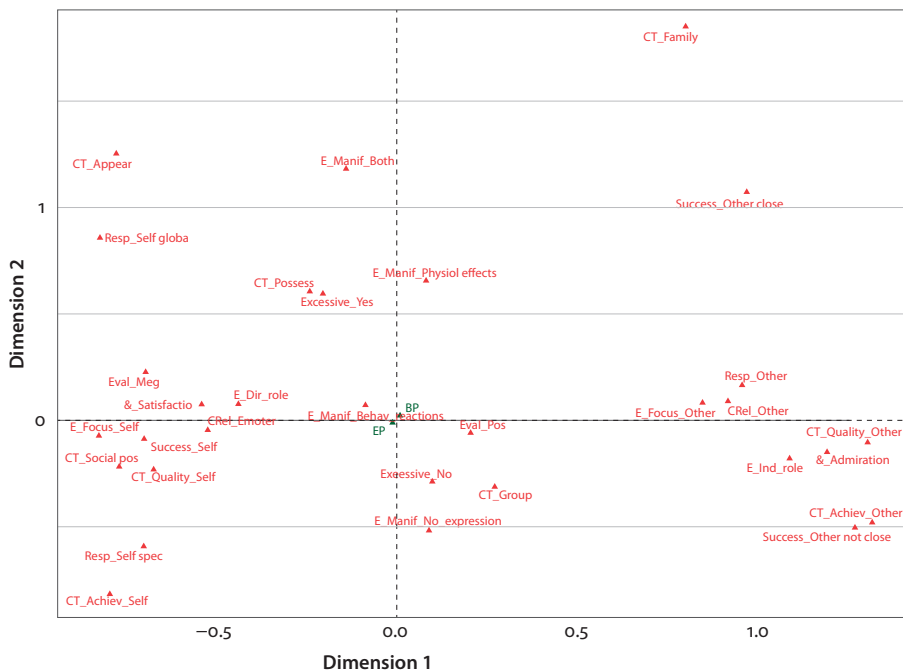


Figure 8. MCA map of PRIDE, with EP and BP varieties

4.2 Logistic regression analysis: ANGER and PRIDE features predicting EP and BP varieties

Let us now turn to the confirmatory method of polytomous logistic regression to complement the findings obtained through the exploratory analyses. Tables 7 and 8 present the results for the predictors of EP and BP varieties. The regression model takes the language variety (EP/BP) as the response variable and the 29 features of ANGER and 31 features of PRIDE previously identified as predictors.¹¹

11. A traditional rule of thumb suggests that logistic models should be used with a minimum of 10 events per predictor variable (EPV) (Peduzzi et al., 1996), but more recent studies suggest that this rule is too conservative and EPV values ranging between 5 and 9 are adequate (Vittinghoff and McCulloch, 2007). In the regression model for ANGER (Table 7) the EPV was 8.5 (246/29 = 8.5), which is within the acceptable range. All values of variance inflation factor (VIF) were <10, which indicates the absence of multicollinearity (Hair et al., 2009). The Hosmer-Lemeshow test suggests a good fit, $\chi^2 = 8.477$, $df = 8$, $p = .388$, and the model explains approximately 25% of the variance observed in the EP and BP varieties (Nagelkerke $R^2 = .254$), suggesting some differences between EP and BP. In the regression model for PRIDE (Table 8) the EPV was 8 (238/31 = 8). All values of variance inflation factor (VIF) were <10, which indicates no

Table 7. Logistic regression analysis of ANGER: Predictors for EP and BP

	B	S.E.	Wald	df	Sig.	Exp(B)	VIF
Emoter control	1.562	.213	53.609	1	<.001	4.766	1.032
Emoter_behavior			12.185	4	.016		1.046
Violence	.170	.266	.406	1	.524	1.185	
Complain	.370	.384	.928	1	.335	1.448	
Social expression	1.219	.389	9.828	1	.002	3.383	
Self depreciation	-.675	.916	.542	1	.462	.509	
Cause type			7.997	6	.238		1.150
Immoral	-.272	.453	.360	1	.548	.762	
Quality	-.483	.691	.489	1	.484	.617	
Feelings	-.842	.545	2.390	1	.122	.431	
Event	-.574	.446	1.656	1	.198	.564	
Inconvenience	-.138	.466	.087	1	.768	.871	
Object	-1.225	.618	3.933	1	.047	.294	
Cause norm violation	-.239	.232	1.057	1	.304	.788	1.095
Cause injustice	.282	.224	1.591	1	.207	1.326	1.034
Resp_type			13.907	8	.084		1.106
Known person	.239	.487	.240	1	.624	1.270	
Family	-.726	.618	1.382	1	.240	.484	
Friend	-.390	1.023	.145	1	.703	.677	
Lover	-.457	.554	.680	1	.410	.633	
Unspecified person	.537	.521	1.064	1	.302	1.711	
Self	.605	.670	.815	1	.367	1.831	
State of affairs	.457	.596	.588	1	.443	1.579	
Object	.534	.595	.804	1	.370	1.705	
Evaluation			6.577	2	.037		1.016
Negative	-1.247	.688	3.282	1	.070	.287	
Positive	-1.992	.794	6.288	1	.012	.136	

Model results: -2 Log likelihood = 595.201; Cox & Snell R Square = .191; Nagelkerke R Square = .254; c-statistic = .754.

Note. EP was coded as 1 and BP was coded as 0. For the predictors, the first category was used as reference category.

Four features of ANGER emerge as significant predictors of EP and BP: Emoter's 'control' over the event and the 'social expression' as the emotional response of the Emoter are predictors for EP; 'inanimate object' as cause of anger and 'positive evaluation' are predictors for BP. None of the remaining features are significant predictors in the model, i.e., they do not predict a national variety specifically.

problems of multicollinearity. The Hosmer-Lemeshow test suggests a good fit, $\chi^2 = 6.622$, $df = 8$, $p = .578$, and the model explains approximately 10.2% (Nagelkerke $R^2 = .102$) of the variance observed in the EP and BP varieties, suggesting mild differences between EP and BP.

These results confirm that EP appears to be more akin to the controlled ANGER cluster, i.e. to the violent response type of anger associated with immoral behavior and norm violation and also to the interpersonal ANGER cluster associated with the behavior of intimate people. This association is in line with the relatively more collectivistic, restrictive, and impulse-controlled culture of Portugal. BP, in turn, is more connected with inanimate causes of anger and with a positively evaluated experience of a typically negative emotion. This correlation is in line with the more individualistic, indulgent, and emotionally expressive culture of Brazil.

Table 8. Logistic regression analysis of PRIDE: predictors for EP and BP

	B	S.E.	Wald	df	p	Exp(B)	VIF
E_Focus_Self	-.562	.323	3.025	1	.082	.570	2.431
Emoter_manif*			3.276	3	.351		1.090
Behavioral_reactions	.451	.340	1.757	1	.185	1.569	
Both	.746	.426	3.069	1	.080	2.109	
No_expression	.333	.338	.969	1	.325	1.395	
E_Direct_role	.537	.298	3.236	1	.072	1.710	1.701
Cause type*			16.461	8	.036		1.258
Achievement-self	-.635	.458	1.928	1	.165	.530	
Quality-self	-.810	.420	3.719	1	.054	.445	
Possessions	-.721	.529	1.854	1	.173	.486	
Appearances	-.368	.514	.513	1	.474	.692	
Achievement-other	.252	.593	.180	1	.671	1.286	
Quality-other	-.292	.550	.282	1	.595	.747	
Belonging to a group	-1.035	.496	4.352	1	.037	.355	
Family	-1.420	.622	5.206	1	.023	.242	
Cause relevance For Emoter	.581	.273	4.544	1	.033	1.788	1.689
Success*			2.403	2	.301		2.972
Self	-.685	.442	2.399	1	.121	.504	
Other-close	-.227	.362	.393	1	.530	.797	
Responsible (for success)*			.711	2	.701		2.025
Other	-.199	.345	.332	1	.564	.820	
Self_global	.141	.312	.204	1	.652	1.151	
Excessive pride	-.093	.223	.174	1	.677	.911	1.110
Negative evaluation	.419	.251	2.780	1	.095	1.520	1.150
Admiration	-.050	.328	.023	1	.879	.951	2.321
Constant	.257	.718	.128	1	.720	1.293	

Model results: -2 Log likelihood = 632.329; Cox & Snell R Square = .076; Nagelkerke R Square = .102; c-statistic = .649.

Note. EP was coded as 0 and BP was coded as 1.

Notes

* The last was category used as reference category.

Turning now to PRIDE, only three features emerge as significant predictors for EP and BP: 'belonging to a group' and 'family' as causes of pride are predictors for EP; 'cause relevance for Emoter' is the predictor for BP. Although the predictors for the two national varieties are scarce, they do confirm that EP appears to be more akin to the cluster of other-directed pride, which is in line with the more collectivistic Portuguese culture, whereas BP seems closer to self-centered pride, which is in line with the more individualistic Brazilian culture.

4.3 Multiple correspondence analysis: Profiles of ANGER and PRIDE metaphors

Table 9 presents the frequency of literal and metaphorical uses of the anger and pride analyzed nouns in EP and BP. Comparatively, the metaphorical figurative conceptualization of ANGER and PRIDE is clearly more frequent than its literal expression, except for the noun *orgulho* 'pride' in BP. The metaphorical structuring of these two emotions appears to be more frequent in EP than in BP, and the ANGER concept is more frequently metaphorically construed than the PRIDE concept. Overall, the clearest divergence between the two national varieties concerns the (non)figurativity of PRIDE.

Table 9. Literal and metaphorical uses of ANGER and PRIDE nouns in EP and BP

		EP			BP		
		Hits	Literal	Metaph.	Hits	Literal	Metaph.
ANGER	<i>cólera</i>	9	0	9	15	0	15
	<i>fúria</i>	106	8	98	103	7	96
	<i>ira</i>	20	3	17	28	6	22
	<i>irritação</i>	29	13	16	23	7	16
	<i>raiva</i>	138	25	113	139	48	91
	Total	302	49	253	308	68	240
	%		16.23	83.77		22.08	77.92
PRIDE	<i>orgulho</i>	167	56	111	171	116	55
	<i>vaidade</i>	71	9	62	77	38	39
	Total	238	65	173	248	154	94
	%		27.31	72.69		62.10	37.90

4.3.1 Profiles of ANGER conceptual metaphors

Table 10 shows the absolute and the relative frequencies of all the conceptual metaphors of ANGER as expressed by the five target nouns found in our corpus.

Table 10. Frequency of conceptual metaphors of ANGER nouns in EP and BP

Conceptual metaphors ANGER IS...	EP	BP
PRESSURIZED FLUID	62 (24.51)	54 (22.50)
HOT	5	0
RISE	8	5
PRESSURE	24	7
COUNTERPRESSURE	1	0
CONTENTION	6	9
COMING OUT	3	0
EXPLOSION	15	33
FIRE	4 (1.58)	2 (0.83)
ILLNESS	3 (1.19)	1 (0.42)
INSANITY	19 (7.51)	35 (14.58)
AGGRESSIVE ANIMAL	6 (2.37)	10 (4.17)
OPPONENT IN A STRUGGLE	14 (5.53)	24 (10.00)
FORCE OF NATURE	2 (0.79)	2 (0.83)
WEAPON	19 (7.51)	12 (5.00)
FORCE	10 (3.96)	5 (2.08)
PHYSICAL ENTITY	29 (11.46)	42 (17.50)
VISIBLE/HIDDEN OBJECT	3	14
POSSESSION	9	4
MOVED OBJECT	0	1
MOVING OBJECT	5	11
OBJECT	3	0
FOOD	1	2
INTENSITY IS SIZE	4	3
SUBSTANCE	3	5
POISON	1	1
INTENSITY IS QUANTITY	0	1
LIVING ORGANISM	12 (4.74)	7 (2.92)
PLANT	2	0
ANIMAL	0	0
HUMAN	10	7

Table 10. (continued)

Conceptual metaphors ANGER IS...	EP	BP
LOCATION	3 (1.19)	0 (0.00)
DANGER/THREAT	1 (0.40)	2 (0.83)
DEVIL	3 (1.19)	0 (0.00)
IDEA	7 (2.77)	5 (2.08)
THE BODY IS A CONTAINER FOR ANGER	59 (23.32)	39 (16.25)
CHEST	0	1
CRY	11	5
EYES	8	4
FACE	16	11
HANDS	2	1
HEAD/MIND	1	2
MOUTH	1	0
SKIN	1	0
SMELL	0	1
VOICE	19	14
Total	253	240

Figure 9 adds to Figure 2 above the sixteen root conceptual metaphors of ANGER presented in Table 10. The metaphors ANGER IS A PRESSURIZED FLUID and THE BODY IS A CONTAINER FOR ANGER are split into metaphors profiling the fluid inside the body (Met_Fluid_in, Met_Body_Container_in) and metaphors profiling the outpouring or the explosion of the fluid (Met_Fluid_out, Met_Body_Container_out). Most of the metaphors converge at the central axis of Figure 9, which means that they are not clearly associated with any of the anger feature clusters identified in Section 4.1.1. There seem to be some approximations, however. The somatic, physiological metaphors of FLUID and BODY CONTAINER seem to be closer to the violent and interpersonal clusters of anger caused by norm violation and immoral behavior, and by the behavior of family or loved people, respectively. This means that these two most intersubjective types of anger tend to be metaphorically construed in terms of a heated and pressurized FLUID in the body container. However, metaphors that are further away from the central axis, like FORCE OF NATURE, ILLNESS, DANGER, DEVIL, cannot be linked to any of the clusters of anger since they are not very representative (see their low frequency in Table 10).

Table 11. (continued)

Conceptual metaphors PRIDE IS...	EP	BP
MOVING OBJECT	2	0
CLOTH	2	0
FOOD	0	1
GAME	0	1
MECHANISM	0	1
MIRROR	0	1
SUBSTANCE	1	5
SYMBOL	4	1
PERSON	65 (37.57)	22 (23.40)
BAD	0	4
BLIND	0	1
FAIR	0	1
FAME	1	0
HONOR	35	3
ILLNESS	0	1
ILLUSION	4	0
PRINCESS	2	0
RIGHT	5	0
SENSUAL	4	0
SIN	3	0
SNOB	1	0
STUPID	2	1
SUPERIOR	2	2
UNSPECIFIED	0	6
VICTIM	6	3
THE BODY IS A CONTAINER FOR PRIDE	28 (16.18)	11 (11.70)
BACK	0	1
BLOOD	2	0
CHEST	0	1
EYES	2	2
FACE	3	0
GESTURE	2	1
HANDS	0	0
HEAD/MIND	4	1
HEART	2	1
PAIN	1	0
RIBS	1	0
SMELL	1	0
SOUL	1	0
UNSPECIFIED	1	0
VOICE	8	4

Figure 10 adds to Figure 6 above the eight root conceptual metaphors of PRIDE presented in Table 11. A distinction was made between the metaphors of body expression denoting internalized expression (Body_in), corresponding to FLUID_IN, BLOOD, HEAD/MIND, HEART, PAIN, RIBS, SOUL of Table 11, and the ones denoting external manifestation (Body_out), corresponding to the remaining metaphors of the first and last categories of Table 11. We have also classified the personification metaphors into positively evaluated PERSON (Person_pos), corresponding to FAIR, HONOR, PRINCESS, RIGHT, VICTIM of Table 11, and negatively evaluated PERSON (Person_neg), corresponding to the remaining sub-metaphors of the same category of Table 11. Finally, we have distributed the various sub-metaphors of the PHYSICAL ENTITY metaphor into four sub-categories (ECONOMIC VALUE = VALUABLE, POSSESSION, VISIBLE and OTHER).

The metaphors are distributed between the two clusters of features: on the left side of the plot are the metaphors that are more closely linked to the cluster of self-centered pride, and on the right side are the metaphors that are more closely linked to the cluster of other-directed pride. This distribution is quite coherent. In fact, the metaphorical conceptualization of pride as a visible, valuable object, as an externally perceptible outpouring or exploding fluid and as a force serves well the



Figure 10. MCA map of usage-feature and conceptual metaphors of PRIDE

self-oriented, self-affirming, bragging, vain and excessive emotion associated with the cluster of self-centered pride. Likewise, the personification of pride as a morally evil person and as an opponent fits well with self-centered pride. On the contrary, the metaphors of pride as a fluid inside the body, possessed object and morally good person are in tune with the cluster of other-directed pride.

4.4 Logistic regression analysis: ANGER and PRIDE metaphors predicting EP and BP varieties

Tables 12 and 13 present the results of the logistic regression analysis.¹²

Table 12. Logistic regression analysis of ANGER: Predictors for EP and BP

	B	S.E.	Wald	df	Sig.	Exp(B)
METAPHOR			30.165	17	.025	
ANIMAL	-1.281	.675	3.602	1	.058	.278
BODY_CONTAINER_IN	.799	.603	1.752	1	.186	2.222
BODY_CONTAINER_OUT	-.860	.515	2.782	1	.095	.423
DANGER	-21.791	40192.970	.000	1	1.000	.000
DEVIL	20.615	23205.422	.000	1	.999	-
FIRE	-.182	.994	.034	1	.855	.833
FLUID_IN	.105	.499	.045	1	.833	1.111
FLUID_OUT	-.993	.489	4.130	1	.042	.370
FORCE	-.118	.693	.029	1	.865	.889
FORCE_NATURE	.105	1.287	.007	1	.935	1.111
IDEA	-.251	.706	.127	1	.722	.778
ILLNESS	.105	1.287	.007	1	.935	1.111
INSANITY	-1.050	.501	4.389	1	.036	.350
LOCATION	20.615	23205.422	.000	1	.999	-
OBJECT	-1.008	.477	4.461	1	.035	.365
OPPONENT	-1.067	.529	4.067	1	.044	.344
ORGANISM	-.077	.650	.014	1	.906	.926

Model results: -2 Log likelihood = 515.644; Cox & Snell R Square = .101; Nagelkerke R Square = .134. c-statistic = .663.

Note. EP was coded as 1 and BP was coded as 0. For the predictors, the last category (WEAPON) was used as reference category.

12. In the regression model for ANGER (Table 12) the EPV was 11 (197/18 = 10.9), which is above the minimum value required. The model explains approximately 13.4% of the variance observed in the EP and BP varieties (Nagelkerke $R^2 = .134$), suggesting mild differences between EP and BP. In the regression model for PRIDE (Table 13) the EPV was 5 (88/18 = 4.8), which is within the acceptable range. The model explains approximately 11% of the variance observed in the EP and BP varieties (Nagelkerke $R^2 = .109$), suggesting mild differences between EP and BP.

Four conceptual metaphors of ANGER emerge as significant predictors for EP/BP variation: ANGER IS A COMING OUT/EXPLODING PRESSURIZED FLUID, ANGER IS INSANITY, ANGER IS A PHYSICAL ENTITY and ANGER IS AN OPPONENT IN A STRUGGLE are predictors for BP. This result is consistent with the more individualistic, indulgent, and emotionally expressive culture of Brazil. In fact, each of these four conceptual metaphors profiles affective semantic dimensions or foci (Kövecses, 2000, pp. 40–46) that are indicators of cultural differences.

The metaphorical conceptualization of anger as a FLUID that surges out of the Emoter's body (COMING OUT) or leaves it in a violent way (EXPLOSION), as INSANITY, and as a harmful and damaging OPPONENT to the self, profiles the self-regulation one may (or may not) exert on one's feelings and/or their manifestation and the intrinsic (un)controllability of the emotion. Specifically, these metaphors highlight the either unsuccessful or unattempted regulation exerted by the Emoter over the anger emotion and thus are in line with the relatively less collectivism of Brazilian culture. The relatively more individualistic Brazilian culture is more favorable to the unrestrained and open manifestation of the intense emotional experience of anger as an affirmation of the self. Although our logistic regression does not indicate that any of the metaphors under study are predictors for EP, it might be expected that the relatively more collectivistic Portuguese culture would tend to repress the overt manifestation of intense negative anger in order to avoid or diminish interpersonal hostility and to ensure social order and harmony.

The same metaphors also reinforce the image of anger as an intense emotional experience with strong effects, be it the high physiological arousal or excitation as an exploding heated fluid or the physiological and/or psychological strong disruption as an opponent in a violent struggle or as insanity. This high *intensity* of anger, which is metaphorically highlighted in BP, is consistent with the relatively more individualistic culture of Brazil, specifically the Brazilian tendency for the unrestrained and open manifestation of emotions.

Finally, the same three metaphors together with the anger metaphor as PHYSICAL ENTITY, especially as VISIBLE and MOVING OBJECT (very frequent sub-metaphors in BP, as indicated above in Table 10), highlight a third culturally sensitive dimension, namely the *expression* or manifestation of the emotion. Specifically, these four metaphors profile the externally perceptible manifestation of anger, as a visible object, a flowing or exploding fluid, a person in fits of madness or fighting in a struggle. The perceptible (visible, audible) manifestation of anger, as opposed to its internalized expression, is coherent with a more individualistic culture like Brazil's, which prevents less and perhaps even facilitates the unrestrained and overt manifestation of intense and negative emotions like anger.

Table 13. Logistic regression analysis of PRIDE: Predictors for EP and BP

	B	S.E.	Wald	df	Sig.	Exp(B)
METAPHOR						
BODY_OUT	-.348	.562	.384	1	.535	.706
FORCE	.463	.784	.348	1	.555	1.588
OBJECT_OTHER	-.741	.617	1.442	1	.230	.476
OBJECT_POSSESSION	-.502	.551	.831	1	.362	.605
OBJECT_VALUABLE	.394	.664	.351	1	.554	1.482
OBJECT_VISIBLE	.057	.648	.008	1	.930	1.059
OPONENT	-.636	.593	1.150	1	.284	.529
PERSON_NEG	-.268	.598	.201	1	.654	.765
PERSON_POS	1.118	.548	4.163	1	.041	3.059

Model results: -2 Log likelihood = 309.151; Cox & Snell R Square = .079; Nagelkerke R Square = .109; c-statistic = .666.

Note. EP was coded as 1 and BP was coded as 0. For the predictors, the first category (BODY_IN) was used as reference category.

The results presented in Table 13 indicate that the conceptual metaphor PRIDE IS A GOOD PERSON is significantly associated to EP. No significant effects were obtained for the remaining metaphors. Looking back to Table 11 above, the HONOR PERSON (35/65) and RIGHT PERSON (5/65) sub-metaphors are the most frequent and productive in EP, in contrast to only 3/22 occurrences in BP. This means that pride in EP is metaphorically very much linked to honor and dignity, which makes it a justifiable and good type of pride since it is other-directed pride, which is, as we have seen, prominent in EP but not in BP. Honor is a cultural dimension and has been deemed relevant for the experience of pride (e.g. Rodriguez Mosquera, Manstead and Fischer, 2000). In honor cultures, pride may be seen as creating an undesirable separation between oneself and one's in-group, and therefore, pride should be negatively sanctioned and less openly expressed. Crucially, honor cultures are typically collectivistic cultures.

5. Conclusions

The present article has developed a corpus-based and profile-based multivariate quantitative methodology for studying the cultural variation of the ANGER and PRIDE emotions in the two main national varieties of Portuguese, especially for measuring the impact of figurativity on the intralinguistic cultural variation of emotions. Developing a meticulous, multifactorial profile-based qualitative analysis of 1,100 examples of anger and pride nouns from a corpus of personal-experiential

blogs, followed by advanced techniques of multivariate statistical modeling, the study has established clusters of feature associations and behavioral profiles of conceptual metaphors that are important in the conceptual structuring and the cultural variation of *ANGER* and *PRIDE* in the EP and BP varieties.

The profile-based qualitative and quantitative analysis has revealed (i) the cultural variability of these two different emotions, one more basic and negative and the other more social and positive, in the same pluricentric language; (ii) the importance of figurativity, especially of conceptual metaphor, in the intralinguistic cultural conceptualization and variation of these two emotions, (iii) and the influence of some cultural dimensions in the conceptualization and variation of emotion concepts, such as collectivism vs. individualism, power distance, and honor. These results reinforce insights from cross-cultural psychological research (e.g. Fontaine, Scherer and Soriano, 2013) and from cognitive linguistic research (e.g. Geeraerts and Grondelaers, 1995; Fabiszak and Hebda, 2010; Glynn, 2014a; Ogarkova and Soriano, 2014; Wilson and Lewandowska-Tomaszczyk, 2017), but also add to these psychological and linguistic studies the importance of cultural differences in the conceptual structuring and metaphorical figurativity of emotions within the same language.

The multifactorial profile-based analysis, particularly the multiple correspondence analysis, has shown three usage-feature clusters of *ANGER*, namely the violent response type of anger associated with immoral behavior and norm violations, a complaining or irritated kind of anger associated with inanimate objects and other inconveniences, and interpersonal anger associated with the behavior of family or loved people (there is yet a fourth cluster, smaller and restricted in associated features: that in which the behavioral response of the Emoter is self-depreciation), and two usage-feature clusters of *PRIDE*, namely self-centered pride and other-directed pride. It has also revealed behavioral profiles of somatic, forceful, violent, irrational, object and bad/good person metaphors highlighting different components of *ANGER* and *PRIDE* emotions.

The same analysis has also shown the importance of figurativity, especially conceptual metaphor, in the conceptualization and variation of anger and pride emotions in EP and BP. Conceptual metaphor is an efficient and productive conceptual mechanism for experiencing and communicating anger and pride even more in EP than in BP and relatively more for anger than for pride. BP showed a preference for the literal conceptualization of pride, probably because pride is more socially accepted, more overtly manifested and more positively evaluated due to the more individualistic Brazilian culture.

The exploratory and confirmatory quantitative analyses have revealed both the strong similarities as well as the subtle but relevant differences in the conceptualization of the emotions of anger and pride in EP and BP. The two national varieties

have the same usage-feature clusters and the same conceptual metaphors of anger and pride. However, there are some conceptual differences, and these differences are influenced by culture.

The logistic regression analysis has shown that the complaining kind of ANGER associated with inanimate objects and the metaphorical conceptualization of ANGER as a COMING OUT/EXPLODING PRESSURIZED FLUID, as INSANITY, as an OPPONENT IN A STRUGGLE and as a VISIBLE object are predictors for BP. This means that BP is more connected with the metaphorically unattempted or failed regulation of anger, as a fluid that comes out of the body or causes explosion, as insanity or as an uncontrolled opponent. BP is also more akin to the metaphorically externally perceptible, unrestrained, and open manifestation of anger as an affirmation of the self, and to metaphorically construed high intensity of anger. Unattempted or failed regulation, externally perceptible, unrestrained manifestation and high intensity of anger as well as the complaining kind of anger and the positive evaluation of anger (also a predictor for BP) are consistent with the more individualistic, indulgent, and emotionally expressive culture of Brazil. The complaining kind of anger, which is uncontrolled by nature, is consistent with less regulated and more expressive/outward and intense anger, although no statistically significant correlation was found between that cluster of anger and these metaphorically profiled dimensions of anger. Importantly, these four conceptual metaphors working as predictors for BP play an important role in the linguistic and cultural variation of ANGER in Portuguese.

The logistic regression analysis also confirmed that Emoter's control over the anger event and social expression as the emotional response of the Emoter are predictors for EP and EP is therefore closer to the violent response type of anger associated with norm violation and to the more interpersonal anger associated with the behavior of family or loved people. This association is in line with the relatively more collectivistic, restrained, and impulse-controlled culture of Portugal. Here, the logistic regression did not show any conceptual metaphor predictor for EP, but the multiple correspondence analysis showed that these two most intersubjective types of anger tend to be built through the very frequent somatic metaphor of heated and pressurized FLUID in the body container.

The logistic regression analysis has also shown that belonging to a group and family as causes of pride are predictors for EP, which means that EP is more connected with other-directed pride, especially communal pride in the family or group one belongs to. This association is in line with the relatively more collectivistic and restrained culture of Portugal. Accordingly, the logistic regression indicated that the very frequent and productive metaphor PRIDE IS AN HONOR/RIGHT PERSON is a predictor for EP. The metaphorically profiled honor dimension of pride is in perfect harmony with other-directed pride and Portuguese collectivistic culture. The logistic regression also showed that cause relevance for Emoter is the predictor for

BP and BP therefore seems closer to self-centered pride, putting more emphasis on self-fulfillment, personal attributes or accomplishments and on situations exemplifying personal success. This correlation is coherent with the more individualistic, indulgent, and emotionally expressive culture of Brazil. Here, the logistic regression did not present any conceptual metaphor predictor for BP, but the multiple correspondence analysis showed that self-centered pride tends to be metaphorically constructed as a visible and valuable object, an externally perceptible fluid in the body container and a force.

These results about the cultural variation in the conceptual structuring and metaphorical representation of anger and pride in the EP and BP varieties provide empirical evidence about important theoretical principles and methodological orientations in the linguistic, psychological and anthropological research on emotions.

Theoretically, this study confirms the hypothesis that emotions, despite being grounded in bodily physiological experiences, are conditioned by culture. Most studies exploring the role of culture in the conceptualization of emotions have emphasized the comparison between different languages. This study highlights the role of culture within the same language and in its pluricentric internal variation, in which the differences in cultural conceptualization are more subtle. Importantly, emotion concepts are not universal or physiologically grounded but are culturally specific, and this is true not only at a cross-linguistic level but also at an intralinguistic level. Thus, the exploration of the social and cultural nature of emotions must consider language-internal variation and sociolinguistic diversity. A second theoretical conclusion is supported by the strong impact of conceptual metaphor on the linguistic and cultural variation of emotions. Of course, analyzing figurativity, especially metaphor and metonymy, to describe and explain the conceptualization of emotions is nothing new. But to demonstrate empirically that conceptual metaphors of emotions are profoundly influenced by culture is not yet a major concern in metaphor research and is even less so in the context of variation within a single language. The action of metaphor as a mechanism of intralinguistic social variation reinforces the importance of understanding metaphor as not just a creative thought-structuring device, but also as socially and culturally situated, which implies a variationist perspective.

Methodologically, the behavioral profile approach to metaphor and emotions, which employs relatively large random samples of corpus data, the annotation of usage features and the application of multivariate statistics to the results of that annotation, offers more realistic and falsifiable hypotheses and results for identifying, classifying, and interpreting conceptual metaphors of emotions. This method is thus consistent with the usage-based model commitment and the inevitable social variation and may adequately unravel the complex conceptual-cultural and figurative structure of emotion concepts.

Funding

This study has been carried out under the research project on Emotions in Portuguese, funded by Calouste Gulbenkian Foundation and the research project UIDB/00683/2020, funded by the Portuguese Foundation for Science and Technology.

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Intersubjectivity and usage play central roles in figurative language and are pivotal notions for a cognitively realistic research on figures of thought, speech, and communication. This volume brings together thirteen studies that explore the relationship between figurativity, intersubjectivity and usage from the Cognitive Linguistics perspective. The studies explore the impact of figurativity on areas of lexicon and grammar, on real discourse, and across different semiotic systems. Some studies focus on the psychological processes of the comprehension of figurativity; other studies address the ways in which figures of thought and language are socially shared and the variation of figures through time and space. Moreover, some contributions are established on advanced corpus-based techniques and experimental methods. There are studies about metaphor, metonymy, irony and puns; about related processes, such as humor, empathy and ambiguity; and about the interaction between figures. Overall, this volume offers the advantages and the opportunities of an interactional and usage-based perspective of figurativity, embracing both the psychological and the intersubjective reality of figurative thought and language and empirically emphasizing the multidimensional character of figurativity, its central function in thought, and its impact on everyday communication.

ISBN 978 90 272 0855 2



9 789027 208552

John Benjamins Publishing Company