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*Marco Coniglio, Andrew Murphy,  
Eva Schlachter, Tonjes Veenstra*

# ATYPICAL DEMONSTRATIVES

SYNTAX, SEMANTICS AND PRAGMATICS

LA LINGUISTISCHE ARBEITEN

## **Atypical Demonstratives**

# Linguistische Arbeiten

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Edited by  
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## Volume 568

# Atypical Demonstratives

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Syntax, Semantics and Pragmatics

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# Preface

The present volume is a collection of selected contributions from a workshop on “Demonstratives”, that took place at the 36th conference of the Deutsche Gesellschaft für Sprachwissenschaft in Marburg. In addition to some of the papers presented on that occasion, two other additional papers, that we considered relevant for the topic under discussion, are also included in this volume. This is a joint collaboration of people working (or having worked) at the following institutions: Collaborative Research Center (SFB 632) *Information Structure: The Linguistic Means of Structuring Utterances, Sentences and Texts* (in Berlin and Potsdam; funded by the German Research Foundation, DFG), Georg-August-Universität Göttingen, Humboldt-Universität zu Berlin, Research Training Group Interaction of grammatical building blocks (in Leipzig; also funded by the DFG), and the Leibniz-Zentrum Allgemeine Sprachwissenschaft (ZAS). Financial support also came from the Federal Ministry of Education and Research (BMBF) of Germany (grant number 01UG0711), which is hereby gratefully acknowledged. In addition to the colleagues that participated in the workshop and/or contributed to this volume, we also want to express our gratitude to the people who have encouraged and assisted us in this enterprise: Eefje Boef, Svenja Brand, Karin Donhauser, Sonja Linde, Katharina Paul, Svetlana Petrova, Klaus von Heusinger, and Lars Erik Zeige. We especially want to highlight the role of Eefje, who was involved from the very start as one of the original organizers, and only stepped down from this project to take up a job outside of academia. Finally, a special thank goes to the extensive group of anonymous reviewers for their invaluable help and input.

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# It's not all just about *this* and *that*

Some exotic species in the realm of demonstratives

## 1 Introduction

Demonstratives form a fascinating group of words, because their common properties are hard to grasp, as Diessel puts it:

All languages have demonstratives, but their form, meaning and use vary tremendously across the languages of the world.

(Diessel 1999: 1)

Whereas all other word classes can be defined via their morphological and/or syntactic behavior, demonstratives resist this kind of categorization since they can be found as particles, pronouns, determiners, adverbs, adjectives, presentational expressions or even verbs (see 1.1). They oscillate between inflecting and non-inflecting classes, as well as between function and content words (Diessel 1999, Dixon 2003).

What they have in common is their semantic and pragmatic properties. All demonstratives are deictic expressions (Diessel 1999: 35) or indexicals (in Kaplan's 1989 terminology), but not all deictic words are considered demonstratives.

Deictic expressions are linguistic signs which cannot have a reference without an actual situation or context, such as *I*, *now*, *here*. These exemplify the three main types of deictic features, i.e. person, time and space (Bühler 1934: 102). Lyons (1977: 637) defines deixis as follows:

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[...] the location and identification of persons, objects, events, processes and activities being talked about, or referred to, in relation to the spatiotemporal context created and sustained by the act of utterance and the participation in it, typically, of a single speaker and at least one addressee.

In addition, “real” demonstratives, typically instantiated by *that*, need what Kaplan (1989: 490) calls an associated demonstration, which ultimately can be traced back to Bühler’s (1934) notion of ‘origo’. Following König & Umbach (this volume) and many others, we define demonstratives as a subclass of deictic expressions which are typically accompanied by a pointing gesture and whose reference can only be determined with respect to a center of orientation, the ‘origo’, which is determined by the utterance situation.

A number of comprehensive monographs (or chapters thereof) have been devoted to demonstratives in various linguistic fields (Brugmann 1904, Diessel 1999, Dixon 2003, Roehrs 2009, a.o.). There, we find different classification criteria based on typological observations, exhaustive discussions of the properties of demonstratives in specific languages, etc. In this volume, we do not intend to offer either a novel typological classification or definition of the phenomena described. This book rather intends to capture the variability of demonstrative expressions based on a broad empirical basis. The individual chapters discuss (properties of) demonstratives that have not received the adequate attention (or have been completely neglected) in the literature. By providing fresh insights and discussing new facets, we intend to contribute to the better understanding of this group of words, starting from specific empirical phenomena. Our objective is to advance our knowledge on the various properties of demonstratives, on their syntactic multi-functionality, and on their semantic feature specifications and pragmatic functions. In addition, an aspect that emerged as orthogonal to most of the papers regards the grammaticalization processes involving demonstratives, in particular how and from which lexical and morpho-syntactic categories they originate cross-linguistically, and which semantic/pragmatic mechanisms characterize their emergence (cf. Diessel 2006, Himmelmann 1997).

The papers in this volume mainly focus on demonstrative pronouns / determiners of the 3rd person, leaving the other ones aside. Their novelty consists in their investigation of many atypical uses and combinations of demonstratives that have not yet been mentioned or focused on in the literature, such as the combination of the definite article with demonstrative or possessive expressions (*de mijne* ‘the mine’; *de die* ‘the that’) in Dutch dialects (Corver & van Koppen), the combination of the indefinite and demonstrative determiner (*ti neki ljudi* ‘those some people’; *taj jedan čovek* ‘that one man’) in Serbo-Croatian (Arsenijević), the development of the definite article from a demonstrative in Chinese starting from

bridging contexts (Cui) or unexpected co-referential readings of referential expressions (Hinterwimmer). Besides these papers on determiners, König & Umbach's contribution treats another neglected phenomenon in the field of demonstratives, namely the manner adverb *so*.

The volume is structured as follows. The first part will focus on the morpho-syntax of atypical demonstratives, whereas semantic and pragmatic peculiarities are discussed in the second part. In the remainder of this introduction, we will first focus on the most important (morpho-syntactic and semantic/pragmatic) properties of demonstratives as they are discussed in the literature. Then, section 2 will summarize the content of the papers in this volume and will briefly summarize their specific contribution to the discussion of demonstratives.

## 1.1 The syntax of demonstratives

The first part of this volume is dedicated to (morpho-)syntactic properties and peculiarities of demonstratives. We pointed out that they are characterized by a great deal of variation, which makes their syntactic classification very difficult, if one abstracts away from semantic and pragmatic criteria. From the morphological perspective, Diessel's (1999: 13ff.) typological investigation reveals that demonstratives may be monomorphemic as well as polymorphemic and, furthermore, that they are mostly independent words (cf. English and German), but that they may behave like clitics in some languages, as shown here by the enclitic demonstratives in Lango, which can be attached to different elements:

- (1) *Lango*
- a. gwók=kì  
dog=this  
'this dog'
  - b. gwôkk à dwón=ni  
dog ATT<sup>1</sup> big.SG=this  
'this big dog'
  - c. gwôkkì à dònò àryó=ni  
dogs ATT big.PL two=this  
'these two big dogs'

(Noonan 1992: 155,156, cited in Diessel 1999: 24)

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<sup>1</sup> ATT = attribute marker.

From a syntactic perspective, the status of demonstratives is at least twofold (cf. Giusti this volume). Some demonstratives belong to the functional category of determiners since they are in complementary distribution with articles, possessives, etc. ((*\*the*) *this boy*) However, based on the observation of article-less languages, other authors argue for an analysis of demonstratives as a special lexical class of adjectives.

Regarding this point, König & Umbach (this volume) summarize the results of wide-ranging typological studies on demonstratives by distinguishing at least the following syntactic uses of demonstratives (cf. Anderson & Keenan 1985; Diessel 1999, Dixon 2003, Krasnoukhova 2012):

- a. pronouns (Engl. *this/that*)
- b. adnominal modifiers (Engl. *this/that* book)
- c. adverbs (Engl. *here/there*)
- d. presentational (identificational) expressions (Fr. *voilà*, Ital. *ecco*)

But they immediately observe that the list cannot be considered exhaustive due to the existence of other types of demonstratives, such as demonstrative verbs (Dixon 2003, Guerin 2015). König & Umbach themselves show special uses of manner, quality and degree demonstratives.

A systematic description is further complicated by grammaticalization processes (cf. Hopper & Traugott 1993), which pose two sorts of problems in relation to demonstratives (cf. Diessel 2006, Himmelmann 1997). First, it has been shown that there are different grammaticalization processes that start out from demonstrative or deictic elements. These processes clearly lead to a higher complexity of synchronic variation in the realm of demonstratives and contribute to making the picture of this class of elements more blurred. Demonstratives are considered donor lexemes for different word classes. For example, a well-described grammaticalization path in Germanic and Romance languages leads from demonstratives to definite articles, via the loss of deixis/anaphoricity (cf. Oubouzar 1992, Himmelmann 1997, Demske 2001). But demonstratives are also claimed to provide the basis for the grammaticalization of (relative) pronouns (cf. German *der/die/das* ‘who, which’), complementizers (English *that*), etc. Thus, on the one hand they continue to exert their deictic or anaphoric functions within the nominal domain (inside the DP), and on the other hand they interact with the clause domain (the CP) and thus acquire important necessarily anaphoric (or cataphoric) functions at discourse-structural level (cf. Hopper & Traugott 1993: 175ff., Alexiadou, Haegeman & Stavrou 2007, and all contributions in this volume).

Second, a more general problem connected to their morpho-syntactic status regards which classes of items are to be considered as donor lexemes for demon-

stratives. As pointed out by Diessel (1999: 150), there is no clear evidence in any language that demonstratives were grammaticalized starting from non-deictic lexical sources. As the only possible exception, he mentions cases of reinforcement of weakened demonstratives by means of lexical material, such as Latin *ille*, reinforced by *ecce* ‘behold’ in Vulgar Latin, yielding Old French *cest cel* and ultimately Modern French *ce* (Harris 1978: 70ff.). But he observes that this is an exceptional mechanism. As in this case, it is sometimes the grammaticalization of the demonstrative into a new item that renders this reinforcement necessary, in order to recreate a new series of deictic/anaphoric elements.

## 1.2 The pragmatics and semantics of demonstratives

Different pragmatic uses of demonstratives have been isolated in the literature. Based on Halliday & Hasan (1976: 57ff.), we distinguish between exophoric and endophoric uses. Demonstratives are used exophorically when they refer to the extra-linguistic situation:

- (2) This finger hurts (Levinson 1983: 66)

Endophoric uses comprise anaphoric, discourse deictic and recognitional uses (cf. König & Umbach, this volume). Anaphoric (or cataphoric) demonstratives create a link to a referent in the preceding (or following) discourse, as illustrated by the following example from German:

- (3) Der Anwalt sprach mit einer Klientin<sub>i</sub>. Da die<sub>i</sub> nicht  
 the lawyer.MASC talked with a client.FEM since she/this NEG  
 viel Zeit hatte, vereinbarten sie ein weiteres Gespräch nächste  
 much time had agreed.on they a further conversation next  
 Woche.  
 week  
 ‘The (male) lawyer talked to a (female) client. Since she didn’t have much  
 time, they agreed to have another meeting next week.’  
 (adapted from Diessel 1999: 96)

Discourse deictic uses refer to “a chunk of the surrounding discourse” (Diessel 1999: 6):

- (4) A: Hey, management has reconsidered its position. They’ve promoted Fred to second vice president.

- B: a. That's false. (reference to proposition)  
 b. That's a lie. (reference to illocution)

(Webber 1991: 111f., cited in Diessel 1999: 101)

A further use of demonstratives – the recognitional one – is discussed by Gundel, Hedberg & Zacharski (1993), Himmelmann (1996, 1997), and Chen (2004). In this use, a demonstrative refers to an entity that is accessible to the hearer based on knowledge shared with the speaker, as in the following example:

- (5) Do you still have that radio that your aunt gave you for your birthday?  
 (Diessel 1999: 7)

Related to this recognitional use is the indefinite use of the demonstrative, as described in Deichsel & von Heusinger (2011), von Heusinger (2011) and Deichsel (2015). They show that certain uses of German *dieser* 'this' (as similar uses of English *this*) introduces referents that are only accessible to the speaker, but not to the addressee (in contrast to recognitional contexts):

- (6) Gestern im Kino hat mich dieser Fremde angesprochen.  
 'Yesterday at the movies this stranger talked to me.'  
 (Deichsel & von Heusinger 2011: 145)

Some of these pragmatic uses have been claimed to play an important role on the grammaticalization path from a demonstrative to a definite article (deictic > anaphoric > recognitional). They are thus assumed to represent diachronic stages on this path (e.g. Szczepaniak 2011: 71ff.). Hawkins (1978), who was the first to offer a systematic treatment of these usages, lists some more contexts (e.g. associative-anaphorical and larger situation uses) in order to describe the possible manifestations of definiteness marked by a definite article. The crucial point is that deictic and anaphoric uses, also subsumed under the concept of pragmatic definiteness (Löbner 1985), may be instantiated both by demonstratives and definite determiners. But as soon as reference is established to entities in associative-anaphorical (bridging) contexts as in the following examples, the use of a demonstrative determiner, as in (7), is ungrammatical or at least odd and the marking via the definite determiner, as in (8), the only grammatical or pragmatically licit option:

- (7) a book ... \*that author, \*\*these pages, \*that content  
 (adapted from Hawkins 1978: 127)

- (8) a book ... The author is unknown, the pages are uncut, the content is abysmal

(adapted from Hawkins 1978: 123)

The last step of the grammaticalization path of the definite determiner is its reference to entities in larger-situation uses (e.g. *the president*, *the butcher*). In such uses, the shared knowledge of a certain community establishes the uniqueness of the referent. For example, the development of a definite article in German is completed by the end of the Old High German period, when unique referents such as *sun* or *heaven* have to be marked by a definite article (Oubouzar 1992, Demske 2001, Szczepaniak 2011). At present, it is less clear whether (further) intermediate stages can be envisaged and how exactly this process proceeds. For instance, based on data from Chinese, Cui (this volume) points out that usages in ‘bridging’ contexts represent a fundamental stage in the transition process from demonstratives to definite articles, rather than being an indicator for either pragmatic or semantic definiteness.

So far, we only discussed the pragmatic import of the exophoric and endophoric characteristics of demonstratives. These characteristics also had a great impact on semantic theory, starting with Kaplan’s (1977/1989) seminal work. He distinguishes between pure indexicals and true demonstratives, both types being directly referential (Kaplan 1989: 492). However, while the interpretation of pure indexicals such as *I*, *now*, *tomorrow* depends on the context, true demonstratives like *he* or *that* are associated with an act of demonstration (Kaplan 1989: 492).

Based on counterfactual contexts, Kaplan argues that demonstratives are rigid designators. Kaplan’s theory of direct reference has been adopted by Roberts (2002: 94f.), who illustrates the directly referential character of demonstratives based on the difference between definite descriptions, personal pronouns and demonstrative DPs in counterfactual situations. Consider a context (originally discussed in Kaplan 1989) where Charles is from Charleston and Paul from St. Paul, and the speaker, pointing in the direction of Paul ( $\delta$ ), who is sitting in front of him, says:

- (9) If Charles and Paul had changed chairs, then
- a. the man being pointed at would be from Charleston.
  - b. he ( $\delta$ ) would be from Charleston.
  - c. this man being pointed at ( $\delta$ ) would be from Charleston.

(Roberts 2002: 94)

For many speakers, (9a) is true, but (9b) and (9c) are not. The proposition with the definite description seems to mean that the man being pointed at would be



Charles, whereas (9b) and (9c) apparently have to be evaluated in the actual and not in the counterfactual world, thus meaning that Paul is from Charleston, which is actually false.

Nevertheless, Roberts does not accept Kaplan's theory of direct referentiality for all kinds of uses, but argues for an account of demonstratives that also explains anaphoric (10) and bound variable uses (11), which obviously do not need a demonstration act.

(10) I saw one quilt, which was quite abstract, with lots of asymmetric diagonals. Another one was more traditional, worked in an old Amish pattern. This quilt was less busy than the other, but just as bold.

(Roberts 2002: 93)

(11) Every dog in my neighborhood, even the meanest, has an owner who thinks that that dog is a sweetie.

(Roberts 2002: 93)

Roberts instead suggests a unified account of all kinds of demonstrative NPs. She claims that these should be treated as subkinds of definite NPs which are anaphorically linked to their (abstract) antecedents (cf. Lücking this volume).

Summarizing the discussion of the literature so far, we can say that from a syntactic point of view demonstratives can be instantiated by two categories, a functional one (determiners) and a lexical one (adjectives). However, the picture is more complex when we enter the realm of semantics and pragmatics. In terms of the semantic type of object described, different dimensions can be discerned. Demonstratives differ as to whether they refer to an individual (Engl. *this*), time (*then*), location (*here*), manner (*so*), etc. From the pragmatic perspective, demonstratives were shown to exhibit different uses, such as exophoric and endophoric ones (such as anaphoric, discourse deictic, recognitional, and indefinite). Nevertheless, the contributions in this volume describe and analyze some problematic aspects and point towards the conclusion that this characterization of demonstratives is still in need of refinement.

## 2 Overview of the contributions

As mentioned above, the volume is divided in two parts. The first part comprises of a group of papers dedicated to the (morpho-)syntax of atypical demonstratives. The second part will consider special semantic and pragmatic properties of such demonstratives in specific languages.

## 2.1 Syntax of atypical demonstratives

The first part of the book provides an in-depth look on numerous phenomena related to the syntactic properties of demonstratives. Apart from Boban Arsenijević's and Giuliana Giusti's paper which aim to unify analyses of demonstratives proper, the other contributions deal with the role that demonstratives play in other grammatical phenomena, as diverse as pronominalization patterns, relativization, and discourse linking.

As noted above, there are two main traditions regarding the status of demonstratives. Demonstratives either belong to the functional category of determiners, or they are treated as a special lexical class of adjectives. A common argument for the latter is the behavior of demonstratives in languages without articles, the idea being that such languages lack a D-position (and DP projection), and therefore demonstratives cannot be determiners. This position is represented by the DP Parameter Theory (DPP), originating from Fukui (1988) and Corver (1992), elaborated on in Bošković (2005, 2008). The alternative is the Universal DP Hypothesis (DPH) of Longobardi (1994), which holds that the DP projection is necessary both for establishing reference and for the capacity of a nominal expression to appear as an argument. It thus universally postulates a DP projection for all referential nominal expressions, and for all nominal expressions appearing in syntactic argument positions, irrespective of whether a language has articles or not. In his contribution, Boban Arsenijević shows on the basis of an extensive data-set from Serbo-Croatian that the arguments for the DPP are not as solid and robust as they seem to be, and argues that the mere empirical availability of data manifesting the atypical use of demonstratives his paper discusses, as well as the analysis he proposes, lend strong support to the DPH. In this way, he implicitly unifies the two approaches to demonstratives.

In addition to the two traditions mentioned above, Giuliana **Giusti** takes on Diessel's (2006) claim that demonstratives are exophoric elements and proposes a unified analysis. According to Diessel (2006: 469), they "serve two closely related functions: First, they indicate the location of a referent relative to the deictic center. Second, they serve to coordinate the interlocutors' joint attentional focus." Giusti adopts this bifurcation, and argues that demonstratives are, therefore, intrinsically carriers of 3<sup>rd</sup> Person, as they point to an object, which is distinguished from the speaker and the hearer. Furthermore, they locate such a referent in space: the exophoric space (with pointing) or the discourse (with anaphoric function). As such, her proposal boils down to the following: a demonstrative is at the same time an argument and a modifier of N. As an argument, it is first-merged above all (possessive) arguments and below adjectival modifiers. Since it carries Person features, it is remerged at the Left Edge of the nominal expression (NE) in order for

these features to be accessible to the outside of the phase, thereby accounting for the following observations: (i) in some languages (e.g. Spanish) demonstratives can occur NE-internally in a low position (cf. Bernstein 1997, Brugè 1996, 2002, and Giusti 1997, 2002); (ii) demonstratives are so-called “edgers” in the majority of languages; (iii) co-occurrence restrictions on articles and demonstratives. As a modifier, a demonstrative saturates the highest position in the theta-grid of N (i.e. the DISTANCE-feature, following proposals by Arsenijević 2007), and it is also in a Concord-relation with N for all its functional features like Number and Gender, thereby deriving the adjectival-like properties.

Norbert **Corver** and Marjo **van Koppen**'s paper deals with DP-internal pronominalization patterns in different varieties of Dutch. The Definite Pronominalization Pattern (DefP) constitutes a specific form of pronominalization, in which the definite article combines with possessive or demonstrative expressions (*de mijne* = ‘mine’, lit. ‘the mine’; *de die* = ‘that one’, lit. ‘the that’). No DP-internal ellipsis is assumed in such cases, but rather it is argued that the article pronominalizes the NP and thus to be the definite counterpart of the English indefinite dummy noun *one*. In Standard Dutch, the DefP is only attested in possessive constructions, but Dutch varieties display both demonstrative and possessive DefPs. After presenting a very detailed syntactic analysis that can account for the cross-dialectal variation observed in Dutch, the following implicational hierarchy for DefPs is discussed:

(12) *de* + pos < *de* + dem < *de* + wh

If a certain dialect has DefPs with *wh*-pronouns, then it also has DefPs displaying a demonstrative pronoun. Further, if a dialect allows for DefPs with demonstrative pronouns, then it also allows similar patterns with possessive pronouns.

The novel data presented in the paper are interpreted in the light of den Dikken's (1998) DP-internal Predicate Inversion for possessive pronouns, which is here extended to demonstrative pronouns. Whereas the possessive pronoun is analyzed as the small clause predicate, Corver and van Koppen propose to analyze the demonstrative in run-of-the-mill demonstrative constructions as the subject of the small clause. In base-generating the demonstrative in a low position, they concur with Giusti's analysis, although the trigger for movement of the demonstrative to the left edge of the nominal expression is different. They build on Campbell's (1996: 162) proposal, and argue that the moved demonstrative “is a kind of DP-internal topic, which links the internal small clause subject position (and hence DP itself) to a referent identified previously in the discourse” (Corver & van Koppen, this volume). They further propose that when the demonstrative has a predicative meaning, i.e. if the demonstrative designates a property/characteristic of an entity, it is in the predicate position of the small

clause. This is the case, they argue, when the demonstrative pronoun precedes a proper name and has a more evaluative reading on the side of the speaker, as in *ik vind die Donald toch zo gestoord* ‘I find Donald really deranged.’

Cecilia **Poletto** & Emanuela **Sanfelici** discuss the use of distal demonstratives as relativizers in four Italian varieties, namely Colloquial Standard Italian, Campobellese (spoken in Sicily), Venosino (spoken in Lucania) and Marebbano (a Rhaetoromance variety). The contexts in which a demonstrative is found in the different relativization strategies of these varieties are the following: in Colloquial Italian, the demonstrative occurs in free relatives, and is part of the external head of the free relative and, hence, not a real relativizer. In Campobellese and Venosino, the demonstrative appears as a relativizer in non-integrated appositive constructions. In Campobellese it also occurs in free relatives (like Colloquial Italian), but the relative clause introduced by the demonstrative is the nominal predicate of an equative small clause. The demonstrative behaves like an E-type pronoun, and it is a portion of the internal head of the RC (unlike Colloquial Italian). In Venosino, on the other hand, the relative clause occurs in non-integrated appositive structures. It is a proposition and is linked to the antecedent via a discourse head. The demonstrative behaves like a third person pronoun and it is a portion of the internal head of the RC. Finally, in Marebbano the demonstrative is a relativizer and it can only occur in integrated PP-relatives. Since the antecedent must be a third person pronoun, the demonstrative is treated as an anaphor. They propose that the distal demonstrative is specified for the following features: (i) Referentiality; (ii) Person, specified for [3rd]; (iii) Location, specified for the value [distance]; (iv) Contrast; (v) Number and Gender (see Giusti, this volume for a similar proposal). The distribution of these features among the different varieties is as follows:

**Tab. 1:** Feature specification in the four Italian varieties (Poletto & Sanfelici this volume: 121)

	Location	Deixis	Contrast	Referentiality	Person	Num/Gen
Colloquial standard Italian	*	✓	✓	✓	✓	✓
Campobellese	*	*	✓	✓	✓	✓
Venosino	*	*	*	✓	✓	✓
Marebbano	*	*	*	*	✓	✓

They then provisionally link the differences in feature specification of the demonstrative to the level of integration in the relativization strategies.

Bettelou **Los** and Ans **van Kemenade**'s paper treats the loss of the *p/s*-demonstrative in Middle English and its consequences for the strategies of discourse linking. In the Old English period, the forms of the *p/s*-paradigm served as demonstrative and relative pronouns as well as demonstrative determiners and typically occurred clause initially in the specifier position of the CP, where they mainly referred back to given antecedents. Syntactically, this system was linked to a Verb Second grammar (V2). The demonstrative paradigm broke down in the Early Middle English period. Due to the loss of gender, independently used demonstratives could no longer refer to human referents. When used in clause initial position, demonstratives mainly served to indicate topic shift, in particular with human referents, which are especially likely to be the protagonists of a following foregrounded event. Los and van Kemenade claim that the loss of the *p/s*-demonstrative was compensated for by a greater use of relative clauses to achieve topic shift, and a greater role for embedded clauses to express foregrounding. As a further consequence, the number of clause initial PPs that refer back to the previous discourse decreases. Instead, these PPs began to be used as starting points in referential chains that increase since the Early Modern English period (Komen 2012). Also adverbials like *then* and *there* seem to undergo a loss of referential functions which appear to be compensated by the rise of various cleft constructions. Linked to these changes on discourse level is the fact that the V2 rule was lost (between 1400 and 1500). Since the CP system lost its different informational structural layers, TP took over the discourse linking function, with T<sup>0</sup> being the target of verb movement.

## 2.2 Semantics and pragmatics of atypical demonstratives

As discussed above, semantic and pragmatic dimensions are independent from the syntactic categorizations of demonstratives. This will become even clearer in the contributions in the second part of this book, which focus on specific semantic and pragmatic properties of demonstratives in reference phenomena, ranging from reference in usual configurations, to reference in bridging and deferred usage contexts, to reference to subkinds.

Some unexpected combination of indefinite and demonstrative determiners in Serbo-Croatian – as in the following examples – are discussed in Boban **Ar-senijević**'s paper:

- (13) a. ti neki ljudi  
 those some people  
 ‘the people’  
 b. taj jedan čovek  
 that one man  
 ‘the man’

While, at first sight, it might seem surprising that indefinite elements like *one* and *some* can co-occur with a demonstrative and behave like determiners, the author claims that this pattern is very frequently attested in natural languages. For example, these elements grammaticalized to indefinite articles in Germanic and Romance.

The so-called ‘spesumtive’ use of *some* (cf. Warfel 1972 and Mazodier 1998) indicates that the referent is unique, but not accessible to the speaker. Arsenijević labels this use ‘epistemic inaccessibility of the referent to the speaker’ (EIS). In a similar fashion, words like *jedan* ‘one’ in contexts like (13b) are interpreted as indicating that the referent is unique, but that it is epistemic accessible only to the speaker (EAS).

The author argues that the unidentifiability of the referent indicated by words like *jedan* and *neki* in (13) is thus only apparently in contrast with the definiteness typically expressed by demonstratives (Kaplan 1977, Giusti 2002, Wolter 2006). He discusses the main semantic (and syntactic) properties of this atypical use of demonstratives. Based on Roberts’ (2002) and Wolter’s (2006) work, he provides an analysis in terms of the situation semantics by arguing that demonstratives and EIS/EAS markers specify the reference of the nominal expression along different dimensions: the demonstrative indicates whether the referent has been referred to in the previous discourse, while the EIS/EAS marker provides an epistemic dimension for the reference of the nominal expression.

Stefan **Hinterwimmer** deals with another atypical behavior of certain demonstratives. He discusses the unexpected grammaticality of demonstrative pronouns in contrast to noun phrases marked by demonstrative and definite articles. Using Principle C of Chomsky’s (1981) Binding Theory, he observes that all three kinds of DPs can be bound by c-commanding DPs in more contexts than Principle C would predict. Nevertheless, observable differences between them can be explained by recurring to syntactic configurations and pragmatic principles.

In the following examples, the demonstrative pronoun may be co-referential with the indirect object *jedem Kolegen* ‘every colleague’ in (15), but not with the subject in (14) and (15):

- (14) Peter<sub>i</sub> glaubt, dass er<sub>i</sub>,/\*der<sub>i</sub> stark ist.  
Peter believes that {he/DPro} is strong.
- (15) Peter<sub>i</sub> glaubt von [jedem Kollegen]<sub>j</sub>, dass der\*<sub>i/j</sub> klüger ist als er.  
'Peter<sub>i</sub> believes of [every colleague]<sub>j</sub> that he<sub>j</sub> is smarter than him<sub>i</sub>.'

The impossibility of co-referentiality with the subject in (14) and (15) is due to a syntactic violation of Principle C: the demonstrative pronoun cannot be bound by the c-commanding subject. The co-referential reading of the demonstrative pronoun with the indirect object *jedem Kollegen* 'every colleague' in (15) is possible, since the demonstrative is not c-commanded by the object in narrow syntax, but only at LF.

Similarly, the referential expressions in (16) are bound by the DP in the prepositional phrase at LF.

- (16) Peter<sub>i</sub> glaubt von [jedem Kollegen]<sub>j</sub>, dass <sup>?</sup>[der Kollege]<sub>j</sub> / [dieser Kollege]<sub>j</sub> klüger ist als er<sub>i</sub>.  
'Peter<sub>i</sub> believes of [every colleague]<sub>j</sub> that <sup>?</sup>[the colleague]<sub>j</sub> / [that colleague]<sub>j</sub> is smarter than him<sub>i</sub>.'

What is problematic for this account is the sentence in (17), in which the referential expressions are c-commanded by the indirect object in narrow syntax and nevertheless allow co-referential readings:

- (17) Peter stellte [jedem Studenten]<sub>j</sub> mindestens eine Frage, die [der Student]<sub>j</sub> / [dieser Student]<sub>j</sub> nicht beantworten konnte.  
'Peter asked [every student]<sub>j</sub> at least one question which [the student]<sub>j</sub> / [that student]<sub>j</sub> couldn't answer.'

Following Schlenker (2005), Hinterwimmer argues that the grammaticality of these examples is settled at the pragmatic level: the repetition of the noun (or actually the predicate) *Student* 'student' is allowed, since it serves to avoid ambiguity. If there were no potential ambiguity, the use of the full DP would violate the pragmatic principle *Minimize restrictors* (cf. Schlenker 2005), which "does not allow the use of DPs containing redundant NPs in order to refer to highly salient individuals" (Hinterwimmer this volume: 219).

Considering yet another special use of demonstratives, Jin Cui's contribution sheds new light on the impact of so called "bridging" contexts for grammaticalization processes. Bridging demonstratives are usually not considered a decisive factor in the historical development of articles (in German). The author argues that this is probably due to the fact that, in contrast to the use of the definite article (18), the use of demonstratives in these associative anaphoric contexts is illicit

(19) – leaving aside some rare exceptions (cf. Gundel, Hedberg & Zacharski 2000, Wolter 2006):

(18) Yesterday, when I passed by your office, the door was locked.  
(Cui this volume: 236)

(19) #Yesterday, when I passed by your office, that/this door was locked.  
(Cui this volume: 236)


In contrast, Cui claims that some bridging cases in Chinese play an important role in the development from a demonstrative to a definite article.

He argues that, contrary to the common view, the distal demonstrative unstressed *na* in Chinese has already grammaticalized in certain bridging contexts, in which it must be interpreted as a definite article. Only situational bridging cases that mostly consist of part-whole relationships, such as *car–trunk*, *essay–title*, etc. (cf. Schwarz 2009: 158ff.), are shown to generally block the use of demonstratives. Non-situational bridging cases, in which the bridged NP is generally outside of the situation containing its antecedent, behave differently with respect to unstressed *na*. For instance, if we take the NP *murder* as the antecedent, both the subsequent bridging NPs *murderer* and *knife* are not necessarily part of the situation. However, only the noun *murderer* shows free variation between the use as a bare noun and the use associated with unstressed *na*. In contrast, the use of the noun *knife* is significantly preferred when it is marked by *na*.

Cui explains this difference adopting Barsalou’s (1992) frame theory, which distinguishes between attributes (e.g. *color*) and values (e.g. *red*). In analogy, he interprets *murderer* as the attribute of *murder*, while *knife* should be treated as a potential realization of the value. Two experiments based on the judgments of Chinese native speakers confirm the initial hypotheses. These results do not only confirm the interpretation of *na* as a definite article in certain environments, but also challenge the “theoretical expectation that the emergence of definite articles starts in deictic and anaphoric contexts” (Cui this volume: 252f.).

From a more general perspective, Andy **Lücking**’s contribution discusses indirect reference marking, which has been largely neglected within grammatical theory. His paper not only focuses on bridging cases (20), but also on cases of deferred reference (21). In both cases, the relationship to the designated referent is not a direct one, but has to be constructed by some sort of association via the context – as in the bridging case –, or via the external situation – as in the deferred reference use. Whereas – as already mentioned – the use of demonstratives is ruled out in bridging contexts (20), it is possible if indirect reference is realized in relation to the external situation (deferred reference) (21):



- (20) In the museum there is a beautiful painting.  
 a. ?That painter is my favorite one.  
 b. The painter is my favorite one
- (21) This [: *demonstrating a painting*] painter is my favorite one.  
 (Lücking this volume: 258f.)

Based on these facts, Lücking argues against a unifying account of demonstratives (cf. Roberts 2002, 2003). Again following Kaplan (1989), he argues that the interpretation of demonstratives in extralinguistic situations (exophoric) has to be distinguished from the one in discourse contexts (endophoric). The latter lack a demonstratum and therefore an act of demonstration. Lücking captures the difference by following Barwise & Cooper (1981: 191f.): “exophoric DemNPs are modeled as witness-loaded referential expressions, while endophoric DemNPs remain witness-free” (Lücking, this volume: 255).

The issue of the presence vs. absence of a demonstratum is also central for the discussion of a neglected group of demonstratives of manner, quality and degree (MQD), such as German *so* (and *solch*) or English *so* (and *such*), with which Ekkehard **König** and Carla **Umbach**’s contribution deals. Their semantics constitutes another problem for Kaplan’s (1989) analysis since direct reference

[...] in Kaplan’s terms not only means that the target of the demonstration gesture is the thing the speaker actually points to but, in addition, that the referent of the demonstrative phrase is identical with the target of the demonstration gesture. This seems trivial in the case of standard demonstratives as in *diese Tasse* or *that mug*. In the case of MQD demonstratives, however, it is plainly false: [...]

(König & Umbach this volume: 307)

Consider the following example:

- (22) So eine Tasse hat Anna auch. ‘Anna has such a mug / a mug like this, too.’  
 (König & Umbach this volume: 303)

The sentence does not entail “that Anna’s mug is identical with the one the speaker points to” (König & Umbach, this volume: 307). Rather, these elements are shown to express ‘similarity’ and thus to create ‘similarity classes’. They compare some relevant features of the kind to which the two similar items belong and thus generate – at least in adnominal and adverbial uses – ad-hoc subkinds.

Besides discussing the semantic properties of MQD demonstratives, König & Umbach’s paper also provides an impressive typological survey of their properties, in which the most important parameters of variation are presented: 1) some languages may distinguish exophoric (or gestural) vs. endophoric uses (possibly

anaphoric and cataphoric uses); 2) with respect to the deictic dimension, two-term or three-term distinctions may be typologically observed (but also more complex differentiations or no distinctions at all); 3) MQD demonstratives may be realized as simple expressions (cf. German and English *so*) or as complex ones (English *like this*). The potential richness of deictic systems can be nicely illustrated by the well-known Japanese paradigm discussed by the authors. Japanese distinguishes between the deictic and the ontological dimension and allows for the different morphemes to be built up compositionally. For example, *ko-* and *so-* denote speaker-or hearer-proximity', while the ontological dimension 'place' is expressed by *-ko*, and 'quality' by *-nna*. This yields the combinations of *ko-ko*, *so-ko*, *ko-nna*, *so-nna*.

The papers in this book will guide the readers on a journey to different exotic species of demonstratives, whose peculiar properties will offer new insights into the complex nature of demonstrative expressions.

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## **Part I: The morphosyntax of atypical demonstratives**



Giuliana Giusti

# Demonstratives as arguments and modifiers of N

**Abstract:** The aim of this paper is to provide a minimalist account of adnominal demonstratives along the lines of a recent proposal by Giusti (2015) which distinguishes three types of feature sharing: Agreement, Concord, and Projection. As demonstratives bind and identify an open position in the argument structure of N, they are claimed to be arguments and, as such, to undergo Agreement. But unlike possessor arguments, which are assigned genitive and are sent to the interfaces independently of the possessee phase, demonstratives are probed to the Edge of the phase and are interpreted as part of it. In order to do so, they must also concord with N, namely they must check and delete uninterpretable N-features. This dual nature of demonstratives as agreeing arguments and concurring modifiers can explain the different positions demonstratives display across languages, as well as their apparently ambiguous behavior as determiners, adjectives and exphoric elements, as claimed by Diessel (2006).

**Keywords:** agreement, concord, determiner, demonstrative, minimalist syntax, phase theory, noun phrase

## 1 Introduction

There is a long-standing debate regarding the category of demonstratives. A well established tradition claims that they belong to the functional category “determiner”, which includes articles, quantifiers, personal pronouns and, in some languages, possessive adjectives and pronouns. This view is based on the fact that demonstratives are often found in complementary distribution with these elements. At the opposite side, another well-established tradition claims that they belong to the lexical category “adjective”, especially in languages with no articles. This view is based on the fact that demonstratives often display adjectival morphology and the same behavior of adjectives as regards word order and extractability. A third, novel view put forth by Diessel (2006) considers demonstratives as neither functional (or D-like in our terms) nor lexical (or A-like in our terms) but as “categories of the third kind”, more primitive than any other linguistic category, directly pointing in space and serving the communicative function of

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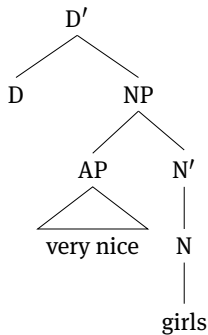
establishing joint attention. In this contribution, I provide a syntactic account of demonstratives in the framework of phase theory (Chomsky 2008 and much work following him), which can conciliate these three apparently alternative views.

## 1.1 The syntax of demonstratives in previous literature

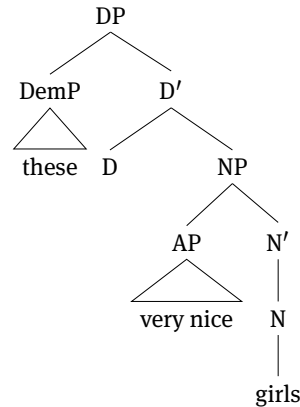
When it comes to the structural position of demonstratives, the two more traditional approaches (functional-determiner status vs. lexical-adjectival status) divide in a number of different possibilities.

In the demonstrative-as-determiner approach (Abney 1987, Longobardi 1994, a.o.), it is generally assumed that demonstratives are in D, as in (1a), heading the highest functional projection of the nominal expression (henceforth NE, a term that allows us to remain agnostic as to the actual label of the complete nominal projection). But it has also been proposed that demonstratives are in other positions, on evidence from languages where demonstratives can or must cooccur with articles. In particular, it has been claimed that demonstratives are specifiers (Giusti 1997, 2002, Brugè 1996, 2002), and this opens up the possibility for them to be merged in SpecDP, as in (1b), or in lower specifiers, as will be shown later in the paper:

(1) a.

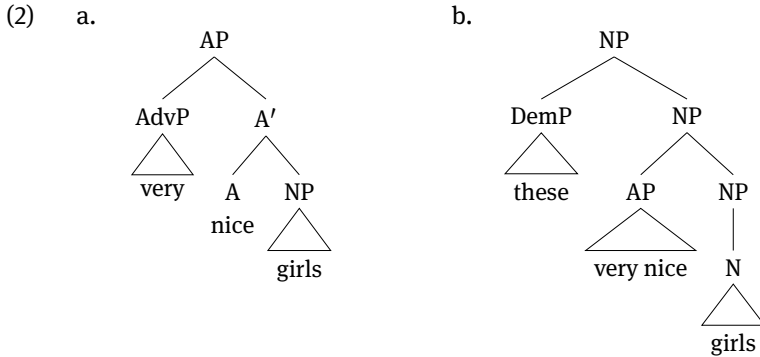


b.



In this perspective, the demonstrative-as-determiner-approach becomes compatible with the demonstrative-as-adjective approach, especially in view of the well known fact that adjectives come in different classes, undergoing a rigid hierarchy. The similarities with adjectives can be attributed to adjectival status, while the differences between demonstratives and other adjectives can be attributed to a difference among adjectival classes.

The structural position of adnominal adjectives is, in general, also subject to debate. Alternative analyses take adjectives as specifiers of NP, as in (1) above, or as heads selecting an NP, as in (2a) (cf. Bouchard 1998, 2002), or as maximal projections adjoined to NP, as in (2b) (cf. Bošković 2005), or as predicates of a reduced relative clause, as in (3), (cf. Alexiadou & Wilder 1998 and den Dikken 1998, who follow Kayne 1994):



As reported by Corver & van Koppen (this volume), according to den Dikken (1998), (3a) is the structure of indirect modification, where the AP is the predicate and the NP moves to SpecFP; while (3b) derives (direct modification) adpositional adjectives from the indirect modification structure, leaving NP in SpecXP and raising the AP predicate to SpecFP:<sup>1</sup>

- (3) a. [DP the [FP [NP mother]<sub>j</sub> F [XP [NP ~~mother~~] ... [AP proud of her son]]]  
 b. [DP the [FP [AP yellow] F [XP [NP book] ... [AP yellow]]]]

In this line of analysis, Corver (2003, 2008) claims that in Dutch, the possessive pronoun is embedded in a possessive PP predicated of the NP *boek* which is in SpecXP, the specifier of the predicate phrase, whose head X is filled by the morpheme 'n, as in (4a). The derivation proceeds as in (4b): P incorporates to X, obtaining X+P, which further incorporates to F. Then the whole PP predicate moves to SpecFP. Finally 'n encliticizes onto *mij* to obtain *mijn*:

- (4) a. [DP D [FP Spec F [XP [NP boek] [X' 'n [PP P<sub>DAT</sub> mij ]]]]] ⇒  
 b. [DP D [FP [PP t<sub>k</sub> mij]<sub>i</sub> F+[X (= 'n)+P<sub>k</sub>]<sub>j</sub> [XP [NP boek] [X' t<sub>i</sub> ]]]]

Corver & van Koppen (this volume) apply (4) to demonstratives. Since the demonstrative cannot be a predicate, they propose that it is the “subject” of the DP-

<sup>1</sup> I substitute traces with strikethrough constituents here to be consistent with what follows.

internal predication, following Campbell's (1996) predication approach to NEs, according to which, when the demonstrative is merged, NP is the predicate of the DP-internal predication. The result is a structure like (5a) which is the base of (5b) with DEM moving from SpecXP to SpecDP:

- (5) a. [<sub>DP</sub> D [<sub>XP</sub> DEM [<sub>X'</sub> X [<sub>NP</sub> PREDICATE ]]]]  
 b. [<sub>DP</sub> DEM D [<sub>XP</sub> DEM [<sub>X'</sub> X [<sub>NP</sub> PREDICATE ]]]]

With this overabundance of alternatives at the background, cross-linguistic variation in the syntax of demonstratives raises the question as to whether their categorial nature and/or different merging positions is subject to parametric variation.

## 1.2 Aim and structure of the paper

The aim of this paper is to provide an analysis of demonstratives in the minimalist framework that captures all the properties accounted for by the three approaches above and some more, which will be presented in the course of the discussion.

The paper is structured as follows. Section 2 presents four different sets of phenomena that characterize demonstratives in European languages; namely, partial adjectival behavior, general tendency of being at the Edge of the NE, possible different positions language-internally, and different cooccurrence patterns cross-linguistically. Section 3 introduces the theoretical background, which is made of three basic ingredients: (i) Diessel's (2006) analysis of demonstratives as originally exophoric elements, which are the base to form a number of indexicals, such as pronouns and articles, notably associated with 3rd Person features; (ii) the concepts of Phase as a referential object, developed by Arsenijević (2007, 2015), and of Agreement as the trigger of compositionality, developed by Hinzen (2012); and (iii) a recent proposal of mine (Giusti 2015), which distinguishes three different ways of sharing features: Agreement, Concord and Projection. I claim that a probe triggering Agreement targets the Person feature of a complete nominal phase. If this is correct, it is expected that all nominal phases have Person, and that Person is merged at the Edge of the phase. Section 4 : my proposal that a demonstrative is at the same time an argument and a modifier of N. As argument, it is first-merged above all (possessive) arguments and below adjectival modifiers. But because it carries the Person feature that is necessary for a nominal phase to be sent to interpretation and be able to re-enter the cycle, it is remerged at the Edge of the NE in order for Person to be accessible to the outside of the phase. I will call the trigger of this type of remerger "internal Agreement". In the languages observed above, the demonstrative also displays Concord with N for all its functional fea-

tures including Case, which is assigned to the whole nominal phase by means of external Agreement. Section 5 derives all the apparently contradictory properties of demonstratives highlighted in section 2 in a unified way and draws the conclusions.

## 2 Cross-linguistic variation

Demonstratives display a wide range of variation at least across four different dimensions. With adjectives, they share inflectional morphology and the possibility or impossibility to extract (§2.1); but unlike adjectives, they are usually at the Edge of the NE (§2.2); in some languages, they can be in more than one position inside the NE (§2.3); in some languages they can cooccur with articles, possessives, and quantifiers; however, in no language do they occur with personal pronouns (§2.4). Although these properties have been noted in the literature, to my knowledge, no previous work has tried to account for them in a unified way.

### 2.1 Adjectival behavior

Demonstratives appear to share many properties with adjectives: first of all, inflection. If adjectives inflect for nominal features in a language, also demonstratives do and vice versa, if adjectives do not inflect, also demonstratives do not. But if there are differences in the richness of inflection, demonstratives are generally richer than adjectives. For example, in English, demonstratives inflect for Number, while adjectives are totally uninflected.

In Romanian, demonstratives fully inflect for Case, like definite enclitic articles, indefinite free articles, and quantifiers. This does not hold of adjectives and nouns. In (6)–(8), we see oblique case on singular masculine and feminine nouns. Masculine singular adjectives and nouns in (6a), (7a), and (8a) do not have a dedicated morphology in oblique case. Feminine singular adjectives and nouns in (6b), (7b), and (8b) display a non-nominative singular form in *-e*, appearing on oblique singular as well as on oblique and non-oblique plural, phonologically reduced if compared to the full oblique singular form *-ei*, which appears on demonstratives and articles. In the examples and glosses the full dative inflection is highlighted in bold, while the weak non-nominative inflection is not:

- (6) a. **acestui** frumos băiat român  
 this.M.SG.DAT nice.M.SG boy.M.SG Romanian.M.SG

- b. **acestei** frumoase fete române  
 this.**F.SG.DAT** nice.F.SG.DAT girl.F.SG.DAT Romanian.F.SG.DAT
- (7) a. **băiatului** (ace**stui**a) frumos  
 boy.the.m.sg.dat this.M.SG.DAT.a nice.M.SG
- b. **fetei** (ace**stei**a) frumoase  
 girl.the.**F.SG.DAT** this.F.SG.DAT.a nice.F.SG.DAT
- (8) a. **frumosului** băiat român  
 nice.the.**M.SG.DAT** boy.M.SG Romanian.M.SG
- b. **frumoasei** fete române  
 nice.the.**F.SG.DAT** girl.F.SG.DAT Romanian.F.SG.DAT

In (6) the prenominal demonstrative is the only carrier of Case. In (7) the postnominal demonstrative carries Case even if Case also surfaces on the article encliticized on the preceding noun. In (8) the prenominal adjective hosts the enclitic article, which is the only carrier of Case. Here, a demonstrative cannot appear at all (cf. (17d-e) later on).

In Latin and Italian, adjectives and demonstratives inflect for the same inflectional features (only Gender and Number in Italian, also Case in Latin, as said above). The comparison of Romanian with Italian and Latin provides evidence for a second parallel between adjectives and demonstratives. If in a language, adjectives can be extracted out of the NE, also demonstratives can, and vice versa, if adjectives cannot be extracted, also demonstratives must remain inside the NE. In Latin (9), both adjectives and demonstratives can be discontinuous from their NE, while in Italian (10) or Romanian (11) neither can (cf. Giusti & Iovino 2016):

- (9) a. **maximam** habet [~~maximam~~ opinionem  
 greatest.F.SG.ACC has opinion.F.SG.ACC  
 virtutis]  
 courage.F.SG.GEN  
 ‘He had the greatest consideration of courage.’ (Caes. Gall. 7,59,5)
- b. **hac** vincit in consilio [~~hae~~ sententia]  
 this.F.SG.NOM wins in council sentence.F.SG.NOM  
 ‘This opinion wins in the council.’ (Caes. Civ. 1.67)
- (10) a. {\*massima} aveva [la {massima} considerazione del  
 greatest [he]-had the greatest consideration of-the  
 coraggio]  
 courage  
 ‘He had the greatest consideration of courage.’

- b. {\*questa} vince [{questa} opinione in consiglio]  
 this wins this opinion in council  
 ‘This opinion wins in the council.’
- (11) a. {\*maxima} are [{maxima} opinie (a) curajului]  
 greatest-the [he]-has opinion (of) courage-the.GEN  
 ‘He takes virtue in the greatest consideration.’
- b. {\*această / \*aceasta} câştiga [{această opinie / opinia  
 this wins this opinion / opinion-the  
 aceasta}]  
 this  
 ‘This opinion wins.’

The same is the case of Serbo-Croatian (12a) vs. Bulgarian (12b) as argued by Trenkić (2004) and Bošković (2005):

- (12) a. Nova / Ta je prodao [nɔva / ta kola] (Serbo-Croatian)  
 New / that is [he] sold new that car
- b. {\*novata / \*tazi} Prodade Petko [{novata / tazi} kola] (Bulg.)  
 new-the / this sold Petko new-the this car

The data presented in this section suggest that demonstratives belong to a special class of nominal modifiers, not exactly like adjectives, but also not completely unlike them.

## 2.2 Demonstratives as “edgers”

Demonstratives are often found at the Edge of the NE. According to Cinque’s (2005) attempt to derive Greenberg’s Universal 20 from a general theory of NP movement inside the NE, the demonstrative is always hierarchically higher than Numerals and Adjectives. In (13), I give the orders reported by Cinque as being attested in “very many” languages; in (14) those attested in “many” languages; in (15) those attested in “few” languages; and in (16) those attested in “very few” languages. According to Cinque, the other logically possible orders are extremely rare or not attested at all:

- (13) a. Dem Num A N (very many languages)  
 b. N A Num Dem
- (14) a. Dem Num N A (many languages)  
 b. Dem N A Num
- (15) a. N Dem Num A (few languages)  
 b. N A Dem Num  
 c. N Num A Dem
- (16) a. Dem N Num A (very few languages)  
 b. A N Dem Num  
 c. N Dem A Num  
 d. A N Num Dem

In the solidly attested orders (13), the hierarchy of modifiers could be taken to be exactly the same, given that the postnominal order in (13b) is the mirror image of the prenominal one in (13a). In both cases the demonstrative is an edger (leftmost or rightmost). This is also the case in the orders in (14). If we abstract from the position of N, this is so also in the left branching orders in (15a), (16a), (16c) and in the right branching orders in (15c), (16d). There are therefore only two exceptions to the generalization that demonstratives are edgers: namely, (15b) and (16b) which have N A and A N, respectively, preceding Dem Num.

Thus, if linear order reflects hierarchical structure, the quasi totality of orders suggests that demonstratives are edgers.<sup>2</sup>

### 2.3 More than one position intra-linguistically

The orders discussed by Cinque abstract from the other well known fact that demonstratives can appear in more than one position intra-linguistically. For example in Romanian (17) and Spanish (18) they can appear in first position as well as NE-internally:

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<sup>2</sup> It is not important here how the right-branching structure should be derived: whether by roll-up movement *à la* Cinque (2005, 2010) or by assuming right-branching merger, *à la* Abels and Neeleman (2012). For such a discussion, I refer the interested reader to Giusti (submitted). For our purposes in this paper, it is sufficient to assume that the demonstrative is the hierarchically highest modifier in the NE.

(17)	a.	acest	băiat	frumos	Dem	N	A		
		this	boy	nice					
	b.	acest	frumos	băiat	Dem	A	N		
		this	nice	boy					
	c.	băiatul	acesta	frumos	N+art	Dem	A		
		boy-the	this.a	nice					
	d.	frumosul	(*acesta)	băiat	A+art	*Dem	N		
	e.	frumosul	băiat	(*acesta)	A+art	N	*Dem		
	f.	băiatul	frumos	(*acesta)	N+art	A	*Dem		
(18)	a.	este	chico	hermoso	Dem	N	A		
		this	boy	nice					
	b.	este	hermoso	chico	Dem	A	N		
		this	nice	boy					
	c.	el	hermoso	chico	este	art	A	N	Dem
		the	nice	boy	this				
	d.	el	chico	hermoso	este	art	N	A	Dem
	e.	el	chico	(*este)	hermoso	art	N	*Dem	A
	f.	el	hermoso	(*este)	chico	art	A	*Dem	N

There are two important facts to be noted in (17)–(18). First, when the demonstrative is not the leftmost element, the NE is introduced by an article, which is encliticized to the leftmost element in Romanian, and is a free morpheme at the Left Edge of the NE in Spanish. Second, Romanian and Spanish present different postnominal positions for the demonstrative, with respect to a postnominal adjective. Note that in the examples above no numeral is given. Although the literature is not explicit on this, a numeral would not be easy to insert if the demonstrative is postnominal, suggesting that these cases are marked. The question is how to derive these possible orders.

The common ancestor of the two languages, namely Latin, a language which is well known to have no article and quite free order, had a rate of Dem N vs. N Dem order (e.g. *hic homo* “this man” vs. *homo hic* “man this”) of around 80% vs. 20%, suggesting that the postnominal position was more marked than the prenominal one (cf. Spevak 2010, Iovino 2012).<sup>3</sup>

<sup>3</sup> The percentages are intended as tendencies of ordering. These rates are independently found in Marouzeau (1922), Spevak (2010), and Iovino (2012). These authors have collected what they consider a consistent number of co-occurrences of Dem and N in representative prose texts (cf. fn. 4 for a detailed description of Iovino’s corpus).



Surprisingly, complex NEs including an adnominal adjective, display only *ille* in postnominal position (cf. Iovino 2012, Giusti & Iovino 2016), and only in the order represented in (19c). The orders in (19a-b) are not found in Latin. The three different demonstratives are instead quite liberally found in different prenominal positions for a total of 94% of cases, out of which the unmarked position is clearly the Left Edge as shown by (20a-b). But the second position preceded by a fronted adjective, as in (20c), is found almost at the same rate as the postnominal demonstrative in simple NEs (19%):<sup>4</sup>

- (19) a. A N \*hic / \*iste / \*ille  
 b. N A \*hic / \*iste / \*ille  
 c. N \*hic / \*iste / ille A (6%)
- (20) a. hic / iste / ille A N (54%)  
 b. hic / iste / ille N A (21%)  
 c. A hic / iste / ille N (19%)

The data above suggest a high left-branching position for demonstratives in Latin. If this is correct, in Latin and Romanian the demonstrative does not appear in a low position, as it does in Spanish.

## 2.4 Co-occurrence patterns

Cross-linguistic variation regards the co-occurrence of demonstratives with the definite article, as we have already seen in Romanian (17) and Spanish (18) for postnominal demonstratives. Importantly, also the prenominal position of the demonstrative can give rise to obligatory cooccurrence with a definite article, as is the case of Greek (21a). Note that this creates a perfect parallel with personal pronouns (21b), even more so if we consider that the plural demonstrative in (21a) is homophonous to the 3rd Person pronoun, as shown by the gloss:

<sup>4</sup> Iovino's corpus consists of 1930 authentic samples of Simple and Complex nominal expressions (1228 S(imple)NEs, among which, 556 containing Dem >/< N; 419 containing PossA >/< N; 253 containing omnis "all" >/< personal pronoun N; and 702 Complex NEs, among which, 262 containing Dem >/< N >/< A/Num/Poss; 96 containing PossA >/< N; 100 containing A2 >/< N >/< A1; 244 containing Q >/< N >/< A). This corpus was created manually, reading representative work by authoritative authors (Plautus, Cato; Caesar, Cicero, Sallust; Livy; Seneca, Tacitus, Suetonius, Ammianus Marcellinus, Gellius and Augustinus) and interrogating the Bibliotheca Teubneriana Latina for specific lexical items.

- (21) a. *afti i glossologi*  
           these/they the linguists  
           ‘these linguists’  
       b. *emis i glossologi*  
           we the linguists  
           ‘we linguists’

Cooccurrence of a demonstrative and a possessor is ungrammatical in French (22a), marginal in German (22b), and freely possible in Italian (22c), where the NE would be ungrammatical without a determiner:

- (22) a. *ces (\*mes) mains*  
       b. *diese (?meine) Hände*  
       c. *queste (mie) mani* ‘these my hands’

The data in (22) clearly correlate with the impossibility in French and German and the necessity in Italian for the possessive to be preceded by a definite article (23):

- (23) a. *(\*les) mes mains*  
       b. *(\*die) meine Hände*  
       c. *\*le) mie mani* ‘the my hands’

But if we look at Spanish, we observe that the facts in (22) cannot be directly reduced to those in (23). In fact, as regards prenominal possessives, Spanish patterns with French, not with Italian. However, a demonstrative can cooccur with a postnominal possessive, cf. ungrammatical (25a) with grammatical (25b). Furthermore, a postnominal demonstrative, as in (26), can appear provided it is lower than the demonstrative:

- (24) a. *(\*las) sus manos* (\*art) Poss N  
       b. *las manos tuyas* art N Poss
- (25) a. *\*estas sus / tuyas manos* \*Dem Poss N  
       b. *estas manos tuyas* Dem N Poss
- (26) a. *las manos estas tuyas* art N Dem Poss  
       b. *\*las manos tuyas estas* \*art N Poss Dem

In what follows, I derive these facts from the notion of phase. I elaborate on the fact that possessives have a referential index independent from the index of the NE projected by the possessee, while demonstratives provide (part of) the index of the possessee. As a consequence, possessives must be sent to interpretation before and independently of the nominal phase of the possessee, while demonstratives and personal pronouns carry the Person feature of the nominal phase,

which reaches the Edge of the possessee phase before the possessee is sent to the interfaces.

### 3 Background assumptions

Diessel (2006) claims that demonstratives are not functional categories, despite they form a closed class; in fact, unlike functional categories, demonstratives are universally present across languages and appear among the first words in child speech. He derives these properties from the very basic nature of demonstratives; namely, the coordination of the interlocutors' joint focus of attention. His conclusion is that demonstratives are primarily exophoric elements, and as such they are a point of junction between language and more primitive systems of communication. Furthermore, Diessel convincingly argues that the discourse anaphoric function of demonstratives is the initial stage of a grammaticalization cline, during which the demonstrative maintains 3rd Person features, progressively losing its pragmatic force (from exophoric to discourse deictic, to anaphoric, to definite, to uniquely referential).

In this section, I set Diessel's remarks in a minimalist perspective. In 3.1, I review the well known proposal by Higginbotham (1985, 1987), to consider the Davidsonian event argument as part of the theta-grid of V and N and two more recent proposals by Arsenijević (2007, 2015) and Hinzen (2012) that shed new light on Higginbotham's theta-binding in the perspective of a theory of phases. We will see that each phase is a complete referential object and that Agreement is the process which allows compositionality of meaning, in that it targets a complete phase (which is referential) to make it part of the description of a new phase. In 3.2, I briefly introduce a proposal of mine to explain feature sharing as the result of two different processes: Agreement, which crucially targets Person features (namely theta-binders at the Edge of a nominal phase) and Concord, which corresponds to theta-identification.

#### 3.1 An ontology of referents and phase theory

##### 3.1.1 Theta-binding and theta-identification

Higginbotham (1985, 1987) proposes an event position <E> in the theta-grids of V and N to capture the fact, noted by Davidson (1967), that circumstantial modification has scope over the whole event, including its arguments. For example, in

(27a), the adverb *fatally* has scope over the whole event <E> of slipping by Mary, as well as over *Mary* (position <1> associated with *slip*), in the sense that the whole event of her slipping was fatal to her. The same is the case of the adjective *fatal* in (27b). The arrows represent the process of theta-identification of the internal argument <2> of Adv or A with the external argument <1> of V or N and of the external argument <1> of Adv or A with the <E> argument of V or N:

- (27) a. Mary fatally slipped [<sub>V'</sub> [<sub>V'</sub> [<sub>AdvP</sub> fatally <1, 2>] [<sub>V'</sub> slipped <1, E>]]]
- 
- b. Mary's fatal slip [<sub>N'</sub> [<sub>N'</sub> [<sub>AP</sub> fatal <1, 2>] [<sub>N'</sub> slip <1, E>]]]
- 

Higginbotham then proposes that while the arguments are saturated by individual referents, the <E> position must be theta-bound by a sentential operator when associated with V, as in (28a), and by a determiner, when associated with N, as in (28b):

- (28) a. Mary walked. → (∃e) walked(Mary, e)  
 b. the dog → (the x) dog(x)

Note the asymmetry between the syntactic object denoting an event (presumably a vP in current terms), which is bound externally namely in the clause, and a NE, a syntactic object denoting an individual, whose theta-binder is inside the NE. I will show that this lack of parallelism is resolved in the more recent theory of phases.

### 3.1.2 Phase Theory

Chomsky (2001, 2005, 2008) and much work following him propose that syntax creates linguistic objects called “phases” that are computed separately. When a phase is sent to interpretation at the interfaces, it becomes opaque to further operations, with the exception of its (Left) Edge. Extractability of parts of a phase is conditioned to the availability of intermediate Edge positions. Chomsky identifies two phases in the sentence, vP and CP and suggests that the core nature of a phase is propositional (like CP and, to some extent, vP). He also attributes the status of phase to DP, even if DP does not have propositional value.

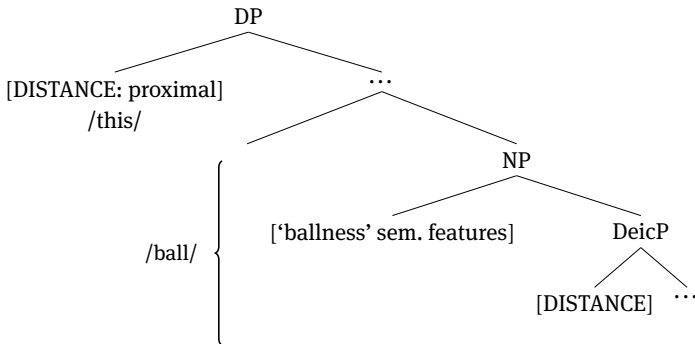
Arsenijević (2007, 2015) reverses Chomsky’s proposal. Observing that most CPs do not have propositional value, he proposes that DPs represent the core nature of phases and that an optimal design of the syntax-semantics interface should view phases as complete referential expressions. “For this to be achieved, it needs

to provide a maximizing description, to specify the relation used to refer (distance, order or aboutness/space-time) and optionally, in the left periphery, to indicate the set of alternatives within which the referent is identified and interpreted. Minimally, this involves one projection introducing an unvalued deictic feature (VP, NP, FinP/TP) and another one that c-commands it and assigns it a value (vP, DP, CP).” In his words “DP establishes reference in terms of the relation of proximity / distance [...], vP establishes reference through the relation of precedence [...], CP establishes reference in terms of the discourse relation of aboutness.” (cf. Arsenijević 2007:6–8)

The parallel with the theta-grid and theta-binding seen in 3.1 is straightforward: the uninterpretable [DISTANCE] and [ORDER] features of N and V are part of the theta-grid of the lexical category and need to be bound existentially by an adequate syntactic object (operator or constant) merged at the Edge. Here the parallel is perfect, in that the open position of N is bound in DP and the open position of VP is bound in vP.

Arsenijević (2007, 2015) proposes that N is composed of an unvalued DeicP targeted to the Edge in D, which contains a corresponding valued feature, as in (29):

(29) ‘this ball’



In (29) the unvalued feature [DISTANCE] is the core of the category N. In a parallel fashion an unvalued feature [ORDER] is suggested to be the core of the category V (to be valued by what is generally considered as Aspect). This makes the nature of two lexical categories N and V quite different from what we are used to imagine, and more importantly, very different from other lexical categories that supposedly do not project phases (e.g. adjectives, adverbials, prepositions), because they do not constitute referential objects. It also makes the two lexical categories N and V similar to T, which is no more taken to be functional.

### 3.1.3 Agreement and compositionality

Hinzen (2012) pursues a naturalization of semantics in a grammatical perspective. His concern is to capture how the human mind processes the “meaning” of a sentence. He notes that it cannot simply consist in the composition of the meanings of its parts, as its parts gain meaning by being in relation with one another. He therefore reverses the traditional concept of meaning depending on the nature of the external world and proposes that meaning should be conceived from the internalist perspective offered by grammar, in particular from the minimalist perspective of phases as unique complete referential objects. Compositionality is consequently reduced to a process that makes a referentially complete object (a phase) be part of the predicate of another phase, as formulated in the Principle of Phasal Composition (30):

- (30) Principle of Phasal Composition (Hinzen 2012: 327):  
 When a referential argument becomes part of a higher phase, it functions as a descriptive predicate that helps to identify the referent of the higher phase.

According to Hinzen (2012: 333), in order for this to occur, the (Left) Edge (LE) of the lower phase  $\alpha$  is targeted by the probe P of the higher phase  $\beta$ . Agreement is the process that allows for phasal composition. In (31), due to the probing of P in  $\beta$ , the LE of  $\alpha$  becomes part of the description of  $\beta$ . The dotted and continuous lines delimit different phases each with a different referential index. When computing  $\beta$  only the LE of  $\alpha$  is visible, the rest of  $\alpha$ , namely its description YP, is not:

- (31) 
$$\boxed{[\beta \text{ LE } [P [XP]]]([\alpha \text{ LE}][P [YP]]]}$$

Thus, referents are determined at phasal boundaries (headed by P), namely at the LE, and there is only one referent for each phase. In the Agreement relation initiated by the Probe, the referential part (the LE) of a complete phase  $\alpha$  is targeted to be made part of the predicate (XP) of the superordinate phase  $\beta$ .<sup>5</sup>

Rephrasing Higginbotham’s proposal in Hinzen’s terms, the theta-grid of a lexical item also establishes what kind of theta-binder will close the phase at the

<sup>5</sup> According to Richards (2007), the probe is the highest non-phasal head, and cannot be the head of the phase. I agree with this and assume a more complex structure in the following sections. Hinzen’s point is not affected by this, and for simplicity I stick to Hinzen’s formalism here.

LE. Agreement from the outside of the phase targets the theta-binder merged at the LE. In so doing, it makes it available for external computation.

Agreement is also known to be the major trigger of feature sharing. In this perspective, it is important to establish whether any type of feature sharing is involved in compositionality and whether Agreement (namely a c-command relation of a probe endowed with an uninterpretable feature onto a goal endowed with a matching interpretable feature) is the only source for it.

### 3.2 On different ways of sharing features

In recent work (Giusti 2008, 2009, 2012, 2015), I claim that feature sharing should not be unified under a single syntactic process (contra Baker 2008) because it is the result of three different relations triggered by the structure building operation Merge; namely, Projection, Agreement and Concord. I propose that a head enters the syntactic structure bundled with all its functional features (interpretable and uninterpretable, valued or unvalued). I also propose that a head entertains a local relation with all its arguments and modifiers. Thus, apart from the two most internal arguments, which are merged as complement and specifier of the head, each further argument or modifier requires remerger of the head with its own projection. This creates a series of XPs headed by the same head X. In the spirit of Giorgi & Pianesi (1997), I call this “scattered head”. I call each instance of the head X “a segment” of X. Whether one or more segments are realized in the extended projection depends on the inflectional paradigm of that head and on general syntactic requirements. For sure, following Arsenijević’s and Hinzen’s insights, a phase must contain a descriptive and a referential portion of structure.

For example, in (32), the N *ragazz-* is bundled with *uCase*, Number, and Gender. In Italian, a NE must have an article, which I take to be the phasal segment of N, heading the referential portion, accessible to Agreement from the outside and therefore valuing Case.<sup>6</sup> The lexical N is realized as one of the segments of the descriptive portion. Gender and Number are redundant on both segments. In (32), the head N combines with the relational adjective *italian-* and the subjective adjective *simpatic-*. Both modify the descriptive portion and concord for Gender and Number (cf. 3.2.2 below). All segments of N are Ns. I numerate them only to

<sup>6</sup> In the spirit of Pesetsky & Torrego (2001, 2004, 2007), in Giusti (2015), I propose to formulate Case as an uninterpretable feature that is valued for the category of the probe. Thus possessive genitive is *uD*, partitive genitive *uQ*, parallel to nominative as *uT* and accusative as *uAsp*. Case can be abstract or morphologically realized as usual. I refer the interested readers to that work.

make easier reference to them and I indicate the phasal nominal head as N/D for the same reason:

- (32)  $[_{N/DP} [_{N/D} \text{le ragazze}] [_{NP2} [_{AP} \text{simpatiche}] [_{N} \text{le ragazze}]]$   
           the                                  nice                                  girls  
            $[_{NP1} [_{AP} \text{italiane} [_{N} \text{le ragazze}]]]]]$   
           Italian

This proposal is strongly indebted to Grimshaw (1991) and Giorgi & Pianesi (1997), but unlike those two proposals, it takes the head of the extended projection to be endowed with all the features from its very first merge. Following Arsenijević (2007, 2015), I assume that the minimal number of projections for a phase is two: “one projection introducing an unvalued deictic feature (VP, NP, FinP/TP) and another one that c-commands it and assigns it a value (vP, DP, CP).” The number of recursive phrases in the descriptive portion solely depends on the number of arguments and modifiers present in the numeration.

For the definite interpretation of NEs with a (so-called definite) article, I rely on Campbell’s (1996) proposal, according to which definiteness is expressed by a non-overt operator in SpecDP. Giusti (2015) calls this operator IndP (Indexical Phrase). In languages with scattered heads like Italian, IndP is in the specifier of the highest overt segment of N. The structure of (32) is therefore (33), regardless of the presence of the pronominal adjective *simpatiche*:<sup>7</sup>

- (33)  $[_{N/DP} \text{IndP} [_{N/D} \text{le ragazze}] [_{NP2} [_{N} \text{le ragazze}] [_{NP1} [_{AP} \text{italiane} [_{N} \text{le ragazze}]]]]]$

An overt indexical such as a demonstrative or a pronoun may require the phasal head to be overt, as is the case of Greek (21), or covert, as is the case of English *these girls* or Italian *queste ragazze*. In Spanish personal pronouns must be in Spec-Head configuration with an overt segment of N/D, as in *nosotras las chicas* “we [the] girls”, unlike demonstratives, cf. *estas (\*las) chicas* “these [\*the] women”. We will come back to this in 3.2.2.

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7 In this perspective, personal pronouns are pure IndPs. It is to be established whether they are always embedded in N/DP, as in the case they are used as determiners (*we linguists*) or they can directly merge with a predicate. Nothing in this paper depends on either choice, but for simplicity reasons I assume the latter choice for the time being.



### 3.2.1 Agreement targets Person features

In Giusti (2015), I propose that the  $u\varphi$  to be checked on a probe by Agreement is a Person feature. Since Person is the crucial feature for reference, this is in line with Arsenijević's and Hinzen's insights that the carrier of reference is the element targeted by the probe in the Agreement relation. I also claim that the only Agreement relation that takes place in a NE is between the head N and a possessor, if there is one. A probe in the nominal bundle targets the Person feature of the possessor and remerges it in its Specifier. In so doing, it assigns genitive ( $uD$ ) to the whole PossP, which can remain in place or be pied-piped to the specifier of the probe, as represented by the curled brackets in (34). PossP is then sent to interpretation, before the phase of the possessee reaches completion:

$$(34) \quad [_{N/DP} N/D [_{NP2} \{PossP\}_{i\varphi} [_{N} \text{probe}_{u\varphi} [ \dots N \dots [_{NP1} \{PossP\}_{i\varphi} \dots N ]]]]$$

This proposal accounts for an otherwise mysterious difference between relational and possessive adjectives that can both be assigned the agent role by N. Only possessive adjectives are found in two positions (35) and can bind an anaphor (36); relational adjectives have a fixed low position (37) and cannot be binders (38):

- (35) a. la nostra / loro brutale invasione dell'Albania  
the our / their brutal invasion of-the Albania  
b. la brutale invasione nostra / loro dell'Albania (non quella  
the invasion brutal our / their of-the Albania (not that  
vostra)  
your)  
'our / their brutal invasion of Albania, not yours'
- (36) a. la loro descrizione di se stessi/stesse  
the their description of themselves.M/F  
b. la nostra descrizione di noi stessi/stesse  
the our description of ourselves.M/F
- (37) a. \*l'italiana invasione brutale dell'Albania  
the Italian invasion brutal of-the Albania  
b. la brutale invasione italiana dell'Albania  
the invasion brutal Italian of-the Albania  
'our brutal invasion of Albania'
- (38) a. \*la descrizione italiana di se stessi/stesse  
The description Italian of themselves.M/F

- b. \*l'ammirazione presidenziale di se stesso / stessa  
 the admiration presidential of himself / herself

The contrast between (35) and (37) is accounted for if, like subjects in the clause, possessives are locally merged in the lexical layer of NP, where they saturate an open position in the theta-grid of N and are then targeted by a probe activated in the high portion of the NE. Unlike possessives, relational adjectives are not targeted by Agreement. This is directly derived by the proposal that in the Agreement process,  $\varphi$  is Person, the same feature that makes an element able to bind. In fact, unlike possessives, in (36), relational adjectives are not possible binders, as shown by the ungrammaticality of (38). The Person feature targeted from the outside of the NE is provided by the IndP in SpecN/DP, cf. (33) above, in case of a full genitive expression (as in *John's book*). Italian does not have such a possibility. The only case of overt movement of the possessor is found in (35a) with the possessive pronoun *loro* ('their'), which I take to be a bare IndP, or the possessive adjective *nostra* ('our'), which I take to be a bare IndP embedded in an AP.

According to Richards (2007), the probe initiating Agreement is not the head of the LE, but the highest non-phasal head. This is accounted for if compositionality requires that a hierarchically lower phase is sent to interpretation immediately before the next phase is composed. It also accounts for the fact that the referent of the possessee is partially identified by the referent of the possessor. I therefore take the probe to be the initial segment of the referential portion of the phase. This leaves space for the merger of an independent IndP in SpecN/DP, which is necessary to complete the phase. The presence of an overt possessor in the highest non-phasal specifier, however, interacts with the overt / covert nature of the phasal segment. This explains the variation noted in 2.4 regarding the compatibility or incompatibility of prenominal possessors with other determiners. In other words, the realization of the highest segment is parametrically dependent on the nature of the immediately lower segment.

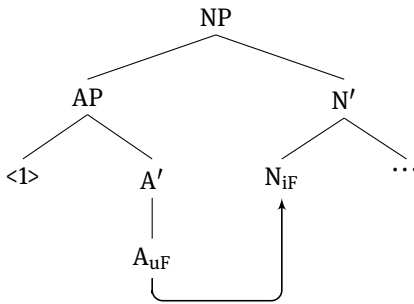
### 3.2.2 Concord targets Gender and Number

The features shared in the Adjective-Noun relation may include Gender and Number (as in Romance), nominal class (as in Bantu), Case (as in Latin or German), and apparent definiteness (as in Germanic weak / strong morphology), but not Person (cf. Baker 2008: 1). In Giusti (2015), I propose to distinguish this kind of feature sharing from Agreement. I call it Concord, following Baker's terminology, but arguing against his unifying proposal. In Concord, uninterpretable features of a projection in specifier position are checked on the spot against the features of

the head. Thus Concord does not involve c-command of a probe onto a goal, but only a Spec-Head relation.

APs are optional modifiers; they do not generally merge to saturate an open position in the theta-grid of the head. On the contrary, A has one or more open positions that must be theta-identified against the open position <E> of N. Note that AP is not a phase in Arsenijević's and Hinzen's terms in that it does not have individual reference. Concord therefore satisfies uninterpretable features (uF) of A against the features (F) bundled with N, as in (39):

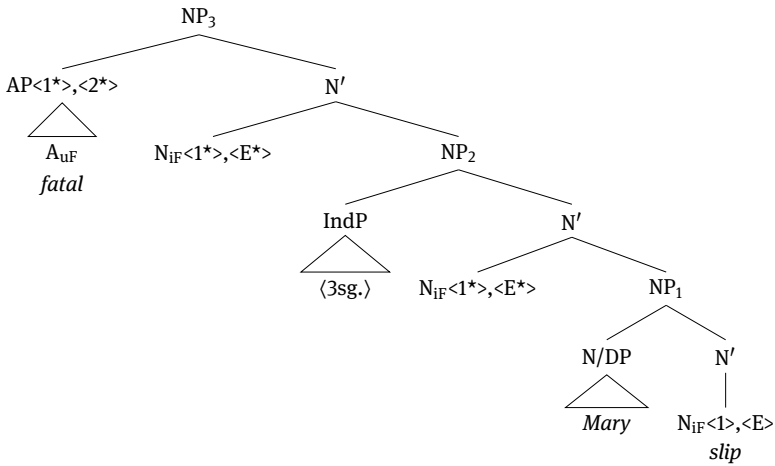
(39) 'Concord'



In (39), neither projections are phases. NP is an intermediate projection of a nominal phase, while AP is a predicate (which is interpreted as a property of the referent of N, part of its description). Valuation of *uF* against the features of N is the morpho-syntactic counterpart of Higginbotham's theta-identification. Note that keeping Agreement and Concord as two separate processes allows us to distinguish possessive adjectives in Italian (cf. feminine singular *nostra* in (35)–(36)), which agree and concord with N, from possessive pronouns which only agree and do not concord (cf. *loro* in (35)–(36)).

Giusti's (2015) proposal of projection applied to Higginbotham's (27b) is given in (40). The discharger of <1> is Mary, an independent Phase (N/DP). I take the discharger of <E> to be a null indexical IndP. The discharged theta-role is marked with a star <1\*>. The two roles <1> and <E> associated with N are discharged in separate applications of Merge, creating NP1 and NP2 respectively; while the AP theta-identifies its roles in the Concord relation in NP3:

(40)



In the following section, I substantiate how this proposal can explain the dual adjectival vs. indexical nature of demonstratives.

## 4 The proposal

In this section, I propose that possessives and demonstratives have two merging positions. Possessives are independent phases. As such, they saturate the theta-grid of N and must be sent to interpretation (by Agreement) before the nominal phase has reached completion. Although demonstratives are not sent to interpretation independently of the NE, they behave in a similar way. They saturate the highest position in the theta-grid of N and must reach the Left Edge of the nominal phase in order complete the phase, because they provide the Person feature to the NE. I call the attraction that the phasal segment N/D exercises on the Person feature that is part the the featural composition of a demonstrative “internal Agreement”.

### 4.1 Two merger positions

Cinque (2005) and Adger (2012) independently claim that a demonstrative is directly merged in the highest position of the adjectival hierarchy. If they are right, postnominal demonstratives must be either due to the right branching nature of the Edge (Adger 2012) or to the application of roll-up movement of the whole NE

around a left branching Edge (Cinque 2005). In the latter case, the Left Edge where the demonstrative sits should be split in at least two projections. This is not problematic in the framework proposed here, given that the referential portion or the NE must be split to comply with Richard's (2007) observation that probes must be non-phasal. It is also quite reasonable if we consider that parallel to clauses, NEs can have a split left periphery which hosts displaced elements carrying discourse features such as topic or contrast (cf. Giusti 1996, 2006, 2012, 2015).

Direct merger of the demonstrative in SpecDP predicts that the order Num A Dem N is non-existent, as seems to be the case (Cinque 2005). However, it does not accommodate for the strandability inside the NE of parts of the demonstrative, which looks parallel to the strandability of parts of the possessor, and ultimately to floating quantifiers from subject position (cf. Sportiche 1988).

As noted by Brugè (1996, 2002), Bernstein (1997), a demonstrative can be associated with a locative adverb of PP which must match its distance features, as shown by the ungrammaticality of distal *allí* ("there") cooccurring with proximal *este* ("this") in (41a) and of proximal *aquí* ("here") cooccurring with distal *aquel* ("that") in (41b):

- (41) a. el chico [ este [ de aquí / \*allí ] ]  
           the boy this here / \*there  
       b. el chico [ aquel [ de allí / \*aquí ] ]  
           the boy that of there / \*here

The same restrictions of cooccurrence are found when the demonstrative is in SpecN/DP (42). Brugè takes this to support her analysis parallel to Sportiche's (1988) well known argument of floating quantifiers in favor of the VP-internal subject position:

- (42) a. [<sub>N/DP</sub> este D [ chico [ este [ de aquí / \*allí ] ] ] ]  
           this boy of here / \*there  
       b. [<sub>N/DP</sub> aquel D [ chico [ aquel [ de allí / \*aquí ] ] ] ]  
           that boy of there / \*here

A similar case can be made for possessives. For example, Old Italian possessive adjectives reinforced by *proprio* ("own") can remain *in situ* as in (43a), or be moved leaving the reinforcer stranded, as in (43b), or be moved pied-piping the reinforcer, as in (43c), (cf. Giusti 2010):

- (43) a. la vertude [ sua [ propria ] ] (Dante, Convivio, p. 393)  
           the virtue his own

- b. la sua vertude [ sua [ propia ]] (Dante, Convivio, p. 368)  
 the his virtue own  
 ‘his own virtue’
- c. lo [ suo [ proprio ]] strumento (B. Latini, Rettorica, p. 4)  
 the his own tool  
 ‘his own tool’

The 3rd Person possessive *suo* can be overtly specified for the Gender and Number of the referent by merging it with a personal pronoun: *suo di lui* (“his”, cf. (44a)), *suo di lei* (“her”), or *suo di loro* (“their”), which do not need to be exemplified here; or with a full NE (*sua di Castruccio*, cf. (44b)):

- (44) a. a’ suoi successori [ suoi [ di lui ]] nella seggia di Roma  
 to his followers of him in the seat of Rome  
 ‘To those who succeeded him on the Roman Chair’  
 (Marsilio Defensor pacis volg., p. 308)
- b. molti di sua gente [ sua [ di Castruccio ]]  
 many of his people of Castruccio  
 ‘many of Castruccio’s folks’  
 (G. Villani, Cronica, 9.223)

The parallel between possessives in the NE and subjects in the clause is straightforward in the hypothesis that possessors, parallel to subjects, agree and for this reason they are first-merged in the descriptive portion (to saturate theta-positions) and then remerged in a position immediately lower than the Edge.

The discontinuity between a demonstrative and its locative reinforcer could be analyzed in the same vein, if there are independent reasons to first merge the demonstrative in an NP-internal position and then remerge it at the Edge. In what follows I elaborate a proposal that distinguishes external Agreement, which sends the targeted phase to interpretation, from internal Agreement, which closes the phase before it is targeted from the outside.

## 4.2 The featural composition of demonstratives

Demonstratives come cross-linguistically in four different classes, which I reformulate in my own terms given in parentheses: pronouns (independent indexicals), determiners (adnominal indexicals), adverbs (adverbial indexicals), identifiers (impersonal indexicals that can be subjects of identificational predications). It is possible that two or more of these classes are realized by the same vocabulary item, as is the case of the languages under consideration, but it is also possible that they are differentiated. I take this generalization to show that demonstratives

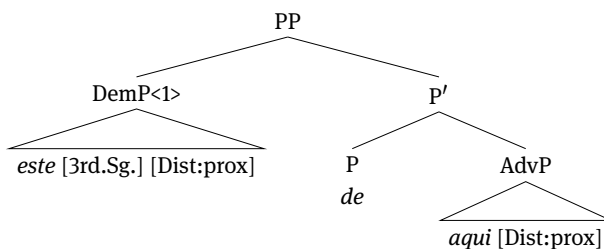
contain a locative feature and an indexical that can be freely introduced in syntax (such as a pronoun) or can combine with a nominal category to turn it into a phase.

Diessel (2006) claims that demonstratives “serve two closely related [communicative] functions: First, they indicate the location of a referent relative to the deictic center. Second, they serve to coordinate the interlocutors’ joint attentional focus.” (p. 469). Thus, demonstratives are intrinsically carriers of 3rd Person, as they point to an object which is distinguished from the speaker and the hearer. They locate such a referent in space: the exophoric space (with pointing) or the discourse (with anaphoric function). As presented in 3.1.2 above, according to Arsenijević, they saturate the DISTANCE feature to make the phase complete. I propose that they provide the Person feature to be targeted in external Agreement. This suggests that they do not have intrinsic nominal features, as their communicative function is to contribute the interlocutors’ joint attentional focus on a referent. For this reason, it is expected that when a demonstrative is adnominal, it needs to value Number and Gender through Concord with N. In (45) I propose the featural composition of a demonstrative, which is composed of an *i*(nterpretable) 3rd Person feature, an *i*(nterpretable) value for Distance (in languages which distinguish more than one distance), and an open position <1> to be theta-valued through Concord (Gender, Number and Case Concord may be triggered, according to the inflectional properties of the demonstrative):

(45) *i*Person:3rd, *i*Distance:x, <1>

The featural composition of a demonstrative in (45) allows it to form a constituent with a Locative PP. In (46) the demonstrative is the specifier of a locative PP (*à la* Brugè 1996, 2002), in which the adverbial is predicated of the demonstrative. Note that the Dist feature on Dem and Adv must have the same value:

(46)



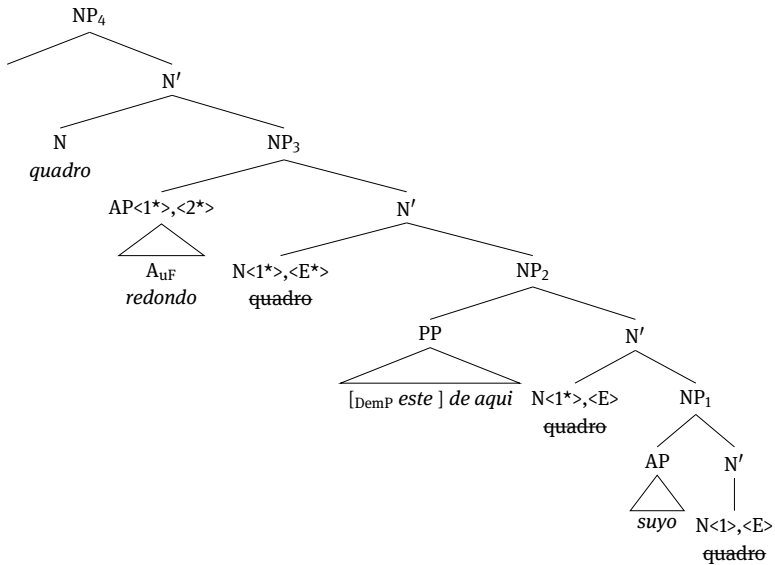
### 4.3 Two sorts of Agreement

Let us now apply Projection to the well known examples by Brugè (1996, 2002) that show that in Spanish a postnominal demonstrative precedes a postnominal possessive adjective:

- (47) a. el quadro redondo este de aqui suyo  
           the picture round this of here her
- b. \*el quadro redondo suyo este de aqui

In (48), the possessive AP saturates position <1> in NP1. The locative PP saturates position <E> in NP2 (the DISTANCE position, in Arsenijević 2007). This straightforwardly captures the hierarchy. N remerges with the descriptive adjective *redondo*, which theta-evaluates an open position through Concord in NP3. N remerges in NP4, because *redondo* is a postnominal adjective, and as such, requires the segment with which it has merged to be covert:

(48)



Structure (48) represents the descriptive portion of the NE. At this point, the internal argument (*suyo*) must be sent to interpretation.

In (49), the possessive adjective is targeted by a covert probe, activated in the highest non-phasal segment of N, here NP5. Recall that the function of the Probe is to send the embedded phase to interpretation, before the Edge of the in-progress phase is merged, which would make the embedded phase opaque. The saturator



of <E> is not an independent phase; it could not check the  $u\varphi$  of the Probe. This is why it does not create a relativized minimality effect with the possessor.<sup>8</sup> As in (34), the covert probe targets the Person feature ( $i\varphi$ ) of *suyo* and remerges it in its specifier. The form *suyo* in Spanish never remerges, while the weaker form *su* does remerge:

$$(49) \quad \left[_{NP_5} [i\varphi] \left[ _N \text{probe}_{u\varphi} \right] \left[ _{NP_4} \left[ _N \text{quadro} \right] \dots \left[ _{NP_2} \text{PP}_{\langle E \rangle N \langle E^* \rangle} \left[ _{NP_1} \left[ _{AP} \text{suyo}_{i\varphi} \right] \right] \right] \right] \right]_{\langle 1 \rangle} N \langle 1^* \rangle \langle E \rangle ] ] ]$$

When the probe targets the Person feature of the possessive AP, it sends it to interpretation as an independent referent, and locates it in a given relation (proximity / distance in Arsenijević's 2007, 2015 terms, the R-relation in Higginbotham's 1985, 1987 terms) with the referent of the phase under construction. Once this is done, the phase of the possessee can proceed to completion, with the phasal head remerged with a Edge, which must carry an index (a Person feature). This will allow for the NE to be part of the description of a superordinate phase.

As observed above, demonstratives are intrinsically 3rd Person, as in (45), this Person feature must reach the Edge of the nominal phase in order to provide it with an index accessible from the outside. The head N/D is a special type of probe, in that it does not carry a  $u\varphi$  targeting a lower complete phase but rather the opposite. It will be targeted by Agreement from the outside. I indicate this with a  $u\text{Case}$  feature. Following Pesetsky & Torrego (2001, 2004, 2007), this is an unvalued uninterpretable categorial feature that remains uninterpretable, but needs to be valued by an external probe (also cf. footnote 6).

Thus the head N in (49) remerges to build the phasal projection labeled N/DP in (50). The only way for  $u\text{Case}$  to be targeted from the outside is to have an  $i\text{Person}$  in its Specifier. I propose to call this type of probing "internal Agreement".  $N/D_{u\text{Case}}$  therefore probes the  $[i\text{Pers}]$  feature of Dem in the PP filling the specifier of NP2:

$$(50) \quad \left[ _{N/DP} [i\text{Pers}] N/D_{u\text{Case}} \left[ _{NP_5} [i\varphi] \left[ _N \text{probe}_{u\varphi} \right] \left[ _{NP_4} \text{quadro} \right] \dots \left[ _{NP_2} \text{Dem}_{i\text{Pers}} \left[ _N \left[ _{NP_1} \text{suyo} \right] \right] \right] \right] \right] ] ] ]$$

**8** Also the saturator of <1> may not be an independent phase, as is the case of relational adjectives saturating the AGENT theta-role but not being targeted by P, as we saw in (35)–(38) above.

## 5 Results

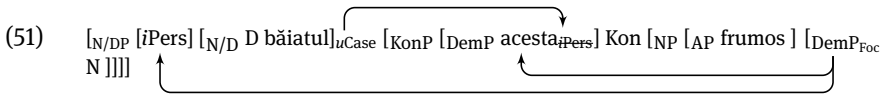
At this point, we can go over the properties observed for demonstratives in section 2 and examine how the proposal straightforwardly derives them.

The similarity with adjectival behavior noted in 2.1 is derived by the need for adnominal demonstratives to concord for nominal features. Differently from adjectives, however, demonstratives concord with the phasal head (N/D), which is valued for Case by an outer probe. For this reason, demonstratives carry case morphology in a language that has such inflection and are the last elements to lose it, as is the case of Romanian (6)–(8) above. This also explains why demonstratives are typically the base to form definite articles, namely overt phasal heads which are assigned Case.

The property of demonstratives to be edgers noted in 2.2 is derived by the proposal that demonstratives provide the NE with a Person feature, which reaches the Edge in order for the nominal phase to be complete and to re-enter the cycle.

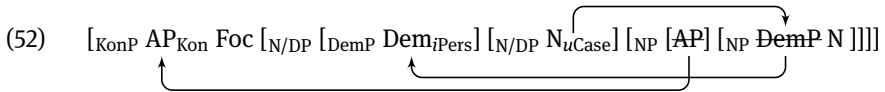
This proposal also derives the property noted in 2.3 to display more than one position. The Person features at the Edge does not always pied-pipe the whole demonstrative, it may leave the DemP in place, as in Spanish (18c-d). Pied-piping of the demonstrative to the Edge also interacts with the possibility, in some languages, that the left periphery of the NE be split. This is the case of the “second” position of demonstratives in Romanian and Latin.

In Romanian (17), demonstratives are the leftmost specifiers and can only be preceded by a bare N inflected for the definite article. Giusti (2005) proposes that the left periphery of the Romanian NE is split into DP > KonP. Reformulating that proposal in the present terms, in (51) the demonstrative moves to KonP to check the Contrast feature with which it is endowed, while the higher N/DP is instantiated by the overt N inflected for the definite article (*uCase*). In order for this to occur, SpecN/DP must host *iPerson*. For this reason N/D “internally agrees” with DemP targeting its *iPerson*, which covertly moves to SpecN/DP:



The analysis in (51) correctly predicts the ungrammaticality of a contrasted demonstrative preceded by an inflected adjective (17d-e). As argued by Dimitrova-Vulchanova and Giusti (1998), fronted adjectives are maximal projections in specifier positions and would occupy the position reserved to *iPers*, leaving the left edge without proper interpretive features.

The “second” position of demonstratives in Latin must be accounted for in a different way, as it can be preceded by an adjective and not by the head N (cf. (20) above). According to Giusti & Iovino (2016), the Left Periphery of the Latin NE is split in the opposite way than in Romanian (or Italian) with the Left Periphery (here KonP) preceding DP. The possible order in (20b) is therefore derived by pied-piping of the demonstrative to SpecN/DP, which can be preceded by a contrasted adjective, as in (52):



Finally, the proposal also predicts the cooccurrence patterns noted in 2.4. Demonstratives do not compete for the same position of articles, which are the overt phasal segments of N, nor of possessives, which are targeted by the highest non-phasal segment, as they must be sent to interpretation before the nominal phase is completed. Demonstratives only compete with personal pronouns, which are the other overt carriers of Person features that can be found in adnominal position.<sup>9</sup>

Moreover, the impossibility to extract a DemP (or an AP) creating a discontinuous phase can be related to the fact that Concord freezes the element in Specifier position. Let us first take the case of a pronominal possessive in Italian. It can extract only if it is embedded in a PP, as in (53). If it is a genitive relative pronoun (54a) or a concording possessive adjective (54b), or a genitive personal pronoun (54c), it cannot:

- (53) a. Gianni [ di cui] tutti conoscono [ il fratello [ di cui ]]  
 G. of whom everybody knows the brother

<sup>9</sup> An anonymous reviewer reports examples such as the one in (i) as counterexamples to the claim of true complementarity of pronominal determiners and demonstratives:

- (i) Quell'io giovane che entro mi rugge.  
 That I young which roars inside me  
 'That young side of me which is roaring deep inside.'

I think (i) and similar cases are instances of categorial coercion of the pronoun into a lexical N. The 3rd Person agreement on the predicate in (23a-b) and (i) shows that the *io* in (i) does not provide any Person feature to the NE, unlike what happens when a pronoun cooccurs with N, as in *Noi donne siamo/\*sono impegnate* (“we women are.1pl/\*are3pl busy”). The example in (i) is therefore evidence in favor of our hypothesis. A true demonstrative can never co-occur with a true pronoun.

- b. Gianni, [ il cui fratello [ eui ] ] tutti conoscono  
 G., whose brother everybody knows
- c. [ Di chi ] conosci [ un fratello [ di ehi ] ] ?  
 Of whom do-you-know a brother
- d. solo [ di lui ] conosco [ tutti i fratelli [ di lui ] ]  
 only of him do-I-know all the brothers
- (54) a. \*Gianni, [ cui ] tutti conoscono [ il [ eui ] fratello ]  
 G., whose everybody knows the brother
- b. \*solo suoi/nostri conosco [ i suoi/nostri fratelli ]  
 only his/our do-I-know the brothers
- c. \*solo loro conosco [ i loro fratelli ]  
 only their do-I-know the brothers

Although *cui* and *loro* in (53)–(54) are not adjectives, I assume that not only do they agree, but they also concord covertly in the highest non-phasal specifier, differently from the PPs, which are not pied-piped in the Agreement process. I propose that Concord fuses these elements, as well as adjectives of any kind, with the covert segment of N with which they concord, thereby freezing them in the Concord position.

The cases of adjective and demonstrative extraction in Latin (9) and Serbo-Croatian (12) are related to the possibility for these languages to split the referential portion of the nominal structure in two projections ordering the N/DP lower than KonP, as in (52) above. In Serbo-Croatian this position is only available to adjectives, while Genitive possessors are frozen in their non-phasal position. This is not the case of Latin.

Giusti & Iovino (2016) argue that the Left Periphery even allows iterated extraction in Latin. The modifier of a genitive DP can be extracted through the possessee Left Periphery and remerged in the clause by scrambling (cf. *pristinæ* in (53a)), wh-movement (cf. *cuius* in (53b)), or fronting to the Left Edge of the upper NE (cf. *huius* in (53c)):

- (55) a. Quorum in consilio [...] pristinae  
 whose.M.PL.GEN in decision.N.SG.ABL old.F.SG.GEN  
 residere [[ pristinae virtutis ] memoria]  
 dwell.INF.PRES virtue.F.SG.GEN memory.F.SG.NOM  
 videtur  
 it-seems  
 ‘The memory of the OLD virtue seems to dwell in their decision.’  
 (Caes. Gall. 7,77,4)

- b. cuius illum [[ eius rei]  
 who.F.SG.GEN that.M.SG.ACC thing.F.SG.GEN  
 sapor] excitet  
 taste.M.SG.NOM excites  
 ‘whose taste excites him’ (Sen. epist. 5,47,8)
- c. Sed abiit [ huius [ tempus [ huius  
 but is-far-away this.F.SG.GEN time.N.SG.NOM  
 querellae ]]  
 regret.F.SG.GEN  
 ‘But the time of this regret is far away’ (Cic. Cael. 74)

In all cases in (53), the element remerges only one more time than the full genitive NE. In (53a) the genitive NE *pristinæ virtutis* is in the (split) left periphery of the NE headed by *memoria*, which is the subject of a raising construction. The modifier *pristinæ* is then remerged alone to the left periphery of the immediately higher phase, the vP headed by the raising verb *videtur*. In (53b) *cuius rei* is in the (split) left periphery of the NE headed by *sapor*, which is the subject of the finite verb *excitet*. The genitive pronoun *cuius* is then remerged in the clausal left periphery to check the relative features. In (53c) the demonstrative *huius* is the Left Edge of the postnominal genitive *huius querellæ*. It then remerges at the (split) left periphery of the immediately higher NE. I refer the interested reader to that paper for further discussion.

To conclude, in this paper I have argued that adnominal demonstratives have the dual function of saturating the <E> position of N and of contributing the Person feature to the nominal phase. In so doing, they behave as arguments of N. But differently from (possessive) arguments, they are not independent phases. I called the process that triggers remerger of the Person features to the Edge of the nominal phase “internal Agreement” and proposed that it is triggered by the need of the NE to have an indexical that must be visible to the upper phase. This directly correlates with the need for Case. Like some externally agreeing elements (e.g. adjectives), demonstratives also concord for nominal features (Gender, Number, and Case). Concord freezes adjectives and demonstratives in their final position, unless the language has a split Left Periphery with a Left Periphery higher than N/DP, which can serve as an escape hatch.

This proposal naturally captures a number of well known properties of demonstratives thereby unifying the three different treatments they have received in the literature, namely as determiners, as adjectives and as exophoric elements of the “third type”.

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Norbert Corver and Marjo van Koppen

# Pronominalization and Variation in Dutch Demonstrative and Possessive Expressions

**Abstract:** The goal of this article is to provide a detailed analysis of DP-internal pronominalization patterns in standard Dutch and Dutch dialects. A core ingredient of our analysis will be the idea that the possessive and demonstrative constructions we discuss feature a DP-internal predication relationship. Furthermore, we aim to explain the (dimensions of) variation between dialects. Part of the attested micro-variation will be shown to be reducible to the PF-interface and the lexicon, i.e., the loci where we expect cross-linguistic/dialectal variation to be given the assumptions of the minimalist program (Chomsky 2000, Kayne 2005). We will further argue that some cross-dialectal differences relate to displacement.

**Keywords:** demonstratives, possessives, Dutch and Dutch dialects, Ellipsis, pronominalization, predication

## 1 Introduction

The literature on noun phrases in the Germanic and Romance languages describes two strategies to leave the lexical noun in a noun phrase unpronounced. The first one is to elide it, resulting in what is normally called NPE (Noun Phrase Ellipsis) in languages like French; see the underlined noun phrase in (1). The second one, which we dub the pronominalization strategy, is to replace (in a purely descriptive, pre-theoretical sense) the lexical noun by an indefinite dummy noun, like the insertion of *one* in English; see the underlined noun phrase in (2). We refer to this pattern as IndefP.

(1) *French:*

J'ai acheté une voiture blanche et Marie a acheté une verte.  
I.have bought a car white and Marie has bought a green

(2) I have bought a white car and Mary bought a green \*(one).

Both phenomena have received a fair amount of attention in the literature (see among others Lobeck 1995, Kester 1996, Sleeman 1996, Ntelitheos 2004, Chisholm

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2003 for analyses of NPE and Schütze 2001, Panagiotidis 2003a,b, Barbiers 2005, Corver & Van Koppen 2011 among many others for analyses of IndefP).

We argue in this article that the dialects of Dutch provide a different implementation of this pronominalization pattern. Consider the Dutch examples in (3) in which a definite article appears when the lexical noun is not realized in possessive and demonstrative constructions.

- (3) a. Jouw auto is wit en *de mijne* is groen.  
your car is white and the mine is green  
'Your car is white and mine is green.' (standard Dutch)
- b. Die auto is wit en *de deze* is groen.  
that car is white and the this is green  
'That car is white and this one is green.' (dialectal Dutch)

Importantly, definite articles cannot co-occur with demonstrative and possessive pronouns in non-elliptical contexts in Dutch and its dialects, see the example in (4).

- (4) a. (\*de) mijn auto  
(the) my car  
'my car' (standard Dutch)
- b. (\*de) die auto  
(the) that car  
'that car' (dialectal Dutch)

We will argue that the definite article preceding the possessive and demonstrative pronouns in (3) has the same role as *one* in English. They are pro-nouns, i.e., dummy nouns replacing nouns in what we think of as NPE contexts.<sup>1</sup> We will refer to this construction as the DefP pattern (the Definite Pronominalization Pattern).<sup>2</sup>

The Dutch dialects show quite a substantive amount of variation within this construction. One dimension of variation concerns the distribution of the definite

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1 These types of examples have sporadically been discussed in the literature (see Corver & Van Oostendorp 2005, Corver & Van Koppen 2010, Schoorlemmer 1998), but they have not been identified as pronominalization strategies so far.

2 A similar pattern is found in French, as is exemplified in (i). We hypothesize that *le* in *le mien* is a pro-form pronominalizing the noun (i.e. NP), just like *de* in *de mijne*. For reasons of space, we will not be able to give a detailed analysis of this construction in French.

- (i) a. mon père                                  b. le mien  
my father                                      the my  
'my father'                                      'mine'

article within the DP. There are for instance dialects that have the definite article preceding the DP-internal pronoun (see (5a)), but there are also dialects in which it follows the pronoun, as in (5b), or even both precedes and follows the pronoun, as in (5c):

- (5) a. den menne  
the mine  
‘mine’ (Wambeek Dutch)
- b. mien-’n-de  
mine-n-the  
‘mine’ (Hooghalen Dutch)
- c. de miende  
the mine-the  
‘mine’ (Giethoorn Dutch)

Dialects furthermore differ in which DP-internal pronominal elements can combine with a definite article. Some dialects can have a definite article with *wh*-pronouns, demonstratives and possessives, others just with demonstratives and possessive and yet others, like standard Dutch, just with possessives. Interestingly, no dialect allows the DefP-strategy with adjectival remnants.

Another dimension of variation concerns the morphosyntactic makeup of the pronominal element. First of all, dialects can select slightly different feature specifications for the definite article (for instance reflecting masculine gender or not). Secondly, dialects can make use of both the DefP-strategy and the IndefP-strategy, or just one of these strategies. A dialect which makes use of both pronominalization strategies is, for example, the dialect of Zierikzee (spoken in the Dutch province of Sealand) in (6).

- (6) a. Piet ei een vervelend-e opa en Jan ei een leuk-en  
Piet has an annoying-*e* grandfather and Jan has a nice-*en*  
‘Piet has an annoying grandfather and Jan has a nice one.’
- b. Deze opa is al oud, maar *den dieje* nie.  
this grandfather is already old but *the* that not  
‘This grandfather is already old, but that one isn’t.’ (Zierikzee Dutch)

The attributive adjective in Zierikzee Dutch inflects in the same way as the attributive adjective in standard Dutch: there is always an *e*-ending, except when the noun is indefinite, neuter and singular. In the latter case, there is no overt adjectival ending. However, when the noun is elided, the ending on the adjective is always *-en* (irrespective of the feature specification of the elided noun); see (6). Corver & Van Koppen (2011) show that this *en*-ending is actually not an adjecti-

val ending, but a pro-noun comparable to English *one*. This example shows that in one and the same dialect we find the pro-noun *-en* with adjectival remnants and the pro-noun *den* with pronominal remnants. When we look at the English translation we see that both with adjectival remnants and with the demonstrative remnant the pro-noun *one* is used.

The goal of this article is to provide a detailed analysis of DP-internal pronominalization patterns in standard Dutch and Dutch dialects. A core ingredient of our analysis will be the idea that these possessive and demonstrative constructions feature a DP-internal predication relationship, an idea which has been explored in most detail for possessive constructions (see among others Den Dikken 1998). Furthermore, we aim to explain the (dimensions of) variation between dialects. Part of the attested micro-variation will be shown to be reducible to the PF-interface and the lexicon, i.e., the loci where we expect cross-linguistic/dialectal variation to be given the assumptions of the minimalist program (Chomsky 2000, Kayne 2005). We will further argue that some cross-dialectal differences relate to displacement. Specifically, in some dialects (viz. those that display feature inheritance in the DP) the demonstrative pronoun can remain in situ in nominal expressions featuring DefP, while in others (those that do not display DP-internal feature inheritance) the demonstrative must move to Spec,DP.

This article is organized as follows. Section 2 describes in detail the properties of the definite pronominalization strategy in Dutch dialects. This microvariation perspective provides us with fine-grained information about the dimensions of variation displayed by this construction. Section 3 first discusses the predicate displacement analysis of possessive nominal expressions and subsequently provides an analysis of the definite pronominalization strategy as attested in varieties of Dutch. In section 4, we give an analysis of Dutch demonstrative constructions, making use of DP-internal predication. We further provide an analysis of the cross-dialectal variation attested in demonstrative constructions featuring definite pronominalization. Section 5 discusses an implicational hierarchy for the definite pronominalization strategy. Section 6 concludes the article.

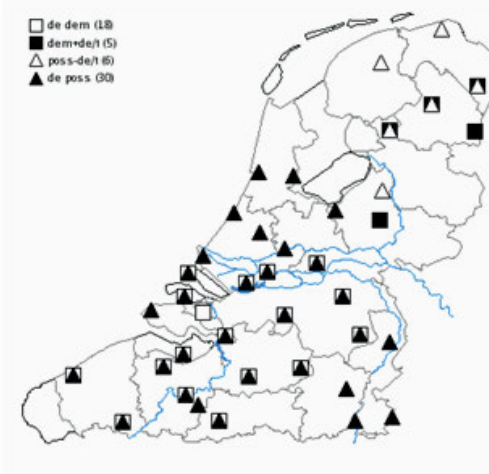
## 2 Data: the definite pronominalization strategy in Dutch (dialects)

In this section we discuss the definite pronominalization strategy in Dutch and its dialects, and in particular to cases of NPE with demonstrative or possessive pronominal remnants.

## 2.1 Three patterns of definite pronominalization

We can distinguish three different patterns of definite pronominalization in Dutch and its dialects. The different dialectal systems and their distribution are depicted on the map in (7).

### (7) Three microsystems for the definite pronominalization pattern



This map depicts the three systems: just the black triangles indicate the standard Dutch system, the white squares with the black triangles show the Southern Dutch system and the black squares with the white triangles represent the Northeastern system.

Let us first consider the system found in standard Dutch (the black triangles on the map in (7)) and several other dialects scattered around the Northwestern part of the Netherlands. The definite article precedes the pronominal remnant and is obligatory with possessive pronominal remnants.<sup>3</sup> However, it cannot occur with demonstrative pronominal remnants:

<sup>3</sup> An anonymous reviewer notes that in his/her Dutch the definite article can actually be absent in (8a)' and that similar patterns are found on the internet. This is an interesting observation that warrants in depth research. What we can already say here, however, is that we have observed this phenomenon for a group of dialects spoken in the Northeast of the Netherlands as well. These dialects seem to have a different strategy to handle NP-omission. We refer the reader to Corver & Van Koppen (2010) for elaborate discussion about this different strategy.

- |     |    |   |     |                                     |
|-----|----|---|-----|-------------------------------------|
| (8) | a. | mijn vader<br>my father<br>'my father'    | a'. | *(de) mijne<br>the my-e<br>'mine'   |
|     | b. | die vader<br>that father<br>'that father' | b'. | (*de) die<br>the that<br>'that one' |

(standard Dutch)

The second pattern (the black triangles within the squares on the map in (7)) is attested in the southern part of the Netherlands (roughly the Dutch provinces of Brabant and Limburg) and in Flanders (the Dutch speaking area of Belgium). The definite article again precedes the pronominal remnant and is obligatory with possessive pronominal remnants and optional with demonstrative remnants:

- |     |    |   |     |                                    |
|-----|----|---|-----|------------------------------------|
| (9) | a. | mijn vader<br>my father<br>'my father'    | a'. | *(de) mijne<br>the my-e<br>'mine'  |
|     | b. | die vader<br>that father<br>'that father' | b'. | (de) die<br>the that<br>'that one' |

(Southern Dutch)

The third and final system is found in the Northeastern part of the Netherlands (provinces of Overijssel, Groningen and Drenthe). This pattern is similar to the pattern we find in standard Dutch in that the remnant-initial definite article can occur with possessive pronominal remnants but not with demonstrative pronominal remnants. In contrast to the standard Dutch pattern, however, this remnant-initial definite article is optional in the Northeastern pattern. Furthermore, the Northeastern pattern deviates in yet another way from the standard Dutch pattern, namely the realization of an extra definite article. This additional definite article follows the pronominal remnant.<sup>4</sup>

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<sup>4</sup> Some dialects which display this pattern do not have a pronoun final *-de* but a pronoun final *-t*. We take this to be the same element. Corver & Van Oostendorp (2005) analyze this final *de/t*-element in these dialects as an element that is present for purely phonological reasons, and not as a definite article with a syntactic origin. We will show in the section 2.3 below that this element induces a certain meaning aspect (viz., contrastive focus), which makes the analysis of a purely phonological addition less likely. Given that the meaning that is related to this *de/t*-element is the same as the meaning of the pronoun initial definite article that we find in the Flemish pattern, we take it to be the same element in both types of dialects.

- |      |    |   |     |  |
|------|----|---|-----|--|
| (10) | a. | mijn vader<br>my father<br>'my father'    | a'. | (de) mijnde<br>the my the<br>'mine'          |
|      | b. | die vader<br>that father<br>'that father' | b'. | (*de) die(nde)<br>the that the<br>'that one' |
- (Northeastern Dutch)

These data raise the following questions: (i) Why does the definite article occur in these pronominal patterns? (ii) What determines the noun phrase internal position of the definite article, i.e., noun phrase initially, noun phrase finally, or in both positions? And (iii) How can we account for the variation between these closely related dialects?

Before we provide an analysis of the data that answers these questions, we will first investigate the properties of the definite article in a bit more detail. We start by looking at the pronominal nature of the definite article in the DefP-pattern. We will show that the pro-nominal status of this element is not as farfetched as it might seem at first sight. Secondly we discuss the grammatical role the pronominalizing definite article plays within the containing DP. That is, under which conditions does this element appear?

## 2.2 The pronominal nature of the definite article in the DefP pattern

The idea that the definite article is actually a pro-noun might seem a bit strange at first, since definite articles are traditionally thought to occupy a functional head position, i.e. the D<sup>o</sup>-position, in the extended nominal domain. However, the idea that pronouns and definite articles are closely related has been formalized in several different analyses (cf. for instance Postal 1966, Abney 1987 among many others). Within generative syntax, Postal (1966) is the first to observe that the paradigms for pronouns and definite articles show an overlap. Consider, for instance, the example in (11) from French.

- |      |    |  |          |
|------|----|--|----------|
| (11) | a. | Je vois <b>le</b> professeur.<br>I see the professor<br>'I see the professor.' |          |
|      | b. | Je <b>le</b> vois.<br>I him see<br>'I see him.'                                | (French) |



Abney (1987) argues on the basis of these data that pronouns and determiners occupy the same structural position, namely  $D^0$  (cf. also Corver & Delfitto 1999). The difference between the two  $D^0$ -fillers is that determiners select for a lexical NP complement whereas pronouns usually do not have this option. One argument in favor of the analysis put forth by Abney (1987) is that pronouns can also co-occur with a lexical NP complement in languages like English. Consider the examples in (12).

- (12) a. [<sub>DP</sub> [<sub>D<sup>0</sup></sub> we] [<sub>NP</sub> linguists]]  
 b. [<sub>DP</sub> [<sub>D<sup>0</sup></sub> the] [<sub>NP</sub> linguists]]

In Dutch we also find a partial overlap between the pronominal paradigm and the paradigm of definite articles. Consider the examples in (13):

- (13) a. **'t** stoeltje  
 the<sub>neut</sub> chair-DIM  
 'the little chair'  
 b. **'t** staat in de weg.  
 it stands in the way  
 'It stands in the way.'  
 c. Ik heb **'t** verplaatst.  
 I have it moved  
 'I have moved it.' (standard Dutch)

The overlap is not complete since the non-neuter definite article *de* cannot be used as a free-standing pronoun, as is evidenced by (14).

- (14) a. **de** man  
 the<sub>non-neut</sub> man  
 'the man'  
 b. **Hij / \*De** staat in de weg.  
 he / the<sub>non-neut</sub> stands in the way  
 'He is in the way.'  
 c. Ik heb **'m / \*de** gezien.  
 I have him / the<sub>non-neut</sub> seen  
 'I have seen him.' (standard Dutch)

There is yet another indication that there is a direct link between the definite article and pronouns. Diachronically, the current definite articles *de* (used in non-neuter singular and plural contexts) and *het* (used in neuter singular contexts) are the result of a phonological reduction (weakening) of the Middle Dutch definite articles *die* 'that (non-neuter)' and *dat* 'that (neuter)', respectively. These elements

were used both as demonstrative pronouns and as definite articles (cf. Schönfeld 1959: 120, Stoett 1923: 55).<sup>5</sup>

The definite article in the DefP behaves differently from the ‘regular’ definite article, suggesting that it has a different syntactic status than the regular definite article. In particular, we will argue that it is a pro-noun replacing the noun (more specifically NP) in demonstrative and possessive constructions, whereas the regular definite article is merged in the head position of the higher DP. There are three differences between the regular definite article and the definite article in the DefP. First of all, the definite article in the DefP cannot be replaced by other definite or indefinite determiner elements. The definite article is the only element which can appear in this context; see (15a). In regular contexts the definite article can be replaced by demonstrative pronouns or indefinite articles, see (15b).

- (15) a. de / \*die / \*een mijne  
 the / that / a mine  
 ‘mine’  
 b. de / die / een lieve man  
 the / that / a sweet man  
 ‘the/that/asweet man’ (standard Dutch)

Secondly, the definite article cannot appear in combination with possessive or demonstrative remnants when the lexical noun is present; cf. the examples in (16). Reversely, a definite article cannot be added to an adjectival remnant of NPE, if the definite article is not also present in the attributive context (cf. (17)).

- (16) a. (\*de) dien opa                      a'. de dien  
 the that grandpa                      the that  
 ‘that grandpa’                              ‘that one’  
 b. (\*de) mijn moeder                      (Asten Dutch)  
 the my mother                              b'. de mijne  
 ‘my mother’                                      the mine  
     ‘mine’  
     (standard Dutch)

<sup>5</sup> The phonological reduction of the demonstrative pronoun (*die*) to the definite article (*de*) (see Van Der Horst 2008: 388) resembles the reduction of strong pronouns to weak pronouns: (i) *jij* (you.NOM, ‘you’) versus *je*, (ii) *mij* (me.ACC, ‘me’) versus *me*, (iii) *zij* (she.NOM ‘she’, or they.NOM ‘they’) versus *ze*. The reduction of *dat* to *het* is a bit less transparent, as an anonymous reviewer notes, but here the reduction was originally from *dat* to *t* (which is actually the form of the definite article that is often used). This weakened *t* was reinterpreted as the pronominal form *het* (see Schönfeld 1959).

- |      |    |  |     |   |
|------|----|--|-----|---|
| (17) | a. | de lieve opa<br>the sweet grandpa<br>'the sweet grandpa' | a'. | de lieve<br>the sweet<br>'the sweet one'        |
|      | b. | een lieve moeder<br>a sweet mother<br>'a sweet mother'   | b'. | (*de) een lieve<br>the a sweet<br>'a sweet one' |
- (standard Dutch)

Finally, the definite article in DefP is incompatible with attributive adjectives; see example (18). As shown by (19), the regular definite article, or other determiner-like elements, can co-occur with an attributive adjective.

- |      |    |                                  |     |   |
|------|----|----------------------------------|-----|---|
| (18) | a. | de mijne<br>the my<br>'mine'     | a'. | *de mijn(e) grote<br>the my(-e) big<br>'my big one' |
|      | b. | de die<br>the that<br>'that one' | b'. | *de die grote<br>the that big<br>'that big one'     |
- (standard Dutch)

- |      |    |  |    |   |
|------|----|--|----|---|
| (19) | a. | de/die/mijn grote hond<br>the/that/my big dog<br>'the/that/my big dog' | b. | de/die/mijn grote<br>the/that/my big<br>'the/that/my big one' |
|------|----|--|----|---|
- (standard Dutch)

The assumption that definite articles are pro-nouns (more specifically pro-NPs) in the DefP can easily account for two out of three of the properties of the definite article in this construction. First of all, it is in complementary distribution with the lexical noun, because the definite article pronominalizes the lower part of the DP-projection (i.e., NP), including the lexical noun. Secondly, it cannot co-occur with adjectives modifying the head noun, because they too are part of the structure which is pronominalized by the definite article. Specifically, we assume that attributive adjectives are modifiers adjoined to NP (i.e.  $[_{NP} AP [_{NP} N]]$ ) and that the DefP replaces the highest NP. In section 3.2 (note 13) we will briefly address the question as to why the DefP-pattern is only possible with *de* (e.g. *de mijne*) and not with *die* (\**die mijne*).

### 2.3 The grammatical role of pronominalizing definite article

The question arises whether the occurrence of the definite article in the DefP can be related to some external factors. Corver & Van Koppen (2010) show that the

definite article in the DefP with a possessive pronoun functions as an agreement marker to recover the gender specifications of the elided noun. We will give one example here to illustrate this from the Dutch-Brabantish dialect of Asten. Asten Dutch (like most southern dialects) shows gender distinctions for masculine, feminine and neuter. The distinction between masculine vs. neuter/feminine is expressed on the indefinite article. We will dub this ‘indefinite gender’. The distinction between neuter vs. masculine/feminine is expressed on the definite article. We will call this ‘definite gender’. This is illustrated in the examples in (20).

- (20)
- |    |                     |                           |                           |
|----|---------------------|---------------------------|---------------------------|
| a. | masculine singular: | <b>nen</b> opa/de oom     | ‘a grandfather/the uncle’ |
| b. | feminine singular:  | een oma/de dame           | ‘a grandmother/the lady’  |
| c. | neuter singular:    | een kind/ <b>t</b> kenijn | ‘a child/the rabbit’      |

The possessive pronoun in this dialect agrees in gender with the possessed noun and follows the indefinite gender pattern (i.e., it makes a distinction between masculine and non-masculine). This is exemplified in (21).

- (21)
- |    |                            |    |                           |
|----|----------------------------|----|---------------------------|
| a. | <i>masculine singular:</i> | b. | <i>feminine singular:</i> |
|    | minnen opa                 |    | min tante                 |
|    | my-MASC grandfather        |    | my aunt                   |
|    | ‘my grandfather’           |    | ‘my aunt’                 |
| c. | <i>neuter singular:</i>    |    |                           |
|    | min kind                   |    |                           |
|    | my child                   |    |                           |
|    | ‘my child’                 |    |                           |

Corver & Van Koppen (2010) argue that the definite article needs to be present when the lexical noun is absent in order to recover the gender features of this lexical noun. The possessive pronoun does not make all the relevant distinctions, since it expresses just indefinite gender. According to Corver & Van Koppen, the definite article is added to the remnant of ellipsis in order to express definite gender. Consider the example in (22).

- (22)
- |    |                            |    |                           |
|----|----------------------------|----|---------------------------|
| a. | <i>masculine singular:</i> | b. | <i>feminine singular:</i> |
|    | de minnen                  |    | de min                    |
|    | the-MASC/FEM my-MASC       |    | the-MASC/FEM my-FEM/NEUT  |
|    | ‘mine’                     |    | ‘mine’                    |
| c. | <i>neuter singular:</i>    |    |                           |
|    | <b>t</b> min               |    |                           |
|    | the-NEUT my-FEM/NEUT       |    |                           |
|    | ‘mine’                     |    |                           |

The definite article is optional in dialects where the possessive pronoun makes the complete set of gender distinctions. Winterswijk Dutch is one such dialect. Consider the example in (23), which shows that Winterswijk Dutch makes a distinction between masculine, feminine and neuter on the possessive pronoun.

- (23) a. *masculine singular:*  
 mien-en hood  
 my-MASC hat  
 ‘my hat’
- b. *feminine singular:*  
 mien-e muts  
 my-FEM bonnet  
 ‘my bonnet’
- c. *neuter singular:*  
 mien hoes  
 my house  
 ‘my house’

Given the reasoning provided above, this means that the definite article should be absent (or at least optional) in the dialect of Winterswijk. This is the case, as shown in (24) below.<sup>6</sup>

- (24) a. *masculine singular:*  
 (d’n) mienen  
 the-MASC my-MASC
- b. *feminine singular:*  
 (de) miene  
 the-FEM my-FEM
- c. *neuter singular:*  
 t miene  
 the-NEUT my-e

In short, the definite article is used in the DefP with possessive pronouns that are unable to identify the gender features of the absent lexical noun. Corver & Van Koppen (2010) restricted themselves to possessive pronouns. The demonstrative pattern appears to work more or less the same, however. Consider the examples in (25), which again are taken from the Dutch-Brabantish dialect of Asten.

- (25) a. *masculine singular:*  
**dizzen** / **dien** opa  
 this-MASC that-MASC grandfather  
 ‘this/that grandfather’

<sup>6</sup> Note that that definite article is obligatory in the neuter singular. We refer the reader to the original paper for an explanation of this.

- b. *feminine singular*:  
**dees** / **die** tante  
 this-FEM that-FEM aunt  
 ‘this/that aunt’
- c. *neuter singular*:  
**di** / **da** kind  
 this-NEUT that-NEUT child  
 ‘this/that child’

This example shows that the demonstrative pronoun (in contrast to the possessive pronoun) expresses the full set of gender features. We therefore expect the definite article to be either completely absent or optional. This expectation is once again confirmed by the data. Consider the table in (26).

(26)

	Distal	Proximal
Masc. sg.	(d'n) dieje the-MASC that-MASC	(d'n) dizzen the-MASC this-MASC
Fem. sg.	(de) die the-FEM that-FEM	(de) dees the-FEM this-FEM
Neut. sg.	da that-NEUT	di this-NEUT

That this analysis of the definite article in the DefP is on the right track is confirmed by data from the Flemish dialect of Wambeek. This dialect also makes a distinction between masculine, feminine and neuter and this is encoded on the distal demonstrative. The proximate demonstrative, however, does not make the distinction between feminine and neuter. As a consequence, the definite article is obligatory in the neuter singular in this dialect. This is illustrated in the table in (27).

(27)

	Distal	Proximal
Masc. sg.	(den) daune the that	(den) dezen the this
Fem. sg.	(de) dei the that	(de) dees the this
Neut. sg.	(t) da the that	* <b>(t) dees</b> the this

In short, the definite article seems to be fully optional in the DefP with demonstrative pronouns in most of the Dutch dialects that display this pattern (with the

exception of dialects like Wambeek Dutch, where the definite article appears to fill a gap in the gender paradigm). However, closer investigation shows that the definite article cannot be left out freely. The DefP with demonstrative remnants seems to be restricted to contexts which encode contrastive focus. Consider the examples in (28).

- (28) a. Ik ging vaker bij deze tante logeren dan bij <sup>??</sup>(de) die.  
 I went more often with this aunt stay than with the that  
 ‘I used to stay more often with this aunt than with that one.’
- b. Laat me je iets over die tante vertellen. (\*De) die is  
 let me you something about that aunt tell. the that is  
 altijd heel aardig.  
 always very nice  
 ‘Let me tell you something about that aunt. She is always very nice.’  
 (Southern Dutch)

These examples show that the informants have a strong preference for the presence of the definite article in a contrastive context, as in (28a). If, on the other hand, the demonstrative pronoun is used as a topic, as in (28b), the definite article is very strongly dispreferred. The presence of the definite article hence seems to result in a contrastive interpretation of the demonstrative construction. It turns out that a similar contrast is found in the Northeastern dialects, where the definite article of DefP follows the demonstrative pronoun. The DefP *diende* (that-the ‘that one’) is preferred in a sentence like (28a), involving contrastive focus, but dispreferred in (28b), where the pronoun has a topical use. For the ‘bare’ demonstrative *dien* (‘that’), we see the reverse pattern: it does not occur in a context like (28a) but is fully permitted in (28b).<sup>7</sup>

---

7 At the end of this section, the question can be raised to what extent DP-internal pronominalization is a more widespread phenomenon in Dutch. Dutch has at least one comparable case of pronominalization, namely with *er* (there, ‘of it/them’) (Bennis 1986). As shown in (i), *er*-pronominalization replaces part of an (indefinite) noun phrase by the pro-form *er*, leaving behind a numeral (or quantifier) as a remnant. Just like the definite pronominalization strategy, *er*-pronominalization cannot co-occur with an overt lexical noun or an adjective, see (i). This complementary distribution suggests that *er* originates in a noun phrase-internal position, just like the definite article in the constructions discussed above.

- (i) Ik heb er toen [twee (\*konijntjes) / (\*lieve)] gezien.  
 I have *er* then two rabbits sweet seen  
 ‘I saw two (\*rabbits/sweet) of them then.’

### 3 Towards an analysis: Definite pronominalization in possessive constructions

Having provided a description of the patterns of definite pronominalization (DefP) as attested in Dutch dialects, we will develop an analysis of these patterns and try to account for the attested cross-dialectal variation in sections 3 and 4. Section 3 discusses the DefP pattern in possessive constructions, and section 4 the DefP pattern in demonstrative constructions. For our analysis, we will base ourselves on the idea that possessive and demonstrative structures involve a predication relationship, which is configurationally defined in terms of a DP-internal small clause structure. By adopting this approach, we follow Den Dikken (1998, 2006) and Campbell (1996) – see also Hoekstra & Mulder (1990), Freeze (1992), Kayne (1994), and Moro (1997), Den Dikken (2006) for predication in the clausal domain – rather than approaches that analyze possessive and demonstrative pronominals in terms of attributive structures (cf. for instance Brugè 1996, Giusti 1997, Schoorlemmer 1998).

#### 3.1 DP-internal Predicate Inversion in possessive constructions

Consider the possessive construction in (29), also known as the Saxon genitive construction.

(29) John's book (Dutch: Jans boek)

Interestingly, in certain Southern dialects of Dutch, the R-pronoun can be replaced by a D(emonstrative)-pronoun *die* 'that, those' (cf. Van Hoof 2005). Notice that at the surface this pattern is quite similar to Def-pronominalization in the sense that the pro-form *die* is a "D-pronoun", just like *de*.

(ii) Ik heb [NP *die*<sub>i</sub>] gisteren [DP *t*<sub>i</sub> [NumP twee [Num' *t*<sub>i</sub>]]] gezien.  
 I have *die* yesterday two seen  
 'I saw two of them yesterday.'

An important difference between *er*-pronominalization and Def-pronominalization regards the placement of the pro-form: *er* occurs in a DP-external position; *de*, on the other hand, cannot leave the DP; it must remain inside the DP. The question of the exact relation between *er*-pronominalization and *def*-pronominalization is left for further research.



Den Dikken (1998) proposes that the derivation of this possessive nominal expression involves DP-internal Predicate Inversion. The derivation is represented in (30), where (30a) represents the ‘base structure’ and (30b) the derived structure.

- (30) a.  $[_{DP} \text{Spec } [_{D'} D [_{FP} \text{Spec } [_{F'} F [_{XP} \text{book } [ X' X [_{PP} P_{\text{DAT}} \text{John } ]]]]]]]]$   
 b.  $[_{DP} \text{Spec } [_{D'} D [_{FP} [_{PP} t_k \text{John}]_i [_{F'} F+X_j+P_k (=s) [_{XP} \text{book } [X' t_j t_i ]]]]]]$

Example (30a) represents the source structure in which the possessor (*John*) is contained in a prepositional predicate (i.e., PP), which is headed by a dative assigning null preposition (i.e., P) and which takes the possessee (*book*) as its subject. Thus, the ‘underlying’ possessive meaning roughly corresponds to: ‘book (is) to John’. Example (30b) represents the structure that is derived by: (i) the application of X-to-F-movement (for reasons of domain extension (equidistance)),<sup>8</sup> (ii) incorporation of P into the F-complex (yielding the possessive ‘have’-relation at the nominal level), (iii) predicate inversion of the “beheaded” dative PP across the possessee to [Spec,FP].

Following Corver (2003, 2008), we adopt the Predicate Inversion analysis for Dutch possessive constructions containing a pronominal possessor, as in *mijn boek* ‘my book’.<sup>9</sup> The base structure and the derived structure are given in (31a) en (31b), respectively:<sup>10</sup>

**8** Domain extension is needed for reasons of locality: the displaced predicate (PP) should be as close (i.e. equidistant) to its extraction site as the “intervening” small clause subject in Spec,XP. See Den Dikken (1998) for details.

**9** An anonymous reviewer notes that there have been several other proposals about the internal structure of the DP that have the potential to explain the data at hand. One could for instance make use of the ideas about the DP put forward in, for instance, Schoorlemmer (2009), in which it is argued that there are two D-positions within the noun phrase, or an analysis as has been provided by, among others, Panneman (2007), in which it is argued that the possessive pronoun pronominalizes part of the DP. As far as we know there are no alternative analyses of the constructions discussed in this paper, however. We do not explore potential alternative analyses here, because our main objective is to describe and analyze the patterns found with demonstrative and possessive NP-omission rather than to compare analyses of possessive and demonstrative patterns.

**10** A reviewer raises the question as to whether there is any evidence in Dutch that the possessor starts in a low predicative position. For a theoretical motivation of the idea that a possessor starts out in a low structural position –i.e., the predicate position within the noun phrase (nominal possessive patterns) or the clause (clausal possessive patterns)– we refer the reader to Den Dikken (1998, 2006). Unfortunately, it is not so easy to find direct empirical support for this low predicative position in present-day Dutch, like e.g. the existence of an in situ variant or stranding of material left behind by the displaced possessor (say, comparable to Q-float phenomena in the

- (31) a. [<sub>DP</sub> Spec [<sub>D'</sub> D [<sub>FP</sub> Spec [<sub>F'</sub> F [<sub>XP</sub> boek [ X' [X 'n] [<sub>PP</sub> P<sub>DAT</sub> mij ]]]]]]]]]  
 b. [<sub>DP</sub> Spec [<sub>D'</sub> D [<sub>FP</sub> [<sub>PP</sub> t<sub>k</sub> mij]<sub>i</sub> [<sub>F'</sub> F+X<sub>j</sub>(= 'n)+P<sub>k</sub> [<sub>XP</sub> boek [X' t<sub>j</sub> t<sub>i</sub> ]]]]]]]]]

Just like in the English example (30) the possessor moves from the predicate position (i.e., complement of X) to Spec,FP. For reasons of equidistance this movement is accompanied by head movement of the small clause head X<sup>0</sup> to F<sup>0</sup>, and incorporation of P into the F-complex. At PF, this resulting complex head is spelled out as the nominal copula *-n* which we argue, following Corver (2003, 2008), is an instance of the so-called spurious indefinite article *een* (cf. Bennis, Corver & Den Dikken 1998); see below for discussion. We assume that at PF, this complex head is 'glued together' with the oblique pronoun *mij*, which occupies Spec,FP in the syntactic representation. This 'gluing together' at PF results in the possessive pronoun *mijn*.

We propose that this PF-process is the operation of *Fusion* (Harley & Noyer 1999: 6; Embick & Noyer 2001), which affixes the complex head [<sub>F</sub> F<sup>0</sup>+X<sup>0</sup>+P<sup>0</sup>] onto the pronominal head inside the inverted PP. The phonological realization of the complex F<sup>0</sup>-head depends on the element that has moved into Spec,FP. If a proper name were to move into this position the complex head spells out as *-s* (the so-called Saxon Genitive); if a pronoun like *mij* occupies Spec,FP, it is the spurious indefinite article 'n which surfaces.<sup>11</sup> It is possible that the constituent formed after fusion is no longer transparently reflecting the pronominal and the spurious indefinite article, as is the case with *zijn* 'his' for instance. The third person oblique pronoun is *hem* 'him'. So, the transparent form of the possessive pronoun should be *hem+n*, which is actually found in several Dutch dialects (see Corver 2003),

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clausal domain). It should be noted, however, that in older variants of Dutch (e.g. Middle Dutch) postnominal placement of a possessive pronoun was possible next to pronominal placement (see Stoett 1923: 48, 87), as in *die oghen dijn* (the eyes your, 'your eyes'). As noted by Stoett, the Middle Dutch possessive pronoun remains uninflected in postnominal position. Possibly, this hints at the predicative nature of this postnominal position. Note, for example, that in present-day Dutch adjectives are typically uninflected in clause-internal predicative positions (e.g., in copular constructions). Notice furthermore that also with certain noun phrase-internal adjectives inflection can be absent if the adjective follows the noun, as in the fixed exclamatory expression *God almachtig* (God almighty, 'Heavens!') versus the vocative expression *almachtige God!* (almighty-e God, 'almighty God'). Arguably, the postnominal (uninflected) position corresponds to the predicative position, while the pronominal one corresponds to the attributive (i.e. inflected) position.

**11** Note that there are restrictions on the Saxon genitive (the *s*-construction) in Dutch. The possessor has to be a proper name or proper-name-like. So, for instance, *oma's auto* ('grandmother's car'), in which the possessor *oma* 'grandmother' acts as a proper name, is permitted, but *[[die oma's] auto]* 'that grandmother's car' is not. Dutch differs from English in this respect.

but instead the opaque form *zijn* is used to spell out the terminal resulting from fusion.<sup>12</sup>

As pointed out above, we analyze *n* in *mijn* as a spurious indefinite article. Evidence in support of its status as an indefinite article comes from its formal similarity with “real” indefinite articles. This similarity is clearly shown by the examples in (32) from Oerle Dutch (De Bont 1958), which displays gender distinctions on the indefinite article.

- |      |              |                         |                          |
|------|--------------|-------------------------|--------------------------|
| (32) | Oerle Dutch: | a.’                     | mene stal                |
|      | a.           | ene stal                | my <sub>Masc</sub> barn  |
|      |              | a <sub>Masc</sub> barn  |                          |
|      | b.           | en schuuier             | b.’                      |
|      |              | a <sub>Fem</sub> barn   | my <sub>Fem</sub> barn   |
|      | c.           | e schaop                | c.’                      |
|      |              | a <sub>Neut</sub> sheep | my <sub>Neut</sub> sheep |

The ‘spurious’ status of *-n* in *mijn* (= *mij* + *een*) is suggested by the fact it can be followed by plural and mass nouns, which is impossible with the “normal” indefinite article *een* (i.e., *een bloem*, \**een bloemen*, \**een spinazie*).<sup>13</sup>

- |      |    |  |                  |
|------|----|--|------------------|
| (33) | a. | Mijn bloem <sub>sing</sub> staat in de vaas. | (mij + ’n bloem) |
|      |    | my flower stands in the vase                 |                  |
|      |    | ‘My flower stands in a the vase.’            |                  |

<sup>12</sup> Note that there are also dialects in which possessor doubling of *hem* ‘him’ and *zijn* ‘his’ resulting in phrases like *hem z’n boek* ‘lit: him his book, meaning his book’. For an analysis of possessor doubling see Corver & Van Koppen (2010).

<sup>13</sup> According to Bennis, Corver & Den Dikken (1998), the spurious indefinite article appears in a variety of nominal constructions, including the N of N-construction (ia), the *wat voor* N-construction (1b), and the nominal wh-exclamative construction (ic).

- |     |    |  |                                  |
|-----|----|--|----------------------------------|
| (i) | a. | die idioot van <b>een</b> Jan <sub>proper name</sub> |                                  |
|     |    | that idiot of a Jan                                  |                                  |
|     |    | ‘that stupid John’                                   | (N-of-N construction)            |
|     | b. | wat voor <b>een</b> jongens <sub>plural</sub> ?      |                                  |
|     |    | what for a boys                                      |                                  |
|     |    | ‘What kind of boys?’                                 | ( <i>wat voor</i> -construction) |
|     | c. | Wat <b>een</b> spinazie <sub>mass</sub> !            |                                  |
|     |    | what a spinach                                       |                                  |
|     |    | ‘What an amount of spinach!’                         | (exclamative)                    |

- b. **Mijn** bloemen<sub>plural</sub> staan in de vaas. (mij + 'n bloemen)  
 my flowers stand in the vase  
 'Mijn bloemen staan in de vaas.'
- c. **Mijn** spinazie<sub>mass</sub> groeit in de tuin. (mij+ 'n spinazie)  
 my spinach grows in the garden  
 'My spinach grows in the garden.'

Notice further that spurious *een*, as part of a possessive pronoun, does not legitimize the occurrence of a possessive noun phrase in the lower “subject” position of an existential construction. It is the (definite) pronominal element *mij* that attributes definiteness to the entire possessive nominal expression. In this respect, *mijn vriend* behaves differently from the possessive noun phrase *een vriend van mij* (a friend of me, ‘a friend of mine’), which is introduced by a real indefinite article.

- (34) a. \*Ik geloof dat er [mijn vriend] voor de deur staat.  
 I believe that there my friend in-front-of the door stands
- b. Ik geloof dat er [een vriend van mij] voor de deur staat.  
 I believe that there a friend of mine for the door stands  
 'I believe that there stands a friend of mine at the door.'

### 3.2 Def-pronominalization in possessor-possessee constructions

Having provided some background of the predicate inversion analysis of possessive constructions, let us now turn to the analysis of the “elided” possessive construction in i), i.e., the pattern that we characterized as DefP.

- (35) de mijne  
 the mine  
 ‘mine’ (standard Dutch)

Recall that we have argued that the definite article *de* ‘the’ in this construction is actually a pronoun substituting for part of the DP. Now that we have established the analysis of non-elided possessive constructions in section 3.1, we can also see which part *de* substitutes for, namely the subject of the small clause. This means that a DP like *de mijne* begins as the following small clause:

- (36) a. [<sub>XP</sub> POSSESSEE [ X' [<sub>PP</sub> P POSSESSOR ]]]  
 b. [<sub>XP</sub> de [ X' [<sub>PP</sub> P mij ]]]

The pronominally used definite article substitutes for the possessee part of the possessive construction. Or to put it differently, *de* pronominalizes the small clause subject.

The next step in the derivation is predicate inversion of *mij* ‘my’ (i.e., P+*mij*) to Spec,FP and concomitant domain extending head movement of the small clause head X to F (plus P-incorporation). We assume that the pronominal definite article *de* moves from Spec,XP to D<sup>0</sup>, as depicted in (37). Under a bare phrase structure analysis of constituents (Chomsky 1995), the pronominal article *de* can be both an X<sup>0</sup> (i.e., behave like a head) and an XP (i.e., behave like a phrase). In its base position in Spec,XP, *de* is a head and a maximal projection at the same time (head because it does not dominate a segment of the same type, max. projection because it is immediately dominated by a projection of a different type). In its landing site, *de* is a head (attached to another head). We assume that, analogously to DP-internal displacement of demonstrative pronouns (see section 4.1), displacement of *de* takes place in order to check some discourse-related feature (like specificity) on D. The pronominalized small clause subject *de* represents given (i.e., Discourse-linked) information, which needs to be checked off in D(P).<sup>14</sup>

(37) [DP Spec [D' de<sub>q</sub>+D [FP [PP t<sub>k</sub> mij]<sub>i</sub> [F' F+X<sub>j</sub>+P<sub>k</sub> [XP t<sub>q</sub> [X' t<sub>j</sub> t<sub>i</sub> ]]]]]]

**14** In section 2.2 we observed that the definite article *de* in *de mijne* cannot be replaced by another determiner-like element, e.g., the demonstrative pronoun *die*: \**die mijne*. We tentatively propose that this contrast is due to the fact that *die* can only (A-bar)-move to Spec,DP, whereas *de*, being a clitic-like element, moves and adjoins to D. In other words, movement of the pronominalizing definite article can be characterized as head movement. With *die* being an XP (phrase) that undergoes DP-internal A-bar movement to Spec,DP, the ill-formedness of *die mijne* can be related to the ill-formedness of example (ib); see Moro (1997) and Den Dikken (2006) for extensive discussion:

- (i) a. Imogen thinks [CP that [TP *the best candidate*<sub>i</sub> is John t<sub>i</sub> ]] (Predicate inversion)  
 b. \**Which guy*<sub>j</sub> does Imogen think [CP t'<sub>j</sub> that [TP [<sub>the</sub> best candidate]<sub>i</sub> is t<sub>j</sub> t<sub>i</sub> ]] ?  
 (wh-movement)

What (ib) shows is that a phrase (in casu: *which guy*) cannot be A-bar-moved across an inverted predicate in Spec,TP (see Moro (1997) and Den Dikken (2006) for accounts of this restriction on A-bar movement). We propose that *die mijne* is ill-formed for the same reason: the XP *die* undergoes A-bar-movement to Spec,DP and crosses on its way to Spec,DP the inverted possessor in Spec,FP. That is, we have the structure in (30), with the difference that displaced *die* occupies Spec,DP. Although A-bar movement across an inverted predicate is not possible, head movement is, as shown in (iib); see Den Dikken (2006: 155–156):

- (ii) a. [TP [The cause of the riot]<sub>i</sub> was [a picture of the wall] t<sub>i</sub> ]  
 b. Was<sub>j</sub> [TP [the cause of the riot]<sub>i</sub> t<sub>j</sub> [a picture of the wall] t<sub>i</sub> ] ?

We assume that the complex head  $F+X_j+P_k$  undergoes fusion at PF with the pronoun. Additionally, we assume that the lower copy of the moved  $D^0$  also undergoes Fusion with this pronominal element in FP. Fusion takes place before vocabulary insertion and local dislocation (see Harley & Noyer 1999). We assume following Nunes (2004) that fusion of lower copies has consequences for vocabulary insertion and linearization. More in particular, Nunes proposes that lower copies of a chain do not get pronounced because they lead to contradictory instructions for linearization and hence have to be deleted. For example, in English interrogative constructions involving long distance wh-movement (e.g., *Who do you think that John saw?*), it is only the highest wh-copy that surfaces at PF (*[Who do you think [wh<sub>θ</sub> that John saw wh<sub>θ</sub>]]?*). Nunes argues, however, that if a lower copy of a chain is fused, these contradictory instructions disappear and more than one copy of a chain can be spelled out. One illustration of this multiple realization of wh-copies comes from varieties of German that besides having an overt wh-word in the left periphery of the matrix clause also feature an overt wh-word in the left periphery of the embedded clause (see (38a)). According to Nunes, the phonetic appearance of this intermediate wh-copy is permitted as a result of morphological fusion of the intermediate *wen* and the complementizer *C*. In a way, after fusion with *C*, the intermediate wh-word becomes invisible for linearization processes that apply to the syntactic structure.

- (38) a. *Copying*  
 [<sub>CP</sub> wen<sub>i</sub> [<sub>C'</sub> glaubt Hans [<sub>CP</sub> [<sub>C</sub> wen<sub>i</sub> [<sub>C</sub>] [ Jakob wen<sub>i</sub> gesehen  
 who believes Hans who Jakob who seen  
 hat ]]]]  
 has
- b. *Fusion*  
 [<sub>CP</sub> wen<sub>i</sub> [<sub>C'</sub> glaubt Hans [<sub>CP</sub> #wen<sub>i</sub>+C# [ Jakob wen<sub>i</sub> gesehen hat ]]]]
- c. *Chain reduction*  
 [<sub>CP</sub> wen<sub>i</sub> [<sub>C'</sub> glaubt Hans [<sub>CP</sub> #wen<sub>i</sub>+C# [ Jakob wen<sub>i</sub> gesehen hat ]]]]  
 ‘Who does Hans believe that Jakob has seen?’

In the line of Nunes (2004), we argue that fusion of the lower copies of a head movement chain can (but do not necessarily have to) result in pronunciation of these lower copies. We assume fusion takes place twice in the example in (35). Once between the (lower copy of the) subject head of the small clause and the

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Under the assumption that movement of *de* in *de mijne* involves head movement rather than XP-movement to Spec,DP, we expect to find the same grammatical outcome as in the clausal domain.

complex head  $F+X_j(=n)+P_k$ , yielding  $n+e$ , and once between this complex and the possessive pronoun (*mij*), yielding  $mij+ne$  (= *mijne*).

- (39) a. *Displacement*  
 $[_{DP} [_{D'} D_1 (=de) [_{FP} [_{PP} t_k mij]_i [_{F'} F+X_j+P_k (=n) [_{XP} t_i (=e) [_{X'} t_j t_i ]]]]]]]]$
- b. *Fusion*  
 $[_{DP} [_{D'} D_1 (=de) [_{FP} [PP t_k mij]_i [F+X_j+P_k (=n)]+[t_i (=e)] [_{X'} t_j t_i ]]]]]]$
- c. *Vocabulary Insertion/linearization*  
 $[ de ] * [ mij-n-e ]$

As indicated in (39), the lower D-copy gets spelled out as *-e* (i.e., /ə/) phonologically.<sup>15</sup> Let us now turn to the possessive DefP-pattern attested in the Eastern varieties of Dutch:

- (40) (de) mijnde  
 the my-n-the  
 'mine' (Eastern dialects)

The derivation of this possessive pattern is basically identical to the one above for standard Dutch *de mijne*. The definite article moves from Spec,XP to D, leaving behind a lower copy in Spec,XP. Just as in standard Dutch both copies get spelled out. The only difference with standard Dutch is that in the Eastern dialects the spell out is *de* rather than *e*.<sup>16</sup> Schematically:

**15** Interestingly, this phonological realization of D as *e* (schwa) as a result of Fusion is also attested in other DP-internal environments in certain dialects of Dutch. For example, the equivalents of standard Dutch *de lamp* and *de kerk* in (i) are *lampe* and *kerke* in Oldambt Dutch (see Schuringa 1923: 101). In the spirit of Longobardi's (1994) theory of N-to-D movement, it does not seem implausible to analyze *lampe* and *kerke* as being derived via N-to-D-movement, where the D-element in the derived complex head  $[N+D]$  spells out as an affix *-e*. Thus:  $[_{DP} [lampi+D(=e)] [NP t_i]]$ .

- |        |  |     |   |
|--------|--|-----|---|
| (i) a. | Lampe wil nait bran'n.<br>lamp-e will not light<br>'The lamp won't light.' | a'. | De lamp wil niet branden<br>the lamp will not fire<br>'The lamp won't light.' |
| b.     | noar kerke<br>to church-e<br>'to (the) church'                             | b'. | naar de kerk<br>to the church<br>'to (the) church'                            |

**16** *-t* is also found instead of *de*, as in *mient* (my-n-t, 'mine').

- (41) a. *Displacement*  
 [DP [D' D<sub>1</sub> (= de) [FP [PP t<sub>k</sub> mij]<sub>i</sub> [F' F+X<sub>j</sub>+P<sub>k</sub> (= n) [XP t<sub>1</sub> (= de) [X' t<sub>j</sub> t<sub>i</sub> ]]]]]]]  
 b. *Fusion*  
 [DP [D' D<sub>1</sub> (= de) [FP [PP t<sub>k</sub> mij]<sub>i</sub> [F+X<sub>j</sub>+P<sub>k</sub> (= n)]+[t<sub>1</sub> (= de)]] [X' t<sub>j</sub> t<sub>i</sub> ]]]  
 c. *Vocabulary insertion/linearization*  
 [ de ] \* [ mij-n-de ]

It should further be noted that there are Eastern dialects in which the first instance of the definite article is optional (e.g. Giethoorn Dutch (*de*) *miende*) and others where it is even impossible (e.g. Hooghalen Dutch; (\**de*) *mien'nde*). For these patterns in which 'initial' *de* is absent, two possible analyses come to mind. First of all, one could propose that movement of the pronominalizing definite article from Spec,XP to D simply does not take place; in other words *de* remains in situ. This derivation is depicted in (42). Secondly, one could propose that it is not just the pronominalizing definite article *de* (i.e. the small clause subject) that undergoes displacement but rather the entire FP. More specifically, displacement of *de* triggers pied piping of FP, where FP lands in Spec,DP, as in (43).<sup>17</sup>

- (42) a. *mijnde*  
*my-n-the*  
 'mine' (Northeastern dialects)  
 b. [DP Spec [D' D [ FP [PP t<sub>k</sub> mij]<sub>i</sub> [F' F+X<sub>j+k</sub> (= n) [XP DP (= de) [X' t<sub>j+k</sub> t<sub>i</sub> ]]]]]]  
 c. [DP [D' D<sub>1</sub> [FP [PP t<sub>k</sub> mij]<sub>i</sub> [F+X<sub>j+k</sub> ] [t<sub>1</sub>]] [X' t<sub>j</sub> t<sub>i</sub> ]]]]] *Fusion*  
 d. [ mij-n-de ] *Vocabulary insertion/linearization*
- (43) a. *mijnde*  
*my-n-the*  
 'mine' (Northeastern dialects)  
 b. [DP Spec [D' D [ FP [PP t<sub>k</sub> mij]<sub>i</sub> [F' F+X<sub>j+k</sub> (= n) [XP t<sub>1</sub> (= de) [X' t<sub>j+k</sub> t<sub>1</sub> ]]]]]]  
 c. [DP [FP [PP t<sub>k</sub> mij]<sub>i</sub> [F' F+X<sub>j+k</sub> (= n) [XP t<sub>1</sub> (= de) [X' t<sub>j+k</sub> t<sub>1</sub> ]]]]]<sub>F</sub> [D' D t<sub>F</sub> ]]  
 d. [DP [FP [PP t<sub>k</sub> mij]<sub>i</sub> [F+X<sub>j+k</sub> ] [t<sub>1</sub>]] [X' t<sub>j</sub> t<sub>i</sub> ]]]]]<sub>F</sub> [D' D<sub>1</sub> t<sub>F</sub> ]]  
*Fusion*  
 e. [ mij-n-de ] *Vocabulary insertion/linearization*

<sup>17</sup> Note that in these derivations we abstract away from the additional -n we see in the Hooghalen Dutch example *mien'nde*. As we will discuss below in footnote 23, we also find a similar additional -n in demonstrative constructions. We do not know exactly how to analyze this -n, but we assume that it is also a nominalizing element, comparable to one in English. This is in accordance with Corver & Van Koppen (2011) where it is shown that these dialects display a nominalizing suffix -n in other contexts as well. Further research is necessary in order to fully understand the properties and distribution of this morpheme.



Unfortunately, at this moment we do not have strong arguments that favor one analysis over the other. We will therefore leave this issue for future research.<sup>18</sup>

## 4 Definite pronominalization in demonstrative constructions

In section 4.2 we will discuss Def-pronominalization in nominal constructions featuring a demonstrative pronoun, as, for example, in *de die* (the that ‘that one’) and *diznde* (this-n-the ‘this one’). In section 4.1 we will first discuss, however, the internal structure of nominal expressions that consist of a demonstrative pronoun

**18** In certain varieties of Dutch (especially Southern varieties), we find the surface pattern ‘*de* + possessor’, as in *de mijne*, also with possessors bearing the Saxon genitive. Two illustrations given in (i):

- (i) a. ’r Hoor wordt nāt zeu grijs a’s *de Nätjes*.  
her hairs gets just as grey as the Netje’s  
‘Her hair is getting as grey as Netje’s.’
- b. *Den ons moeders* is veul dūrder.  
the our mother’s is much expensive-COMPAR  
‘Those of our mother are much more expensive.’ (De Bont 1958: 385–386)

We assume that these DefP-patterns with a Saxon genitival remnant have the derivation depicted in (46). That is, the possessor undergoes Predicate Inversion and the pronominalizing definite article moves from the small clause subject position to D. It should be noted that in Standard Dutch, DefP-patterns like those in (i) are not possible. In other words, even though DefP is permitted with a possessive pronominal remnant (*de mijne*), it is not possible with a Saxon genitival remnant (*\*de Jans*; the Jan’s, ‘Jan’s’). We leave the account of this contrast for future research. Something which we would like to add to this discussion about *de* + Saxon genitive is the observation that in Dutch child language we find patterns like (ii), where the pronominalizing definite article (DefP) seems to stand in its ‘base position’ (i.e. the specifier position of the small clause XP). Only the possessor (*Laura/opa*) has undergone displacement (viz. Predicate Inversion) in those nominal expressions. Consequently, the definite article (pronounced as *te*) follows the inverted possessor (data drawn from Van Kampen & Corver (2006)).

- (ii) a. En achterop staat Laura-s-te  
and at-the-back stands Laura-s-te  
‘And at the back stands Laura’s (= Laura’s drawing).’ (S. 4,5 years)
- b. En als het opa-s-te is?  
and if it grandpa’s-te is  
‘And if it is grandpa’s (= grandpa’s glasses)?’ (S. 4,5 years)

and a lexical noun, as in *die man* ‘that man’. We pursue the idea that demonstrative pronouns, just like possessive pronouns, are base generated as part of a DP-internal small clause. In the spirit of Campbell (1996) we propose that the demonstrative pronoun is the subject of the small clause. In this respect, the demonstrative pronoun differs from the possessive pronoun, which we took to be part of the small clause predicate (see section 3.1).

#### 4.1 The internal syntax of demonstrative constructions

Campbell (1996) argues that the common noun of a DP acts as the predicate of the referent of that DP (see also Higginbotham 1985, Abney 1987 and Barbiers 1992 for similar analyses).<sup>19</sup> He assumes the referent is a (base-generated) empty element which is the subject of the DP-internal small clause. This empty small clause subject is bound by an operator (possibly null) in Spec,DP. To make things concrete, the DP *the thief* has the following structure:  $[_{DP} O_i \text{ the } [_{SC} [e]_i \text{ thief}]]$ . The operator  $O_i$  in Spec,DP is a specificity operator. According to Campbell (1996: 162), this operator “is a kind of DP-internal topic, which links the internal small clause subject position (and hence DP itself) to a referent identified previously in the discourse.”<sup>20</sup> Campbell further proposes that the demonstrative *that* in a nominal expressions like *that thief* is not a determiner but rather an overt specificity operator in Spec,DP, which binds the empty small clause subject:  $[_{DP} \text{that}_i D [_{SC} [e]_i \text{ thief}]]$ .

We will follow the spirit of Campbell’s predication approach to nominal expressions featuring a demonstrative pronoun but slightly modify it by assuming that the demonstrative pronoun is not base-generated in Spec,DP but rather moves from the small clause subject position to Spec,DP forming an operator variable chain. This A-bar movement operation, a sort of DP-internal topicalization, is illustrated for example (44a) in the derivation in (44b)-d.

- (44) a. *die man*  
       *that man*  
       b.  $[_{DP} [_{D'} D [_{XP} \text{DEMONSTRATIVE } [_{X'} X \text{PREDICATE } ]]]]$   
       c.  $[_{DP} \text{DEMONSTRATIVE}_i [_{D'} D [_{XP} t_i [_{X'} X \text{PREDICATE } ]]]]$   
       d.  $[_{DP} \text{die/that}_i [_{D'} D [_{XP} t_i [_{X'} X \text{man } ]]]]$

<sup>19</sup> See also Duinhoven (1988) for Middle Dutch. According to Duinhoven, the Middle Dutch nominal expression *die coninc* ‘that king’ had the interpretation: ‘that one, a person being a king’.

<sup>20</sup> Aboh (2004) shows that in Gungbe (and the Gbe languages in general) specificity is marked overtly within the noun phrase by means of a specificity marker (located in D).

One might raise the question as to why the predication relationship is not the other way around: the noun being the subject of the small clause and the demonstrative element being the predicative element, quite analogously to the base structure of the possessive construction. We propose that such a structural analysis is possible in principle but only if the demonstrative has a predicative meaning, i.e. if the demonstrative designates a property/characteristic of an entity. If the demonstrative designates an entity/individual whose contents is specified by a predicative noun, we have the structure in (44).

We propose that this property reading of the demonstrative pronoun is found in the nominal expressions in (45), where the demonstrative pronoun precedes a proper name. Clearly, a proper name like *Brian/Jan* does not need the presence of a demonstrative pronoun for the purpose of referential interpretation. It has been argued in the literature (see e.g. Overdiep 1937) that *die* has a more evaluative reading on the side of the speaker. More specifically, the demonstrative refers to some characteristic property of the referent designated by the noun.<sup>21</sup>

- (45) a. Ik vind [die Brian van jullie] een vervelend joch.  
I find [that Brian of you] an annoying boy  
'I find that boy Brian (of yours) quite annoying.'  
b. Ha [die Jan]! Hoe gaat het?  
Ha that Jan! how goes it  
'Hi John! How are you doing?'

An in-depth analysis of this evaluative demonstrative is beyond the scope of this paper. We tentatively propose that an expression like *die Jan* in (45b) receives the analysis given in (46): *die* starts out as a predicate referring to some property of the subject and is moved to Spec,DP.

- (46) a. [DP [<sub>D'</sub> D [<sub>XP</sub> Jan [<sub>X'</sub> X die ]]]]  
b. [DP die<sub>i</sub> [<sub>D'</sub> D [<sub>XP</sub> Jan [<sub>X'</sub> X t<sub>i</sub> ]]]]

<sup>21</sup> As pointed out to us by Klaus von Heusinger, a predicative reading of *die* 'that' or *deze* 'this' is possibly also found in (iB) in situational/discourse contexts like the following:

- (i) <Persons A and B standing in front of a store window>  
A: Wat een leuke hoed! Ik wil deze/die hoed kopen!  
what a nice hat I want this/that hat buy  
'What a nice hat! I want to buy this/that hat!'  
B: Ik heb deze/die hoed thuis al aan de kapstok hangen.  
I have this/that hat at.home already on the hatstand hang  
'At home I have a hat of this/that type (= such a hat) hanging on the hatstand.'

As indicated in (44), we assume that the demonstrative element undergoes A-bar movement to the left periphery of the extended nominal projection (i.e., Spec,DP). Such a DP-internal movement operation is familiar from the literature on demonstratives. Panagiotidis (2000: 732–733), for example, proposes that Greek nominal constructions featuring a demonstrative in a position preceding the definite article result from movement of the demonstrative to Spec,DP, where movement is triggered by [deictic] feature checking; see (47). See also Bernstein (1997), Brugè (1996, 2002) and Giusti (1997, 2002) for the idea that demonstratives in Romance and Germanic languages are merged in a position (typically a specifier position of a functional head) low in the nominal domain and raise to the left periphery of DP (i.e., Spec,DP) to check the deictic feature.

- (47)  $[_{DP} \text{ aftii } [_{D'} \text{ i } [_{\text{NumP}} [_{AP} \text{ ne}_i] \text{ NUM } [_{NP} \text{ t}_i [_{N'} \text{ katiki } [_{DP} \text{ tis}$   
 these the new inhabitants the-GEN  
 polis ]]]]]]  
 city-GEN  
 ‘these new inhabitants of the city’ (Panagiotidis 2000: 732–733)

## 4.2 Def-pronominalization in demonstrative constructions

Having argued that nominal expressions like *die man* ‘that man’ have a DP-internal small clause structure as part of their representation, we will now analyze those patterns in which part of the nominal expressions has been ‘elided’. As was shown in section 2.1, three patterns were attested from a cross-dialectal perspective:

- (48) a. (\*de) die  
 the that  
 ‘that one’ standard Dutch
- b. (de) die  
 the that  
 ‘that one’ Southern Dutch
- c. (\*de) dien-de  
 the that-the  
 ‘that one’ Northeastern Dutch

In standard Dutch, the demonstrative can only occur on its own, in Southern Dutch the definite article *de* can optionally co-occur with the demonstrative, and in Northeastern Dutch *de* can also co-occur with the demonstrative, but, as opposed to Southern Dutch, it must follow the demonstrative. As indicated, it is impossible to have a doubling pattern in which an instance of *die* precedes and fol-

lows the demonstrative pronoun. The question, obviously, arises how to account for these patterns of microvariation.

Let us start our analysis with the Northeastern Dutch pattern. Adopting the DP-internal small clause analysis for demonstrative constructions, we start out with the ‘base structure’ in (49b). The pronoun *die* raises to Spec,DP to check some Force-feature (say, a [deictic]-feature). The definite article *de* pronominalizes the DP-internal predicate nominal and adjoins to D, see (49c).<sup>22</sup> Recall that under a bare phrase structure analysis of constituents (Chomsky 1995), the pronominal article *de* can be both an  $X^0$  (i.e., behave like a head) and an XP (i.e., behave like a phrase). In its small clause predicate position *de* is an XP, whereas in its derived position (cliticized onto D) *de* is an  $X^0$ . In the morphological (i.e. post-syntactic) component, the demonstrative *die* and the DefP *de*, which are adjacent in their derived positions, undergo Fusion, possibly to avoid a doubly-filled DP-effect. After fusion, we have the morphologically complex unit *diende* (see (49c,d)). Notice, finally, that a doubling pattern like *de diende*, in which one instance of *de* precedes *die*, cannot be derived since the demonstrative must raise to Spec,DP. That is, it must raise to a position preceding D.<sup>23</sup>

- (49) a. (\*de) diende  
           the that-the  
           ‘that one’
- b.  $[_{DP} \text{Spec } [_{D'} \text{D } [_{XP} \text{die } [_{X'} \text{X de } ]]]]$  ‘Base structure’
- c.  $[_{DP} \text{die}_i [_{D'} \text{de}_k + \text{D } [_{XP} \text{t}_i [_{X'} \text{X t}_k ]]]]$  Displacements
- d.  $[_{DP} \text{die}_i [ \text{de}_k + \text{D} ] [_{XP} \text{t}_i [ X' \text{X t}_k ]]]]$  Fusion
- e. [ dien-de ] Vocabulary insertion/linearization

The derivation of the standard Dutch pattern *die* is largely similar to the one given above for Northeastern Dutch. Starting from the base structure in (50b), we get the derived syntactic structure in (50c), after movement of *die* to Spec,DP and movement (and adjunction) of *de* to D. The way in which standard Dutch differs from Northeastern Dutch regards the operation of Fusion. Specifically, in standard

<sup>22</sup> Note that *de* in *de die* fulfills the same grammatical role as *one* in English *that one*. Both *de* and *one* pronominalize part of the noun phrase.

<sup>23</sup> Within the form *diende* there is a *-n* present. This is unexpected, since we have argued above that the *-n* in possessive pronouns is the result of predicate inversion followed by spell-out and there is no predicate inversion in demonstrative constructions. We do not think this *-n* is the spell-out of predicate inversion, however, but rather that it is the same ‘additional’ *-n* we find in possessive constructions in some dialects (see (18)). As already said there, we assume this *-n* is actually a nominalizing morpheme, comparable to English *one* (see also Corver & Van Koppen 2011). However, more research is necessary to fully establish the properties of this element.

Dutch *die* and *de* do not undergo fusion. In order to avoid a doubly-filled-DP effect, we assume that *de* is not pronounced. In other words, we have a silent  $\text{DE}$  in D, as in (50d).

- (50) a. (\**de*) *die*  
           the that  
           ‘that one’  
       b.  $[_{DP} \text{Spec } [_{D'} D [_{FP} [_{F'} F [_{XP} \text{die } [_{X'} X \text{ de } ]]]]]]$                    ‘Base structure’  
       c.  $[_{DP} \text{die}_i [_{D'} \text{de}_k + D [_{XP} t_i [_{X'} X t_k ]]]]$                     Displacements  
       d. [ *die* ] \* [  $\text{DE}$  ]   no Fusion & silent D (i.e.  $\text{DE}$ )  
       e. [ *die* ]   Vocabulary insertion/linearization

Let us now turn to the Southern Dutch pattern: *de die*, in which *de* and *die* can co-occur and *de* precedes *die*. This last observation suggests that *die* does not move to Spec,DP in the Southern Dutch pattern, which obviously raises the question why this is so. We propose that the answer to this question comes from the phenomenon of feature inheritance. Suppose that analogously to feature inheritance in C-T relationships (Chomsky 2008), there is feature inheritance in D-X relationships. That is, the head of the complement of D (in casu the head of the small clause XP) can inherit features from D (see (51c)). After inheritance, *die* can enter into a checking relation with the Force feature in situ. The pronominalizing definite article *de*, which substitutes for the small clause predicate, raises to D (see (51d)). Since there is no constituent in Spec,DP, the raised D (*de*) can be spelled-out. That is, no Doubly-filled-DP effect will be obtained.<sup>24</sup>

**24** A reviewer correctly raises the question whether a demonstrative pronominalization pattern (e.g. *de die*, where *de* is the inverted pronominal predicate) features a property reading (compare with (46)). The following examples from De Bont (1958: 380) suggest that such an (evaluative) property meaning is indeed possible:

- (i) a. Den dieë zie'k nie gaer.  
           the that see-I not preferably  
           ‘I don’t trust that guy.’  
       b. De die, die vertel ik niks.  
           the that that tell I nothing  
           ‘That woman, I won’t tell her anything! (I don’t trust her)’

These examples have a pejorative flavor (i.e. negative evaluation by the speaker). It does not seem implausible to assume that this negative evaluative meaning is somehow associated with the pronominalized predicate *de*. Arguably, in examples like (6) and (28), this evaluative reading of the inverted predicate is less clearly present (or even suppressed) because the information-structural notion of contrastive focus figures more prominently at the level of interpretation. Im-

- (51) a. de die  
 the that  
 ‘that one’
- b. [DP Spec [D' D<sub>[Force]</sub> [XP die [<sub>X'</sub> X de ]]]] ‘Base structure’
- c. [DP Spec [D' D<sub>[Force]</sub> [XP die [<sub>X'</sub> X<sub>[Force]</sub> de ]]]] Feature inheritance & in situ checking
- d. [DP [D' de<sub>k</sub>+D<sub>[Force]</sub> [XP die<sub>i</sub> [<sub>X'</sub> X<sub>[Force]</sub> de<sub>k</sub> ]]]] Displacement of de
- e. [ de ] \* [ die ] Vocabulary insertion/linearization

Summarizing, Southern Dutch parametrically differs from Standard Dutch and the Northeastern varieties in terms of the phenomenon of feature inheritance: the former variant has it, the latter two do not.<sup>25</sup> The two variants that do not display feature inheritance differ from each other as regards the phenomenon of Fusion: Northeastern varieties have it, Standard Dutch does not. In order to circumvent a doubly-filled-DP-effect, Standard Dutch does not spell-out the pronominalizing definite article. In other words, we have a silent D.

If our conclusion that Southern Dutch varieties leave the demonstrative pronoun in situ is correct, then this implies that Spec,DP is available for other material (possibly via External Merge). Although we haven't investigated this systematically, it is interesting to observe that in Oerle Dutch (De Bont 1958: 414), which is spoken in the south of the Netherlands (Northern-Brabantish), we find patterns in which a locative adverb precedes the definite article in the *de die*-pattern. Arguably, the locative adverb occupies Spec,DP. Observe that it is also possible to have the locative adverb at the end of the entire nominal expression (possibly in some DP-internal adjunct position). Importantly, in standard Dutch we have the pattern *die daar* but not *daar die*. This is expected if *die* occupies Spec,DP; in that case, Spec,DP is not available as a landing site for *daar*. Also for the North-eastern dialects, we haven't come across examples in which a locative adverb precedes *diende* (that the ‘that one’).

- (52) a. [ **Door** den dieën ] die zee dä ...  
 there the that that said that
- a.' [ Den dieën **door** ] die zee dä ...  
 the that there that said that

portantly, we assume the same structure for both interpretations. We leave this issue for future research.

**25** The idea that feature inheritance is parametrized differs from the standard view that it automatically happens upon merger of the phase head. However, this idea is not unprecedented. Jiménez-Fernández & Miyagawa (2014) in analyzing variation in topic constructions argue that languages differ in whether or not certain discourse features are inherited.

- ‘That one over there, he said that ...’
- b. [ **Hieër** den dieën] die zee dä ...  
 here the that that said that
- b.’ [ Den dieën **hieër**] die zee dä ...  
 the that here that said that
- ‘This one over here, he said that ...’

## 5 An implicational hierarchy

In section 2.1 we saw that some Dutch dialects differ in which element can combine with the pronominal definite article (DefP). In standard Dutch, the possessive pronoun can co-occur with the pronominal definite article (*de mijne*) but the demonstrative pronoun cannot (*(\*de) die*). In Southern Dutch varieties, the definite article is found with both possessive pronouns and demonstrative pronouns (*dedie*). The same holds for North-eastern dialects, where the pronominal definite article typically follows the possessive or demonstrative pronoun (*mijnde*, *diende*). As is clear from this description, the dialects that permit DefP (i.e., the pronominalizing definite article) with demonstrative pronouns is a subset of the dialects that permit DefP with possessive pronouns. In implicational terms: if a dialect X has the def+dem pattern, it also has the def+poss pattern. Interestingly, this implicational hierarchy can be extended. A subset of the dialects displaying the Southern Dutch pattern have an additional option: they can combine the pronominal definite article with a wh-pronoun (*de + wh*), as for example in *de welke* (the which ‘which one’). The implicational hierarchy is given in (53) and its (geographical) distribution is given in (54):

(53) de + pos > de + dem > de + wh



## (54) The distribution and implicational hierarchy of de+poss; de+dem; de+wh



This map clearly shows an implicational hierarchy: dialects that can combine a definite article with a demonstrative pronoun (yellow dots on the map) can also combine the definite article with a possessive pronoun (blue squares) and dialects that can combine the definite article with an interrogative pronoun (black dots) can also combine it with a demonstrative pronoun.

In (55a)-e, the implicational hierarchy is exemplified for the dialect of Oerle (data from De Bont 1958). Comparison with the data in (55a)'-e' from standard Dutch clearly shows that the latter variant of Dutch is much more restricted in the realization of the DefP-pattern; it is only permitted with possessive pronouns.

- | (55) Oerle Dutch   | Standard Dutch  |
|--|---|
| a. <b>de</b> mene(n) <sub>MASC.SG</sub><br>the my-a<br>'mine'                    | a'. <b>de</b> mijne<br>the my<br>'mine'   |
| b. <b>den</b> deizen(n) <sub>MASC.SG</sub><br>the this<br>'this one'             | b'. (* <b>de</b> ) deze<br>the this<br>'this one'                                       |
| c. <b>de</b> welke(n) <sub>MASC.SG</sub><br>the which<br>'which one'             | c'. (* <b>de</b> ) welke<br>the which<br>'which one'                                    |
| d. <b>de</b> wieze(n) <sub>MASC.SG</sub><br>the whose<br>'whose'                 | d'. (* <b>de</b> ) wiens<br>the whose<br>'whose'  |
| e. <b>de</b> waffere(n) <sub>MASC.SG</sub><br>the what-for<br>'what kind of one' | e'. (* <b>de</b> ) wat voor één <sub>SG</sub><br>the what for one<br>'what kind of one' |

As shown in (56) also Northeastern varieties of Dutch display a more widespread distribution of DefP (data from Gunnink 1908: 74–76). Observe that the doubling pattern is only permitted with the (non-interrogative) possessive pronoun (see (56a)). All other pronouns only permit the simplex pattern with DefP following the pronominal element.

- (56) a. **de miende**  
         the my-the  
         ‘mine’
- b. **(\*de) diznde**  
         the this-the  
         ‘this one’
- c. **(\*de) welknde**  
         the which-the  
         ‘which one’
- d. **(\*de) wafnde**  
         the what+for-the  
         ‘what kind of one’

One could try to relate the more widespread occurrence of DefP in Oerle Dutch to a freer application of feature inheritance within the DP. Recall from the derivation of *de die* in (51) that we took *die* to be licensed in situ after the Force feature associated with D (a phase head) had been inherited by the small clause head X. We tentatively assume that this feature inheritance also applies to other Force features associated with D, such as the interrogative Q-feature. To make things concrete, consider, for example, the derivation of a pattern like *de welke* (see (55c)). Without going into too many details, we assume that *de welke* has the derivation in (57).

- (57) a. **de welke**  
         the which  
         ‘which one’
- b. *‘base structure’*  
         [<sub>DP</sub> Spec [<sub>D'</sub> D [<sub>FP</sub> Spec [<sub>F'</sub> F [<sub>XP</sub> *de* [ X' [X -lk] wa+wh ]]]]]]]
- c. *predicate inversion*  
         [<sub>DP</sub> Spec [<sub>D'</sub> D<Q> [<sub>FP</sub> wa+wh<sub>m</sub> [<sub>F'</sub> F<Q>+lk<sub>j</sub> [<sub>XP</sub> *de* [<sub>X'</sub> t<sub>j</sub> t<sub>m</sub> ]]]]]]]
- d. *movement of de*  
         [<sub>DP</sub> Spec [<sub>D'</sub> *de*<sub>k</sub>+D [<sub>FP</sub> wa+wh [<sub>F'</sub> F<Q>+lk<sub>j</sub> [<sub>XP</sub> t<sub>k</sub> [<sub>X'</sub> t<sub>j</sub> t<sub>m</sub> ]]]]]]]
- e. *fusion*  
         [<sub>DP</sub> Spec [<sub>D'</sub> *de*<sub>k</sub>+D [<sub>FP</sub> **wa+wh** [<sub>F'</sub> **F<Q>+lk<sub>j</sub>** [<sub>XP</sub> t<sub>k</sub> [<sub>X'</sub> t<sub>j</sub> t<sub>m</sub> ]]]]]]]
- f. *vocabulary insertion/linearization*  
         [ de ] \* [ welke ]

Example (57b) represents the base structure. As indicated we assume that *de welke* can be decomposed into three parts: the small clause subject *de* (i.e., DefP), a small clause head *-lk* (compare English *like*) and the wh-element *wa* (see Hachem 2015). The meaning corresponding to this small clause structure can informally be defined as: ‘Def is like what’. As indicated in (57c), predicative inversion moves the wh-pronoun to Spec,FP and X-to-F-movement applies to the small clause head *-lk* (for reasons of domain extension). As shown by (57c), we take the Q-feature (interrogativity) associated with D to be inherited by F (i.e. the head of the complement of D). This way, *wa* can be licensed in Spec,FP. In other words, it does not have to (and therefore doesn’t) raise to Spec,DP in order to check off the Q-feature. (57d) shows that DefP moves and adjoins to D. Fusion of *-lk* and *-de* to *-lke* and fusion of *wa* and *-lke* yield the form *welke*.

Northeastern Dutch and Standard Dutch do not have the option of feature inheritance. Therefore, the wh-element always has to move to Spec,DP to check off the Q-feature on D. A pattern like *welknde* in (56d) involves the movement steps depicted in (58). Besides movement of *wa* to Spec,DP the complex head [F + X (= *lk*)] moves and adjoins to D, which also hosts the displaced pronominalizing definite article (Def). The wh-element (*wa*) and the complex head [[F+X +*lk*]+D (= *de*)] spell out as *welknde* after morphological fusion has taken place. Standard Dutch differs from Northeastern Dutch in the realization of the D; it spells out as *-e* in Standard Dutch, but as *-de* in Northeastern Dutch.

- (58)  $[_{DP} wa+wh_m [_{D'} [[F+lk_j]_s+[de_k+D_{+Q}] [_{F'} t_s [_{XP} t_k [_{X'} t_j t_m ]]]]]]$   
 North-eastern Dutch: *welknde*  
 Standard Dutch: *welke*

## 6 Conclusion

In this article we have argued that the definite article *de* in the Standard Dutch possessive construction *de mijne* ‘mine’ is a pronoun, i.e. a dummy noun replacing a noun in what we think of as an NP ellipsis pattern. Thus, *de mijne* is a pattern which does not involve DP-internal elision (i.e., deletion of material) but DP-internal pronominalization. Although in Standard Dutch, the DefP-pattern is not attested in demonstrative constructions, we have shown that in other varieties of Dutch such patterns do exist (e.g. Southern-Dutch *de die* ‘that one’ and North-Eastern Dutch *diende*). We further pointed out an implicational hierarchy for the DefP-strategy: if a dialect permits DefP with wh-pronouns, it also permits DefP with demonstrative pronouns, and if it permits DefP with demonstrative pro-

nouns, it also permits DefP with possessive pronouns. The microvariation attested in this domain of Dutch grammar was associated with the following dimensions of grammar: (i) DP-internal feature inheritance ('yes' for Southern dialects, 'no' for Standard Dutch and North-eastern dialects); (ii) fusion and spell out operations.

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Cecilia Poletto and Emanuela Sanfelici

# On demonstratives as relative pronouns

New insights from Italian varieties

**Abstract:** This paper investigates the use of distal demonstratives as relativizers in order to shed light on the typology of relativization strategies. We concentrate on three Italian varieties, Campobellese (an Eastern Sicilian dialect), Venosino (a variety spoken in Lucania) and Marebbano (a Rhaetoromance V2 variety). In all these varieties the usual form of the relativizer is reinforced with the distal demonstrative. We argue that this relativization strategy is an instance of a syntactically and semantically motivated renewal of the relativizer form, which proceeds according to an implicational hierarchy. By comparing Italian varieties with colloquial standard Italian, we show that the relative clause contexts in which distal demonstratives appear progressively broaden along the following scale: demonstratives are attested in light-headed free relatives only; in addition to being the head of a light-headed free relative clause, they become real relativizers in the same contexts in which we find the standard Italian *il quale*-relativizer. The first contexts in which demonstratives appear as real relativizers are two types of non-integrated appositives (see Cinque 2008), i.e. structures related to the head noun through a small clause structure. The other context is represented by integrated relative structures where extraction/deletion of the head noun is banned for syntactic reasons, namely prepositional relative clauses. This spreading through contexts corresponds to a progressive loss of features of the demonstrative, notably of location, deixis, contrast, and referentiality, which can be described on the basis of a hierarchy on the featural make up of demonstratives, with Person, Number and Gender features being the highest and most resistant ones.

**Keywords:** free relatives, deixis, Italian dialects, features

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# 1 Introduction

This paper investigates the use of distal demonstratives as relativizers in Italian varieties. The aim is twofold: (i) to shed light on the syntax of relativization from a dialectal perspective and (ii) at the same time, to define the feature specification of demonstratives. We argue that the demonstrative pronoun intrudes into relative clauses (henceforth RCs) and is thereby reanalyzed as a relativizer through a stepwise process, which implies a concomitant loss of feature specification on the demonstrative. We identify four steps of this renewal process. Therefore, the empirical domain will be limited to four varieties which are each representative of one step. They are colloquial standard Italian, Campobellese (an Eastern Sicilian dialect), Venosino (a southern variety spoken in Basilicata) and Marebbano (a Rhaetoromance V2 variety); the comparative distribution of demonstratives in these four varieties will turn out to be crucial in order to understand why and how a demonstrative can intrude into RCs.

To introduce RCs, these four Italian varieties pattern alike with Standard Italian in exhibiting the invariable complementizer *che* and can in addition display a resumptive pronoun. However, the dialectal varieties differ in allowing *che* to be reinforced by the distal demonstrative in some contexts, which gives rise to the periphrastic form *quell(o/a/i/e) che* ‘that that’. This relativization strategy is rather unexpected given the Italian and Romance paradigm of relativizers. We demonstrate that this is the result of a renewal process that starts from the use of the demonstrative in light-headed free RCs, and ends with the use of demonstratives as relativizers in non-integrated appositives and in integrated prepositional RCs. This spreading hierarchy is exemplified in (1).

- (1) light-headed free RCs > non-integrated RCs / prepositional RCs

Since this relativization strategy coexists with the one where the “simple” complementizer is used, the first part of the paper is devoted to assess the import of the periphrastic relativizer and to analyze the structures where it occurs. After having introduced the theoretical tools (section 2), in section 3 we will first single out the contexts in which demonstratives appear as relativizers. Whereas in colloquial standard Italian the demonstrative lexicalizes part of the light head of a free RC and therefore cannot be defined as a real relativizer internal to the relative clause, in the three dialects investigated demonstratives are indeed used in contexts in which it is impossible to extract/delete the internal head as well as in contexts in which the internal head must be interpreted as an intrinsically referential pronoun, which shows that they have become part of the relative clause. We will also demonstrate that the contexts in which the demonstrative appears as a relativizer

in the dialectal varieties are the same where *il/la/i/le qual(e/i)* in Standard Italian occurs, namely (i) non-integrated appositive clauses and (ii) prepositional RCs. As a more general theoretical point, our empirical evidence supports a theory of relativization along the lines proposed by Cinque (2008, 2013) as well as a theory of non-integrated appositives as a phenomenon at the interface between syntax/semantics and discourse as outlined in Del Gobbo (2007). Furthermore, we provide evidence that Cinque's (2008) analysis, which splits appositive relatives into integrated and non-integrated appositives, needs further refinements. Our data show that non-integrated appositives have to be further split into two subtypes depending on the type of functional head connecting the head noun with the appositive RC. The two types of heads can be either an equative-like head and or a discourse head similar to the one found in Hanging Topic constructions, as originally proposed by Cinque (2008).

After having singled out the contexts and the properties of demonstrative RCs, the second part of the paper (section 4) shifts the focus to the internal structure of the demonstrative relativizers. We will argue that this strategy is an instance of synchronic renewal of the relative pronoun paradigm, which is syntactically and semantically motivated. Demonstratives are usually defined as bundles of morphosyntactic, semantic and pragmatic features. The question we address is whether demonstrative relativizers have the same feature specification of demonstratives occurring in other contexts. We will show that the spreading of the distal demonstrative through RC contexts correlates with a concomitant feature impoverishment of the demonstrative itself and will identify which features are lost first and which are more stable. Whereas renewal is usually defined as the replacement of old grammatical forms, subject to attrition and no longer distinctive, by new periphrastic expressions (cf. Hopper & Traugott 1993), we will propose a synchronic reformulation of the process of renewal. This perspective allows us to predict that not only should the feature specification of demonstrative relativizers be different from the one of "real" demonstratives, but it should also contain fewer features than those specified on "real" demonstratives. As in standard cases of grammaticalization, the loss of features we see in synchronic terms can be arranged in a stepwise fashion, which can be formalized in an implicational scale (2).

(2) Location > Deixis > Contrast > Referentiality > Person/Number/Gender

The feature hierarchy based on our finding shows that Person, Number and Gender specified on demonstratives are the most stable features, at least in the languages investigated here.

## 2 Theoretical background

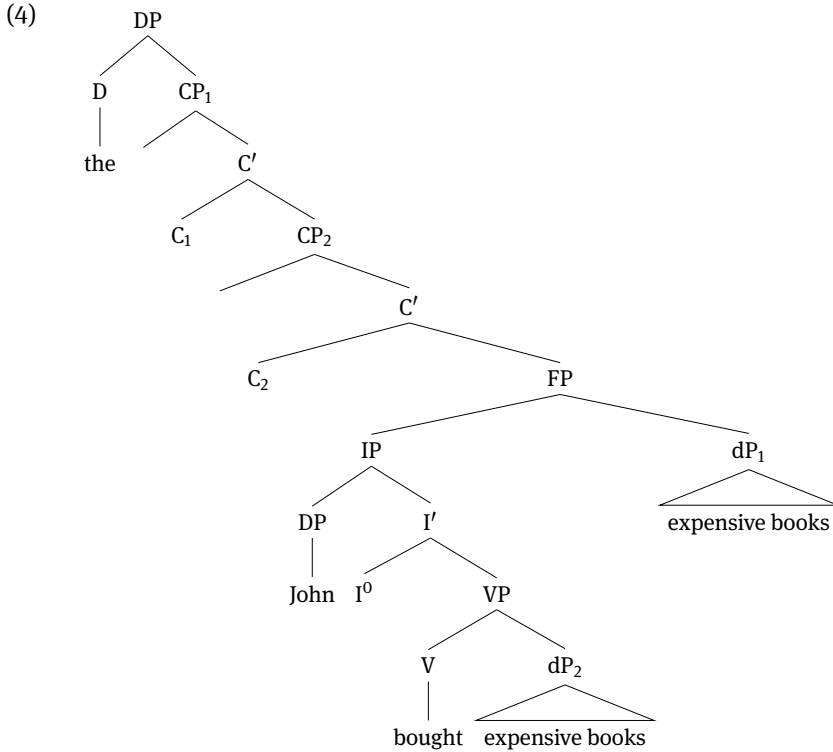
In this section we briefly outline the theoretical premises on which this paper is built. Three main types of RCs have been distinguished in the literature: restrictive, appositive and free (maximalizing) relatives. We first summarize Cinque's (2008, 2013) proposal on the syntax of restrictive relatives, and then we focus on the structure of appositive RCs as defined in Cinque (2008). Finally, we turn to the structure of free relatives as formulated in Benincà (2010, 2012).

Restrictive RCs are defined as predicates denoting properties that combine with the meaning of the nominal head they are attached to in an intersective way. As such, they restrict the set denoted by the nominal expression they modify (Heim & Kratzer 1998). On the contrary, appositive relatives do not combine directly with the denotation of a nominal head, rather they convey additional information about the referent of the DP they relate to. From a structural perspective the differences between restrictive and appositive RCs are captured by Cinque (2008, 2013) in the following way. On the basis of cross-linguistic evidence and in accordance with Kayne's (1994) Antisymmetry theory, the author suggests that both RCs are adjective-like structures which are merged in the specifier of a functional projection of the DP. Finite restrictive RCs are merged in a projection above numerals and below universal quantifiers, whereas appositive relatives are merged higher than universal quantifiers as in (3).

- (3) [RC<sub>APP</sub> X<sup>0</sup> [QP<sub>Universal</sub> Q<sup>0</sup> [DP D<sup>0</sup> [RC<sub>REST</sub> X<sup>0</sup> [NumP Y<sup>0</sup> [AP...Z<sup>0</sup> [NP ]]]]]]]]

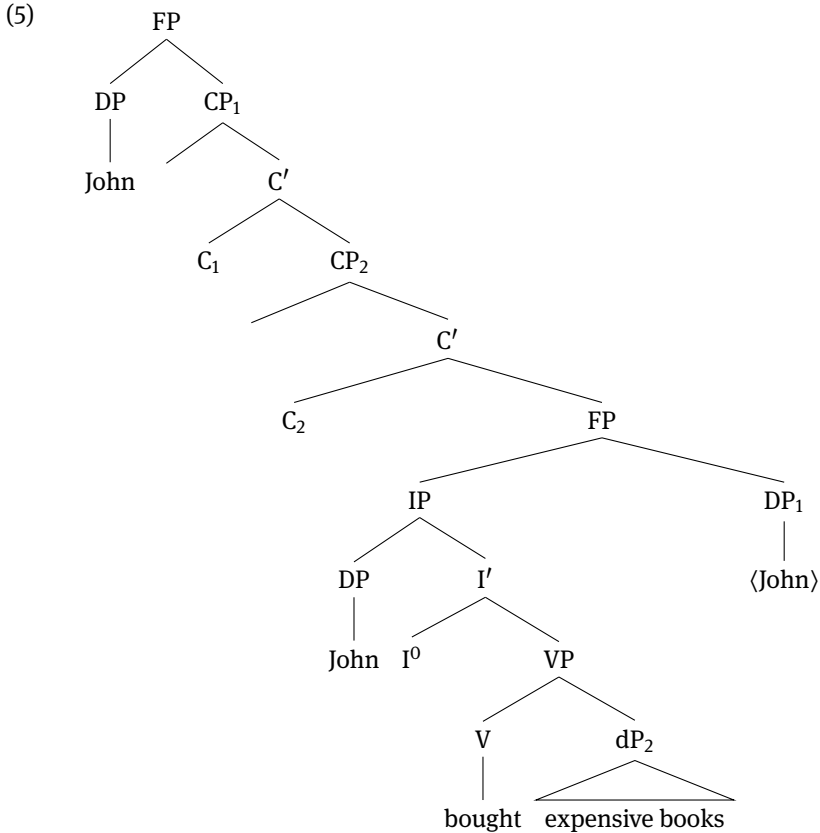
The core of Cinque's (2008, 2013) proposal is that there always are two heads involved in the derivation of a RC: an external one base-generated as the complement of the functional projection that hosts the RC in its specifier; an internal one base-generated inside the RC. These two heads are non-distinct.<sup>1</sup> Since restrictive RCs are attached below D, the two heads are a smaller category than a DP, i.e. they are dPs in Cinque's terms. On the contrary, given the high attachment of appositives above D, the two heads are full DPs. As follows we clarify the structure of a restrictive RC, first in a tree diagram adapted from Cinque (2013): dP<sub>2</sub> is the head internal to the RC, i.e. "internal head" and dP<sub>1</sub> the nominal expression modified by the RC, i.e. "external head".

<sup>1</sup> On the realization of the internal head, languages differ in the sense that in some languages the internal head is always deleted at PF, whereas in others it is spelled out (Kayne 1994, Bianchi 1999, Hulsey & Sauerland 2006, Cinque 2013: ch.17).

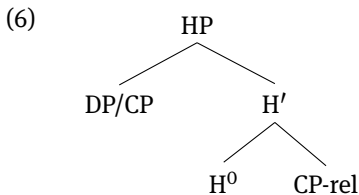


Given a structure like (4), the head of the RC will be the dP that surfaces in PF and controls the PF deletion of the other dP. Hence, if this head is dP<sub>1</sub>, i.e. the external head, matching is the operational derivation adopted and no reconstruction effects are detectable: the spelled out head is not linked to the chain inside the RC. If the spelled out head is dP<sub>2</sub>, i.e. the internal head, the derivation is obtained through raising and hence reconstruction effects are expected.

As for appositive RCs, Cinque (2013) suggests that their structure is similar to the one sketched in (4) for finite restrictive relatives but it differs in three respects: a) as stated above, appositive relatives are attached above D. b) The two heads are full DPs and not dPs and, c) since no reconstruction effects are found in appositives, appositives are only derived through matching. This means that it is always the external head that is spelled out (5).



Cinque (2008, 2013) notices that not all types of appositive RCs have the structure proposed in (5). He convincingly proves that there exist at least two types of appositive RCs: integrated ones, to which the structure (5) applies, introduced by the relativizer *che* ‘that’ and non-integrated appositives, which exhibit structure (6) and are introduced by the relative pronoun *il quale* ‘the which’. Non-integrated appositives seem to be related to the external head by means of a discourse procedure in the sense of Williams (1977): they are the complement of a discourse head, whereas the external head sits in its specifier as in (6).



Cinque (1982, 2008) shows that there are substantial differences between integrated appositives (cf. (5)) and non-integrated ones (cf. (6)). We summarize some of his tests distinguishing the two types in Table 1.

**Tab. 1:** Properties of integrated and non-integrated appositives

	Integrated appositives structure (3)	Non-integrated appositives structure (4)
A. Illocutionary independence	*	✓
B. Non-adjacency	*	✓
C. Split antecedents	*	✓
D. Temporal adverbials	✓	*
E. CP-antecedent	*	✓

A. Only *il quale*-appositives can be either interrogative or imperative when the matrix clause is declarative (7a). On the contrary, *che*-appositives can only be declarative (7b).

- (7) a. Tuo padre, il quale potrà mai perdonarci per quello che abbiamo fatto?, non si sarebbe mai comportato così.  
 b. \*Tuo padre, che potrà mai perdonarci per quello che abbiamo fatto?, non si sarebbe mai comportato così.  
 ‘Your father, by whom will we ever be forgiven for what we have done?, would have never behaved like that.’

B. Whereas *che*-appositives must be adjacent to the external head (8b), *il quale*-appositives can be separated from it (8a).

- (8) a. Da quando i russi se ne sono andati, i quali non si erano veramente integrati con la popolazione, la pace è finita.  
 b. \*Da quando i russi se ne sono andati, che non si erano veramente integrati con la popolazione, la pace è finita.  
 ‘Since the Russians left, who had not really mixed with the population, there is no more peace.’

C. Only *il quale*-appositives can have split antecedents (9a). On the contrary *che*-appositives cannot (9b).

- (9) a. Se Carlo<sub>j</sub> non amava più Anna<sub>i</sub>, i quali<sub>j+i</sub> d'altra parte non si erano mai voluti veramente bene una ragione c'era.

- b. \*Se Carlo<sub>j</sub> non amava più Anna<sub>i</sub>, che<sub>j+i</sub>d'altra parte non si erano mai voluti veramente bene una ragione c'era.  
'If Carlo was no longer in love with Anna, who at any rate never really loved each other, there was a reason.'

D. Only *che*-appositives can have a temporal adverbial as an antecedent (10a), whereas *il quale*-ones cannot (10b).

- (10) a. La settimana prossima, che sono in ferie, gioco a carte finalmente.  
'Next week, which I am on holidays, I will finally play cards.'  
b. \*La settimana prossima, la quale sono in ferie, gioco a carte finalmente.

E. Whereas *che*-appositives only allow for nominal antecedents (11b), *il quale*-appositives can take a larger class of antecedents, such as CPs (11a).

- (11) a. Carlo lavora troppo poco. La qual cosa verrà certamente notata.  
b. Carlo lavora troppo poco. \*Che verrà certamente notato.  
'Carlo works too little, which will certainly be noticed.'

From our perspective, the crucial difference between integrated and non-integrated appositive RCs lies in the nature of the internal head of the appositive CP. In the case of integrated appositives, the internal head is an identical copy of the external one, whereas in non-integrated structures the head of the appositive CP is an independent DP only discourse bound to the external head, hence, the two heads can be identical but they do not need to be. (12) shows that in non-integrated structures the two heads can be different DPs, since we have *Gianni* as the external head and *il quale ragazzo* as the internal head.

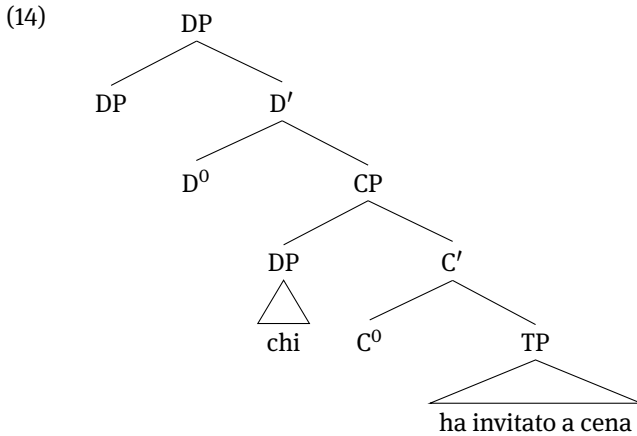
- (12) Ho sempre lodato Gianni per la sua correttezza, il quale ragazzo infatti non ha mai criticato nessuno.  
'Lit. I have always praised Gianni for his honesty, which boy indeed has never criticized anybody.'

This difference has the semantic reflex that only non-integrated appositives contain a definite pronoun able to denote nominalized properties and propositions. On the contrary, integrated appositive clauses lack this type of pronoun and contain an identical copy of the external head only denoting nominal properties (Del Gobbo 2003, Potts 2005).

The last type of RC we discuss here is represented by free RCs. Free RCs are different from both restrictive and appositive relatives in not displaying a visible nominal head, rather they just display a *wh*-element as in (13).

- (13) *Conosco* [<sub>FR</sub> *chi hai invitato a cena*]  
 ‘I know who you invited to dinner.’

We adopt Benincà’s (2010) proposal which considers free RCs as standard relatives headed by a silent DP, while the *wh*-element is part of the RC (cf. Carlson 1977, Bresnan & Grimshaw 1978, Groos & van Riemsdijk 1981, Larson 1987, Grosu 1996, among many others).

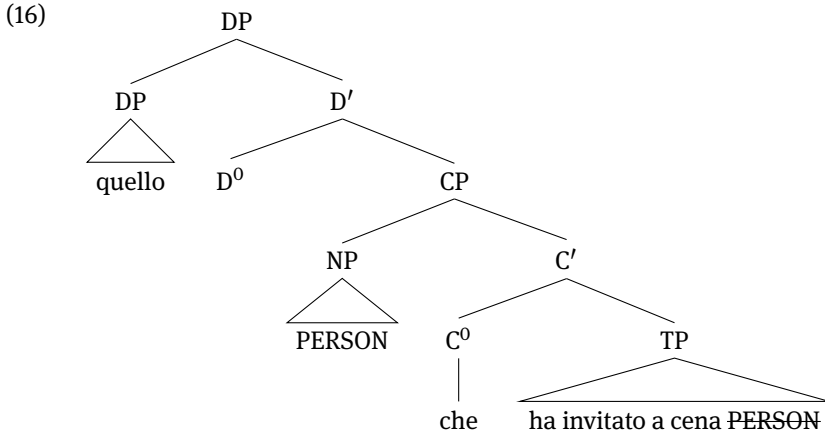


As already noticed by Munaro (2000) and Benincà (2010, 2012), Italian can actually spell out the head of a free RC with a light pronominal head (*ciò/colui/quello* ‘it/the.he/that’). The RC is introduced by the relativizer *che* or *il quale* and the light headed RC can either have a free choice or a specific reading (15).

- (15) a. Non conosco **quello che** vincerà questa sfida.  
 ‘I do not know who will win this game.’  
 b. Preferisco **quello che** hai comprato.  
 ‘I prefer what you bought.’

Building on Benincà’s (2010, 2012) analysis, we propose that free relatives headed by a demonstrative have the same structure as in (14) with the difference that the SpecDP of the light external head is occupied by the demonstrative itself. Both the external and the internal head of the RC correspond to null elements like PERSON or THING as in (16).





Thus, light-headed free relative structures as in (16) differ from restrictive RCs in two respects (Cinque 2013). First, in free relatives the internal head is a phonetically null light noun either PERSON or THING, whereas in restrictive ones it is a lexical N. Second, the external determiner is a distal demonstrative in SpecDP, whereas it usually is an article in D° in restrictive relatives.

With these theoretical tools in mind, we are now ready to turn to our empirical section and to the distribution of demonstratives in RCs.

### 3 The distribution of demonstratives in relative clauses

Standard Italian has three types of relativizers: a) agreeing *wh*-pronoun of the type *il quale/la quale/i quali/le quali* ‘the which’; b) an invariable element identical to the one used to introduce complement clauses, namely *che* ‘that’; c) an uninflected *wh*-pronoun *cui* ‘which:obl’ only used in oblique RCs. As follows, we will only concentrate on the first two types of relativizers. Their distribution depends on two factors, namely the type of relativized element, whether bare or PP, and the type of RC. Following Cinque (1978, 1982, and subsequent works), the use of *il quale* is restricted to two contexts, namely non-integrated appositive RCs as in (17b) and (restrictive and appositive) prepositional RCs (henceforth, PP-RCs) as in (18).

- (17) a. La ragazza **che**/**\*la quale** ho incontrato mi ha parlato di te.  
 ‘The girl that I met talked about you.’

- b. Maria, **che/la quale** non vedo da oltre tre anni, arriva domani.  
‘Maria, whom I haven’t seen for three years, arrives tomorrow.’
- (18) a. La ragazza **con la quale/\*che** ho parlato ieri si chiama Maria.  
‘The girl with whom I talked yesterday is called Maria.’
- b. Mario, **con il quale/\*che** ho parlato ieri arriva alle 14:00.  
‘Mario, with whom I spoke yesterday, will arrive at 14:00.’

In colloquial standard Italian and in the non-standard Italian varieties collected by the ‘Atlante Sintattico d’Italia (ASIt)’ project the paradigm of relativizers differs as follows from standard Italian. First, the only relativizer is of the *che*-type. In the case of PP-relatives, speakers use *che* plus a resumptive clitic or they opt for a structure which is not a RC (either adjectives, or coordinates CPs or various types of adverbial embedded clauses). The same holds for appositive relatives.

Interestingly, in some varieties demonstratives followed by the relativizer *che* surface in various contexts according to the variety taken into account. As follows we describe the distribution of this relativization strategy, by looking at colloquial standard Italian (Section 3.1), Campobellese and Venosino (Section 3.2), and Marebbano (Section 3.3). These varieties can be split in two groups:

- i. Varieties where the demonstrative is (still) the external head of a light-headed free RC, as in colloquial standard Italian;
- ii. Varieties where the demonstrative is (already) a real relativizer and, hence, a portion of the RC-internal head, as in the three dialects.

The second group will be further divided with respect to the contexts where the demonstrative relativizer occurs:

- ii.A Varieties, such as Campobellese and Venosino, where the demonstrative relativizer occurs in non-integrated appositive relatives. The RC is not directly inserted into the DP spine but sits in the predicate position of a small clause. In these cases the demonstrative is a referential pronoun which obeys principle B of binding theory.
- ii.B Varieties where the demonstrative relativizer occurs in all types of PP-relatives, i.e. contexts in which it is impossible to extract/delete the internal head. This is exemplified by Marebbano. In these contexts, the demonstrative is an anaphoric pronoun which obeys principle A of binding theory.

### 3.1 Demonstratives as the external head of the relative clause: colloquial standard Italian

As already noticed by Munaro (2000) and Benincà (2010, 2012), in Italian demonstratives occur in light-headed free RCs with either a free choice or a specific reading (cf. (15)), whose structure is illustrated in (16), repeated here as (19), where we formulate the structure in accordance with Cinque's proposal that RCs contain two non-distinct heads, an internal and an external one, both of which are phonetically null, hence represented as a null nominal of the type discussed in Kayne's recent work, i.e. PERSON in (19).

- (19) [DP [SpecD quello] D<sup>0</sup> [RelCP [[PERSON] [che [NP-internal PERSON]]] [C<sup>0</sup> [TP ... [che [NP-internal PERSON]]]] [NP-external PERSON]]]

We argue that in colloquial standard Italian the demonstrative is still the external head of a light-headed free relative as in (17), but can function as an apposition to a nominal expression. Therefore, the demonstrative is located outside the boundaries of the RC.

In these contexts, the antecedent is a nominal expression that cannot entail unique reference, a restriction which also holds for restrictive relatives. For instance, in (20) the unique reference antecedent *padre* 'father' is not allowed to be followed by the free RC.

- (20) \*Ho incontrato tuo padre, **quello che** è stato in prigione.  
'I met your father, who was in jail.'

Free RCs headed by a demonstrative are compatible with what *prima facie* looks like a restrictive interpretation. In (21), for instance, the interpretation is as follows: among the class of individuals whose name is *Maria* there is exactly the one that has the property of being known by both the speaker and the addressee, and left for Rome.

- (21) Maria, **quella (là) che** conosci anche tu, è partita per Roma.  
Maria that (there) that know also you is left for Rome  
'Mary, the one you also know, left for Rome.'

Notice that the demonstrative may be reinforced by the locative adverb *là* 'there'. However, differently from real demonstratives, the meaning of the adverb has no locative import, but it expresses a link to the previous discourse (see Section 4). Differently from real restrictive RCs, in order for these structures to be grammatical, the antecedent must already be identified at least as part of a specific set from

which the demonstrative returns an identified token, as it is clearly shown by the ungrammaticality of (22).

- (22) Ho incontrato un uomo, (**\*quello**) **che** è stato in prigione.  
‘I met a man who was in jail.’

Since in (21) the proper name is not fully individuated although it refers to possible individuals available in the discourse, we analyze it as an NP (following a long tradition; cf. Elbourne 2005, for an overview) and the anchor of the modification is the demonstrative, more precisely the null light noun PERSON that the demonstrative modifies. We propose that despite appearances, these structures are not real restrictive relative clauses where the demonstrative would be part of the internal head. We surmise that in these cases the demonstrative is the head of a free RC, which is an apposition specifying the token of the referents introduced by the antecedent. Building on Cinque’s and Benincà’s proposals, the structure instantiated in (21) is given in (23).

- (23)  $[_{FP} [_{NP} \text{Maria}] [_{F^0} [_{DP} \text{quella} [_{D^0} [_{RelCP} [_{dP} [_{PERSON} \text{che} [_{NP-internal} \text{PERSON}]]] [_{C^0} [_{TP} \dots [_{dP-internal} \text{che} [_{NP-internal} \text{PERSON}]]]]]]] [_{dP-external} \text{PERSON}]]]]]$

The free relative character of these structures is further supported by fact that the case of the demonstrative must be the one of the external head, and not the one of the internal head, as one would expect from a relativizer. This would be mysterious if (21) were either a case of appositive or of restrictive RC.<sup>2</sup> Since the demonstrative is external to the RC head, it must receive its Case from the matrix predicate, while it is the *che* that gets oblique case and turns into *cui*.<sup>3</sup>

- (24) Maria, con (**\*quella che/cui**) ho parlato ieri, arriva stasera.  
‘Maria, with whom I talked yesterday, arrives tonight.’

Taken our data altogether, we conclude that the demonstrative in colloquial standard Italian is part of the head of a light-headed free RC which sits outside the

<sup>2</sup> Another piece of evidence that the demonstrative must be external to the RC comes from cases like (i), where the demonstrative copies the external case: *a Maria* and *a quella che*.

- (i) Ho dato il libro a Maria, **a quella** che Gianni ha visto ieri in biblioteca.  
‘I gave the book to Mary, to the one that Gianni yesterday met in the library.’

<sup>3</sup> Our hunch to explain the distribution and the diachronic development of *cui* is that *cui* is an oblique form of *chi/che*. We will not further develop this point here because it is tangential to the main argumentation.

boundaries of the RC. The position of the free RC in (23) may be similar to that proposed in Cinque (2007) where epithets are merged.

### 3.2 Demonstratives as relativizers in non-integrated appositive relative clauses: Campobellese and Venosino

In this section we investigate two Italian varieties, Campobellese di Licata and Venosino. We first demonstrate that, contrary to colloquial standard Italian, where the demonstrative is not merged within the RC but rather it is part of the external (otherwise null) head, the demonstrative in these varieties is a real relativizer since it spells out the RC-internal head. The main empirical difference between colloquial standard Italian is that in these dialects demonstratives can occur in non-integrated appositive RCs.

Campobellese and Venosino exhibit two types of relativizers: *ca*-relativizers and the demonstrative followed by *ca*.<sup>4</sup> This pattern resembles that found in standard Italian, i.e. *che* and *il quale*. However, whereas the distribution of the Standard Italian relativizers depends both on the type of RC as well as on the type of relativized element, bare vs PP, in the two dialects the distribution of the two relativizers is determined only by the type of RC. Restrictive RCs only exhibit *ca*-relativizer and *ca/cu* in PP-relatives as in (25a-b).<sup>5</sup>

- (25) a. Lu libru **ca** mi consigliaiu Mario, mi piaci.  
'I like the book that Mario suggested to me.'
- b. Lu trenu **ccu cu** viaggiannu iera un intercity.  
'The train on which he travelled yesterday was an intercity one.'
- (Campobellese)

Free relatives can be both headless and light headed, as in the case of Italian (cf. ex (11-13)). When free relatives are light-headed, the distal demonstrative *chiddu* spells out the demonstrative of the light head.

- (26) a. **Cu** dissi chistu, nun canusciva la situazioni.  
b. **Chiddu ca** dissi chistu, nun canusciva la situazioni.  
'Who(ever) said this, did not know the situation.'

<sup>4</sup> The data on Campobellese are based on Viganò (2015). The data on Venosino have been collected in a fieldwork funded by the Deutsche Forschungsgemeinschaft (DFG), Project PO1642/1-1.

<sup>5</sup> Due to space limits, we only report data from Campobellese. However, the pattern exhibited by Campobellese in the examples (26-29) is identical to that found in Venosino.

- (27) a. Ammitammu a **cu** ancora nun ammu ammitatu.  
 b. Ammitammu a **chiddri ca** ancora nun ammu ammitatu.  
 ‘We invite those that we have not invited yet.’

The same relativizers found in restrictives and light headed free relatives are also found in appositive RCs (28a,b). Moreover, what looks like an appositive RC can also exhibit the demonstrative (29a,b).

- (28) a. Givanni, **ca** lu vitti aieri a lu mercatu, si marità la simana passata.  
 ‘Giovanni, (lit.) that I saw him yesterday at the market, got married last week.’  
 b. Gianni, **cu cu(i)** mi parlavu aieri, mi telefona stamatina.  
 ‘Gianni, with whom I spoke yesterday, phoned me this morning.’
- (29) a. Givanni, **chidru ca** vitti aieri a lu mercatu, si maritaju na simana passata.  
 ‘Giovanni, whom I saw yesterday at the market, got married last week.’  
 b. Gianni, **cu chidru ca** parlavu aieri, mi telefona stamtina.  
 ‘Gianni, with whom I spoke yesterday, phoned me this morning.’  
 (Campobellese)

The question now is to understand what structure the example in (29) instantiates and what import the demonstrative has. We argue that the demonstrative in both Campobellese and Venosino is a portion of the internal head.

Differently from colloquial standard Italian (cf. (24)), it can be clearly shown that the demonstrative is not part of the external head of the RC, but rather sits in the SpecCP of the RC and as such is a real relativizer, i.e. a spelled out portion of the internal head. Straightforward evidence that this is so is provided by the fact that the demonstrative does not receive its Case from the matrix predicate but it receives its case from within the RC:

- (30) Gianni, **cu chidru ca** parlavu aieri, mi telefona stamatina.  
 ‘Gianni, with whom I talked yesterday, will call me this morning.’  
 (Campobellese)

This means that the structure of demonstrative relatives must be different from the structure of Italian in (16) and (23), which only allow for demonstratives to occur in light-headed free relatives. The same observations hold for Venosino.

We conclude that the demonstrative is indeed a relativizer in these varieties. The question that now arises is what the difference is between the two appositive clauses introduced by bare *ca* and by the demonstrative+*ca*. We argue that the dif-

ference lies in the integration of the appositive RC (cf. Section 2: ex (5-6)). Similarly to *il quale*-relativizers in Standard Italian, only relatives with the demonstratives can be non-adjacent to their antecedent (31-32b) (cf. Section 2, Table 1). On the contrary, the simple relativizer *ca* must be adjacent to the head noun as (31-32a).

- (31) a. \*Giorgiu e Francu partieru **ca** vulivamu mmitari a mangiari stasira.  
 b. Giorgiu e Francu partieru, **chiddri ca** vulivamu mmitari a mangiari stasira.  
 ‘Giorgio and Franco left, whom we wanted to invite for dinner tonight.’  
 (Campobellese)
- (32) a. \*I fegl’ touje van’ vul’ndir’ a la scol’, ca stann’ semb’ a studjà.  
 b. I fegl’ touje van’ vul’ndir’ a la scol’, chir ca stann’ semb’ a studjà.  
 ‘Your children go willingly to school, who are always studying.’  
 (Venosino)

Whereas *ca*-RCs are integrated appositive clauses, those with the demonstrative are non-integrated structures. This means that in these dialects, where forms of *qual-* are unknown, the demonstrative has taken on the function of standard Italian *qual-*.

Although the two dialects pattern alike in many respects as we have shown, there is still a crucial difference between the two. Whereas in Campobellese, similarly to colloquial standard Italian, demonstratives cannot occur with a unique reference antecedent (33a), in Venosino they can (33b).

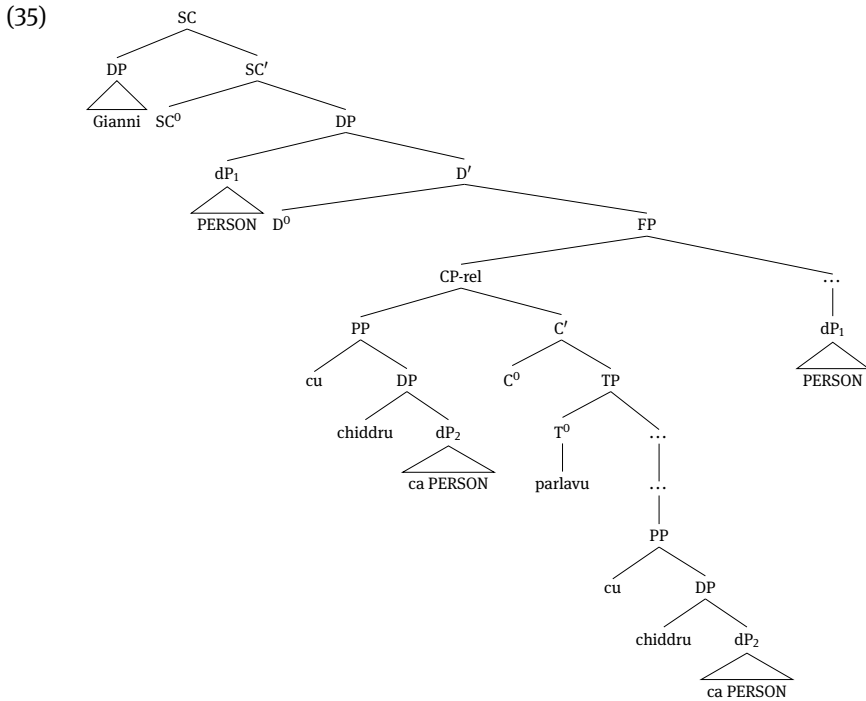
- (33) a. Su patri (\***chiddru**) **ca** è simpri malatu sinni a lu spitali.  
 ‘His father, who is always sick, is at the hospital.’  
 b. Aier ajj nguntrat a ppant, **cor ca** jè stèt ign carcær.  
 ‘Yesterday I met your father, who was in jail.’

We interpret this difference as the reflex of the fact that the demonstrative in Campobellese is a pronoun of the type “that one” in the sense of Sauerland (2003). On the contrary, in Venosino it is a third person pronoun. This makes the immediate prediction that none of the two demonstratives can occur with a speech participant as its antecedent. This prediction is indeed borne out as shown in (34a) for Campobellese and (34b) for Venosino. Notice that (34) is ungrammatical independently from the verb agreement pattern: with both first and third person the sentence is considered unacceptable.

- (34) a. Ia, (\*chiddru) ca t’affinnivu/affinniva aieri mo ma scusari.  
 ‘I, who offended you yesterday, apologize to you now.’

- b. Ie, (**\*cor**) ca su/jè stat a u fresk u trov sobbt u fateig.  
 ‘I, who was in jail, cannot easily find to work.’

On the basis of the contrast in (33), we argue that the two dialects instantiate two slightly different structures. In Campobellese the RC introduced by the demonstrative is a free RC with a null nominal head PERSON/THING, and hence a DP (35). The antecedent and the free RC form a small clause instantiating an identity relation between two DPs: the DP *Gianni* as its specifier, and the DP – which is a free RC – as its complement.<sup>6</sup> The head mediating the small clause is a sort of equative head similar to the one found in copular constructions.



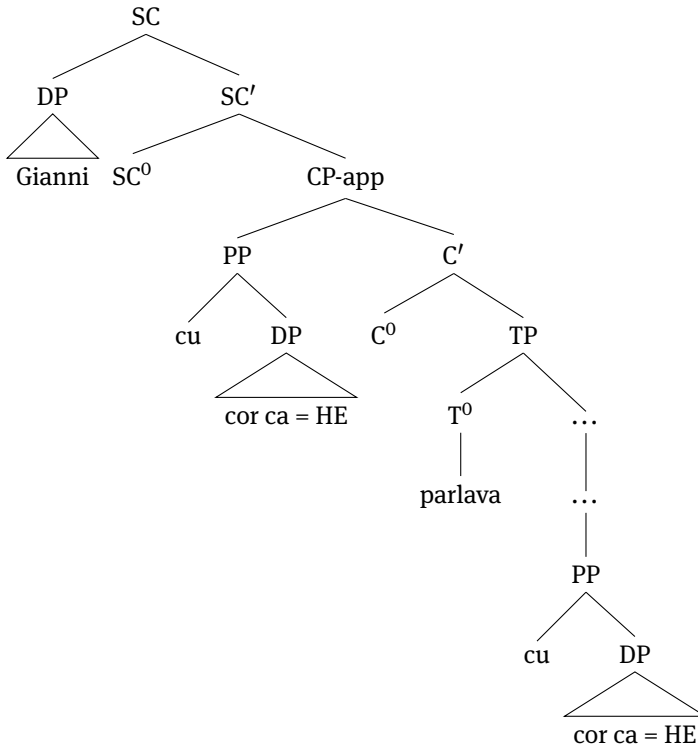
Since Venosino demonstratives allow for unique referent antecedents, we adopt the structure that Del Gobbo (2003) proposed for *who/which*-appositive relatives in English, which is also the one Cinque (2008) proposed for non-integrated RCs (cf. Section 2): we still have a small clause whose subject is the head noun, but

<sup>6</sup> This is reminiscent of De Vries (2006)’s analysis of appositive clauses. Crucially, taking into consideration Cinque (2013)’s critiques, we do not overgeneralize this structure to all appositive RCs.



the predicate is realized by a relative CP and not by a DP. Hence, in Venosino the RC introduced by the demonstrative is an appositive CP, and hence a proposition (36), not a DP. The mediating head is a discourse one.

(36)



Although in both dialects the antecedent and the RC are in a small clause relation, their structures differ in two respects: (a) the type of complement, a DP in (35) and a CP in (36); (b) the mediating head, an equative-like head in (35) and a discourse head in (37) (as originally proposed in Cinque (2008) for non-integrated relatives).<sup>7</sup> The two distinctions are related, since the equative head cannot be used in equating a DP with a CP, i.e., a proposition. Therefore, in structures like (36) the only possible mediating head is the loose discourse one. In addition, these two distinctions directly follow from the nature of the demonstrative which is a

<sup>7</sup> These two properties are most probably related in the sense that the whenever two DPs are in the spec and complement position of a small clause, the SC head is interpreted as equative. In the case in which the complement is a CP, the only possibility is a discourse head.

pronoun of the type “that one” in Campobellese and a third person pronoun in Venosino.

Our proposal makes an interesting prediction with respect to the categorial nature of the antecedent. According to our analysis Campobellese demonstratives are expected not to allow CPs as antecedents, whereas Venosino demonstratives are. Again, this prediction is borne out: in Campobellese (37a), demonstratives cannot have clauses as antecedents. In these contexts, only *ca* is found. In Venosino (37b), on the contrary, demonstrative relativizers allows for a CP as an antecedent.

- (37) a. *Ma maritu voli finiri di fumari, (\*chiddru) ca nun gne facili.*  
 ‘My husband wants to quit smoking, which is not easy.’  
 b. *Attanama u trova sobbt u fateig. Cor ca jé na schifezz.*  
 ‘My father cannot easily find a job. Which is an awful thing.’

In conclusion, we have singled out two types of non-integrated appositive structures. The first type is represented by Campobellese where the RC is a free relative and is linked to the DP antecedent by a small clause whose head can be roughly represented as an equative head. This structure and this mediating head aim to ensure the nature of the antecedent, i.e. DPs only. The second is shown in Venosino where the RC is a proposition containing a third person pronoun. The appositive clause is linked via a discourse head as in the case of Standard Italian non-integrated appositive clauses (as proposed in Cinque 2008). The nature of the demonstrative in Venosino is so that it can pick up a larger class of antecedents, among which CPs.<sup>8</sup>

Given our observation regarding the similarity between Italian *il quale* and the demonstrative in these two varieties, we now discuss how far the similarity between the two elements goes. We have noticed that the Campobellese and Venosino demonstrative has common properties with the Italian *il quale*, since both are licensed in non-integrated structures. This is further supported by the fact that both *il quale*-relativizer in Italian and the demonstrative in these two dialects are banned when there is a temporal adverbial DP as antecedent (cf. Section 2, (10)). In Campobellese (38a) and in Venosino (38b), the demonstrative cannot be licensed when the antecedent is a temporal DP.

- (38) a. *Dumani, (\*chiddru) ca sunu acca’, iuocu a li carti.*

<sup>8</sup> A possible way to capture the distinction between the two types of appositives may be to equate these structures with copular constructions as in Moro (1997) and den Dikken (2006). We leave this topic for future research.

- b. Craje, (\***cor**) **ca** so' in cast, scioc' accart'.  
 'Tomorrow, that I am at home, I will play cards.'

Cinque (2008: 120) suggests that the impossibility of *il quale*-relativizers to have temporal antecedents may be attributed to the particular relation that is established between the pronoun and the head: 'in the non-integrated non-restrictive with *il quale* the pronoun is a kind of E-type pronoun requiring coreference with some object(s) [...]; hence requiring that the antecedent be independently capable of referring (something that nominal temporal adverbials are not)'. We propose that the same reason holds for demonstrative relativizers. Following the classification of pronouns outlined in Büring (2011) the demonstrative in our small clause structures is intrinsically referential, which means that it is to be interpreted as a definite DP (see also Kaplan 1989; Del Gobbo 2003).

*Il quale* in Standard Italian crucially differs from the demonstrative in the two dialectal varieties in being able to occur not only in non-integrated appositive relatives but also in integrated PP-relatives, both restrictive and appositive. On the contrary, the demonstrative only appears in non-integrated appositives both on bare NPs as well as on PPs. The question is why the demonstrative should be banned in integrated appositives and in PP-restrictive RCs. A possible answer could be that the demonstrative in these varieties is only a referential pronoun, a DP, and obeying principle B of binding theory, it must be free in its complex functional domain. This means that the head can only be outside its functional domain as in the small clause structures above. This proposal is an adaptation of Cinque's (1978) idea that *il quale* in non-integrated structures is an intrinsically referential pronoun. Cinque also proposes that on the contrary, *il quale* in integrated relatives is an anaphoric pronoun, obeying in these cases principle A of binding theory. Whereas in Standard Italian *il quale* can both behave as a definite pronoun and as an anaphoric pronoun, in these two varieties the demonstrative is only a definite, referential pronoun, and as such, it is not licensed in those contexts in which its antecedent c-commands it in its complex functional domain (see Hinterwimmer, this volume for similar binding facts in German).

### 3.3 Demonstratives as relativizers in integrated prepositional relative clauses: Marebbano

In this section we consider the case of a language where demonstratives can also be relativizers in restrictive RCs. In this case, we argue that the demonstrative plays a role similar to that of *il quale*-relativizer in Italian PP-relatives: it is an anaphoric pronoun which obeys principle A of binding theory. We propose that

the demonstrative spells out the RC-internal head, which as in the case of *il quale* needs to be syntactically a pronoun, either strong or weak, to be stranded after preposition. Similarly to the three varieties we saw above, Marebbano allows for demonstratives in light-headed free RCs, both with a free choice and a specific reading.

- (39) Chel co à dit cösch ne conescea nia la situaziun.  
 ‘Who(ever) said this did not know the situation.’

In addition to light-headed free RCs, the demonstrative can also appear in other contexts. Similar to Standard Italian *il quale*, the distribution of the demonstrative in Marebbano is dependent only on the type of relativized element, whether bare or PP: the demonstrative only occurs in prepositional RCs. Differently from Campobellese and Venosino, there is no restriction on the type of RC: the demonstrative is allowed in both true restrictive (40a) as well as in appositive relatives (40b).

- (40) a. L seniëur **de chël che** cunësci la sor röa enco.  
 ‘The man of whom I know the sister arrives today.’  
 b. Mio pere **a chell che** mia oma à albù rajun da ti scraiè ados laura trep.  
 ‘My father, whom my mum rightly reprimanded, works too much.’

Moreover, the demonstrative can also occur with an indefinite antecedent (contrary to the previous varieties).

- (41) Maria ie na persona **sun chëla che** te posses te lascé.  
 ‘Mary is a person whom you can rely on.’

In Marebbano the distribution of demonstratives is partially identical to the one of *il quale* in Italian, since they are both found in restrictive and appositives introduced by a preposition. The data above suggest that the demonstrative is used as an equivalent form to *il quale*-relativizer of Italian, i.e. it also includes the value expressed by the definite article in Italian. The similarity with the *il quale*-relativizer is also shown by the fact that the sentence is degraded when the antecedent is provided by a speech-participant. Whereas in Italian the use of *il quale*-relativizer is banned in bare relatives (42a), speakers differ when it comes to PP-relatives: some speakers judge (42b) ungrammatical, whereas for others it is barely acceptable. The same difference is also found in Marebbano (43).

- (42) a. \*Tu, **il quale** mi dai sempre preoccupazioni, non riesci a capire la situazione.  
 ‘You, who always worry me, do not understand the situation.’

- b. ??/\*Posso sempre contare su di te, **al quale** infatti confido sempre tutto.  
 ‘I can only rely on you, to whom indeed I always tell everything.’
- (43) ??/\*A mé mo plej te **sun chel che** i poss i lascé.  
 ‘I like you on whom I can rely.’

Leaving aside the slight tolerance shown by some speakers in (42), we take the contrast between the previous examples, e.g., (40-41) and (43) as a significant one. We interpret it as the result of the fact that the demonstrative, presumably as *il quale*-relativizer, maintains [third person] as one of its feature.

In order to account for this distribution, we propose that the RC containing the demonstrative is integrated into the spine of the DP it modifies, as it is the case of *il quale*-type in restrictive PP-relatives in Standard Italian. Hence, Marebbano instantiates the integrated structures proposed by Cinque sketched in Section 2, (4) in the case of restrictive and (5) in the case of appositive RCs. Taking these results together, we surmise that the last structure that demonstrative relatives can instantiate is the canonical one proposed for integrated RCs by Cinque (2008, 2013; cf. Section 2). In Marebbano, the demonstrative RC is merged in the spine of the DP, crucially also in the position of restrictive relatives. As in the case of Standard Italian *il quale*, the insertion of the demonstrative in PP-relatives reflects the need of stranding a pronoun, either strong or weak, after the preposition (on this we refer the reader to Poletto & Sanfelici 2014, to appear). Contrary to the other varieties, the demonstrative can be the head of a restrictive RC, which under standard assumptions is an indefinite nominal expression. Adopting the definition proposed in Cinque (1978), we can conclude that the demonstrative in this variety is an anaphoric pronoun which obeys principle A of binding theory and not an intrinsically referential pronoun as we saw in the other two dialects. This proposal predicts the impossibility of the demonstrative to occur in non-integrated structures, differently from what happens in Venosino and Campobellese. As shown, this prediction is indeed borne out.

### 3.4 Interim conclusion

In the previous sections we investigated the use of the distal demonstrative in RCs in four Italian varieties, namely colloquial standard Italian, Campobellese, Venosino and Marebbano. Table 3 summarizes our findings regarding the RC-contexts where the demonstrative appears, the role of the demonstrative and its interpretation.

As shown in Table 2, the demonstrative can be the external head of a light-headed free RC in all four varieties. In addition to this context, the demonstrative

**Tab. 2:** Overview of the uses of the demonstrative + *che* in four Italian varieties

	Syntactic environment		Role of the demonstrative	Interpretation of the demonstrative
Colloquial standard Italian	Apposition to nominal expressions		External head of the free RC	the one
Campobellese	Non-integrated RCs	free	Internal head of the RC	That one
Venosino	Non-integrated appositive RCs		Internal head of the RC	He
Marebbano	PP-integrated RCs		Internal head of the RC	Anaphoric pronoun

can also be the spell-out of a portion of the internal head in three structures. In Campobellese and Venosino, the demonstrative is a relativizer in non-integrated constructions: respectively in free RCs which are the complement of an equative head and in non-integrated appositive RCs which are the complement of a discourse head. In Marebbano the demonstrative appears as a relativizer in PP-RCs. Given the distribution of demonstratives in RCs in our data, we can draw an implicational scale as in (44).

(44) light-headed free RCs > non-integrated appositive structures / PP-RCs

According to (44), if a language uses the demonstrative in contexts to the right, it also uses the demonstrative in contexts to its left each variety exhibits the demonstrative. Accordingly, colloquial standard Italian only has demonstratives in light-headed free RCs, whereas the three dialects have demonstratives in the structures on the left as well as in light-headed free RCs. On the basis of these three varieties we are not able to order the two structures to the left of the arrow. In fact, what emerges from our data is that either a variety develops the demonstrative in non-integrated appositive structures or it does so in PP-RCs. We lack data on a variety with the demonstrative occurring in both non-integrated appositive structures and PP-RCs to properly identify the order between the last structures (see Section 4 for a refinement of (44)). Notably, the demonstrative is used as a relativizer in those contexts where a pronoun, either an anaphoric (obeying principle A) or a referential (obeying principle B) one, is needed, similarly to what happens with Italian *il quale*.

Given the different distribution of the demonstrative in the four Italian varieties a natural question arises as to which feature specification the demonstrative has in each variety. The next section addresses this problem.

## 4 The renewal process of the relative pronoun

The previous sections show that whereas in colloquial standard Italian the demonstrative is the external head of the RC, in the three dialects – Campobellese, Venosino and Marebbano – it is part of the paradigm of relativizers, i.e. part of the internal head. In order to capture the differences between these varieties we proposed that relative demonstratives instantiate different structures in each variety. We captured the different distribution of the demonstrative relativizers by proposing that in non-integrated structures the demonstrative is an intrinsically referential pronoun whereas in PP-relatives it is an anaphoric pronoun following the terminology proposed in Cinque (1978). The question that now arises concerns whether demonstrative relativizers have the same feature specification as “real” demonstratives and whether the three dialectal demonstrative relativizers are alike in their feature endowment.

### 4.1 Feature specification on the demonstrative

In all the dialectal varieties the usual relativization strategy is the complementizer-like *che*-relativizer. However, in the contexts individuated above, the relativizer must be reinforced with the distal demonstrative. This is reminiscent of the procedure usually seen in diachrony and labeled as renewal. The synchronic variation we observe can be taken as evidence of the steps that the relative pronoun undergoes in the renewal process. Renewal is defined as the replacement of old grammatical forms, subject to attrition and no longer distinctive, by new periphrastic expressions (cf. Hopper & Traugott 1993).

An example of renewal is the development of the future during the history of Latin. In Latin, the future originates from the combination of an Indo-European infinitive and the copula, such as *\*vidē b<sup>h</sup>wō* ‘I am to see’. In Classical Latin, the form had undergone attrition to *videbo* and was then renewed in Late Latin by the form *videre habeo* ‘I have to see’ (cf. Lazzeroni 1987, Roberts & Roussou 2002). Since von der Gabelentz (1891), renewal was assumed to have a typical non-linear but cyclical nature. Particular forms are renewed again and again in a language, but renewals are seldom identical to the forms they replace. For instance, going back to the example about future forms, the Indo-European *be*-future was replaced in Vulgar Latin by the *have*-future and this was again renewed by the *go*-future in some modern Romance languages, such as French or some Northern Italian varieties or *want*-like in Rhaetoromance.

However, in all cases there is a clear pattern which can be identified through the different instances of the process: the form is renewed by means of a non-finite form of the lexical verb plus a functional verb. Which non-finite form and which functional verb is selected are properties determined by the single linguistic system in which the change occurs. If we leave aside for a moment the diachronic dimension of what renewal means, we can assimilate our construction to the examples on the future forms: as in the case of the periphrastic future, the simple *che*-relativizer is replaced by the periphrastic form [demonstrative + *che*-relativizer]. In this sense, the feature specification of demonstrative relativizers is expected to be not only different from the one of ‘real’ demonstratives but also to contain fewer features than those specified on ‘real’ demonstratives.

Demonstratives are bundles of morphosyntactic, semantic and pragmatic features. We tentatively propose that the features specified on the distal demonstrative are the following (see also Giusti, this volume for a similar proposal):

- i. Spatial location, which is specified for the value [distance] (Leu 2008; Büring 2011; Giusti this volume)
- ii. Deixis, as the identification of the referent with respect to the speaker (Lyons 1977: 637; Diessel 2014; Büring 2011)
- iii. Contrast, as suggested by Hawkins (1978), Diessel (1999, 2006, 2014)
- iv. Referentiality, in the sense that demonstratives carry the referential index of the nominal expression (Lyons 1977; Kaplan 1989; Longobardi 1994, 2001)
- v. Person, specified for [3<sup>rd</sup>] as a value (Lyons 1999)
- vi. Number and Gender, at least in Romance languages (Giusti 1997, 1998)

We propose that in Standard Italian real demonstratives are endowed with all these features. On the contrary, demonstratives in the four varieties we analyzed exhibit a different feature make-up, which is more impoverished than the specification seen in Standard Italian.

#### i. The loss of Location

In colloquial standard Italian the demonstrative is not specified for the spatial location, as shown by the example (21). All the other features are retained on the demonstrative. Notably, the possibility of adding the adverbial reinforcer without its the spatial meaning but with a discourse speaker-oriented meaning is here taken as evidence that the demonstrative is specified for deixis, and therefore establishes a link between the speaker and the referent.



## ii. The loss of Deixis

In Campobellese we claimed that the demonstrative is a definite pronoun and as such it is intrinsically referential. It is specified for third person and indeed it cannot refer to a speech participant antecedent. Furthermore, it still involves the Contrast feature, which for the moment we translate with the expression ‘that one’. This means that the demonstrative identifies a token or a type from a set of possible referents. The presence of the Contrast feature can explain the ban on referring to unique reference antecedents. The feature that undergoes a change are both spatial location and deixis. ‘Simple’ distal demonstratives can appear with a stranded adverbial PP such as *lá* ‘there’, on the contrary, when used as relativizers they never allow it. This holds for when the adverb has both a spatial and a deictical/contextual meaning.

## iii. The loss of Contrast

As seen for Campobellese, Venosino demonstratives are referential pronouns and are specified for 3<sup>rd</sup> person, not allowing a speech participant as an antecedent. However, contrary to Campobellese, the demonstrative in Venosino can refer to a unique referent antecedent (cf. (35b)). Hence, we argued that the Venosino demonstrative relativizer behaves like a third person pronoun. In order to capture this behavior, we propose that the demonstrative lacks not only the location and deixis but also the Contrast feature: there is not a set of possible referents from which the demonstrative individuate a single token.

## iv. The loss of Referentiality

In Marebbano the demonstrative relativizer shows the same feature specification instantiated by the Venosino one. However, here the demonstrative relativizer lacks definiteness (on the indefinite character of demonstratives, see Arsenijević this volume). Restrictive relatives are analyzed as denoting properties, which combine with the meaning of the nominal head in an intersective way, such that they further restrict the set denoted by nominal predicate they modify (Heim & Kratzer 1998). This means that the head internal to the restrictive RC does not have its own reference (see Cinque (2008), who proposes that the internal head of a restrictive RC is smaller than a DP, i.e. dP cf. (3)).

As the definite article in some context is inserted because of a Strong-D requirement (Longobardi 1994) but it does not imply definiteness, we claim that the

demonstrative in PP restrictive RCs is subject to the same requirement (see also Los and van Kemenade, this volume: Section 5.4).<sup>9</sup>

Table 3 summarizes the variation in the feature loss of the demonstrative when used as relativizers with respect to "standard" demonstratives. We consider the four varieties investigated in Section 3: (colloquial) Italian, Campobellese, Venosino and Marebbano.

**Tab. 3:** Feature specification in the four Italian varieties

	Location	Deixis	Contrast	Referentiality	Person	Num/Gen
Colloquial stan- dard Italian	*	✓	✓	✓	✓	✓
Campobellese	*	*	✓	✓	✓	✓
Venosino	*	*	*	✓	✓	✓
Marebbano	*	*	*	*	✓	✓

The results from our survey suggest that features are lost in a stepwise fashion and that they are hierarchically ordered such that the loss of one feature implies the loss of another located lower in the scale that is to read from right to left in our table. Given this, we propose the following featural scale:

(45) Location > Deixis > Contrast > Referentiality > Person/Number/Gender

Whereas demonstratives in colloquial standard Italian are specified for all the features except location, both location and deixis is lost in the Campobellese demonstrative relativizer. In Venosino location, deixis, and contrast are lost and finally Marebbano demonstrative relativizers lose location, deixis, contrast and referentiality. The morphosyntactic features Number and Gender and Person specification seem to be the most resistant ones. We surmise that this is due to the fact that at least number and gender are morphologically encoded. The path of feature loss that we see in Table 2 is very similar to the one instantiated in grammaticalization processes (e.g., van Gelderen 2004).

<sup>9</sup> Notice that also *il quale*-relativizer is not referential per se (cf. Bianchi 1999).

## 4.2 Feature specification and demonstrative relativizers

Comparing Table 2 and Table 3, we can draw a few interesting generalizations. In Table 2, we showed that whereas in colloquial standard Italian demonstratives spell out the external head of free RCs, in the three varieties they spell out portions of the internal head, and are thus considered as relativizers. Whereas Campobellese and Venosino demonstrative relativizers occur in non-integrated structures, in Marebbano the demonstrative RC is integrated inside the spine of the DP. From Table 3 it emerges that in Marebbano the demonstrative relativizer has fewer features than those specified on Campobellese and Venosino demonstratives, which in turn display fewer features than colloquial standard Italian demonstratives.<sup>10</sup> We conclude that the demonstrative can be a relativizer if it has fewer features than a real demonstrative and its level of integration correlates with the number and type of features it possesses. Demonstratives appear in non-integrated appositive RCs if they lose location, deixis, and possibly also contrast and in restrictive RCs if they also lose referentiality.<sup>11</sup> When the demonstrative has the full feature specification, it can only be the light head of a free RC in apposition to a nominal expression. Crucially, the feature specification of the demonstrative relativizer is different in the three dialectal varieties, which all together differs from the featural make up of real demonstratives. If we take referentiality to be instantiated in  $D^0$  as suggested in Longobardi (1994), our findings according to which the demonstrative can be referential as well as non-referential may support an analysis of demonstratives as being first merged below  $D^0$  (e.g., i.a. Giusti 1994).<sup>12</sup>

**10** This pattern is similar to that discussed by Los and van Kemenade (this volume: Section 2.2).

**11** It is tempting to take the analysis one step further and combine the synchronic variation in the integration level seen in the previous sections and the feature specification of the demonstrative depicted in Table 3 and to interpret the progressive integration of the demonstrative into the RC as the result of a diachronic feature loss. However, we leave this point open for further research since it may well be the case that the various trajectories of development observed here are not the same.

**12** On the basis of the hierarchy in (45) and on the claim according to which features are hierarchically ordered (e.g., Rizzi 2004, among others), we may rephrase the generalization in (44) and speculate that the two structures to the right may be ordered as in (i).

- (i) light-headed free RCs > non-integrated appositive structures > PP-RCs

For the time being we leave (i) as a tentative proposal which needs to be proved with further research.

## 5 Conclusion

In this work we have shown that the distal demonstrative can be used as a relativizer co-occurring with the relativizer *che*. By looking at Italian varieties, we argued that the demonstrative followed by the relativizer *che* is an instance of the renewal process the demonstrative undergoes. We first demonstrate that demonstratives intrude into RCs from light headed free RCs. As relativizers, they occur in the same contexts in which the *il quale*-relativizer is attested in Standard Italian, namely (a) contexts in which the internal head must be a definite pronoun, intrinsically referential, as in non-integrated appositive structures and (b) contexts in which it is impossible to extract the internal head, namely PP-RCs unless an anaphoric pronoun is stranded. We argued that in both contexts the head internal to the RC must be a pronoun, either weak or strong: an intrinsically definite one and an anaphoric one (in the sense of Cinque 1978). In the case of non-integrated appositives, the use of the demonstrative is interpreted as the result of the semantic and discourse requirements to have a definite pronoun, which obeys principle B of binding theory (see del Gobbo 2007). In restrictive RCs the use of the demonstrative is interpreted as the result of the need to extract the internal head in a raising derivation, or to delete it in a matching one, in phrases headed by a preposition. Hence, in these contexts the demonstrative is an anaphoric pronoun, which obeys principle A of binding theory. These findings support a theory of relativization along the lines proposed in Cinque (2013) as well as a theory of appositives as a phenomenon at the interface between syntax/semantics and discourse as defended in Del Gobbo (2007). Furthermore, our analysis suggests that two types of non-integrated structures must be identified: (a) non-integrated appositive clauses mediated by a discourse head, as originally proposed in Cinque (2008), but also (b) a free RC as the complement of an equative-like head.

The other theoretical relevant outcome of this study concerns the feature specification of demonstratives occurring in the previously identified structures. We have shown that demonstrative relativizers in each dialectal variety have a different feature specification, depending on the level of integration of the RC they introduce. The interesting aspect that emerges from our survey is the way in which features are lost in demonstrative relativizers. We have shown that feature loss probably proceeds in a stepwise fashion along the hierarchy illustrated in (45). The generalization emerging from the data is that Person, Number and Gender are the most resistant ones and this might be related to the fact that they are morphologically expressed, hence more difficult to cancel.

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Bettelou Los and Ans van Kemenade

# Syntax and the morphology of deixis

The loss of demonstratives and paratactic clause linking

**Abstract:** This paper investigates the affinities between V2 in Old English, the Spec,CP position, and the deictic *p/s*-system (demonstratives *se/sēo/bæt* as well as an etymologically related set of time, place and manner adverbs *þa* ‘then’, *þonne* ‘then’, *þær* ‘there’, *þus* ‘thus’, *swa* ‘so’, *swylc* ‘such’). The interrelations between V2 syntax and an articulated demonstrative paradigm create efficient systems for expressing topic shift and topic continuity. In the course of Middle English, a number of developments conspire to break the system down: the loss of gender and the loss of V2, leading ultimately to a loss in specific reference of the *p/s*-elements and a restructuring of discourse relations, with relative pronouns taking over the role of topic shifters.

**Keywords:** Old English syntax, demonstratives, discourse relations, Verb-Second

## 1 Introduction

The history of English is marked by extensive loss of inflectional morphology, more so than its West-Germanic sister languages: Present-Day English (PDE) has no verbal categories like subjunctive, very little person/number marking on the verb (only the distinction between third singular –s versus –*ø* for the other persons, and this only in the present tense), no marking on infinitives, no cases apart from a subject/oblique opposition in personal pronouns, no grammatical gender.<sup>1</sup> The only West Germanic language that comes close to such an extreme level of inflectional loss is Afrikaans (cf. McWhorter 2002). A lesser studied aspect of the loss of inflections is the demise of the paradigm of weak demonstrative pronouns, aka the *se* paradigm. This paradigm, articulated for case, number and gender, was a multifunctional one in Old English (OE) and could be used as a demonstrative

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<sup>1</sup> A dissenting voice is Szmrecsanyi (2012), who offers quantified evidence that English has become more synthetic than analytic; but his investigation starts in Middle English, by which time the majority of the morphological marking of nominal and verbal categories had been lost.

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determiner, as a (deictic) independent pronoun to refer to human referents, and as a relative pronoun. It thus constituted an independent strategy of pronominal reference in OE, which in turn raises the question how its use compares with that of personal pronouns. This question is the central concern of this chapter: we focus on the pronominal use of the *se* paradigm, showing that the crucial distinction in use between personal pronouns and demonstrative pronouns shows up when they are in clause-initial position. Clause-initial personal pronouns typically mark topic continuity, whereas demonstrative pronouns typically mark topic shift, in ways that are similar (though not identical) to the use of demonstratives in present-day Dutch and German. We show that the topic shift function characteristic of demonstratives is primarily associated with the (multifunctional) Spec,CP position, and it is this property that gives demonstrative pronouns an important syntactic status as a discourse-linking element in main clauses and as a clause-linking element in sub-clauses. The fact that demonstrative pronouns (and other deictic expressions such as demonstrative adverbs) were firmly entrenched syntactically meant that the loss of demonstratives in the transition to Middle English (ME) necessitated a fundamental switch in the marking of clause linking. We also propose that the loss of demonstratives, occurring as they did in the first position of main clauses, contributed substantially to the loss of Verb Second, which had arisen in early (West-)Germanic as a clause-typing and discourse-linking strategy, but which in English was lost. The chapter is organized as follows: Section 2 presents the primary pronominal paradigms of OE, and the function of clause-initial demonstratives in a range of paratactic constructions, including relative clauses and a variety of correlative clauses. Section 3 contrasts the referent tracking properties of OE personal and demonstrative pronouns, and section 4 will discuss OE Verb Second against the backdrop of the foregoing sections. Section 5 presents evidence for the loss of demonstratives in Middle English, and its consequences for the syntax of clause-linking, for interclausal referent tracking, and the loss of V2. Section 6 summarizes and concludes.

## 2 Demonstrative functionality in OE

### 2.1 *p/s-* and *h-*systems in OE

The history of English interclausal referent tracking in OE has a wider range of morphosyntactic means at its disposal than later stages of English. There is first of all the paradigm of personal pronouns, which is inflected for person, number, case, and, in the third person singular, for gender, as shown in table 1:

**Tab. 1:** The personal pronoun paradigm in OE

	Singular					Plural		
	1st	2nd	3rd			1st	2nd	3rd
			Masc	Fem	Neut			
NOM	ic	þu	he	heo	hit	wē	gē	hī
GEN	mīn	þīn	his	hire	his	ūre	ēower	hira
DAT	mē	þē	him	hire	him	ūs	ēow	him
ACC	mē	þē	hīne	hī	hit	ūs	ēow	hī

Deixis in OE is expressed by demonstratives (the *p/s*-system), shown in table 2, and by an etymologically related set of time, place and manner adverbs (*þa* ‘then’, *þonne* ‘then’, *þær* ‘there’, *þus* ‘thus’, *swa* ‘so’, *swylc* ‘such’).

**Tab. 2:** The demonstrative paradigm in OE

	Singular			Plural
	masculine	feminine	neuter	all genders
NOM	se	sēo	þæt	þā
GEN	þæs	þære	þæs	þāra
DAT	þæm	þære	þæm	þæm
ACC	þone	þā	þæt	þā
INSTR	þy, þon			

The *p/s* paradigm is also entrenched in the OE clause/initial position as the relative pronoun, a use which will be discussed below.

Note that both pronominal paradigms are only gendered in the singular, which emphasizes their parallel structure; it may also explain why, while plural *those* and *these* can still be used as independent pronouns referring to human referents in PDE, this is not the case for singular *that* and *this*. We will come back to this point in section 5.

Of the two pronominal paradigms, the demonstratives are firmly associated with the clause-initial position, the subject/topic position in main clauses, and as relative pronouns or demonstrative-based (complex) conjunctions in sub-clauses. We first discuss a core function of clause-initial demonstrative pronouns in present-day Dutch.

Dutch and German, as is well known, typically use personal pronouns as markers of topic continuity and demonstrative pronouns to mark topic shift; this

issue will be discussed in more detail in section 3. Our focus in this section is on the function of Spec,CP, as illustrated in (1), from van Kampen (2007):

- (1) a. De advocaat<sub>j</sub> heeft met uw broer<sub>i</sub> gesproken...  
 the lawyer has with your brother spoken  
 ‘The lawyer has spoken with your brother.’  
 b. Die<sub>i</sub>/\*H(e)m<sub>i</sub> achtte hij<sub>j</sub> betrouwbaar.  
 that/him thought he reliable  
 ‘whom he thought reliable’  
 c. Hij<sub>j</sub>/\*Die<sub>j</sub> achtte hem<sub>i</sub>/#die<sub>i</sub> betrouwbaar.  
 he/\*that thought him/#that reliable  
 ‘who thought him reliable’

The way in which the *p/s*-system interacts with the clause-initial position in Germanic is that the topic-shifting function of *p/s*-elements only works if the element is in Spec,CP, as in (1b) (van Kampen 2007); topic-shifting cannot be achieved with the *p/s*-element elsewhere in the clause (witness (1c)). This interaction between the *p/s*-system and Spec,CP is central to this paper. It is this interaction that facilitated the rise of hypotactic relative clauses such as those in (2), the Dutch relative clause equivalent of (1a-b):

- (2) a. De advocaat<sub>j</sub> heeft met uw broer<sub>i</sub> gesproken, die<sub>i</sub> hem<sub>j</sub> betrouwbaar achtte.  
 ‘The lawyer has spoken with your brother, who thought him reliable.’  
 b. De advocaat<sub>j</sub> heeft met uw broer<sub>i</sub> gesproken, die<sub>i</sub> hij<sub>j</sub> betrouwbaar achtte.  
 ‘The lawyer has spoken with your brother, whom he thought reliable.’

The association of demonstratives and the clause-initial position, Spec,CP, is at the heart of a range of paratactic left peripheral constructions in early Germanic, and we now discuss a number of examples from OE.

## 2.2 Relative clauses

Old English has three main types of finite relative clauses, one of which, the so-called *se*-relative, which is non-restrictive, is paratactic and very often ambiguous between main clause and sub-clause status, as illustrated by (3):

- (3) he wolde adræfan anne æþeling se wæs Cyneheard gehaten  
 he wanted drive-out a prince DEM was Cyneheard called  
 ‘He wanted to drive out a prince who was called Cyneheard.’  
 ‘He wanted to drive out a prince. That-one was called Cyneheard.’  
 <ChronA, 753><sup>2</sup>

The demonstrative pronoun *se* can be variously interpreted as introducing a new V2 main clause as in (1b), or as a relative pronoun introducing a paratactic relative.

The other two types of relative clause show clear signs of hypotaxis, the *þe*-relatives. These are the *þe*-relatives and the *se þe*-relatives. *þe* derives from the *þ/s*-system but was grammaticalized into an invariant “universal” embedder, introducing not only relative clauses but also complement clauses and adverbial clauses, exactly the same trajectory that was later travelled by *that* (neuter form *þæt* of the *se*-paradigm in table 2) in Middle English (ME). The *se þe*-relative can be argued to represent a case of syntactic renewal (see Poletto & Sanfelici, this volume), in which the bleached meaning of the grammaticalized embedder is reinforced by the demonstrative. There are clear indications that *se*-relatives are more independent and less integrated than *þe* or *se þe*-relatives: (i) *Se*-relatives are nearly always non-restrictive, while *þe*-relatives and *se þe*-relatives strongly tend to be restrictive, (ii) *se*-relatives tend to be foregrounded topic-shifters and carry the action further, while *þe*- and *se þe*-relatives serve to identify its antecedent, (iii) *Se* in *se*-relatives exhibit the case associated with the syntactic function it has in the relative clause (evidence of its non-integrated status), while the opposite phenomenon, “case attraction” in which *se* appears with the case associated with its syntactic function in the higher clause is optionally found only in *se þe*-relatives (van Kemenade 1987: 150; see also Poletto & Sanfelici, this volume). An example of this is (4):

- (4) Ic wat witodlice ðæt ge secað ðone Hælend **ðone** ðe on  
 I know truly that you seek the Saviour-ACC whom-ACC that on  
 rode ahangen wæs.  
 cross hung was  
 ‘I know truly that you seek the Lord, who was hung on the cross.’  
 <Matthew 1766>

<sup>2</sup> The reference to an OE text enclosed in <> follows the system of short titles as employed in Healey & Venezky (1985 [1980]) (in turn based on the system of Mitchell, Ball & Cameron 1975, 1979). It is identical to the TEI reference in the Toronto Corpus, which means that line numbers refer to the beginning of the sentence rather than the line in which the relevant structure occurs.

The relative pronoun is expected to be *se*, nominative, as it is the subject of the relative clause, but it is in fact an accusative, *þone*, “attracted” to the case of the antecedent *ðone* in *ðone Hælend* ‘the Saviour’; (iv) *Se*-relatives never allow preposition stranding, while *þe*-relatives do, indicating that the latter are integrated into the higher clause and less independent; and (v) *se*-relatives have high rates of V-movement (V2), a main clause phenomenon. The *se*-relative clauses are part of a wider system of paratactic clause-linking in OE, which relies heavily on a *p/s*-element in the first clause being repeated in the first position of the next clause. Typically, the second clauses in such pairs show various degrees of clausal integration, although the consensus is that both clauses must originally have had the same (main) clausal status (see e.g. Kiparsky 1995). This correlative system is the topic of the next section.

## 2.3 Correlative clauses

The *se*-clauses discussed in the previous section are part of a larger system of correlative linked clauses in OE. Correlatives are robustly attested in OE with complement and adverbial clauses, again relying on *p/s*-elements (in bold in the examples below). An example is (5). The first clause has a demonstrative object *þæs*, which is cataphoric, referring forward to *þæt* ‘that’ in the Spec,CP of the second clause:

- (5) & heo þa sona **þæs** gefægnode, þæt heo hæfde ealles **þæs**  
 and she then at-once that-GEN rejoiced that she had all the  
 gæres bigleofan  
 year’s livelihood  
 ‘and then she immediately rejoiced because she had an entire year’s worth  
 of supplies’ <GD 1 (C) 9.69.12>

Another example, this time with an accusative anticipatory object *þæt*, can be found in (7) below, lit. ‘They heard that, that the king had been slain’. Bennis (1986) argued for Dutch that such second clauses are syntactic adjuncts when they have a correlative in the first clause, but syntactic arguments when the correlative pronoun is absent; the anticipatory correlative element of the first clause fills the semantic role assigned by the verb. A similar phenomenon has been argued to be the case for subject and object agreement markers on the verb in polysynthetic languages; any additional nominal subjects and/or objects in that clause are adjuncts, as the agreement markers, which probably represent grammaticalizations of pronouns, fill the semantic roles (Baker 1996). Such phenomena show that the second clause in a correlative is more independent, less integrated, less

hypotactic. In the discussion of the demonstrative paradigm in table 2, we noted that the full set of *p/s*-elements includes a range of adverbial elements, too. These elements have the same clause-linking function as the demonstrative forms, as is shown in (6)-(7) below, with *þær* ‘there’ and *þa* ‘then’, respectively. Example (6) shows that it is not always possible to analyse such correlatives in terms of main clauses and subclauses, which is another sign of parataxis:

- (6) **þær** Paulus ne mihte mid scipe faran **þær** Petrus eode mid drigum  
 there Paul not could with ship go there Peter went with dry  
 fotum.  
 feet  
 a. ‘Where St Paul could not cross with a ship, St Peter went with  
 dry feet.’ OR:  
 b. ‘St Paul could not cross with a ship, where St Peter went with  
 dry feet.’ <GD (C) 1 12.91.8>

For correlatives marked with *þa* ‘then’, there is a clearer system in that the V moves to C in the *þa*-main clause, as in (7), usually (although not in (7)) presenting a clear contrast with the *þa*-subclause which tends to be marked by lack of V-movement, much like *da... da...* clauses in Older German or *toen... toen...* clauses in Dutch:

- (7) **ða** on morgenne gehierdun þæt þæs cyninges þegnas þe him  
 then on morning heard that the king’s thanes who him  
 beæftan wærun þæt se cyning ofslægen wæs **þa** ridon hie þider...  
 behind were that the king killed was then rode they thither  
 ‘When in the morning, the king’s thanes who had been left behind heard  
 that the king had been slain, then they rode there...’ <ChronA 753>

Finally, another adverbial correlative is the purpose clause introduced by *þæt* with an anticipatory correlative *to þan/to þon/to þy* (relic instrumental cases of the demonstrative) ‘to that [end] that, to that [purpose] that’:

- (8) **þa** wæs he gelæded to þam Godes were, to **þan** **þæt** he  
 then was he led to the God’s man to that [end] that he  
 gewilnode & abæde him þa helpe þæs halgan mannes  
 wanted and asked him the help of-the holy man’s  
 þingunga.  
 intervention  
 ‘He was then led to the man of God, in order to desire and ask for himself  
 the intervention of the holy man.’ <GD 1 (C) 10.77.20>

The *b/s*-system, then, plays an important role in clausal linking in OE, with the requirement that the *b/s*-element in the second clause needs to be in Spec,CP. The successive grammaticalization cycles of Spec,CP elements being reanalysed as C-elements (ultimately giving rise to the complementizer *that* in PDE) can be argued to represent a standard development that is not necessarily evidence of any change in Spec,CP, but reflects a bias in language acquisition in which the default assumption of young children being exposed to linguistic items is that such items are heads rather than phrases. Items will only be given a more complex analysis than “head” if there is positive evidence in the child’s data that they warrant it, see e.g. van Gelderen (2004), and the modelling of the grammaticalization process in Roberts & Roussou (1999, 2003) as a bias towards the option *merge* as an expression of functional heads, which will be the preferred analysis in acquisition if the data allow it. This standard development, however, weakened the evidence in acquisition for the special linking status of Spec,CP, a development that was further accelerated by the loss of V2 in late Middle English.

### 3 Topic Shift

As in Modern Dutch and German, the *b/s*- and *h*-systems in OE have largely complementary functions in keeping track of referents, where personal pronouns mark topic continuity, and demonstrative pronouns topic shift. Before we go on to discuss this, consider the PDE joke in (9):

- (9) (Columbo: No, my wife is not here. She had to go to Chicago to look after her mother. **She** had a fall and broke her hip.

Woman at party: Oh, your wife broke her hip? How terrible!

Columbo: No, her mother.

(Columbo, series 10.1, episode *No time to die*)

The joke depends for its effect on the fact that PDE only has a single system for referent tracking: the personal pronoun. *She* (in bold) has two possible antecedents, Columbo’s wife and her mother. It would be impossible to translate in idiomatic German or Dutch, or presumably OE, as the most natural translation of *she* would be a demonstrative (feminine *die/die/sēo*), which would pinpoint the “new” referent, *her mother*, as the new topic, rather than the “old” topic, *Columbo’s wife*.

Dutch and German are well-known for a high degree of complementarity of personal pronouns and demonstrative pronouns, especially when they are in

first position in the main clause (Bosch et al. 2003, 2007; Krause 2010; Kaiser & Trueswell 2004; Kaiser 2011; Wöstmann 2012; for OHG, see Petrova & Solf 2010). The findings of these studies substantiate two sets of observations:

- (10) a. (clause-initial) personal pronouns prefer to encode continued topics
- b. (clause-initial) demonstrative pronouns prefer to encode topic shift
- (11) a. demonstratives prefer preverbal position
- b. personal pronouns prefer clause-internal positions

Bosch et al. (2003) give corpus-based figures for (11) in German. When the antecedent is in the previous clause, the choice of antecedent is distributed as in tables 3 and 4, showing that demonstrative pronouns dominantly take the non-topical referent in the preceding clause as their antecedent, and personal pronouns take the topic of the preceding clause as their referent:

**Tab. 3:** Antecedents of demonstrative pronouns

Antecedent in the preceding sentence	
nominative	non-nominative
23,6%	76,4%

**Tab. 4:** Antecedents of personal pronouns

Antecedent in the preceding sentence	
nominative	non-nominative
86,7%	13,2%

This corpus evidence is only partly confirmed by experimental work. Bosch et al. (2007) report that personal pronouns are clearly more flexible in their referential choice than demonstratives: while demonstratives prefer object antecedents, personal pronouns have no clear subject preference. This reinforces the idea that demonstrative pronouns in Spec,CP are topic-shift markers. Similar findings are presented for Dutch by Kaiser & Trueswell (2004), who show on the basis of a sentence completion task and eye tracking that clause-initial subject demonstratives have a strong referential bias for the object of the previous clause, and that personal pronouns show an even stronger referential bias for the subject.

This referential bias has often been accounted for in terms of the accessibility hierarchy of Gundel et al. (2004), on the assumption that subjects are more



salient/topical than objects: personal pronouns are higher in the accessibility hierarchy than demonstrative pronouns, and personal pronouns thus refer to the more salient referent, most typically a subject, marking topic continuation. Demonstrative pronouns are lower on the accessibility hierarchy and refer to less salient, non-topical referents, most typically a non-subject. This makes them natural candidates for marking topic shift.

Let us now consider, against this background, the reference tracking properties of demonstratives in OE. There is a good deal of evidence for strong parallels between Present-Day Dutch and German on the one hand, and OE on the other hand.

Systematic study of one narrative text, the OE translation of Bede's *Ecclesiastical History of the English Church and People*, reveals a distribution much like that in present-day Dutch and German: out of 16 clause-initial demonstrative pronouns with a choice between two referents in the immediate context, 14 refer to the object or other non-subject referent of the previous clause as illustrated in (12)-(13), and 2 refer to the subject of the previous clause, as illustrated in (14):

- (12) Ðone Iustum he in Cent sylfre to biscope gehalgode to  
 DEM-M.ACC Justus he in Kent self to bishop consecrated at  
**Hrofesceastre. Seo** is from Cantwarena byrig on feower &  
 Rochester-F. DEM-F.NOM is from Canterbury on four and  
 twentigum mila westrihte.  
 twenty miles west.  
 'He consecrated that Justus to bishop himself, at Rochester.  
 That (=Rochester) / which is twenty-four miles west of Canterbury.'  
 <Bede 2 3.104.23>
- (13) Ða wæs he sona gehrinen lichomlicre untrymnesse & seo  
 Then was he at-once attacked of-the-body infirmity-F and DEM-F  
 dæghwamlice weox & hefigade  
 daily increased and grew-worse  
 'Then he was attacked at once by bodily infirmity, and this grew worse  
 daily/which grew worse daily.'  
 <Bede 4 3.266.34>
- (14) Ond he set on his setle on Cænt ærran dæge Kalendarum  
 And he sat on his throne in Kent previous day of-the-first-of  
 Septembrium ðy Dryhtenlican dæge. Se betwih monge  
 September the Lord's day. DEM-M.NOM among many  
 bisscopas ða he gehalgade, eac swilce, ða Gefmund ðære  
 bishops DEM-PL he consecrated, also such when Gefmund the

circan bisscop æt Hrofeceastre forðferde, & Tobiam for hiene  
 church's bishop at Rochester died, and Tobias for him  
 gehalgade;  
 consecrated

'And he was enthroned in Kent on the last day of August, which was the Lord's day. He consecrated among many other bishops Tobias, in place of Gefmund who died as bishop of the church at Rochester.'

<Bede 5 8.408.9>

Likewise, in Bede, clause-initial pronominal subjects usually refer to the subject of the previous clause, as in (15), but can occasionally refer to non-subjects, as in (16):

- (15) Ond sona þæs þe he eft on his eðel hwearf ond rice  
 And as-soon as he then to his country returned and kingdom  
 onfeng þa wilnade he liif onhyrgan, þe **he** wel geseted  
 received then wished he life imitate, which he well established  
 geseah in Gallia rice. Ond **he** scole gesette, in þære  
 saw in Gaul kingdom. And he school-F founded, in DEM-F  
 cneohtas & geonge menn tydde & lærde wæron;  
 boys and young men taught and educated were  
 'And immediately after he returned to his country and received the king-  
 dom, he wished to emulate the life that he had seen well-established in  
 Gaul. And he founded a school. In that-one/in which boys and young men  
 were taught and educated.'  
 <Bede 3 14.208.8>

- (16) Ono þa Sigeberht se cyning þa wæs ceasterwara gefremed  
 Now when Sigeberht the king then was citizen made  
 þæs ecan rice, & wolde eft þæt seðl secan his  
 DEM-GEN eternal kingdom-GEN and wished again the seat find his  
 hwiilwendlices riices, þa bæd he Osweo þone cyning,  
 temporal kingdom-GEN, then asked he Osweo the king  
 þæt he **him** hwylcehwego lareowas sealde, þa ðe his þeode to  
 that he him some teachers gave-SUBJ, who that his people to  
 Cristes geleafan gecerde, & mid þa halwendan wyllan  
 Christ's faith converted-SUBJ, and with the saving well  
 fulwihtes bæðes aþwoqe. Ond **he** ða se cyning sende  
 baptism-GEN bath-GEN washed-SUBJ and he then DEM king sent  
 ærendwrecan to Middelenlum  
 messengers to Middle-Angles  
 'Now when king Sigeberht was made a citizen of the eternal kingdom, and  
 wished to return to the seat of his temporal kingdom, he prayed king Os-

wio to give him some teachers, who should convert his people to Christ's faith and wash them in the saving fount of baptism. And he, this king, sent envoys to the Middle Angles...' <Bede 3 16.226.4>

Note, however, that the personal pronoun in (16) is supplemented by an apposition that has a function equivalent to topic-shifting in that it explicitly contradicts the assumption that the personal pronoun refers to the earlier topic rather than the newly-introduced King Osweo.

Example (17) illustrates a construction that is particularly frequent in the two versions of the OE translation of *Gregory's Dialogues*, in which *se* is typically used for the second mention of a newly-introduced protagonist:

- (17) he<sub>i</sub> sæde, þæt **sum man**<sub>j</sub> wære in þære ylcan mægðe, þam<sub>j/\*i</sub> wæs  
 he said that a man was in that same family DEM was  
 nama Martirius, se<sub>j/\*i</sub> wæs swiðe estfull þeow þam ælmihtigan  
 name Martirius DEM was quite devoted servant the-DAT almighty  
 Gode.  
 God  
 'He said that there was a man in that same family, whose name was Mar-  
 tirius, who was a very devoted servant to the almighty God.'  
 <GD 11.86.24>

The idea that a clause-initial demonstrative refers to a less accessible referent also makes sense of a fact on which the literature on demonstratives in OE has long been puzzling: their use with proper names, as in this often cited example:

- (18) **se** Cynewulf oft miclum gefeohtum feaht uuip Bretwalum.  
 DEM Cynewulf often great battles fought against Britons  
 'This Cynewulf often fought great battles against the Britons.'  
 (<ChronA 755.6>; Traugott 1972; Allen 2012)

This use is not mysterious in view of the Accessibility Hierarchy, as *se* clearly reactivates an earlier topic that is taken up again after a digression (cf. Breban 2012):

- (19) Her Cynewulf benam Sigebyrht his rices & West Seaxna  
 here Cynewulf deprived Sigebyrht his kingdom and West Saxon  
 wiotan for unryhtum dædum, buton Hamtunscire; & he  
 councillors for unjust deeds except Hampshire-F; and he  
 hæfde þa oþ he ofslog þone aldormon þe him lengest  
 had DEM-F until he killed the alderman who him longest  
 wunode; & hiene þa Cynewulf on Andred adræfde, & he  
 remained and him-ACC then Cynewulf to Weald drove and he

þær wunade oþ þæt hiene an swan ofstang æt  
 there lived until that him-ACC a swineherd stabbed-to-death at  
 Pryfetes flodan; & he wræc þone aldormon Cumbran; & **se**  
 Privett's River and he avenged the alderman Cumbra; and DEM  
 Cynewulf oft miclum gefeohtum feaht uuip Bretwalum...  
 Cynewulf often great battles fought against Britons  
 'In this year Cynewulf and the West Saxon council deprived Sigebyrht  
 of his kingdom for unlawful deeds, except Hampshire; and he had that  
 (=Hampshire) until he slew the alderman who had remained with him  
 longest; and Cynewulf then drove him into the Weald, and he stayed there  
 until a swineherd stabbed him to death at Privett's river; and he avenged  
 the alderman Cumbra; and this Cynewulf often fought great battles against  
 the Britons...'  
 <ChronA 755.1-6>

There is a good deal of evidence, then, that the function of clause-initial demonstratives in OE is very similar to its present-day Dutch and German counterparts. This view of demonstratives meshes nicely with the fact that demonstratives are also relative pronouns in Dutch, German, and in OE. Let us return again to example (3) of section 2.2, here repeated as (20), which follows straight on from the same narration as (19):

- (20) & ymb xxxi wintra þæs þe he rice hæfde, he wolde  
 and around 31 winters that that he kingdom had he wanted  
 adræfan anne æþeling **se** wæs Cyneheard gehaten.  
 drive-out a prince DEM was Cyneheard called  
 'He wanted to drive out a prince who was called Cyneheard.'  
 'He wanted to drive out a prince. That-one was called Cyneheard.'  
 <ChronA 755.6>

We have here the same pattern as in (17): *se* encodes the second mention of a newly-introduced protagonist, and takes the narrative further (foregrounding), which explains to some extent the high frequency of verb-movement in *se*-clauses (as opposed to *þe* or *se þe*-clauses, see section 2.2 above), as foregrounding is by and large a main clause phenomenon. In Present-Day Dutch and German, the analytic ambiguity inherent in *se*-clauses in OE (indicated in the PDE translations given for (12), (13), (15) and (20) above) between a main clause and a relative clause reading is disambiguated by the position of the finite verb, where the main clause/subclause asymmetry is completely grammaticalized: (21) is a (German) main clause with verb movement, while (22) is a relative clause with the finite verb in clause-final position (modeled on Schumacher and Hung 2012).

- (21) **Der** Schüler interviewte einen Schriftsteller. **Den** verehrte er schon seit eine Weile.  
 The student interviewed a writer. that-one admired he already since a while  
 ‘The student interviewed a writer. He had admired him for some time already.’
- (22) **Der** Schüler interviewte einen Schriftsteller, **den** er schon seit eine Weile verehrte.  
 ‘The student interviewed a writer whom he had admired for some time already.’

We conclude from the evidence presented here that clause-initial demonstratives predominantly have the special function of topic shift in main clauses, particularly with human referents which are especially likely to be the protagonists of a following foregrounded event. This is clearly only the case when they are in clause-initial position, whether in main clauses like (21) or subclauses (relative clauses), as in (22). This in turn suggests that the position of clause-initial demonstratives is the same in main clauses and relative clauses, viz. Spec,CP. We will elaborate this argument further in the next section.

## 4 *p/s*- and *h*-systems and the left edge of the clause: Spec,CP

### 4.1 Spec,CP as a derived position

The traditional view of the architecture of the clause in Dutch and German is that the subclause shows the basic or underlying SOV word order. Main clause orders can be derived from this basic template by two movement rules: one that puts the finite verb in second position, and a second rule that topicalizes a constituent from the clause into first position. This constituent may be moved from any position in the clause, may have any syntactic function, and any information status (both old and new, with or without contrastive focus). One way to look at this is that this head movement of V to C creates Spec,CP as a landing site and “opens up” a prefield. The material intervening between the fronted finite verb and the non-finite verb is called the middle field (e.g. Zwart 2011).

Crosslinguistically, main and subclause asymmetries are a common phenomenon: main clauses are affected by various communicative requirements, the positioning of focus and of discourse-old or discourse-new material, and they

therefore tend to develop special constructions not found in the subclause (see Bybee 2001); the first position of a main clause is a “cognitively privileged position” for which marked topics and marked foci naturally compete (Lambrecht 1994: 31–32). In all three languages, OE, Dutch and German, Spec,CP hosts focus constituents (primarily questioned constituents, marked by the *hw*-system) as well as discourse links (marked by the *p/s*-system), but OE shows remnants of a system where the identity of the elements in Spec,CP is further disambiguated by which head the finite verb moves to – the higher head C, or a lower head which we will call non-committally F (for Functional Head) (van Kemenade 2000, 2012, see also Haeberli 2002); the *h*-system has its own landing-site Spec,FP. The various positions are set out in table 5:

Tab. 5: The prefield in OE

FOCUS	C	Protagonist: h system	F	TP – VP - ...
hwæt 'what'	selþ 'sells'	he 'he?'		
hwæt 'what'	selþ 'sells'			se mann 'that man?'
<b>GIVEN INFORMATION</b>		<b>NEW INFORMATION</b>		
<b>Discourse link:</b> <b>s/p system</b>	<b>C</b>	<b>Protagonist:</b> <b>h system</b>	<b>F</b>	<b>TP – VP - ...</b>
Mid þam 'with those' (=people)			wunode 'lived'	an mæden 'a maiden'
Mid þam 'with that one'		he 'he'	wunað 'lived'	on blysse a butan ende 'on bliss always without end'
<b>CONTRASTIVE FOCUS</b>				
ðuruh þæt gescead ana 'through that understanding alone'		we 'we'	synd 'are'	sælran þonne þa ungesceadwysan nytenu 'better than the unreasoning animals'

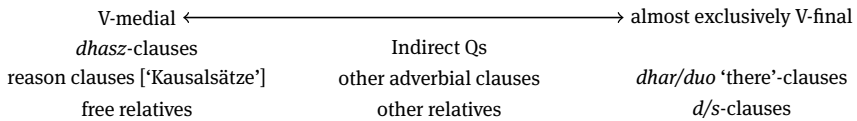
The evidence for two landing sites C and F in OE is provided by the asymmetric behaviour of nominal and pronominal subjects, which correlates with the nature of the content of Spec,CP: *hw*-elements or negation will always be followed by the finite verb, whereas discourse links – whether they are adverbials or objects – will

be followed by the finite verb only if the subject is a nominal NP; with pronominal subjects, the finite verb surfaces in third, not second position.

Los (2012) speculates that the OE situation reflects the original motivations for verb-second in Germanic: movement to demarcate a focus-domain and movement to demarcate old from new information. It is unclear to what extent the discourse-sensitivity of this system is still productive in OE. Names may also show up in Spec,FP, as do nominal NPs with specific reference (van Kemenade, Milicev and Baayen 2008).<sup>3</sup> This might point to a discourse organisation rather than a purely syntactic one. A further argument in favour of V-to-F being primarily triggered by discourse considerations is that V to C is canonical in OE, but V to F may fail, with the finite verb occasionally staying in clause-final position in main clauses (see Haeberli 2002, Bech 2012), while sometimes showing up in an “early” position in subclauses (Pintzuk 1999: 228).

Schlachter (2012) found for her Old High German (OHG) data (the *Isidor*-group) a correlation between “early” verbs in subclauses and the type of subclause: complement-clauses, reason-clauses and free relative clauses were found to have higher rates of “early” verbs”, as shown in figure 1:

**Fig. 1:** A cline of relative frequencies of “early verbs” (V-medial) in various subclause types, Schlachter (2012: 74, table 11)



A similar situation has been found for OE prose texts (Pintzuk 1999: 228): complement clauses and reason-clauses show “early verbs” much more frequently in OE than indirect questions or other adverbial clauses. A possible explanation for this is that complement-clauses and reason-clauses occupy low positions in Cristofaro’s *Subordination Deranking Hierarchy* in (23), as they are cross-linguistically more likely to be found expressed in clauses with main-clause than subclause characteristics. The cline in (23) starts with expressions that typically show a high degree of syntactic subordination (more compressed/non-finite forms, arguments shared with higher clause, tense dependent on tense of higher clause, etc.) and progresses towards expressions that show a lower degree of subordination:

<sup>3</sup> Note, however, that van Kemenade, Milicev and Baayen’s study is based on diversified subject positions in subclauses.

(23) *The Subordination Deranking Hierarchy:*

Phasals, Modals > Desideratives, Manipulatives, Purpose > Perception > Before, After, When, *A Relativization*, *S Relativization* > reality condition, Reason, *O Relativization* > Knowledge, Propositional attitude, Utterance, *Indirect object relativization*, *Oblique relativization*

(Cristofaro 2003: 229; Hooper & Thompson 1973; Givón 1990: 528–530)

Cristofaro finds that a low position on the scale correlates with a high degree of assertion; complement-clauses and reason-clauses are high in assertion, which may go some way towards explaining the fact that V-to-F favours these types of subclauses, both in OHG and OE. This suggests an additional motivation for V-to-F in that it may mark assertion as well as demarcate information domains. The semantic concept of assertion may be marked in various ways crosslinguistically, which in turn can be syntacticized in terms of clause-type marking, so that assertion-marking may develop into main-clause marking (as assertion tends to outrank other conceptual asymmetries, like foregrounding versus backgrounding; see Cristofaro 2003 for discussion).

However, the V-to-C/V-to-F system in OE does not align perfectly with the template in table 5, as contrastively-focused discourse links, which, as focus, could be expected to have V in C, may show up with V in F, which argues for some degree of syntacticisation.

All these matters will have to be left to future research.

## 4.2 Interim summary

We have seen so far that demonstratives in OE play an important role in inter-clausal reference tracking, both as discourse linkers in main clauses and as clause linkers in subclauses. In both clause types, they are found in the first position. Although the demonstrative introducing the subclause shows grammaticalization into an invariant complementizer, in tandem with the grammaticalization of the clause as subordinate, the mechanism that originally led to the clause-initial positioning of the demonstrative must have been the same as that which still operates in OE main clauses: elements in Spec,CP are correlatively linked to a demonstrative in the previous clause, as illustrated in section 2.

The first position in main clauses is the syntactic niche in which the referential properties of the demonstratives, as well as of the adverbs of the *s/p*-system, *hā* ‘then’, *hus* ‘thus’, *hær* ‘there’, *swā* ‘so’ etc., mesh perfectly with the given-information domain carved out by finite verb movement to F: elements in the Spec,CP created by V-to-F naturally link to the focus of the preceding clause. This



shows that referential linking is one of the essential properties of V2. As such, it is inevitable that losses in the referential functionality of the *s/p*-system will have repercussions for V2. As V2 is lost in the fifteenth century, the losses in functionality of the *s/p*-system warrant a closer look.

## 5 The loss of referential functionality in the *s/p*-system

### 5.1 The morphological loss of gender

The demonstrative paradigm breaks down in Early Middle English and undergoes extensive re-shaping, splitting into an invariant definite article *the* and a distal demonstrative that is only marked for number (*that* versus *those*) (McColl Millar 2000). *Those* is formally the reflex of the plural form of the proximal demonstrative *this*, for which a new plural *these* was created. Smith (1996) presents some interesting evidence that in the Early Middle English continuations of the Peterborough Chronicle, the demonstrative paradigm had already lost gender, but there were attempts to realign the paradigm according to case distinctions, before these, too, were lost. The use of relic demonstratives in Early Middle English texts seems to be erratic in most cases, showing a system in decline. The most crucial effect of this in terms of interclausal reference tracking is that independently-used demonstratives could no longer refer to people from the Early Middle English period onwards. This loss seems to have happened at the same time as the loss of gender, and the gendered paradigm of table 2; the fact that the plural forms *those/these* preserved that property also points to a connection with the loss of gender, as the plural forms were not gendered. There are signs that there was a brief period in Early Middle English in which this loss was compensated for by the emergence of a periphrasis *he this*, *she this*, mainly in religious treatises, as ‘an attempt to produce the English counterpart of the Latin demonstrative pronouns’ (Mustanoja 1960: 137). Latin singular demonstratives could have human referents, like Old English demonstratives, but Middle English demonstratives could not, which posed a problem for translators. The following example, from ca. 1400, shows one manuscript (LV) going for the unidiomatic translation, while another (I) tries to remedy the problem by adding a personal pronoun:

- (24) And if ony womman hath an vnfeithful hosebonde, and this (LV) /he this (I) consentith to dwelle with hir, leeue sche not the hosebonde.  
 ‘And if any woman has an unfaithful husband and this man agrees to live with her, let her not leave the husband.’  
 (Wycliffite Bible Later Version (LV) and ms Bodley (I), Corinthians 7.13, Miura (2016))

Other manuscripts translate such instances as *this man* (Ibid.), which solves the problem by making sure the demonstrative is no longer used independently; note that the proform one (*this one, that one*) does not appear until the Early Modern English period, so was not available to step into this gap. In its determiner function, the demonstrative remained available, so that circumlocutions like *this man* might be a plausible alternative. Full NPs, however, contrast with pronouns as referential expressions in narratives in that full NPs primarily serve as reactivation devices for earlier topics that have remained inactive for such a long stretch of discourse that they can no longer be referred to by pronouns (see also Los 2009).<sup>4</sup> Substituting *this woman* for *she* in Columbo’s joke in (9) or *that man* for *he* in (25a-d) below shows that such circumlocutions are not felicitous alternatives for the topic shifting functions of the independent demonstrative.

Another solution to the problem of the loss of the ability of demonstratives to refer to human referents is the relative clause. Relative clauses take over some of the topic shifting (cf. the PDE translation of (1) above), which is why relative clauses often contain foregrounded rather than backgrounded information in English; see Denison & Hundt (2013). Note that PDE speakers, when not (grammatically) allowed to resort to relative clauses or circumlocutions like *this man*, have no other formal options to mark topic shift. This is evident from sentence completion tasks as in (25a-d), often used in psycholinguistic studies into the systems that hearers rely on to decode the referents of pronouns. Take the following examples from Kehler et al. (2008) by way of illustration:

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<sup>4</sup> Los (2009) shows that the need for reactivation in narratives by means of full NPs or proper names increases between OE and PDE, but this is an area where more work needs to be done. There are various suggestions in the literature that full NPs have an increasingly important function in maintaining textual coherence. Kastovsky (2006: 207) discusses a property of English he labels “syntactic recategorisation” – using a one-off construction (usually a compound or a nominalization) that “takes up the previous context and repeats it – almost like a pronoun”. Anyone familiar with, particularly, scientific writing recognizes the use of such one-offs as a coherence feature, where a condition or situation that has just been discussed (say, the need for new ways of generating energy) can be summed up as a single NP (“fuel famine”; see e.g. the editorial *A Nuclear Future* in the *New Scientist* of 20 December 1956, reprinted 13 December 2006). There are links here with Halliday’s (2004: 102) concept of the “Attic Style”.

- (25) a. John borrowed a bike from Mike. He \_\_\_\_\_  
 b. John passed the comic to Mike. He \_\_\_\_\_  
 c. John hugged Mike. He \_\_\_\_\_  
 d. John helped Mike. He \_\_\_\_\_

Using relative clauses would quickly disambiguate such referents (*John borrowed a bike from Mike<sub>i</sub>, who<sub>i</sub>...*). When subjects are forced into starting a new main clause, with a personal pronoun, as in these experimental conditions, the personal pronoun leaves the choice of antecedent up to the speaker. Although findings from such investigations show a strong tendency for topic continuity, topic shift is also robustly present, and the selection of Mike as new topic appears to correlate with the coherence relation that the subjects of these experiments want to express. Any hint of the focus being on interpersonal relations – *John hugged Mike* – or on character traits of the protagonists – *John helped Mike* – tends to lead to subjects going for *John* as the referent of *he*, making up sentences that establish a *causal coherence relation* that explains the protagonist's motivations. If such hints are absent, as in (25a-b), subjects tend to go for *Mike*. The choice of topic continuity or topic shift, then, correlates with the type of coherence relation speakers establish between the two sentences. This alignment follows *Grounding*: if the subjects identify the second clause as having any of the coherence relations *Result, Goal, Occasion, Causal Consequence* with respect to the previous clause, they will go for topic shift; these coherence relations move the action forward and are about foregrounded events, i.e. what happens next (=Foregrounding). If the subjects identify the second clause as having any of the coherence relations *Cause* and *Explanation*, they will go for topic continuity; these coherence relations do not help the action forward but provide background information about motives and reasons (=Backgrounding). What is at the bottom of these alignments between the type of coherence relation and topic continuity to topic shift, then, is *Grounding*.<sup>5</sup>

Without a morphological means to mark topic shift (other than using a non-restrictive relative clause), the burden on PDE hearers to disambiguate the referent of a personal pronoun as in (25a-d) is considerable; with the loss of a gendered demonstrative paradigm to refer to people as well as things, hearers have to rely on language-external data like their knowledge of social scenarios to tell them which coherence relation is most likely to hold between the two clauses, and hence, which referent is the most likely target for *he*.

<sup>5</sup> Kehler et al.'s coherence relation *Cause* (or *explanation*) and Majid et al. (2007)'s *causal antecedent* are strongly tilted towards topic continuity. Kehler et al. (2008)'s coherence relations *Result, Goal and Occasion* and Majid et al. (2007)'s *causal consequence* relation are tilted towards topic shift.

## 5.2 Decline of Spec,CP as a host for *p/s*-elements

The decline of *p/s*-elements in Spec,CP correlates with the loss of that position for discourse linking, and the decline of V-to-F movement which starts around 1400 (i.e. the decline of V2). The loss of gender is unlikely to have played a role here. More significant is the fact that the Spec,CP position and the *p/s*-system interacted in a number of ways, so that losses in referential functionality may have had repercussions for the function of the Spec,CP position. This section argues that that function changed in the course of Middle English, with subjects assumed to be in Spec,TP rather than Spec,CP, taking over the discourse linking function.

The linking function in PDE is no longer connected with a *p/s*-element in Spec,CP. Spec,CP is no longer multifunctional, either syntactically (allowing any syntactic function) or information-structurally (allowing old and new, with or without contrastive focus). Adverbials in first position are overwhelmingly frame-setters as in (26) that evoke a contrastive reading.

(26) **In Germany** the prospects are good, but **in America** they are losing money.

(Krifka 2007: 45)

Objects in pre-subject position are increasingly contrastive in the history of English (e.g. Dreschler 2015), as the number of discourse-linking objects in that position declines with the loss of the multifunctionality of the Spec,CP position. As Birner & Ward point out, the topic in PDE (27) should not be construed as “baseball” but as the entire category of “sports”, and this activation of the entire set explains why the effect is “contrastive”. The preposed material in (28) is similarly contrastive (“*most*” similarly evokes a scale as it implies “*not all*”).

(27) G: Do you watch football?  
E. Yeah. **Baseball** I like a lot better. (Birner & Ward 1998: 38)

(28) Did you buy a whole new wardrobe for school? No, I have lots of clothes.  
**Most of my stuff** my mom gets at Alexander’s.

(Birner & Ward 2002: 1373)

Spec,CP in PDE is almost exclusively associated with *wh*-negation, i.e. with Focus, although with subject-auxiliary movement (T-to-C) rather than movement of the lexical verb (V-(to-T)-to C), as the lexical verb no longer moves, witness the rise of do-support in the 16th century (Ellegård 1953, Kroch 1989). Constituents focused by the addition of a focus marker like *only* as in (29a) also trigger T-to-C movement, although these sentences have an archaic feel and are experiencing some competition from the stressed-focus *it*-cleft as in (29b):

- (29) a. Only after I had been in the room for a few minutes **did** I realize that everyone was staring at me.  
 b. It was only after I had been in the room for a few minutes **that** I realized that everyone was staring at me.

In contrast, the correlative types discussed in section 2 have all survived in Dutch and German, although usually represented most robustly in spoken rather than written registers (see e.g. Jansen 1981 for Dutch). PDE, by contrast, has lost them in all registers, with Contrastive Left Dislocation as in (30) the only possible survivor (we noted earlier that plural *those/these* can still refer to people):

- (30) The people who earn millions and pay next to no tax, **those** are our targets.  
 (Birner & Ward 2002: 1413)

Most of the PDE Left Dislocations are Hanging Topic Left Dislocations, which use personal pronouns rather than the *s/p* system:

- (31) A: Both my husband and I work, and our children are sixth, fourth, and third grade. And the school years are wonderful, they're just wonderful.  
 B: Uh-huh.  
 A: [The kids], **they** are real people, and they are interesting, and  
 B: <Laughter>  
 A: They, they have all their own activities and, um, I think as parents we really enjoy them in, in our personal situation... Our children have not yet decided to rebel <laughter>.  
 (The Switchboard corpus,<sup>6</sup> 4123\_1595\_1530; TOPIC#349; DATE: 92031-09)

The decline of Spec,CP as a multifunctional position for focus as well as for discourse-linking can further be gauged by a decrease in the first-position PPs that encode discourse links.

### 5.3 Decline in PP-linking

The loss of independent demonstratives to refer to human referents also affected such demonstratives that are found in clause-initial PPs in OE; here are the two

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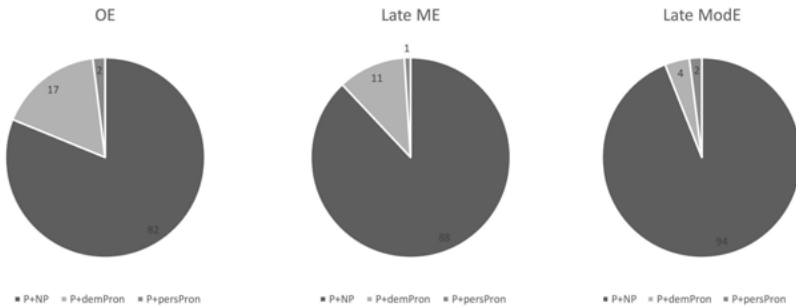
<sup>6</sup> The Switchboard Corpus (Godfrey et al. 1992) is a preliminary version of the Penn Treebank Corpus.

sentences that were used to exemplify the information structure of V-to-F clauses in table 5:

- (32) **Mid þam** wunode an mæden. <ÆLS (Basil) 468>  
 ‘With those (=people) lived a maiden.’
- (33) **Mid þam** he wunode on blyse a butan ende <ÆLS (Basil) 618>  
 ‘With that one (=God) he lived on bliss always without end.’

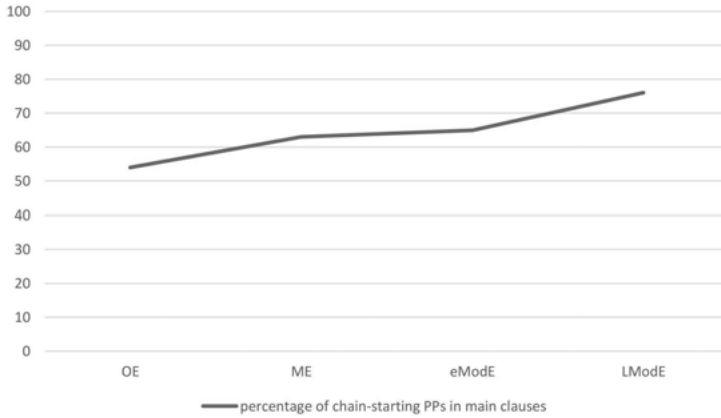
Such discourse linking PPs decrease in the history of English: figure 2 shows that there is a decrease of clause-initial PPs that refer back to the previous discourse.

**Fig. 2:** Decline of clause-initial PPs containing an independent demonstrative in three subperiods of the Helsinki Corpus (data in percentages) (Los & Drescher 2012: 867)



As the *s/b*-paradigm is used both for demonstratives and definite articles, the corpus investigation of figure 2 had to be restricted to independent demonstratives, which may have skewed the picture in various ways, as the figures will inevitably reflect the increasing impossibility of independent demonstratives to refer to people. But a subset of the Helsinki Corpus texts enriched with referential information (see Komen 2012) confirms that clause-initial PPs that have no link to the preceding discourse are indeed increasing. These enriched texts allow us to retrieve the antecedents of every NP. An NP that refers back to an antecedent builds a chain with that antecedent; NPs that do not refer back will “head” a new chain. Figure 3 shows that the ratio of NPs within PPs that start, rather than continue, such a referential “chain” is on the rise.

*Therefore*, originally a pronominal adverb meaning ‘for that’, survives as a lexicalization rather than a phrase and can only refer back in a general way in

**Fig. 3:** Chain-starting PPs in main clauses (Komen 2012)

PDE, and not to a specific clause or NP in the previous discourse, unlike Present-Day Dutch or German *daarom/darum*.

Compared to Dutch and German, links to the previous discourse are either expressed by a subject or by an adverbial connective that, tellingly, leaves the link itself implicit, like *instead* rather than *instead of this*. When the new stressed-focus *it*-cleft first arises in Middle English, it is with referential *that*, but this *that* is increasingly replaced by non-referential *it* (Ball 1991). *It* in PDE clefts as in (29b) is a mere placeholder and does not encode a semantic role, nor does it refer back; this is not the case with cataphoric *that* which is assigned a theta-role by the verb. We will see below that the rise of clefts is intimately connected with the loss of referential functionality.

#### 5.4 Loss of referential functionality and the rise of clefts

We saw in the previous section that the decline of discourse-linking functionality of demonstratives also extends to adverbial *p/s*-elements, like *there* in *therefore*. This section will discuss the loss in referential functionality of *then* and *there*. The decline in referential functionality of the demonstratives was shown to be compensated for by using relative clauses to topic-shift (section 5.1). The loss of referential function of adverbial elements like *then* and *there* appears to be compensated by the rise of various clefts. The loss of referential function, then, appears to extend to the entire *p/s*-system.

Ball's study of the rise of the *it*-cleft in the fifteenth century compares the clefts found in Watts' PDE translation of Boethius' *De Consolatione Philosophiae* with earlier translations of the same passages, just to see what structures English employed at an earlier stage, before the existence of the new clefts (Ball 1991: 481). The cleft of the PDE translation in (34) shows up as a correlative Left Dislocation in the earlier translation (35), from Chaucer:

- (34) If Nature gives them their beauty, how does it involve you? They would still have been pleasing by themselves, even if separated from your possessions. It isn't *because they are part of your wealth* that they are precious, but *because you thought them precious* that you wanted to add them to the sum of your riches.

(Watts 1969: tr. Bo 2. pr5.67; Ball 1991: 482)

- (35) Forwhy fair ne precyous were thei nat *for that thei comen among thi rychesses*; but for *they semeden fair and precyous, therefore* thou haddest levere rekne hem among thi rychesses.

(Chaucer, tr. Bo 2.pr5.108; Ball 1991: 482)

The correlative “works” by an anticipatory element *for* ‘because’ in the left dislocate linking to the main clause by means of a repetition of *for* in Spec,CP of the main clause, as part of a pronominal adverb *therefore* in which the anaphoric element *there* (from the *p/s*-system) refers back. (The pronominal subject *thou* in that clause, though in an unexpected position from a Dutch or German perspective, conforms to the structure of the OE prefield, as in table 5.) Ball (1991: 484–485) explores the various PDE options and concludes that it is only the cleft as in (34) that will do here. What is relevant is that Ball identifies the reason why (35) is no longer possible as a failure of the anaphoric reference between *p/s*-element and the constituent it refers back to, witness the unacceptability of (36):

- (36) But [because they are fair and precious]<sub>i</sub>, therefore<sub>\*i</sub> you wanted to reckon them among your riches.

An anaphoric PP, like *for that reason* in (37) is marginally better, but again lacks the specificational reading of the original:

- (37) But [because they are fair and precious]<sub>i</sub>, for that<sub>\*i</sub> reason you wanted to reckon them among your riches.

Specification can be restored by adding the focusing modifier *precisely* which triggers inversion (I-to-C movement, a remnant of Focus-V2):



- (38) But [because they are fair and precious]<sub>i</sub>, precisely for that<sub>i</sub> reason did you want to reckon them among your riches.

Note that (38) positions the anaphoric constituent in Spec,CP, a position that is intimately connected in OE with discourse linking, as argued above.

Another option is a pseudo-cleft with a deictic NP subject, as in (39):

- (39) But [because they are fair and precious]<sub>i</sub>, that<sub>i</sub> is why you wanted to reckon them among your riches.

What such reversed pseudo-clefts achieve is that they pull apart the anaphoric component (*that*) and the reason-component (*why*) of the pronominal adverb *therefore*, allowing the anaphoric component to be positioned in the subject position which is the prototypical position for old information in PDE (versus Spec,CP as in OE, Dutch or German). Dutch/English translation manuals recommend using an English pseudo-cleft as the translation-of-choice for Dutch pronominal adverbs like *daarom* in clause-initial position (see e.g. Lemmens & Parr 1995, Hannay & Keizer 1993).

A similar loss of referential functionality can be argued for PDE *then*. Examples (40a-c) show *then* in a number of sentences that have the same truth conditions but use different syntactic constructions, from single clauses with clause-initial and non-clause-initial *then* in (40a) to bi-clausal clefts, a reversed pseudo-cleft with *then* in (40b) and a stressed-focus *it*-cleft with *then* in (40c).

- (40) a. We got together about 18 months ago, before the Earth Summit in Rio. **Then** we realised we were terrifically compatible/We then realised we were terrifically compatible.  
 b. We got together about 18 months ago, before the Earth Summit in Rio. **That was when** we realised we were terrifically compatible.  
 c. We got together about 18 months ago, before the Earth Summit in Rio. **It was then** that we realised we were terrifically compatible.

(BNC, K32: 1051)

What makes (40a) awkward is that *then* in first position apparently turns what follows into a separate event (cf. Prince 1978: 902) – it fails to make a specific connection with the time of the earlier clause in PDE (unlike its OE counterpart *þa*, its German counterpart *da* or its Dutch counterpart *toen*). As in (39), the reversed pseudo-cleft in (40b) is better able to create an anaphoric link with a specific time established in the previous discourse by pulling apart the linking component (*that*) and the time-component (*when*) of *then*. A stressed-focus *it*-cleft as in (40c) does the job, too, but it has an additional foregrounding effect of the con-

tent of the following *that*-clause, triggering the expectation that the events described in this clause are key events, possibly the “central reportable event” that is the *raison-d’être* of every narrative, the reason the story is worth telling in the first place (Labov 1972). Its function in (40c) appears to be an announcement of where this story is going, and what the climax is going to be. The speaker is stepping back from the narrative to provide a meta-comment, conveying the message “What I am telling you now you should consider the “point” of the story, and the reason why I am telling it at all” (Stein 1990: 36).

## 6 The loss of correlative linking as the loss of a cue for OV order

The previous sections show that the effects of the combined loss of a multifunctional Spec,CP position and a loss in referential functionality of the *p/s*-system has had consequences beyond just losing a system of gendered demonstratives or the loss of an adverbial system for linking. This short section suggest that the loss of correlative linking also removed robust cues in acquisition that the language was underlyingly OV, in spite of its high rates of extraposed objects, in the shape of the anticipatory correlative *p/s*-elements; as pronouns, they were unlikely to be extraposed and would appear in the underlying object position as in (41):

- (41) & þa sona sændon hi ærendracan to þam Godes þeowe  
 and then at-once send they messengers to the God’s man  
 Equitie & him **þæt** bodedon, **þæt** seo nunne wære inhæted mid  
 Equitius and him that told that the nun was heated-up by  
 unmætum feferadlum, & **þæt** heo geornlice bæde Basilies  
 excessive fevers, and that she eagerly asked Basileus’  
 neosunge þæs muneces.  
 coming of-the monk  
 ‘They then at once sent messengers to the priest Equitius and told him that  
 the nun was inflamed by excessive fevers and that she was eagerly asking  
 for the coming of the monk Basileus.’ <GD 1 (C) 4.29.7>

The loss of this powerful cue may well have precipitated the loss of underlying OV, which was complete by around 1200.

## 7 Conclusion

The morphological paradigm that expresses deixis in OE included not only a gendered system of demonstratives, but also an etymologically related set of time, place and manner adverbs (*þær* ‘there’, *þus* ‘thus’, *swā* ‘so’, *swylc* ‘such’ etc.). This *s/p* system interacts with the Spec,CP position in OE, facilitating referential links to the focus of the immediately preceding clause. This interaction of syntax and morphology created a paratactic system of clause linking and a system to mark the contrast between topic continuity (the *h*-system) and topic shift (the *s/p* system). The referentiality of the *s/p* system declines in the history of English: gender is lost, and with it the use of independent demonstratives to refer to animate referents. This led to the loss of the topic continuity/topic shift contrast, a loss that was compensated for by a greater use of relative clauses to achieve topic shift, and a greater role for embedded clauses to express foregrounding.

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## **Part II: The semantics and pragmatics of atypical demonstratives**





Boban Arsenijević

# Atypical demonstratives in an articleless language

**Abstract:** The paper presents a novel type of atypical use of demonstratives from Serbo-Croatian, in which demonstratives occur together with markers of epistemic (in)accessibility, which are normally found only in indefinite expressions. An analysis of the presented facts is provided in terms of the independent marking of the two dimensions of reference, the epistemic and the discourse-organizational dimension pronominal component, modeled via resource situations (Büring 2004, Cooper 1993, Elbourne 2005, Etxeberria 2005, Percus 2000, Stanley & Szabo 2000, von Stechow 1994, Kratzer 1989). The syntactic component of the analysis, which locates the observed items in the DP layer, provides an argument in favor of the hypothesis that the DP projection is universally present in the nominal structure of both languages with and without articles.

**Keywords:** atypical demonstratives, indefinites, resource situations, DP, Serbo-Croatian

## 1 Introduction

The empirical goal of this paper is to present a novel type of atypical use of demonstratives, characteristic for their co-occurrence with items used to mark indefiniteness, for their restriction to the weak usage (i.e. prosodically deaccented, semantically non-contrastive), and for their particular semantic contribution. At the theoretical level, this paper aims to provide an analysis of the presented facts, and to contribute to answering a semantic and a syntactic theoretical question, respectively: 1) What is the range of referential properties available to the situation pronoun representing the reference domain restriction in nominal expressions, often referred to as the resource situation? (Büring 2004, Cooper 1993, Elbourne 2005, Etxeberria 2005, von Stechow 1994, Kratzer 1989, Percus 2000, Stanley & Szabo 2000, among many others) 2) Does the syntactic structure of nominal expressions in languages without articles include the DP projection?

Atypical uses of demonstratives have been a subject of linguistic study since at least Perlman (1969), and they include the indefinite use of demonstratives, as in (1a), where it is used in the *there*-existential context, and the expressive use of

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demonstratives, in which they often occur with already definite nominal expressions, including proper names, as exemplified in (1b).

- (1) a. And then, there was this demonstrative.  
 b. Oh those Kardashians!

In Serbo-Croatian (S-C), demonstratives exhibit a third type of atypical use: the use with what is traditionally described as indefinite markers of referential (un-)identifiability *jedan* ‘one’ and *neki* ‘some’.

Cross-linguistically, it is not unusual for the counterparts of the words *one* and *some* to receive indefinite determiner semantics and be used as determiners. In Germanic, Romance and a number of other languages, the word for one has been grammaticalized into the indefinite article. The use of the word *some* and its counterparts to mark referential unidentifiability has been labeled the ‘spesumptive’ use (standing for pseudo-specificity, i.e. a presumption of specificity not supported by knowing the exact referent), and has been studied in Warfel (1972) and Mazodier (1998).

- (2) Some woman wanted to see you yesterday, they say.

In S-C, *neki* ‘some’, when combined with demonstratives, may only receive the spesumptive interpretation as described in Warfel (1972) and Mazodier (1998), marking that the referent of the aggregate nominal expression is unique (i.e. referentially specific), but that its exact identity is not available to the speaker, as illustrated in (3).<sup>1</sup> I label this interpretation the epistemic inaccessibility of the referent to the speaker, short EIS. The word *jedan* ‘one’, outside of its cardinal use, has a similar interpretation: it specifies that the referent of the nominal expression is unique, and referentially identifiable (only) by the speaker.<sup>2</sup> Again, only this interpretation, which I label as the epistemic accessibility of the referent to the speaker (abbreviated as EAS), is available to *jedan* ‘one’ when it combines with a demonstrative.<sup>3</sup>

<sup>1</sup> As illustrated in (3a), unlike the English *some* (at least as argued for English by Warfel 1972), S-C *neki* ‘some’ can be used with plural nouns as well.

<sup>2</sup> Usually, in such cases, the referent is identifiable by the speaker, but it is also possible that this identifiability is indirect, e.g. the speaker has access to another subject who can identify the referent. See Lücking (this volume) for a discussion of the discourse-related and epistemic uses of demonstratives, in a somewhat different perspective.

<sup>3</sup> Ionin (2006) discusses the Russian counterpart of the S-C *jedan*, *odin*, which she refers to as the indefinite specific determiner. In this article, I argue that this item marks neither indefiniteness nor specificity, though its semantics conditions it to occur only in specific nominal expressions.

- |     |  |  |
|-----|--|--|
| (3) | a. neki ljudi <sup>4</sup><br>some people<br>'some people'<br>(existential/spesumptive)            | b. jedan čovek<br>one man<br>'one man / a certain man'   |
|     | c. ti neki ljudi<br>those some people<br>'the people'<br>(specific, unidentifiable by the speaker) | d. taj jedan čovek<br>that one man<br>'the man'<br>(specific, identifiable only by the speaker) <sup>5</sup> |

Putting the use with demonstratives aside, both *jedan* and *neki* are used only in indefinite nominal expressions. Demonstratives, on the other hand, typically contribute definiteness (Kaplan 1977, Giusti 2002, Wolter 2006, though note that their atypical uses clearly indicate that they are at best referential, with definiteness emerging through some kind of strengthening). The combination of an EIS/EAS marker and a demonstrative thus either involves an atypical use of the demonstrative, in which the demonstrative description is indefinite, or indefiniteness is not necessarily part of the meaning of the EIS/EAS markers. Reconciliation of the (rigid) referential capacity of the demonstrative with the unidentifiability of the referent (by the hearer or by the speaker) implied by the EIS/EAS marker presents a major challenge in modeling the syntax and semantics of these expressions.

Building on the analyses of demonstratives such as Roberts (2002), and especially Wolter (2006), I propose an analysis in which the demonstrative and the EIS/EAS marker contribute information about the resource situation specifying the domain of reference of the nominal expression, but along different dimensions. The demonstrative specifies the resource situation as a speech-act situation, i.e. it specifies whether the referent of the nominal expression has been referred to in the previous discourse. The EIS/EAS marker contributes information along the epistemic dimension, i.e. it specifies the resource situation as a descriptive one, enriching the discourse with properties of the respective referent. I refer to this contribution of the specification of the resource situation as epistemically accessible (*jedan*) or epistemically inaccessible (*neki*) to the speaker. Both demonstratives and EIS/EAS markers crucially restrict a resource situation pronoun along its two dimensions: discourse-familiarity and epistemic familiarity

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<sup>4</sup> All the non-English examples in this paper which are not explicitly marked for coming from a particular language are from S-C.

<sup>5</sup> The notion of familiarity used here only refers to the description having already been used in the discourse for the same referent, and it is hence compatible with the unidentifiability of that referent.

(the latter amounting to whether the descriptive information about the referent is commonly accessible to the speaker and the hearer, only to the speaker, or to neither). That the resource situation is epistemically accessible to an interlocutor means that the interlocutor has the means to identify the situation, i.e. that she has certain information about this situation, and hence can as well contribute parts of it to the shared discourse by a respective utterance. EIS/EAS markers achieve this specification through the proximity feature, possibly indexed for the speaker as its anchor. This feature is independently motivated in the respective syntactic positions, based on the behavior of demonstratives. The analysis is presented in section 8.

As a final step in this section, let me briefly introduce the debate surrounding the status of the DP projection in languages without articles. One pole in the debate builds on the Universal DP Hypothesis (DPH in further text), stemming from Longobardi (1994), and holding that the DP projection is necessary both for establishing reference and for the capacity of a nominal expression to appear as an argument. DPH thus universally postulates a DP projection for all referential nominal expressions, and for all nominal expressions appearing in syntactic argument positions, irrespective of whether a language has articles or not. The opposite pole is represented by the DP Parameter Theory (DPP), originating from Fukui (1988) and Corver (1992), elaborated in Bošković (2005, 2008), according to which the presence of the DP projection is parametrized: languages with articles have it, and languages without articles do not. I argue that the mere empirical availability of the data manifesting the atypical use of demonstratives that this paper concentrates on, and especially the analysis argued for here, lend strong support to the DPH.

The paper is organized as follows. Section 2 introduces the relevant empirical facts about the S-C demonstratives, and section 3 briefly summarizes arguments for and against the DP projection in S-C, as a language without articles. In section 4, the empirical facts about the construction that this paper focuses on are presented. Section 5 provides a brief introduction to the theory of reference restriction domains and points out the issues that are central for the current paper. Sections 6, 7 and 8 present the analyses of the S-C demonstratives, EAS/EIS markers and their combination, respectively, couched in terms of the situation semantics of reference domain restriction, which are proposed in the paper. Section 9 concludes.

## 2 S-C demonstratives

Each demonstrative in S-C has three different forms along the dimension of proximity. In addition to the two values that demonstratives can take in typical demonstrative systems such as English (proximal or distal), S-C demonstratives involve further specification anchored to the speaker. Two of the three forms available in S-C are proximal, the distinctive feature being whether they mark that the referent is proximal to the speaker or to the communication situation, and the third form is specified as distal.

- (4)
- |    |                     |                    |
|----|---------------------|--------------------|
| a. | ova stolica         |                    |
|    | this chair          |                    |
|    | ‘this chair’        | (speaker-proximal) |
| b. | ta stolica          |                    |
|    | that chair          |                    |
|    | ‘that chair’        | (proximal)         |
| c. | ona stolica         |                    |
|    | yonder chair        |                    |
|    | ‘that/yonder chair’ | (distal)           |

The proximity component of the demonstrative semantics can be modeled in a relatively simple, binary way in terms of the richness of feature valuation.

- (5)
- |    |             |                          |
|----|-------------|--------------------------|
| a. | <i>onaj</i> | [dem]                    |
| b. | <i>taj</i>  | [dem: proximal]          |
| c. | <i>ovaj</i> | [dem: proximal: speaker] |

The interpretation of the demonstrative without the proximity feature (*onaj*) is a pure demonstrative interpretation (following Wolter 2006, a definite description targeting a non-default resource situation, as elaborated in more detail in section 6). The interpretation of the demonstrative *taj*, involving a demonstrative feature valued by the unvalued feature [proximal], is richer for the specification that the referent (and by default also the situation restricting reference) is proximal to one of the interlocutors or to another prominent entity in the discourse (such as the utterance time or the current discourse topic). Finally, the interpretation of the demonstrative *ovaj*, with the richest specification involving a feature [proximal] which is valued for the anchor of proximity by the feature [speaker] (i.e. the 1st person feature), additionally specifies that the referent (and by default also the resource situation) is proximal to the speaker. A generalized scalar implicature excludes the proximity to the speaker from the interpretation of the demonstrative with an unvalued feature [proximal] (the traditional medial demonstrative

*taj*) and any proximity from the interpretation of the unspecified demonstrative *onaj*, rendering it distal.

The link to the person features is supported by the demonstrative morphology: the stems of the hearer-proximal and distal demonstratives are the stems of the second and third person pronouns (first person in S-C is characterized by a large number of suppletive forms).

- (6) a. taj : ti  
Dem<sup>P</sup> : you
- b. onaj : on  
Dem<sup>D</sup> : he

Person relatedness in demonstratives is confirmed by their use. Observe the example in (7), where only the demonstrative involving unvalued proximity is felicitously used in a situation in which the referent is present in the physical context of the communication and spatially proximal to the hearer.

- (7) [the hearer is holding a piece of paper]  
Daj mi #ovaj / taj / #onaj papir.  
give.IMP.2SG me.DAT Dem<sup>P1</sup> Dem<sup>P</sup> Dem<sup>D</sup> paper  
'Give me that paper.'

For this reason, I henceforth gloss the demonstratives as follows: *ovaj* as Dem<sup>P1</sup> (Proximal to the speaker, i.e. in the 1<sup>st</sup> person domain), *taj* as Dem<sup>P</sup> (Proximal), and *onaj* as Dem<sup>D</sup> (Distal).<sup>6</sup>

The proximity component of the demonstrative semantics can be interpreted along four different dimensions. It can receive a spatial, a temporal, a discourse-organizational or an epistemic interpretation. The spatial interpretation is the prototypical case, usually taken as the primary interpretation of demonstratives. Along the spatial dimension, proximity links to individuals: the first person proximal demonstrative (*ovaj*) is proximal to the speaker, and the one with an unvalued proximity feature (*taj*) is typically proximal to the hearer, although it can also be anchored to other prominent referents. Along the temporal dimension, *ovaj* 'Dem<sup>P1</sup>' is used for a referent establishing a relation with a temporal interval which is significantly more proximal to the utterance time than its alternatives (for instance an event ongoing at the speech time). The form *taj* 'Dem<sup>P</sup>' specifies proximity to any discourse-prominent temporal interval and the form

<sup>6</sup> Assuming a uniform specification of the stem *t* from (6a), this implies that the second person (in S-C) is actually specified as unvalued person, and linked to the second person by a generalized non-cancelable implicature stemming from the availability of a first person valued form. As this implication reaches far beyond the topic of this paper, I refrain from further discussion and leave it for future work.

*onaj* ‘Dem<sup>D</sup>’ restricts to referents temporally distal from the utterance time or from any discourse-prominent temporal intervals (usually a participant in a situation from a distant past with respect to the entire temporal structure of the current discourse). Along the discourse-organizational dimension, the form *ovaj* ‘Dem<sup>P1</sup>’ typically restricts to situations introduced in the discourse by the speaker and the form *taj* ‘Dem<sup>P</sup>’ restricts to situations introduced to the discourse by any of the interlocutors. The form *onaj* ‘Dem<sup>D</sup>’ refers to situations which are introduced in the discourse in its phases which do not belong to the current, local phase of the discourse from the perspective of some relevant granularity. Finally, along the epistemic dimension, proximity targets asymmetries in the epistemic content about the referent available to the interlocutors: if one interlocutor holds a significant body of information about the referent which is not accessible to other interlocutors, then the referent is proximal to the interlocutor with the rich epistemic capacity.<sup>7</sup>

- (8) Ova knjiga mi se više dopada.  
 Dem<sup>P1</sup> book me REFL more appeal  
 ‘I like this book better.’
- a. *spatial*: the book is in the speaker’s spatial domain (e.g. the speaker is holding it).
  - b. *temporal*: the book is involved in a situation overlapping with the ‘now’ of the utterance (e.g. the speaker is editing it in the current temporal interval).
  - c. *discourse*: the referent has been introduced into the discourse by the speaker.
  - d. *epistemic*: the information the speaker has about the book is a superset of the information shared in the discourse about it (e.g. she read it before it would be published).

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<sup>7</sup> The spatial adverb demonstrative *tamo* ‘there<sup>2nd</sup>’ in the epistemic interpretation frequently combines with the spesumptive *neki* ‘some’ to intensify the unidentifiability and unfamiliarity of the referent.

- (i) Jer to nije tamo neki stručak zumbula, nego jedna naročita ruža  
 because it isn’t there<sup>P</sup> some posy hyacinths but one specific rose  
 ‘Because it isn’t just some remote posy of hyacinths, but one particular rose’

Combinations include also qualitative, spatial, temporal and other indefinite pronouns (*tamo negde* lit. ‘there somewhere’, meaning ‘at a random/distant unidentified place’, *tamo nekad* lit. ‘there sometime’, meaning ‘at a random/distant unidentified time’ are frequent as well, *tamo nekakav* lit. ‘there of some kind’, meaning ‘of random unknown properties’).



A hierarchy seems to obtain between the dimensions, with the spatial dimension being stronger than the other three (if a referent satisfies a marked value of spatial proximity, no other dimension can be overtly expressed by a demonstrative), and the discourse-organizational dimension following. It is less clear what the relation is between the temporal and the epistemic dimension, where experimental research is needed to establish a clearer picture.

The division presented results in a reduced compatibility of individual demonstratives with particular spatial and temporal modifiers. Consider the example in (9), where the temporal adverbial expressions specifying distant intervals are incompatible with the proximal demonstrative. The pragmatic degradation can be repaired if sets of alternatives are provided which establish sufficiently large scales (naturally, it is much easier to have a scale in which yesterday counts as proximal than for scales in which 8 years ago qualifies as a proximal temporal interval).

- (9) [Ova knjiga danas / #juče / #letos / #pre 8 godina] mi  
 Dem<sup>P1</sup> book today yesterday last summer 8 years ago me  
 se više dopada.  
 REFL more appeal  
 ‘I like this book now/today better.’  
 (this book now/today refers to a book involved in an event taking place now/today, which may as well be a speech act event – the book talked about / at issue now/today)

The spatial dimension (typically accompanied by pointing) shows the same type of effects, with its respective series of modifiers. Again, the degradation is repaired if the alternatives are distributed over a larger scale space.

- (10) [Ova knjiga pored mene / #tebe / #njega] mi se više dopada.  
 Dem<sup>P1</sup> book next to me you him me REFL more appeal  
 ‘I like this book next to me better.’

Similar effects, albeit stronger and irreparable, obtain when (ad)nominal demonstratives are combined with the adverbial ones.

- (11) [Ona onda / onde / #sada / #ovde / #tada knjiga] mi se više  
 Dem<sup>D</sup> then<sup>D</sup> there<sup>D</sup> now here then<sup>P</sup> book me REFL more  
 dopadala.  
 appealed  
 ‘I liked yonder book back then/over there better.’

In the epistemic use, the distal demonstrative is also used when the description derived in the NP receives a non-veridical interpretation (Giannakidou 2013). In (12), the referent is modally embedded and undetermined at the utterance time. The example sounds most natural with the distal demonstrative *onaj*, in which case it fits the English translation with the definite article. The speaker-proximal form *ovaj* is expectedly out, while the demonstrative *taj*, with an unvalued proximity feature, triggers an effect of a perspective being taken after the loser is decided and known (close to the English *the one who will have lost*).<sup>8</sup>

- (12) Onaj / taj / #ovaj takmičar koji izgubi plaća pivo.  
 Dem<sub>D</sub> Dem<sub>P</sub> Dem<sub>P1</sub> participant who loses pays beer  
 ‘That/the participant who loses is buying beer (for all).’

In its temporal and epistemic interpretation, the demonstrative *taj* is less rigidly referential than the other two demonstratives. It is sensitive to modal operators, as in the example (12), which further confirms that it is much closer to definite articles in article languages than the other two S-C demonstratives. A major difference is, of course, that this S-C demonstrative is obligatory in a significantly narrower set of contexts than the definite article typically is.

Another property of S-C demonstratives relevant for the current discussion is their appearance in the strong and in the weak use. The strong use contrasts the referent of the demonstrative description with other referents in the discourse satisfying the description contributed by the nominal expression selected by the demonstrative, as in (13a). This example would be nonsensical without the demonstrative, as the bare noun – whether interpreted as definite or indefinite – could not pick a referent from the set of alternatives. The weak use is conditioned by there being no clear contrastive component involved in respect of the referent of the nominal expression. Such is the use in (13b), which disambiguates the (discourse-anaphoric) referential interpretation from the generic interpretation, which is the only interpretation available for the bare noun in (13c).

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<sup>8</sup> Radek Šimik (p.c.) points out that proximity is not sufficient to rule out the form *ovaj*, referring to a scenario in which all the participants are proximal to the speaker. This is correct, but in such a situation, the dimension among which this proximity relation obtains cannot serve to contrast the loser to other participants, and the use of demonstratives requires a degree of contrast. Moreover, along the epistemic line, the loser, being unknown at the utterance time, will always have a dimension along which the distant demonstrative is a match.

- (13) a. Da je zamenica u tom obliku, morala bi biti u poziciji  
if is pronoun in Dem<sup>P</sup> form must would be in position  
subjekta.  
subject.GEN  
'If the pronoun were in that form, it would have had to be in the sub-  
ject position.'
- b. A: Uhvatio sam dva čudna insekta u sobi.  
'I caught two strange insects in my bedroom.'  
B: Imaju li ti insekti žaoku?  
have Q Dem<sup>P</sup>.PL insects sting  
'Do those/the insects have a sting?'
- c. B: Imaju li insekti žaoku?  
have Q insects sting  
'Do insects have a sting?'

The contrast between B's replies in (13b and c) establishes a close parallel between the Dem<sup>P</sup> demonstrative in S-C and the definite article in English, contrasted with the bare plural expression. In both languages, generic and kind readings are more likely to be denoted by bare nominal expressions than referential and sub-kind interpretations (there may be a universal tendency of generic readings to be better licensors of zero articles than other definite readings).

Strong demonstratives may be morphologically marked as such in certain combinations of case and gender features, however this marking is optional. Thus, prosody aside, the unmarked form is in principle ambiguous between the strong and the weak use. Minimal pairs along the dimension of strength for the ambiguous dative form *tom* and its strong only version *tome* are presented in (14a-b vs. c-d).

- (14) a. Tom službeniku si se obratio JUČE.  
Dem<sup>P</sup>.DAT.SG officer AUX.2SG REFL addressed yesterday  
'You addressed the/that officer yesterday.'
- b. TOM službeniku si se obratio juče.  
Dem<sup>P</sup>.DAT.SG officer AUX.2SG REFL addressed yesterday  
'You addressed THAT officer yesterday.'
- c. \*Tome službeniku si se obratio  
Dem<sup>P</sup>.STRONG.DAT.SG officer AUX.2SG REFL addressed  
JUČE.  
yesterday

- d. TOME službeniku si se obratio  
 Dem<sup>P</sup>.STRONG.DAT.SG officer AUX.2SG REFL addressed  
 juče.  
 yesterday  
 ‘You addressed THAT officer yesterday.’

Complex pragmatic considerations underlie the use of strong and weak demonstratives, yielding other, more subtle effects. For instance, the epistemic use of the demonstratives has the capacity to induce expressive effects, such as distancing oneself from something or expressing indifference in the case of the demonstrative *taj* ‘Dem<sup>P</sup>’, or affectedness or personal responsibility in the case of *ovaj* ‘Dem<sup>P1</sup>’. The expressive content in (15a) is licensed by pragmatic knowledge, and in (15b) it plausibly comes from a clash between a strong presupposition of familiarity of the fiancé and the semantic and pragmatic content of the distal demonstrative used.

- (15) a. Ah, taj truli zapad!  
 ah, Dem<sup>P</sup> rotten west  
 ‘Ah, that rotten West!’
- b. Možda posle svega ovaj moj idiot doleti sa vereničkim  
 maybe after all Dem<sup>P1</sup> mine idiot flies in with wedding  
 prstenom.  
 ring  
 ‘Maybe after all (this), this idiot of mine flies in with a wedding ring.’

Both the proximity feature and the opposition between weak and strong demonstratives play an important role in the analysis in sections 6-8.

### 3 S-C determiners

Arguments have been put forth for the claim that S-C has no determiner category whatsoever, and that the words with determiner semantics in this language are syntactically plain adjectives. The main arguments for this claim include 1) the fact that bare nouns can be definite in S-C (Zlatić 1998), 2) the fact that possessive pronouns can occur as predicates (Zlatić 1997), 3) the fact that different candidates for determiners can be stacked in S-C (Zlatić 1997), 4) the fact that all prenominal elements in S-C, including potential determiners, show the same type of agreement with the noun (Bošković 2005), and 5) the fact that the items with determiner semantics undergo Left Branch Extraction just like regular adjectives (Corver 1992, Bošković 2005).

Zlatić (1997) observes that even though definiteness in S-C can be overtly marked by the use of demonstratives, a bare singular noun can as well have a definite interpretation – unlike in languages with articles (cf. (16a vs. b))

- (16) a. Taj student voli Mariju.  
Dem<sup>P</sup> student loves Marija  
'That/the student loves Marija.'
- b. Student voli Mariju.  
student loves Marija  
'The/a student loves Marija.'

This is a very weak argument against the category D in S-C. Tools such as empty categories or ellipsis, which are independently introduced in linguistic modeling, in fact predict this type of behavior (else we should conclude that subject pro drop languages have no subjects, and no TP/FinP). Moreover, a) bare nouns may receive definite interpretations in languages with articles as well (e.g. Carlson 1977, Zamparelli 1995, and especially Schmitt & Munn 1999, Munn & Schmitt 2005, Espinal & McNally 2011) and b) there are contexts in S-C where a determiner is obligatory, or in other words: the absence of a determiner in S-C has to be semantically and pragmatically licensed (see Caruso 2012, as well as Stanojević 2012 on implied definites in S-C). This is illustrated by the obligatory use of a particular demonstrative in the context in (17a, b) and the ban on the use of particular determiners in the generic and implied definite cases in (17c-d).<sup>9</sup>

- (17) a. A: Uhvatio sam dva čudna insekta<sub>i</sub> u sobi.  
'I caught two strange insects in my bedroom.'
- B: Ima li #(taj / #ovaj / #onaj) insekt<sub>i</sub> žaoku?  
Has Q Dem<sup>P</sup> Dem<sup>P1</sup> Dem<sup>D</sup> insect sting  
'Does that/the insect have a sting?'
- b. Svidela mi se [\*(ona) knjiga juče].  
appealed me.DAT REFL Dem book yesterday  
'I liked [that book yesterday]'
- c. (#taj / #ovaj / #onaj) čovek je nastao od (#tog /  
Dem<sup>P</sup> Dem<sup>P1</sup> Dem<sup>D</sup> man AUX emerged from Dem<sup>P</sup>  
#ovog / #onog) majmuna  
Dem<sup>P1</sup> Dem<sup>D</sup> monkey  
'The man evolved from the monkey.'

<sup>9</sup> Some quantifiers, such as the universal quantifier *svi* 'all', escape the ban on the determiners in implied definites. Interestingly, however, these are exactly the quantifiers that can combine with the definite article in languages with articles, which further supports the view involving a zero definite article.

- d. Vojska je umarširala u grad. (#Ta / #njegova) svetla  
 The army marched into city. those its lights  
 su bila ugašena.  
 Aux been turned off  
 ‘The army marched into the city. #Those/#its/[(all) the] lights were out.’

Examples such as those in (17) contribute to the body of evidence that a) S-C has a zero determiner which is the direct counterpart of the English definite article and b) precise conditions can be specified for languages without articles which license the use of the zero determiners, as well as those that necessitate the overt ones.

The argument from possessives occurring in predicate positions or combining with demonstratives is flawed. In a large number of languages, including article languages such as Italian (see especially the well-formed Italian examples in (18)), possessives do not show any characteristics of determiners.<sup>10</sup>

- (18) a. (i) Ova knjiga je moja.  
 Dem<sup>P1</sup> book is my/mine  
 ‘This book is mine.’ S-C
- (ii) questo libro è mio  
 this book is my/mine  
 ‘This book is mine.’ Italian
- b. (i) ta moja knjiga  
 Dem<sup>P</sup> my book  
 ‘my book’ S-C
- (ii) il mio libro  
 the my book  
 ‘my book’ Italian

The fact that determiner-like words and adjectives in S-C share the same inflectional morphology is taken to imply that they belong to the same category, but again, there is no reason why two distinct categories should not take the same set of agreement endings. Moreover, the adjectival declension referred to is a consequence of a generalized anaphoric pronoun incorporation into adjectives in an earlier stage of development (e.g. Schenker 1993), and before that adjectives used to decline exactly like nouns (without being one and the same category).

<sup>10</sup> Storto (2000) argues that even the English Saxon Genitive is ambiguous between a definite and an indefinite reading. His crucial set of data comes from non-identificational use of possessives in copular predicates (*These books are my books, and those books are my books as well*). The fact that they do not preserve the indefinite interpretation (and the availability of the corresponding syntactic position) in argument nominals is an issue that receives independent explanation.

The argument from the generalization that the ordering between words with determiner semantics and adjectives is free is simply based on a blatantly false generalization. This ordering is subject to hard constraints, as illustrated in the discussion of examples (22)-(23) below (see also Pereltsvaig 2007).

Bošković (2008) and Runić (2011) put forth an argument based on Fukui's (1988) generalization in respect of the possibility to (restrictively) modify pronouns. His generalization was that in English pronouns cannot be modified, with a small number of exceptions, while in Japanese all pronouns are productively modified. Fukui's explanation was that the lexicon of Japanese, unlike that of English, does not include the functional element D, and that hence all Japanese pronouns share their category with common nouns, while in English all pronouns, with very few exceptions, are of the category D. Indeed, in S-C pronouns can be modified, although in most cases the examples sound somewhat degraded. Examples like that in (19) can be found in literary language, yet speakers judge them as marginal.

- (19) ?*Jedan jučerašnji on stoji dok staklena vrata klize...*  
 one yesterday.ADJ he stands while glass.ADJ door slides  
 'A him from yesterday is standing while the glass door is sliding...'

Even if we ignore the degradation in S-C, the generalization turns out to be false. English personal pronouns are easily modified, as shown in the examples in (20) – note especially the use of the definite article when a non-possessive adjective is used, supporting the view that the pronoun, when modified, does not go to D(P).

- (20) a. Doctor's time-shifted call to Clara at the end of the episode, asking her to take care of the new him.  
 b. And he had just read something that the critic Marvin Kitman had written about the old him being better than the new him. Marvin Kitman hated the new him.  
 c. My him, not yesterday's him  
 d. Last night's him was so unlike the him that Sepi had first met.  
 e. In another place, I see a different you.

Melchin (2014) reports that in Polish, another Slavic language without articles, pronouns cannot be modified. I have received judgments which indicate that the same is the case in Slovak, while a significant number of speakers of Macedonian (a Slavic language with articles) judges examples with modified pronouns only slightly degraded.<sup>11</sup> Finally, after consulting a large number of speakers of

<sup>11</sup> Veronika Richtarcikova (p.c.).

German (which, as is well known, has articles), I find it safe to conclude that German pronouns cannot be modified.<sup>12</sup> As the availability of all four combinations shows, modifiable pronouns and articles (English, Macedonian), modifiable pronouns and no articles (S-C, Japanese), non-modifiable pronouns and articles (German, Bulgarian) and non-modifiable pronouns and no articles (Polish, Slovak), the modifiability of pronouns is not a function of the presence vs. absence of articles in a language (also Melchin's 2014 conclusion).<sup>13</sup>

The argument from Left Branch Extraction (LBE) originates from Corver's (1992) observation that languages which allow LBE tend to be languages which do not have articles. His analysis, further elaborated in Bošković (2005, 2008), models this link in terms of the absence of a DP projection in LBE languages: languages with articles have the DP projection, and the DP projection triggers island effects.

- (21) Desni sam oštetio desni far, levi je u redu.  
 right AUX.1.SG damaged right headlight left is in order  
 'It's the right headlight that I damaged, the left one is fine.'

The facts regarding LBE are, however, far from clear-cut, as Bošković (2005, 2008) claims. Certain languages with articles, such as French, Bulgarian and Macedonian do allow LBE. They display different degrees of restrictedness in respect of this phenomenon: French and Bulgarian are relatively restricted, while Macedonian is much more liberal. Articleless (Slavic) languages also show different degrees of liberty in respect of LBE configurations, with Russian being somewhat more restricted, and with Serbo-Croatian being at about the same level as Macedonian (see Fanselow & Féry 2006 for an overview). Moreover, there are simple and appealing analyses of the S-C LBE which rely on the DP projection in this language (e.g. Fanselow & Ćavar 2002 in terms of distributed deletion, or Predolac

**12** Pronouns can be modified in German if they have been nominalized, such as the first person pronoun *ich* used to denote someone's identity, in which case it does not take cased forms, it is written with the capital initial letter like other common nouns in German, and it can combine with the second and third person possessives, all of which confirms its nominalized status.

**13** Bošković (2009) has a more accurate empirical picture, acknowledging the grammaticality of modified pronouns in English and Macedonian, but he makes a point that in these languages the case assignment to the pronoun is blocked, since the pronoun obligatorily bears the default case in both languages (in English: *yesterday's him/\*he*). He takes this blocking and its absence in articleless languages to be testifying about the absence of DP in the latter type of languages. But other explanations are available too, for instance that the problem is in the absence of cased forms of the article and of the adjectives in Macedonian (under the requirement that they agree with the projecting head, in this case the cased pronoun), or that the blocking comes from the article, but a zero article is not able to block case assignment.



2011 in terms of secondary predication). Fanselow & Féry (2006) provide prosodic data supporting the view that it is an entire DP that moves in the S-C type of LBE.

Apart from the more general arguments for DPH, such as those based on the parallels between clausal and nominal structures (Abney 1987, Szabolcsi 1987 and much subsequent work), there are also those from the tendency of determiner like words to sit very high in the nominal structure (see Giusti this volume for a discussion of this tendency). Both demonstratives and EAS/EIS markers tend to surface in the hierarchically highest position in a nominal expression, as illustrated by the strong parallelism between English (in (22)) and S-C (in (23)) (see also Pereltsvaig 2007, Caruso 2012 for the same type of argument).

- |      |    |   |    |  |
|------|----|---|----|--|
| (22) | a. | a little blue chair   | f. | the/that blue little chair   |
|      | b. | a blue little chair   | g. | *little the/that blue chair  |
|      | c. | *little a blue chair  | h. | *such the/that blue chair  |
|      | d. | such a blue chair   | i. | that one chair   |
|      | e. | the/that little blue chair                                  | j. | *one that chair  |
|      |    |   |    |  |
| (23) | a. | jedna mala plava stolica<br>one little blue chair           | f. | ta plava mala stolica<br>Dem <sup>P</sup> blue little chair                |
|      | b. | jedna plava mala stolica<br>one blue little chair           | g. | *mala ta plava stolica <sup>14</sup><br>little Dem <sup>P</sup> blue chair |
|      | c. | *mala jedna plava stolica<br>little one blue chair          | h. | *takva ta plava stolica<br>such Dem <sup>P</sup> blue chair                |
|      | d. | takva jedna plava stolica<br>such one blue chair            | i. | ta jedna stolica<br>Dem <sup>P</sup> one chair                             |
|      | e. | ta mala plava stolica<br>Dem <sup>P</sup> little blue chair | j. | *jedna ta stolica <sup>15</sup><br>one Dem <sup>P</sup> chair              |

**14** With a strongly stressed (i.e. focal) preposed adjective (here *MALA* 'little') and a parenthetic determiner-like item (*jedna*), especially in colloquial and poetic language, this order becomes acceptable. This type of expressions, which is closely related also to LBE (as by a rule exactly in the same set of cases also a clausal preposing of the extracted adjective is possible) is left for further investigation. Note just that this does not make an argument that determiner-like items do not have a designated projection as they have in languages with articles, because this type of ordering is also allowed in some languages with articles, such as Spanish: *Donde espumoso el mar siciliano* lit. 'Where foamy the sea Sicilian', from *Fábula de Polifemo y Galatea* by Luis de Góngora y Argote. Under the right context, this word order is also possible in colloquial speech (Vicente, p.c.).

**15** This example is well formed on the type (of chairs) interpretation, but in this case arguably one nominal expression (denoting a type) embeds in another (denoting an individual). Again, the same is possible in a number of languages with articles.

Similarities are not restricted to the global level, but occur in more particular constructions as well, such as for instance in the phenomenon known as modified light nouns / indefinite pronouns, characteristic for the inversion of the neutral ordering between the head and the modifier, as in (24).

- (24) a. something nice  
 b. no place special  
 c. anything sharp

Several different analyses have been proposed for this pattern (Kishimoto 2000, Larson & Marušič 2004, Bayer & Brandner 2004, Leu 2005, Marušič & Žaucer 2009), all of which crucially relying on the DP projection.<sup>16</sup> What all these approaches have in common is that a determiner component contained in the indefinite pronoun needs to reach the DP to check its determiner features and establish interpretation.

The same pattern is not just attested, but very productive in Serbo-Croatian.

- |         |           |                                  |    |           |                              |
|---------|-----------|----------------------------------|----|-----------|------------------------------|
| (25) a. | nešto     | lepo                             | d. | bilo šta  | oštro                        |
|         | some.what | nice                             |    | be        | what sharp                   |
|         |           | 'something nice'                 |    |           | 'anything sharp'             |
| b.      | svašta    | zanimljivo                       | e. | mnogo šta | novi                         |
|         | all.what  | interesting                      |    | many      | what new                     |
|         |           | 'all kinds of interesting stuff' |    |           | 'a lot of new stuff'         |
| c.      | ništa     | posebno                          | f. | štošta    | sumnjivo                     |
|         | NEG.what  | special                          |    | what.what | suspicious                   |
|         |           | 'nothing special'                |    |           | 'different suspicious stuff' |

Just like in the global picture, the fact that S-C shows behavior equivalent to that of languages with articles in respect to a phenomenon involving determiners, the analyses of which involve a crucial role of the DP projection, strongly favors the DPH against the DPP theories.

The reader is referred to, among others, Progovac (1998), Leko (1999), Rutkowski (2002), Bašić (2004), Pereltsvaig (2007), Caruso (2012), Stanković (2014) for additional more concrete arguments in favor of the DP projection in Slavic languages without articles. The analysis proposed in this paper for the use of S-C demonstratives with the markers of referential indefiniteness presents a further argument in

<sup>16</sup> Kishimoto in fact relies more on the NumP, but this is equally incompatible with the approaches arguing that in articleless languages NP is the highest projection of the nominal domain. This analysis also works on DP-less accounts allowing for other functional projections in the nominal domain, such as Despić (2009).

favor of the availability of the DP projection in the syntactic model of S-C nominal expressions.

## 4 The atypical use: demonstratives with EIS/EAS markers

As already briefly presented, S-C demonstratives productively, and in colloquial speech highly frequently, combine with the EIS/EAS markers *jedan* ‘one’ and *neki* ‘some’ (see also Katunar et al. 2013 for a discussion of this combination). Under the traditional approach, where EIS/EAS markers mark indefinite interpretations and demonstratives contribute definiteness, the compositional interpretation of the combination is expected to have conflicting properties regarding the standard definitions of definiteness, that is it is expected to be equivalent to combinations of a demonstrative or a definite article (for the default determiner interpretation of the demonstrative) and an indefinite article in languages with articles, to my knowledge an as of yet unattested phenomenon.<sup>17</sup> Consider the example in (26).

- (26) Indira ima tu jednu mušku energiju u ženskom tijelu.  
 Indira has Dem<sup>P</sup>.ACC one.ACC male.ACC energy.ACC in female body  
 ‘Indira has that certain masculine energy in a female body.’

The interpretation the nominal expression *tu jednu mušku energiju* ‘that certain masculine energy’ receives in the example is that the speaker knows the particular energy that she associates with men, and holds information about it, but the hearer neither has ways to identify it (Fodor & Sag’s 1982 ‘specificity’), nor possesses information about it, and that at the same time while not being introduced into the discourse, this referent is nevertheless discourse old. It comes as intuitive that the latter component is contributed by the demonstrative, and this is confirmed by the fact that the same expression, only without the demonstrative, must introduce a new referent, previously not part of the discourse, as illustrated in (27), with Fodor & Sag’s specific indefinite interpretation of the nominal expression.

<sup>17</sup> An anonymous reviewer points out that in German demonstratives combine with *ein* ‘one/a’, but I take that the English counterpart with *one* rather than *a(n)* indicates that it is the numeral and not the indefinite article *ein*.

- (27) Indira ima jednu mušku energiju u ženskom tijelu.  
 Indira has one.ACC male.ACC energy.ACC in female body  
 ‘Indira has a certain masculine energy in a female body.’

The following example involving the spesumptive *neki* ‘some’ displays similar properties.

- (28) Sa tim nekim ambicijama su ušli u  
 with Dem<sup>P</sup>.INST some.INST ambitions AUX.3PL entered in  
 Evroligu.  
 Euro.league  
 ‘With those ambitions (unidentifiable by the speaker), they entered the Euro league.’

The interpretation is that the ambitions are discourse old, and their existence is presupposed, but at the same time, the speaker can neither determine their precise referents, nor has access to information about them. For instance, these are not the typical ambitions of competitive teams, such as the title, or reaching the quarter-finals, but rather to gain some experience, test the team, sell a couple players well, or something of that kind.

Sentences involving the combination of a demonstrative and an EIS/EAS marker can be used out of the blue, in a discourse in which the referent of the respective nominal expression has not been referred to or implied, as well as in a discourse in which their referent has been introduced or implied. Even one and the same sentence, such as the example in (26), can occur in all the three types of environments. When used in out of the blue contexts or in a discourse in which their referent has not been introduced or implied, an effect of presupposition accommodation obtains (in respect of existence). However, the expression in question cannot be used if the referent has been introduced in the discourse in a way suggesting its identifiability.

- (29) Mnoge pjevačice imaju onu mušku energiju u ženskom tijelu  
 many singeresses have Dem<sup>D</sup> masculine energy in female body  
 ‘Many female singers have a masculine energy in a female body...’

... #Indira ima tu jednu mušku energiju u ženskom tijelu.  
 Indira has Dem<sup>P</sup> one.ACC male.ACC energy.ACC in female body  
 ‘Indira has a certain masculine energy in a female body.’

The expression under investigation gains additional theoretical significance from the observation that one of its two variants is a near S-C counterpart of an atypical use of demonstratives characteristic for languages with articles: the use in indefinite specific expressions. Many examples of this atypical use receive closely

matching translations in terms of the combination of a demonstrative and an EAS marker in S-C (the English examples in (30) are from von Heusinger 2011). This suggests that the indefinite use of demonstratives may involve a similar relation of anchored epistemic accessibility and (accommodation of) familiarity.

- (30) a. (i) 'I put this 1\$ stamp on the letter and realized too late that it was worth a fortune.'  
 (ii) Stavila sam tu jednu marku od 1\$ na pismo, i  
 put AUX.1SG Dem<sup>P</sup> one stamp of 1\$ on letter and  
 prekasno shvatila da vredi bogatstvo.  
 too late realized DA is worth fortune
- b. (i) Alice wanted to kiss this sailor boy.  
 (ii) Alis je htela da poljubi tog jednog mornara.  
 Alis AUX wanted DA kiss Dem<sup>P</sup> one sailor
- c. (i) Mary didn't buy this pink truck.  
 (ii) Marija nije kupila taj jedan pink kamion.  
 M. NEG.AUX bought Dem<sup>P</sup> one pink truck

While examples of unexpected referential properties attributed to demonstratives, such as those in (30) have already been presented and discussed in the literature (Perlman 1969, Prince 1981, Ionin 2006, von Heusinger 2011), S-C provides one of the few data patterns which manifest combinations of overt markers of the different components of such types of referentiality (see Aboh 2010 for similar type of data from Gungbe). The regularity and consistency of the semantic contribution of the demonstrative and of the EIS/EAS marker component suggest that these two types of items target two positions in the syntactic structure specified for the respective types of interpretation (see Giusti this volume for a discussion about multiple structural positions targeted by demonstrative-like items). A further tempting idea, coming from the correspondence with the indefinite use of demonstratives in article languages, is that the structure of the demonstrative + EAS/EIS marker combination in S-C is the underlying structure of the indefinite use of demonstratives in languages with articles. Moreover, as the semantic effects and the surface positions observed are typically attributed to determiners and interpreted in the DP, the data imply a rich DP-like layer in S-C, able to host two D level items with different referential specifications.

I argue that the EIS/EAS markers are best analyzed as items which contribute specification of the resource situation. While clearly involving presupposition of existence, they specify that the presupposition itself, and the descriptive information about the referents, have its source in domains other than those shared by the interlocutors. The marker *jedan* 'one' additionally marks that there source situation is epistemically accessible to the speaker, i.e. that she has the epistemic

capacity of identifying the referent and disposes of relevant information about it. Details of the analysis are presented in section 7.

## 5 Reference domain restriction

The analysis proposed in section 8 for the atypical use of demonstratives in combination with the EIS/EAS markers crucially relies on the role of resource situations in the syntax and semantics of nominal expressions. Thus, I first introduce the basic necessary ingredients of the analysis related to resource situations. For reasons of space and simplicity, I simply adopt an existing approach to the syntax and semantics of reference restriction, namely the one elaborated in Schwarz (2012).

Although in most of their uses, the semantics of nominal expressions can be modeled ignoring the issue of resource situations, it has been a common assumption in semantic theory since its beginnings that every interpretation proceeds under a particular indexing, i.e. under particular restrictions. Textbook examples include the one in (31), where in all realistic cases not every student in the universe came to the party, but only every student from some relevant set determined by the resource situation. Nevertheless, the semantics of the quantifier and the entire sentence can be discussed in most relevant respects without going into any details about the resource situation.

(31) Every student came to the party.

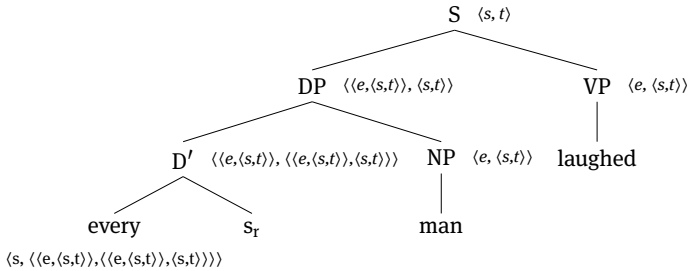
Certain constructions, however, receive a simpler analysis once the resource situation is explicitly included in the formal representation. Such is the case with donkey anaphora sentences, as in (32a), or other sentences displaying the intensional and temporal dependence of nominal expressions, as in (32b).

(32) a. Every farmer who owns a donkey beats it.  
 b. If I made every page just two rows longer, the paper would be shorter by one page.

Building on the previous semantic models, such as Büring (2004) and Elbourne (2005), Schwarz (2012) proposes an analysis targeting the syntax-semantics interface in which the restriction domain of a nominal expression is syntactically realized, in the form of a situation pronoun generated as an argument of the de-

terminer.<sup>18</sup> In the schematic representation in (33), Schwarz's (11), the resource situation is represented by the situation variable  $s_r$  (since the tree represents primarily semantically motivated syntactic structure, it is underspecified with regard to the syntactic status of its nodes, except that it is the determiner that projects).

(33) Every man laughed.



Schwarz identifies three general ways in which the situation pronoun restricting the nominal expression may be assigned its referent: it may refer to the topic situation at the respective point of the discourse (illustrated in (34a)), to a contextually salient situation (as in (34b)), or it may be bound by a c-commanding operator (exemplified in (34c), where the restriction of the DP *the experiment* is bound by the range of situations in the matrix clause). In other words, it may refer to situations available in the discourse and/or in the context, or be bound.

- (34) a. Since it had snowed during the night, everyone shoveled their driveway.  
Kratzer (2004), cited in Schwarz (2012)
- b. Everyone is asleep and is being monitored by a research assistant.  
Soames (1986), cited in Schwarz (2012)
- c. Whatever John does, most people turn up late for the experiment.  
Cooper (1995), cited in Schwarz (2012)

The fact that the situation pronoun representing the resource situation can be bound implies that it need not receive a prototypical definite/specific interpretation. Questions emerge as to what the range of interpretations available for the resource situation pronoun is, how it is specified by demonstratives and EAS/EIS markers, and what semantics results from these specifications.

The table in (35) gives a tentative matching of the four combinations of the epistemic status of the resource pronoun and the type of reference induced by

<sup>18</sup> See also Hinterwimmer (this volume) for a similarly spirited analysis.

this view with the five major types of referential nominal expressions in respect of definiteness and specificity traditionally recognized in the literature: definite, partitively specific (specific in the sense of Enç 1981), referentially specific (specific in the sense of Fodor & Sag 1982), and non-specific.

(35)	definite determiner	indefinite determiner
Familiar <i>s</i> -pronoun	definite nominal expressions	Enç's specific nominal expressions
non-familiar <i>s</i> -pronoun	Fodor-Sag's specific nominal expressions	non-specific nominal expressions

True definite nominal expressions pick out a familiar maximal referent within a unique familiar situation. Partitive specificity (Enç 1981), i.e. indefinite reference within a definite set, is the property whereby descriptions pick out a non-maximal referent within a familiar unique situation. Referentially, specific nominal expressions obtain when the description picks a unique, maximal referent from a resource situation which cannot be identified by the interlocutors. Finally, indefinite reference within a resource situation unidentified by the collocutors yields the traditional non-specific indefinite nominal expressions.

I will not go into a further discussion of this view here. Instead, I focus on using its inventory to develop an analysis of the combination of demonstratives with the EAS/EIS markers. Following a commitment to compositionality, I first present the analyses of the use of demonstratives and EAS/EIS markers in isolation, and then I discuss how they combine into an analysis of the atypical use of demonstratives, which is the topic of this paper.

## 6 The analysis: demonstratives

With respect to demonstratives, I adopt the approach by Wolter (2006) (similar to Roberts 2002 in its general spirit). Wolter argues that definite articles and demonstratives are near equivalent: both refer to a unique, maximized referent whose existence is presupposed. The only difference is that for definite articles, this presupposition holds of the default situation (usually that specified at the clausal level or specific of the point in the discourse), while for demonstratives a non-default resource situation is involved. In other words, in addition to the shared semantics with articles, demonstratives also 'block' the inheritance of the reference domain from the immediate context.



- (36)  $\llbracket the_n \rrbracket: \lambda P_{\langle s, et \rangle}: P(s_n)$  is a singleton set. If defined, denotes  $\iota x.P(x)(s_n)$   
 $\llbracket that_n \rrbracket: \lambda P_{\langle s, et \rangle}: P(s_n)$  is a singleton set and  $s_n$  is non-default. If defined, denotes  $\iota x.P(x)(s_n)$

Given a sentence S, a situation variable  $s$  is a default situation just in case it is bound in S. Otherwise  $s$  is a non-default situation.

(Wolter 2006: 149).

One possibility to derive this effect is to include the feature [contrast] in the representation of the demonstratives. In strong demonstratives, this feature requires the generation of a set of alternative situations to the default situation and the selection of one of those situations. If we combine this insight with the description provided in section 3, we arrive at the following representation for S-C demonstratives (in line with Wolter's view, the feature [dem] is decomposed into the features [def], [contrast], and the availability of dimensions of proximity/distance):<sup>19</sup>

- (37) a. [def], [contrast]; *onaj*  
 b. [def: proximal], [contrast]; *taj*  
 c. [def: proximal: speaker], [contrast]; *ovaj*

In weak demonstratives, the feature [contrast] is weakened or neutralized, and the demonstrative acts as a definite article enriched by the proximity specification and/or the pragmatic effects of its absence (a distal interpretation implicature). In languages without articles, weak demonstratives may have both their features [contrast] and [proximal] neutralized. In the perspective of a late lexicalization approach to syntax, this happens when the zero definite article is not licensed, and the determiner projection only involves a definite determiner. In languages with the definite article, in such cases the availability of articles blocks the use of the weak demonstrative (the article offers a 'tighter' lexicalization).<sup>20</sup>

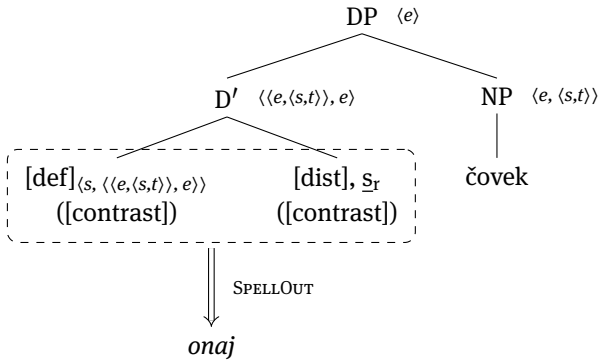
Using Schwarz's (2012) structure, I model S-C demonstratives as in (38).<sup>21</sup>

<sup>19</sup> I take the feature [def], but I am grateful to an anonymous reviewer for pointing out that in my analysis this feature should semantically be treated as contributing referentiality (which in many contexts gets strengthened to definiteness).

<sup>20</sup> There are also languages with articles marked for the proximity value, such as Macedonian (*kniga-va* 'book-DEF<sub>P1</sub>', *kniga-ta* 'book-DEF<sub>P</sub>', *kniga-na* 'book-DEF<sub>D</sub>'). Even in Macedonian, one of the forms of the article (*kniga-ta* 'book-DEF<sub>P</sub>') can have the default interpretation, in which the proximity dimension is neutralized.

<sup>21</sup> [def] in the structure in (38) stands for what Wolter (2006) refers to as  $\llbracket that_n \rrbracket$ , with her specification as given in (36).

- (38) Onaj čovek  
 Dem<sup>D</sup> man  
 ‘that man’



The demonstrative is a lexicalization of the two nodes dominated by D'. In a broader structure, it may also spell out the case head, by spelling out a different case ending than the zero nominative ending in (38). I refrain from a more detailed syntactic analysis, but it is plausible to think of the stem *on* as a bearer of the situation component, the proximity component and the contrastivity (contrastivity is responsible for picking a non-default situation, and is cancelable, yielding weak demonstratives; features [contrast] on two nodes under the same D' node do not add up, but unify) and the ending as triggered by agreement with the zero definite determiner and the case head (if specified), with the *a* in *onaj* most probably being epenthetic, as it does not surface in case forms of the demonstratives (genitive = *on-oga*, dative = *on-ome...*), see Simonović & Baroni (2014) for arguments for this view.

This presents demonstratives as blockers of binding of the resource situation. The blocking is a consequence of the contrastive nature of the interlocutor-oriented proximity specification in combination with the contrastivity: it skips the potential binders and is anchored high up in the structure in the interlocutor roles. In weak demonstratives, lacking the contrast component, this anchoring is not established. Therefore, weak demonstratives can be bound (e.g. Elbourne 2008). This model lends itself well to modeling the EAS/EIS markers, which also strongly resist binding, as shown in the next section.

## 7 The analysis: EAS/EIS markers

EAS/EIS markers present a peculiar hybrid of referential properties. They yield reference characterized by specificity and limited or absent identifiability. The difference between them is that with the EAS *jedan* ‘one’ the speaker knows the particular referent of the expression, while with the EIS *neki* ‘some’ this is not the case. A curious property that these markers share, atypical for markers of indefiniteness, is that they can be part of the description of a referent even after this referent has been introduced in the discourse, and that as noted above, they are never subject to binding. Consider the English passage in (39a), and its S-C counterpart in (39b) in which the marker of indefiniteness *jedan* ‘one’ recurs in what qualifies as definite descriptions.

- (39) a. [A new police officer]<sub>i</sub> is joining the station. ... If [he/the new police officer/that police officer/\*(\*the/\*that) a new police officer]<sub>i</sub> finds out about you, he will arrest you.
- b. [Jedan novi policajac]<sub>i</sub> dolazi u stanicu. ...  
 one new policeman comes in station  
 ‘A certain policemen is joining the station.’  
 Ako te [taj policajac / taj jedan policajac / taj jedan  
 if you Dem<sup>P</sup> policeman Dem<sup>P</sup> one policeman Dem<sup>P</sup> one  
 novi<sub>i</sub> policajac] vidi, uhapsiće te.  
 new policeman sees arrest.FUT.3SG you  
 ‘If that policemen sees you, he will arrest you.’

This requires abandoning either the premise of the indefiniteness of EAS/EIS markers or that of the definiteness of demonstratives. I have already hinted the direction that I take, i.e. that neither premise is to be maintained. EAS/EIS markers combine aspects of indefiniteness (unidentified resource situation) with aspects of definiteness (a presupposed maximized referent within the resource situation). At the same time, the definiteness of demonstratives has been questioned in the literature with examples of their indefinite use, discussed shown in examples (15) and (30). Crucially, the two determiners involving different proximity specifications target different properties of reference. The demonstrative is weak and targets the dimension of discourse-organization, i.e. the speech act situations building up the discourse, and the EAS/EIS marker targets the epistemic dimension, i.e. the access to the information about the referent. Thus in (39), it is specified that the referent is mentioned in the discourse, yet only the speaker is a source of information about it. In terms of resource situations, there is an

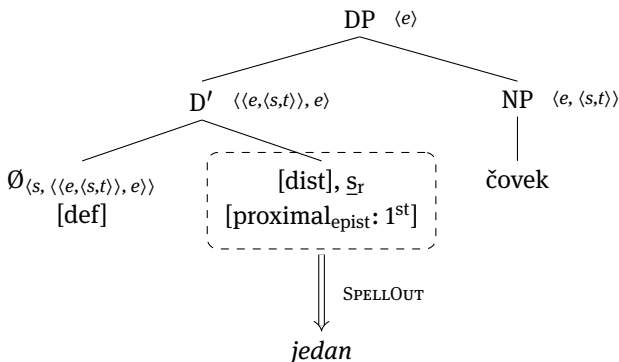
accessible speech-act resource situation for the referent in the shared discourse, but no accessible descriptive situation.

In this section, I first outline the analysis of the EAS/EIS markers, before I can combine it with the already provided analysis of demonstratives. The few semantic analyses of the EAS/EIS markers available in the literature all view them as determiner words specifying the reference of a nominal expression as indefinite and referential (Ionin 2006, Katunar et al. 2013). I propose an analysis in which this referential property is derived from more fine-grained specifications. In particular, I analyze these two markers as determined by four aspects: 1) licensing by a definite determiner, 2) a non-default resource situation pronoun, 3) epistemic dimension and 4) speaker-indexed or indexless proximity marking for the EAS and EIS, respectively.

- (40) a. *jedan*                                      b. *neki*  
        $s_{\text{epist}}$ , [ $\text{proximal}_{\text{epist}}$ : speaker]          $s_{\text{epist}}$ , [ $\text{proximal}_{\text{epist}}$ ]

In both cases, the marker spells out two nodes analogously to the case with demonstratives. The non-default situation effect emerges from the combination of the proximity specification and the restriction to the epistemic dimension, which is typically a left peripheral main clause phenomenon and hence universally outscopes the potential binders.<sup>22</sup> A structural representation, still using Schwarz's (2012) structure for uniformity, is given in (41).

- (41) *Jedan čovek*  
       one man  
       ‘a certain man’



<sup>22</sup> In fact, they also can be bound, by epistemic attitude contexts (e.g. *Svako dete ima jedno mesto na kome se oseća bezbedno*. ‘Every child has this one particular place where she feels safe’). To avoid unnecessary complication, I avoid discussing such examples.

The interpretation derived for the EAS marker *jedan* is that of a resource situation unbound in the shared epistemic space of the interlocutors and proximal to the speaker (hence a situation among the situations cumulatively representing the speaker's knowledge – accounting for the speaker-anchored referential specificity effect), within which exactly one individual satisfying the predicate *čovek* 'man' is presupposed to exist.<sup>23</sup> By generalized scalar implicature, the EIS marker *neki* in an analogous structure differs only in lacking the proximity value and receives the interpretation of an epistemic resource situation distal from the speaker, i.e. a situation outside the domain of the speaker's knowledge. This also implies the speaker's agnosticism regarding the identifiability of the referent by the hearer. The speaker cannot determine the resource situation of the aggregate expression along the epistemic dimension, and hence she cannot identify the particular referent either.

The analysis characterizes both epistemic accessibility markers as specific due to a definite determiner, which is in agreement with the analyses provided in the literature (Warfel 1972 and Mazodier 1998 for some and its cross-linguistic counterparts, Ionin 2006 for the Russian *odin*, a near counterpart of the S-C *jedan* 'one'), with the only difference between them pertaining to the identifiability of the situation by the speaker in the case of *jedan* 'one'.

Regarding properties of reference, the idea is that the nominal expression has a resource situation whose epistemic content is not part of the shared discourse. The lack of a familiar resource situation renders the referent 'unintroducible' into the discourse, i.e. it remains familiar in respect of the discourse organization, but it can only be referred to again as newly introduced into the discourse due to the failure to situate it in the set of situations constituting the shared discourse.

## 8 The analysis of the construction demonstrative + EAS/EIS marker

The atypical use of demonstratives discussed in this paper, the construction involving demonstrative + EAS/EIS marker, shows the following properties: 1) it always involves a weak demonstrative, 2) it contributes the interpretation that the

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<sup>23</sup> As pointed out to me by Radek Šimik (p.c.), analyzing the markers in terms of quantification over situations introduces the question of scope: how come they do not enter scope relations with other quantifiers but rather are fixed with a wide scope. There is a general cross-linguistic tendency that items with an epistemic effect take high positions in the structure and a corresponding wide scope interpretation. It is beyond the scope of this paper to explain these tendencies.

referent of the nominal expression has been introduced in the discourse, but still either can only be identified by the speaker in case the EAS marker *jedan* ‘one’ is used, or cannot be identified by her for the EIS marker *neki* ‘some’, 3) it can be used for referents introduced in the discourse by a nominal expression involving an EAS/EIS marker without a demonstrative (otherwise the corresponding effects are accommodated).

Consider a prototypical example such as (26), repeated as (42).

- (42) Indira ima *tu jednu* mušku energiju u ženskom tijelu.  
 Indira has Dem<sup>P</sup> one male energy in female body  
 ‘Indira has that certain masculine energy in a female body.’

The sentence in (42) can be used if the expression *jedna muška energija u ženskom tijelu* ‘a certain masculine energy in the female body’ has occurred in the previous discourse, or if such an effect is being accommodated, and at the point of utterance it is still only the speaker among the interlocutors who can identify the referent and has access to the information about its properties, and hence also the referent.

Analogously, in the example in (43), the contribution of the EAS marker *neki* ‘some’ (which could not be captured in the translation) specifies the referent as somehow elusive: the interlocutors share the presupposition that there is a dark approach to the film present in the works of the author in question, but the speaker cannot identify the precise referent.

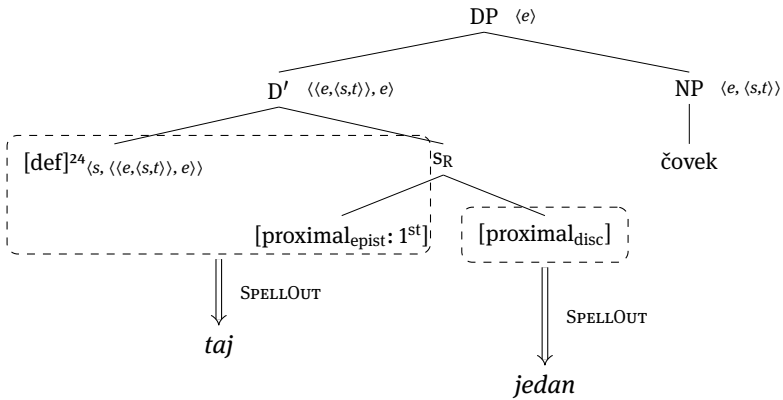
- (43) Čovek ima taj neki mračan pristup filmu.  
 man has Dem<sup>P</sup> some dark approach film.DAT  
 ‘The man has that dark approach to film.’

Let me briefly recapitulate the ingredients important for the analysis that I propose. A weak demonstratives lacks the contrastive component and contributes referentiality and a proximity specification. Moreover, they tend to be interpreted along the discourse organization dimension. EIS/EAS markers specify that the resource situation is not part of the shared discourse along the discourse dimension, by specifying it as proximal to or distal from the speaker along this dimension. Finally, they are conditioned by the presence of a definite determiner affecting in specific reference.

With all these properties, the two items are expected to combine. A weak demonstrative interpreted can be base generated in the determiner position when a zero definite article is not licensed (in both (42) and (43) the absence of the demonstrative would not yield ungrammaticality, but the referents would be interpreted as non-identical to the referents previously introduced by the same

EAS/EIS marker; they would rather, respectively, introduce another masculine energy in a female body and another dark approach to film, in addition to those already introduced by a previous use of exactly the same expression).

- (44) Taj jedan čovek  
 Dem<sup>P</sup> one man  
 ‘that certain man’



The example in (44) derives the interpretation that an individual proximal in the discourse along the epistemic dimension, is presupposed to be maximized by the description *man* within a situation which is epistemically accessible to the speaker, but not to the collocutors. Due to the non-familiar status of the situation in the discourse, the exact referent of the expression is beyond the epistemic capacity of the collocutors.

The EAS marker specifies the resource situation along the dimension of epistemic accessibility, and the demonstrative interpreted along the dimension of the discourse organization specifies that the resource situation, along the discourse organization dimension, is member of the shared discourse. The demonstrative phonologically realizes the definite determiner, marking the nominal expression as referential on the background of the resource situation.

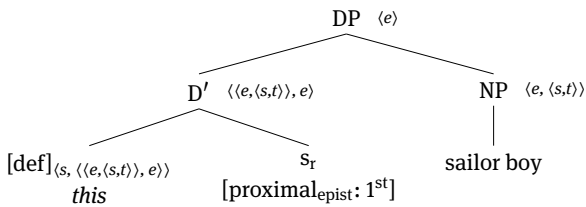
Comparing the EAS/EIS marker expressions with and without the demonstratives, the difference is that the demonstrative marks the referent of the expression as discourse old. Syntactically and pragmatically, the difference is in the licensing of a zero determiner (not licensed when the referent has already been introduced in the discourse).

24 [def] here stands for what Wolter (2006) refers to as  $[[the_n]]$ , with her specification as given in (36).

The availability in S-C of items specifying the properties of the determiners and of resource situations, and in particular their mutual positional restrictions and syntactic and semantic relations typical of functional items, strongly support the view that the structure of the S-C nominal expression involves the same (or even richer) structural inventory, including the determiner projections, as that of languages with articles. The differences are well captured by a more liberal licensing of zero determiners in the articleless languages.

The close correspondence between the indefinite use of proximal demonstratives in languages like English on the one hand and the combination of the medial demonstrative and the EAS marker in S-C on the other, illustrated in (30), suggests that the structure in (44) may also be the structure of the English indefinite *this*. Under this tentative analysis, the epistemic value of the situation pronoun is specified by the weak demonstrative as unbound and proximal to the speaker, i.e. as a situation which is not part of the shared knowledge but is accessible to the speaker. The epistemic interpretation is licensed by the absence of contrastivity in the weak demonstrative.

(45) Alice wanted to kiss this sailor boy.



To wrap up, the analysis observes that the addition of an EAS/EIS marker does not just add to the semantics of the demonstrative, but actually also restricts it to a particular domain. While demonstratives when occurring alone can have a discourse-oriented, an epistemic or a combined interpretation, in combination with an EAS/EIS marker they are constrained to the discourse-oriented meaning. The analysis proposed models this in terms of the syntactic locality between the position in which the discourse specification appears relative to the definiteness component, as a result of which only the discourse component can be lexicalized together with the definiteness feature, which is the only way to lexicalize a demonstrative. The remaining epistemic component then needs to be lexicalized by a non-demonstrative item with the relevant semantics, and this is where EAS/EIS markers are resorted to.<sup>25</sup>

<sup>25</sup> An anonymous reviewer points out that in German (and possibly other languages), it is possible to combine demonstratives with words like *ein* 'one', and that the complex expressions



## 9 Conclusion

Empirical facts were presented concerning the use of demonstratives in combination with indefiniteness markers in S-C, a phenomenon highly unexpected under the traditional analyses of determiner-like expressions. An analysis is provided in terms of resource situations and their properties formalized in terms of non-default situation pronouns and proximity specification. The discussion and the analysis contribute to the theory of resource situations, by splitting up their epistemic and discourse-organizational dimensions, and to the syntactic question of universal vs. parametric status of the determiner layer, supporting the former view.

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still occur in the same contexts as bare demonstratives (deictic, anaphoric, indefinite...), from which (s)he concludes that the demonstrative preserves its meaning, and the additional item only adds something to it. The present view is that it does not have to be added meaning, but also can be a restriction over the ambiguous semantics of the demonstrative (i.e. elimination of the epistemic interpretations). In S-C, exactly as predicted by the present analysis, the construction Dem+EAS/EIS marker cannot ever have the deictic use (it is impossible for something deictically pointed at to remain epistemically inaccessible to the hearer, even more so also for the speaker), and the anaphoric use is only possible for items which are introduced by a nominal expression with an EAS/EIS marker (which then become discourse-accessible and epistemically inaccessible for the hearer or for both) – see example (29) above and its discussion. It is indeed not unexpected that the situation in S-C differs from languages with articles such as German or English. I thank the reviewer for pointing out this issue.

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Stefan Hinterwimmer

# The Binding Properties of Demonstrative Pronouns, Definite Descriptions and Full Demonstrative DPs

**Abstract:** In this paper I compare the binding options of German demonstrative pronouns of the *der/die/das* series, full demonstrative DPs – i.e. DPs consisting of a demonstrative determiner and an overt NP – and definite descriptions. I will argue that all three types of DPs in principle get co-varying interpretations that are truth-conditionally indistinguishable from bound-variable interpretations, although they come about indirectly, via the binding of a situation variable by a quantificational DP (cf. Elbourne 2005, 2013). The conditions under which such readings are available are different, however, for demonstrative pronouns, on the one hand, and demonstrative DPs and definite descriptions, on the other: While the latter are subject to a (slightly modified version of a) pragmatic reconstruction of Principle C of Binding Theory (Schlenker 2005), the former cannot be bound by DPs functioning as grammatical subjects.

**Keywords:** binding, pronouns, definite descriptions, demonstratives, c-command, Principle C

## 1 Introduction

The topic of this paper is a comparison of the binding options of three types of DPs that are usually analyzed as referential phrases which accordingly should not receive bound variable interpretations at all (in contrast to personal pronouns): German demonstrative pronouns of the *der/die/das* series (henceforth: DemPros), full demonstrative DPs (henceforth: DemDPs), i.e. DPs consisting of a demonstrative determiner and an NP such as *dieses Pferd/this horse/that horse*, and definite descriptions. While DemPros do not exist in English, both German and English have DemDPs and definite descriptions, and since there do not seem to be any relevant differences between the two languages as far as the binding behavior of DemDPs and definite descriptions is concerned, I will often illustrate the latter two with English examples.

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I will argue that all three types of DPs in principle get co-varying interpretations that are truth-conditionally indistinguishable from bound-variable interpretations, although they come about indirectly, via the binding of a situation variable by a quantificational DP (cf. Elbourne 2005, 2013). The conditions under which such readings are available are different, however, for DemPros, on the one hand, and DemDPs and definite descriptions, on the other: The latter are subject to (a slightly modified version of) a pragmatic reconstruction of Principle C of Binding Theory (Chomsky 1981) that has been proposed by Schlenker (2005). The basic idea is that whenever a DP with an overt NP is to be interpreted as either co-referential with or bound by a highly salient DP, the overt NP has to be elided – which amounts to replacing it by a pronoun – if it is redundant, i.e. if there is no independent reason for retaining it. Concerning DemDPs, in contrast, they are prohibited from being (indirectly) bound by DPs functioning as grammatical subjects because, being the marked pronoun variant in German, they may not be bound by the most prominent DPs available as potential binders (Hinterwimmer 2015).

The paper is structured as follows: In section 2 I briefly summarize the (for our purposes in this paper) most important aspects of King's (2001) and Elbourne's (2008) analyses of DemDPs, of Elbourne's (2013) analysis of bound definite descriptions, and of Hinterwimmer's (2015) analysis of DemPros. In section 3 the binding behavior of DemDPs and definite descriptions is directly compared with that of DemPros and I present my account of the similarities as well as the differences. Section 4 is the conclusion.

Some readers might wonder why I do not compare DemDPs with demonstrative pronouns of the *dieser/diese/dieses* series, which seems to be more straightforward given that they only differ from German DemDPs in the absence of an (overt) NP. The reason why I chose to leave them aside and concentrate on DemPros instead is the following: *diese(r)*-pronouns only occur in a rather formal register and thus sound rather unnatural in many of the cases considered in this paper.<sup>1</sup> DemPros, in contrast, are more neutral in this respect, i.e. they occur in colloquial as well as in more formal register. To see this, compare the sentence in (1) with the one in (2): While (1) is quite natural, (2) sounds rather stilted (although it is by no means unacceptable).

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**1** Additionally, there may also be semantic and/or pragmatic differences between the two series of demonstrative pronouns. These are beyond the scope of the present paper, however.

- (1) Peter<sub>i</sub> glaubt von [jedem Kollegen]<sub>j</sub>, dass der<sub>j</sub> klüger  
 Peter believes of every-DAT colleague that DemPro-NOM smarter  
 ist als er.  
 is than he  
 ‘Peter<sub>i</sub> believes of [every colleague]<sub>j</sub> that he<sub>j</sub> is smarter than him<sub>i</sub>.’
- (2) ??Peter<sub>i</sub> glaubt von [jedem Kollegen]<sub>j</sub>, dass dieser<sub>j</sub> klüger ist  
 Peter believes of every-DAT colleague that Dem-NOM smarter is  
 als er.  
 than he  
 ‘Peter<sub>i</sub> believes of [every colleague]<sub>j</sub> that he<sub>j</sub> is smarter than him<sub>i</sub>.’

## 2 Previous Analyses of DemDPs, DemPros and Bound Definite Descriptions

### 2.1 Analyses of DemDPs

#### 2.1.1 King’s (2001) account

Kaplan (1989) considers both simplex demonstratives like *this* and *that* and DemDPs to be directly referential terms whose reference is fixed by a demonstration of the speaker in the context of utterance. Note that the term demonstration is not to be understood as requiring that the speaker actually points at the individual or object in question. Rather, it is sufficient that s/he can reasonably expect the audience to identify the demonstratum, i.e. that it is in the focus of their attention. The only difference between simplex demonstratives and DemDPs is that in the case of the latter reference is only established if the individual pointed at satisfies the predicate denoted by the NP-complement of the demonstrative determiner (see Braun 2008 for detailed discussion). For Kaplan, DemDPs are thus fundamentally different from definite DPs, whose reference is not determined by the context, but which simply refer to the unique individual satisfying the predicate denoted by the NP-complement of the definite determiner (possibly relative to some situation instead of the world of evaluation; see below). In order to appreciate the difference, consider the sentences in (3a) and (3b), uttered in a context where (a) it is known to both speaker and hearer(s) that Maria is from Berlin and Paula is from Hamburg, (b) both Maria and Paula are sitting on a chair in front of the speaker and (c) the speaker is pointing at Maria while uttering the respective sentence.



- (3) a. If Maria and Paula had changed places, then the woman I'm pointing at would be from Hamburg.  
 b. If Maria and Paula had changed places, then this woman I'm pointing at would be from Hamburg.

The crucial point is that (3a) is true in such a context, since in the counterfactual situation depicted by the *if*-clause, the woman being pointed at by the speaker is Paula, not Maria, and Paula is indeed from Hamburg. The variant in (3b), in contrast, is false, since the demonstrative can only refer to the individual the speaker is actually pointing at while uttering the sentence, and this individual, Maria, is from Berlin. Assuming counterfactual conditionals to express universal quantification over worlds that satisfy the antecedent but are otherwise as close as possible to the world of evaluation, the definite description thus denotes in each of the worlds quantified over the unique individual that satisfies the property of being a woman pointed at by the speaker in that world. The reference of the DemDP, in contrast, is fixed once and for all by the actual demonstration of the speaker in the context of utterance, i.e. in the case of (3b) the worlds quantified over do not contain the unique individual satisfying the property of being a woman pointed at by the speaker in that world, but rather the individual being pointed at by the speaker in the context of utterance, Maria.

King (2001) now discusses five kinds of uses of DemDPs that are incompatible with the assumption that their reference is always fixed by a demonstration of the speaker in the context of utterance (see Boella et al. 1999, footnote 1 and Abbott 2002 for related previous observations). He dubs the first kind of use *No demonstration no speaker reference* use (henceforth: NDNS-use). An NDNS-use of a DemDP is exemplified by an utterance of the sentence in (4) in a context where the speaker knows on completely general grounds that exactly one student received a score of one hundred on a particularly tough exam, but where she doesn't know the identity of the student.

- (4) That student who scored one hundred on the exam is a genius.

The second kind of use, which King dubs *Quantification in* use (henceforth: QI-use) is exemplified by the sentences in (5). The crucial point is that since on such uses the DemDPs contain a pronoun that is interpreted as a variable bound by a quantificational DP, the (in these cases: abstract) entities denoted by the DemDPs vary with the entities quantified over by the respective quantificational DPs. Consequently, for each father *x*, there is a different moment that he dreads, and likewise for (5b).

- (5) a. Every father dreads that moment when his eldest child leaves home.

- b. Most avid snow skiers remember that first black diamond run they attempted to ski.

The third kind of use, the *Narrow scope* use (henceforth: NS-use), is very similar to the QI-use, the only difference being that on this use the DemDPs do not contain a pronoun that is bound by the respective quantificational DP. For an illustration, consider the examples in (6a) and (7a), whose relevant readings are paraphrased in (6b) and (7b), respectively.

- (6) a. That professor who brought in the biggest grant in each division will be honored.
- b. Each division  $x$  is such that that professor who brought in the biggest grant in  $x$  will be rewarded.
- (7) a. That senator with the most seniority on each committee will be consulted.
- b. Each committee  $x$  is such that that senator with the most seniority on  $x$  will be consulted.

The fourth kind of use, the *Bound variable* use (henceforth: BV-use) is illustrated by the sentence in (8a) on its most prominent reading, which is paraphrased in (8b).

- (8) a. Mary talked to no senator without declaring afterwards that that senator would cosponsor her bill.
- b. No senator  $x$  is such that Mary talked to  $x$  without declaring afterwards that that senator  $x$  would cosponsor her bill.

Finally, DemDPs can be used as *donkey pronouns*, i.e. they can be interpreted as if they were variables that are bound by a quantificational DP that does not have scope over them, i.e. that c-commands them neither on the surface nor at LF (because the required covert movement would violate well-known constraints; see Evans 1980, Kamp 1981, Heim 1982 and Elbourne 2005 for analyses of personal pronouns used as donkey pronouns). Consider the sentence in (9a) for illustration, whose relevant reading is paraphrased in (9b).

- (9) a. Every farmer who owns a donkey beats that donkey.
- b. Every farmer  $x$  for whom there is a donkey  $y$  such that  $x$  owns  $y$  is such that  $x$  beats that donkey  $y$ .

The goal of King (2001) is to develop an account that handles the problematic cases (his focus is on NDNS-uses, QI-uses and NS-uses) as well as the data that originally motivated the direct reference account. His basic idea can be stated as

follows: DemDPs are quantifiers whose denotation is similar to that of definite descriptions on Russell's (1905) account, but which differ from the latter in being sensitive to the speaker's intentions. More concretely, the demonstrative determiner is taken as a function from properties  $F$  to a function from properties  $G$  to truth values that yields *true* iff there is exactly one individual that satisfies  $F$  and  $G$  and two other properties, where those two properties are determined by the speaker's intentions. Crucially, King distinguishes between two kinds of intentions, *perceptual intentions* and *descriptive intentions*. Perceptual intentions are at play in the classical, directly referential uses of DemDPs that motivated Kaplan's (1989) account (see above): The speaker intends to refer to an individual that she is either perceiving at the time of utterance or has perceived at some earlier time. Descriptive intentions, in contrast, are at play in all the other uses: The speaker intends to say something about whatever individual satisfies some property she has in mind.

King assumes the general schema for complex demonstratives given in (10a), where the underscores are meant to be placeholders for the two properties that are determined by the speaker's intentions. They essentially function like free variables ranging over properties whose values are determined by the speaker's intentions, where the second property (i.e. the one corresponding to the second underscore) can only take one of the following two values: Either the property of being uniquely jointly instantiated in the world and time of utterance or simply the property of being uniquely jointly instantiated (in some world at some time). In case the speaker has a perceptual intention, the first underscore is always replaced by the property of being identical to some salient individual, and the second underscore by the property of being uniquely jointly instantiated in the world and time of utterance, as shown in (10b).

- (10) a.  $\llbracket \text{that} \rrbracket = \lambda F. \lambda G. \text{The properties } F \text{ and } \_ \text{ are } \_ \text{ in an object } x \text{ and } x \in G.$   
 b.  $\llbracket \text{that} \rrbracket = \lambda F. \lambda G. \text{The properties } F \text{ and } \{y: y \text{ is identical to } b\} \text{ are uniquely jointly instantiated in } \langle w, t \rangle \text{ in an object } x \text{ and } x \in G, \text{ where } b \text{ is the object determined by the speaker's perceptual intention and } \langle w, t \rangle \text{ are the world and time of utterance.}$

A sentence such as (11a) is accordingly interpreted as shown in (11b).

- (11) a. That guy (gesture at Paul) is smart.  
 b.  $\llbracket \text{that} \rrbracket (\llbracket \text{guy} \rrbracket) (\llbracket \text{is smart} \rrbracket) = [\lambda F. \lambda G. \text{The properties } F \text{ and } \{y: y \text{ is identical to Paul}\} \text{ are uniquely jointly instantiated in } \langle w, t \rangle \text{ in an object } x \text{ and } x \in G] (\llbracket \text{guy} \rrbracket) (\llbracket \text{is smart} \rrbracket) = \text{The properties } \{y: y \text{ is a guy}\} \text{ and } \{y: y \text{ is identical to Paul}\} \text{ are uniquely jointly instantiated in } \langle w, t \rangle \text{ in an object } x \text{ and } x \in \{y: y \text{ is smart}\}.$

Concerning NDNS-uses, QI-uses, NS-uses, BV-uses and donkey-uses, King assumes descriptive intentions to be at play in each of them. I will briefly go over the first three uses and discuss BV-uses in a little more detail. Since we want to compare the binding behavior of DemDPs, definite descriptions and DemPros as they are the most important ones for our purposes in this paper, I will set donkey uses aside, since they involve additional complications that are not relevant to our concerns. If *that* is used with a descriptive intention, it has the denotation given in (12), i.e. the first underscore is replaced by some property  $O^*$  determined by the speaker's intentions and the second underscore by the property of being uniquely jointly instantiated (in some world at some time).

- (12)  $\llbracket \text{that} \rrbracket = \lambda F. \lambda G. \text{The properties } F \text{ and } O^* \text{ are uniquely jointly instantiated in an object } x \text{ and } x \in G.$

In an NDNS-use of a DemDP like the one in (4), repeated here as (13a), King assumes the speaker's descriptive intention to be redundant, and the sentence is accordingly interpreted as shown in (13b).

- (13) a. That student who scored one hundred on the exam is a genius.  
 b. The properties  $\{y: y \text{ is a student who scored one hundred on the exam}\}$  and  $\{y: y \text{ is a student who scored one hundred on the exam}\}$  are uniquely jointly instantiated in an object  $x$  and  $x \in \{y: y \text{ is a genius}\}$ .

In QI-uses of DemDPs like the one in (5b), repeated here as (14a), and NS-uses like the one in (6a), repeated here as (15a), King assumes the speaker's descriptive intention to be likewise redundant, and the sentences are accordingly interpreted as shown in (14b) and (15b), respectively.

- (14) a. Most avid snow skiers remember that first black diamond run they attempted to ski.  
 b. For most avid snow skiers  $x$ : The properties  $\{z: z \text{ is the first black diamond run } x \text{ attempted to ski}\}$  and  $\{z: z \text{ is the first black diamond run } x \text{ attempted to ski}\}$  are uniquely jointly instantiated in an object  $y$  and  $y \in \{z: x \text{ remembers } z\}$ .
- (15) a. That professor who brought in the biggest grant in each division will be honored.  
 b. For each division  $x$ : The properties  $\{z: z \text{ is the professor who brought in the biggest grant in } x\}$  and  $\{z: z \text{ is the professor who brought in the biggest grant in } x\}$  are uniquely jointly instantiated in an object  $y$  and  $y \in \{z: z \text{ will be honored}\}$ .

Although it is not immediately relevant for the main subject of this paper, I would like to mention that descriptive intentions in all uses under consideration can be non-redundant as well, as shown in King (2001). Let me illustrate that with a QI-use. Imagine the sentence in (16) to be uttered in a situation where the speaker and some friends ‘are watching a scene in a movie in which a professor is fondly flipping through what is being depicted as his finest piece of published work’ (King 2001: 74). In such a situation, the DemDP is automatically understood as denoting the unique instance of being  $x$ ’s finest publication, for every professor  $x$ . The speaker’s perceptual intention is thus not redundant.

- (16) Every professor cherishes that publication of his.  
(King 2001: 74, ex. 19)

The existence of non-redundant descriptive intentions is of some importance to King (2001), because it shows that DemDPs in all their uses differ from definite descriptions in being sensitive to speaker’s intentions. It is just in cases where the speaker’s descriptive intentions are redundant that DemDPs are equivalent to definite descriptions. But whenever they are not, the demonstrative determiner cannot be replaced by the definite one, as shown by the infelicity of the variant of (16) given in (17) in the scenario just sketched.

- (17) \*Every professor cherishes the publication of his.  
(King 2001: 74, ex. 19a)

Let us finally turn to BV-uses of DemDPs like the one in (8a), repeated here as (18a). While King (2001) does not offer a detailed analysis of BV-uses, it is pretty clear what would be needed in order to account for them in his framework (see Elbourne 2008: 454): The property determined by the speaker’s descriptive intention has to be the property of being identical to a variable  $y$ , where  $y$  is the variable bound by the quantificational DP that has scope over the DemDP. The sentence in (18a) is thus interpreted as shown in (18b).

- (18) a. Mary talked to no senator without declaring afterwards that that senator would cosponsor her bill.  
b. For no senator  $x$ : The properties  $\{z: z \text{ is a senator}\}$  and  $\{z: z \text{ is identical to } x\}$  are uniquely jointly instantiated in an object  $y$  and  $y \in \{z: \text{Mary talked to } z \text{ without declaring afterwards that } z \text{ would cosponsor her bill}\}$ .

Although King (2001) does not discuss the issue, the availability of BV-readings for DemDPs raises non-trivial questions regarding the syntax-semantics interface that go beyond the general issue of the existence of not directly referential uses

of DemDPs. What is at stake is the structural conditions under which binding by a quantificational DP is possible. It is widely assumed, following Reinhart (1983), that in order to be interpreted as bound variables, pronouns need to be c-commanded by their binders at the surface already, i.e. it is not enough for the latter to have scope over the former at LF (see Heim & Kratzer 1998: 261; Büring 2004: 24 and Büring 2005: 91 for slightly different formulations of this general idea). This automatically accounts for contrasts like the one between (19a) and (19b): Only in (19a) can the pronoun be interpreted as bound by the quantificational DP, while in (19b) it has to be interpreted as referring to some contextually salient male individual, in spite of the fact that a quantifier in object position can easily take scope over the clause containing it.<sup>2</sup> Since the quantificational DP would have to be moved across the pronoun at LF in order to yield the intended reading, sentences like (19b) are classical instances of so-called *weak crossover* (Higginbotham 1980; Reinhart 1983; May 1985; Safir 1984).

- (19) a. [Every man]<sub>i</sub> adores his<sub>i/j</sub> mother.  
 b. His<sub>\*i/j</sub> mother adores [every man]<sub>i</sub>.

In order to bind the (covert) variable contained in the DemDP in (18a) on the BV-reading of the sentence, the quantificational DP would thus have to c-command the DemDP on the surface. But being contained in a PP headed by *to*, the quantificational DP *no senator* does not c-command the DemDP on the surface. In addition to that, since the PP headed by *without* is – according to standard assumptions – adjoined to the VP that contains the PP headed by *to*, it is not even the case that the PP containing the quantificational DP c-commands the DemDP on the surface. One might thus be tempted to claim that there is a difference between variables introduced by overt constituents, i.e. pronouns, and covert ones, and that in order for the latter to be bound it is sufficient that their binder c-commands them at LF, i.e. has scope over them. This cannot be right, however, since the sentence in (20), which only differs from (18a) insofar as the DemDP has been replaced by a pronoun, receives exactly the same interpretation, i.e. the pronoun can be interpreted as bound by the quantificational DP, too.

- (20) Mary talked to no senator without declaring afterwards that he would cosponsor her bill.

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<sup>2</sup> Note that these contrasts are not in all languages as strong as in English. For many native speakers, the German equivalent of (19b) does allow a bound reading of the pronoun, for example.

This lends additional support to Barker's (2012) claim that (surface) c-command is not required for binding (at least not in English). Rather, in order to bind a pronoun, a quantificational DP needs (a) to have scope over it (which in a framework assuming Quantifier Raising means that it c-commands the pronoun at LF) and (b) linearly precede its base position (i.e. the position from which it has potentially been moved and to which it gets reconstructed at LF). The unavailability of a bound reading for the pronoun in cases like (19b) would thus not be due to a violation of the surface c-command requirement, but rather to the fact that the quantificational DP does not linearly precede the pronoun. Seen this way, there is nothing special about the binding of covert variables contained in DemDPs. It is just that binding in general does not work as claimed by the mainstream literature following Reinhart (1983) (see the references cited on p. 8). But there is another twist: It is well-known that full, i.e. non-pronominal, DPs are not allowed to be co-indexed with DPs c-commanding them on the surface. This constraint is known as Principle C of Binding Theory (Chomsky 1981) and it accounts for the fact that neither the proper name nor the definite description in (21a) can be interpreted as co-referential with the pronoun in subject position.

- (21) a. \*He<sub>i</sub> believes that John<sub>i</sub>/[the dean]<sub>i</sub> is smart.  
 b. John<sub>i</sub>/[The dean]<sub>i</sub> believes that he<sub>i</sub> is smart.

It also accounts for the fact that in contrast to the one in (18), the DemDPs in (22a.b) cannot be interpreted as bound by the quantificational DP in subject position: The quantificational DP c-commands the DemDP on the surface and can thus not be co-indexed with it without violating Principle C.

- (22) a. [Every man]<sub>i</sub> believes that [that man]<sub>\*i/j</sub> is smart.  
 b. [No senator that Mary talked to]<sub>i</sub> was asked whether [that senator]<sub>\*i/j</sub> would cosponsor Mary's bill.

### 2.1.2 Elbourne's (2008) account

Elbourne (2008) also assumes that complex demonstratives are definite descriptions of a special kind, but following the spirit of Strawson (1950) rather than that of Russell (1905) he assumes the semantic value of definites to be individuals – or rather, individual concepts, i.e. functions from situations to individuals. Syntactically, Elbourne assumes that the demonstrative determiner combines with a (phonologically empty) individual variable *i* and a (likewise phonologically empty) relational variable *R* in addition to its overt NP-complement. A DemDP such as *that cat* has thus the syntactic structure and interpretation shown

in slightly simplified form in (23) (adapted from Elbourne 2008: 429) – since it plays no role for the purposes of this paper, we will ignore the distinction between *this* and *that* in terms of distance from the speaker and accordingly suppress the corresponding condition in Elbourne’s original entry for *that*.

- (23)  $\llbracket \text{that } i_1 R_2 \text{ cat} \rrbracket^{w,h,a,t} = \lambda s. \iota z(h(R_2)(h(i_1), z, s) \wedge z \text{ is a cat in } s)$ , where  $w$ ,  $t$ ,  $a$  are the world, the time and the author (i.e. the speaker) of the respective context,  $h$  is a variable assignment, and  $s$  is the type of situations.

Let us now go through the various uses of DemDPs that we have discussed in section 2.1.1. and see how they are accounted for in Elbourne’s system. Concerning (directly) referential uses, Elbourne assumes the individual variable  $i$  to be resolved to the individual pointed at (or otherwise demonstrated) by the speaker and the relation variable  $R$  to be resolved to the relation of identity. A sentence such as (24a), if it is uttered in a situation where the speaker points at a cat named *Felix*, is thus interpreted as shown in (24b) (adapted from Elbourne 2008: 434).

- (24) a. That cat laughed.  
b.  $\lambda s. \iota z(z = \text{Felix} \wedge z \text{ is a cat in } s)$  laughed in  $s$ .

In an NDNS-use of a DemDP like the one in (13a) – repeated here as (25a) – , in contrast, the individual variable  $i$  is resolved to the utterance where the respective individual was mentioned (given here as  $b$ ), and the relational variable  $R$  is resolved to the function mapping utterances to the property of having one’s existence announced in them. The sentence is thus interpreted as shown in simplified form in (25b).

- (25) a. That student who scored 100 on the exam is a genius.  
b.  $\lambda s. \iota z(z$ ’s existence was announced in  $b \wedge z$  is a student who scored 100 on the exam) is a genius in  $s$ .

The QI-use of the DemDP in (10a), repeated here as (26a), is accounted for as follows: The individual variable  $i$  is resolved to the concept or idea of the first black diamond run one attempted to ski, and the relational variable  $R$  is resolved to the relation of being exemplified by. The sentence is thus (very roughly) interpreted as paraphrased in (26b).

- (26) a. Most avid snow skiers remember that first black diamond run they attempted to ski.  
b. Most avid snow skiers  $x$  remember the unique  $z$  such that  $z$  is the first black diamond run  $x$  attempted to ski, and  $z$  exemplifies the concept  $y$  of *first black diamond run one attempted to ski*.



Let us finally turn to BV-uses, which are the most important ones for our purposes in this paper. Going into the (quite involved) technical details would take us too far afield, but the basic idea can be summarized as follows (see Elbourne 2008, 445-446 for details): At the level of LF, the respective quantificational DP is moved away from its base position to a position where it c-commands the entire sentence. Such a movement operation is standardly assumed to trigger the insertion of a lambda-operator directly beneath the landing site of the moved quantificational DP (Heim & Kratzer 1998). In contrast to standard assumptions, though, Elbourne assumes the lambda-operator to bind the relational variable  $R$  instead of the individual variable  $i$ , which causes it to receive as value the property of being identical with the individual variable bound by the quantificational DP. At the same time, the individual variable  $i$  is resolved to the group of individuals to which the individuals quantified over belong. The denotation of the quantifier *no senator* assumed by Elbourne is given in (27) (adapted from Elbourne 2008: 446). Putting everything together, a sentence such as (28a) – which is simpler than the original sentence in (18a), but exemplifies the same structure – is thus interpreted as shown in slightly simplified form in (28b).

- (27)  $\llbracket \text{no} \rrbracket = \lambda f_{\langle \langle s, e \rangle, \langle s, t \rangle \rangle} \cdot \lambda g_{\langle \langle s, e \rangle, \langle s, t \rangle \rangle} \cdot \lambda s$ . for no individual  $x$  is it the case that there exists a minimal situation  $s'$  such that  $s' \leq s$  and  $f(\lambda s. x)(s') = 1$ , such that there is a situation  $s''$  such that  $s'' \leq s$  and  $s''$  is a minimal situation such that  $s' \leq s''$  and  $g(\lambda s. x)(s'') = 1$ , where a minimal situation satisfying a predicate  $P$  is a situation that contains nothing (i.e. no individuals, properties or relations) apart from what is strictly speaking required to make  $P$  true.
- (28) a. Mary talked to no senator before that senator was lobbied.  
 b.  $\lambda s$ . For no individual  $x$  is it the case that there exists a minimal situation  $s'$  such that  $s' \leq s$  and  $x$  is a senator in  $s'$ , such that there is a situation  $s''$  such that  $s'' \leq s$  and  $s''$  is a minimal situation such that  $s' \leq s''$  and Mary talked in  $s''$  to  $x$  before  $tz(z = x$  and  $z$  is a senator in  $s''$ ) was lobbied in  $s''$ .

Note that concerning the structural conditions under which BV-readings are available for DemDPs and how they differ from the ones under which personal pronouns receive BV-readings, Elbourne does not have anything more to say than King (2001).

Before concluding this section, I would like to mention a point that will become important in the following section: On Elbourne's (2008) account, DemDPs combine the denotation of personal pronouns with the denotation of definite determiners (with the suppressed specification concerning the location of the value

of *i* with respect to the speaker being the only additional component). This becomes evident if we compare the denotation of the DemDP *that cat* in (23), repeated here as (29a), with the denotation of the definite description *the cat* and the pronoun *it* in Elbourne's system given in (29b) and (29c), respectively. Note that since the application of the value of *R* assigned to the value of *i* results in a predicate that has to be true of exactly one individual in order for the iota-operator to return a defined result, personal pronouns in Elbourne's system are nothing but definite descriptions in disguise (see Parsons 1978, Cooper 1979, Davies 1981, Neale 1990, chapter 6, Heim 1990 and Ludlow 1994 for earlier implementations of this idea). They differ from regular definite descriptions only insofar as the predicate that has to be true of exactly one individual needs to be retrieved from the linguistic or extra-linguistic context, via finding values for the individual variable *i* and the relational variable *R*, respectively, while in the case of regular definite descriptions this predicate is provided by the NP-complement of the definite determiner. DemDPs are thus special insofar as they combine both properties: The predicate that has to be true of exactly one individual results from the conjunction of a contextually retrieved predicate and the predicate provided by the NP-complement of the definite determiner.

- (29) a.  $\llbracket \text{that } i_1 R_2 \text{ cat} \rrbracket^{w,h,a,t} = \lambda s. \iota z(h(R_2)(h(i_1), z), s) \wedge z \text{ is a cat in } s)$   
 b.  $\llbracket \text{the cat} \rrbracket^{w,h,a,t} = \lambda s. \iota z(z \text{ is a cat in } s)$   
 c.  $\llbracket \text{it } i_1 R_2 \rrbracket^{w,h,a,t} = \lambda s. \iota z(h(R_2)(h(i_1), z), s)$

Given these assumptions, bound readings of pronouns thus come about in the same way as those of DemDPs, namely via the insertion of a lambda-operator directly beneath the (LF-)landing site of the quantificational DP which binds the *R*-variable and causes it to be resolved to the property of being identical to the individual variable bound by the quantificational DP. The variant of (28a) given in (30a), in which the DemDP has been replaced by the personal pronoun *he* is thus interpreted as shown in (30b). As can easily be seen by comparing the two formulas, the one in (30b) only differs from the one in (28b) in not containing a second occurrence of the predicate *senator*.

- (30) a. Mary talked to no senator before he was lobbied.  
 b.  $\lambda s. \text{For no individual } x \text{ is it the case that there exists a minimal situation } s' \text{ such that } s' \leq s \text{ and } x \text{ is a senator in } s', \text{ such that there is a situation } s'' \text{ such that } s'' \leq s \text{ and } s'' \text{ is a minimal situation such that } s' \leq s'' \text{ and Mary talked in } s'' \text{ to } x \text{ before } \iota z(z = x) \text{ was lobbied in } s''.$

In section 2.1 I have summarized the (for our purposes) most important features of two theories which both, contra Kaplan (1989), assume DemDPs to be a special

kind of definite description that mainly differs from regular definite descriptions in introducing a free predicate variable whose value is contextually determined. In both accounts the directly referential readings that were Kaplan's main focus just arise in cases where the free predicate variable is resolved to the property of being identical to some salient individual that is present in the utterance situation. Concerning BV-uses of DemDPs, both theories essentially make the same assumption (although the technical implementation is very different): They result from resolving the free predicate variable to the property of being identical to the variable bound by the respective quantificational DP.

## 2.2 Elbourne's (2013) analysis of bound definite descriptions

It has been observed by various authors (Wilson 1984, 1991, Heim 1991, Schlenker 2005) that definite descriptions sometimes receive BV-readings as well, parallel to those of DemDPs discussed in section 2.1. In fact, replacing the DemDP in (28a), repeated here as (31a), by a definite description does not lead to any difference in acceptability or truth condition, i.e. in both cases a BV-reading is easily available. Additional examples of bound definite descriptions are given in (32a) (from Wilson 1984: 360; see Schlenker 2005 for detailed discussion of such examples) and (35b) (from Elbourne 2013: 126).

- (31) a. Mary talked to no senator before that senator was lobbied.  
 b. Mary talked to no senator before the senator was lobbied.
- (32) a. Every scientist who was fired from the observatory at Sofia was consoled by someone who knew the scientist as a youth.  
 b. John fed no cat of Mary's before the cat was bathed.

Elbourne (2013) provides an analysis of such sentences according to which co-variation of the individuals denoted by the definite description with the individuals quantified over by the quantificational DP comes about indirectly, via the binding of a situation variable contained in the definite description. He assumes the denotation in (33a) for the quantificational determiner *no* and the denotation in (33b) for the definite determiner *the*.

- (33) a.  $\llbracket \text{no} \rrbracket = \lambda f_{\langle e, \langle s, t \rangle \rangle} . \lambda g_{\langle e, \langle s, t \rangle \rangle} .$  there do not exist an individual  $x$  and a situation  $s'$  such that  $s'$  is a minimal situation such that  $s' \leq s$  and  $s' \leq s^*$  and  $f(\lambda s. x)(s') = 1$ , such that there is a situation  $s''$  such that  $s''$  is a minimal situation such that  $s' \leq s''$  and  $g(\lambda s. x)(s'') = 1$
- b.  $\llbracket \text{the} \rrbracket = \lambda f_{\langle e, \langle s, t \rangle \rangle} . \lambda s: \exists ! x(f(x)(s) = 1) . \iota x(f(x)(s) = 1)$

Both denotations are very similar to the respective denotations assumed in Elbourne (2008) (see (27) and (29b) above), but also differ from them in some respects. Setting minor technical issues aside that are not important for our purposes, the following points merit some discussion: Concerning quantificational determiners such as *no*, Elbourne (2013) assumes them to take a syntactically represented situation pronoun as their first argument, where the value of that pronoun is provided by the context. It effectively serves to further restrict the set of individuals quantified over – namely to those individuals that in addition to satisfying the predicate denoted by the respective NP are contained in the contextually provided situation that the situation pronoun is resolved to (in the limiting case, i.e. if the set of individuals quantified over is not contextually restricted in any way, the world of evaluation might serve as the value of that pronoun). Concerning the definite article, Elbourne (2013) likewise assumes it to take a syntactically represented situation pronoun as one of its arguments (as the second one, after combining with the predicate denoted by the NP). That pronoun can then either be resolved to some contextually salient situation, just as in the case of quantificational determiners, or it can be turned into a variable bound by a quantificational DP c-commanding it at LF via the insertion of a situation variable binding operator beneath the landing site of that DP. If the second option is chosen, definite descriptions receive BV-interpretations in virtue of their denotation varying with the (minimal) situations quantified over by the respective quantificational DP. Concerning the formula in (33b), note finally that (following the convention in Heim & Kratzer 1998) the condition following the colon is presupposed, i.e. *the* only takes situations as its second argument for which it is the case that there is exactly one individual that satisfies the predicate provided by its first argument.

Putting everything together and glossing over various details that are not relevant for our concerns, the sentence in (32b) is thus interpreted as given (in simplified form) in (34).

- (34)  $\lambda s$ . there did not exist an individual  $x$  and a situation  $s'$  such that  $s'$  is a minimal situation such that  $s' \leq s$  and  $s' \leq s^*$  and  $x$  was a cat of Mary's in  $s'$ , such that there was a situation  $s''$  such that  $s''$  was a minimal situation such that  $s' \leq s''$  and  $s'' \leq s$  and there was a situation  $s'''$  such that  $s'''$  was a minimal situation such that  $s''' \leq s''$  and John fed  $x$  in  $s'''$  before there was a situation  $s''''$  such that  $s''''$  was a minimal situation such that  $s'''' \leq s''$  and  $\iota x(x$  was a cat in  $s')$  was bathed in  $s''''$ .

Note that the uniqueness presupposition of the definite determiner is guaranteed to be satisfied in (34): Each of the situations  $s'$  quantified over is a *minimal* situation containing a cat of Mary's, i.e. it contains one and only one cat. The same

fact also ensures the cats denoted by the definite description to be identical to the ones quantified over by the quantificational determiner, and thus accounts for the BV-reading.

Similarly to Elbourne (2008), Elbourne (2013) assumes personal pronouns to be definite descriptions in disguise (see Parsons 1978, Cooper 1979, Davies 1981, Neale 1990: chapter 6, Heim 1990 and Ludlow 1994 for earlier implementations of this idea). More concretely, he assumes them to be the spell out of a definite determiner with a covert NP-complement, where the latter denotes a predicate variable whose value is determined by the context. Consequently, a pronoun such as *it* has exactly the same denotation as *the* (given in (33b)), and the variant of (34b) in (35), where the definite description *the cat* has been replaced by the pronoun *it*, also receives the interpretation in (34) (assuming that the free predicate variable is resolved to the predicate *cat*).

(35) John fed no cat of Mary's before it was bathed.

Elbourne (2013) does not discuss DemDPs, but since his account of BV-readings of pronouns is arguably more elegant and less stipulative than the one in Elbourne (2008) insofar as it does not add anything to the independently justified mechanism of quantification over minimal situations and of relativizing the uniqueness conditions of definite descriptions to situations, it is worth asking whether it works for DemDPs as well. As far as I can see, this is the case, i.e. we can retain all the essential components of Elbourne's (2008) analysis of DemDPs discussed in section 2.1.2, combined with the assumption that just like the definite determiner, the demonstrative determiner takes a situation pronoun as one if its arguments which likewise can either be resolved to some contextually salient situation or be turned into a variable bound by a quantificational DP c-commanding it at LF. If the latter option is chosen, BV-readings come about in exactly the same way as with definite descriptions, namely via the binding of the situation variable contained in the predicate provided by the overt NP. Since the *R*-variable does not have a role to play anymore in such cases, we can simply assume it to be resolved to some redundant or trivial value (cf. King's (2001) assumptions concerning redundant descriptive intentions discussed in section 2.1.1). A sentence such as (28a), repeated here as (36a), would thus not be interpreted as given in (28b), but as given in (36b).

(36) a. Mary talked to no senator before that senator was lobbied.  
 b.  $\lambda s$ . There did not exist an individual  $x$  and a situation  $s'$  such that  $s'$  is a minimal situation such that  $s' \leq s$  and  $s' \leq s^*$  and  $x$  is a senator in  $s'$ , such that there is a situation  $s''$  such that  $s''$  is a minimal situation such  $s' \leq s''$  and  $s'' \leq s$  and Mary talked in  $s''$  to  $x$  before  $\iota z(z$  is a senator in  $s')$  was lobbied in  $s''$ .

Elbourne's (2013) analysis is attractive insofar as it provides an elegant account of BV-readings that works not only for definite descriptions, but also for personal pronouns and DemDPs, and that does not require any stipulations whose sole purpose it is to account for BV-readings. Just like King (2001) and Elbourne (2008) do not discuss the structural conditions under which DemDPs receive BV-readings and how they differ from the ones under which personal pronouns receive such readings, Elbourne (2013) does not have anything to say about the conditions under which definite descriptions can be interpreted as if they were bound variables. In section 2.1.1. I have tentatively suggested that we get the right predictions by combining Barker's (2012) assumption that binding requires the binder to both c-command the bindee at LF and linearly precede its base position at the surface with the assumption that DemDPs are subject to Principle C of Binding Theory and thus may not be co-indexed with DPs that c-commanded them on the surface. The conditions holding for definite descriptions do not seem to differ from the ones holding for DemDPs: We have already seen that in the case of (31a) replacing the demonstrative determiner by the definite one does not lead to any change in acceptability or truth conditions (see (31b)). Likewise, replacing the definite determiner in the sentences in (32a,b) by the demonstrative one does not make any difference as far as the availability of QV-readings is concerned:

- (37) a. Every scientist who was fired from the observatory at Sofia was consoled by someone who knew that scientist as a youth.  
 b. John fed no cat of Mary's before that cat was bathed.

But now observe that the acceptability of (32a) and (37a) (on the relevant reading) raises a problem for the assumption that the availability of BV-readings for both DemDPs and definite descriptions is constrained by Principle C: The subject-DP in (32a)/(37a) (surface) c-commands the DemDP/definite description, which is contained in the VP-adjoined *by*-phrase. At the same time, the sentences in (38) do not allow for BV-readings of the DemDP/definite description – rather, they are only acceptable if the DemDP/definite description refers to some contextually salient scientist.

- (38) ??After having been fired from the observatory at Sofia, every scientist was consoled by the scientist's/that scientist's best friend.

Therefore, it seems quite likely that the DemDP/definite description in (38a) is acceptable on a BV-reading because its surface position is quite far removed from the surface position of its (indirect) binder, i.e. there is a lot of lexical material intervening between the two DPs. While such an assumption is hard to make sense of if Principle C is conceived of as a syntactic principle that only cares for hierarchical

structure, it naturally follows from a pragmatic reconstruction of Principle C along the lines of Schlenker (2005) (see also Reinhart 1983 for an early implementation of a similar view), which, roughly speaking, forces overt NPs to be deleted whenever those NPs are redundant. We will come back to this point in section 3. But let us first have a look at the conditions under which DemPros can be interpreted as if they were variables bound by quantificational DPs.

### 2.3 Hinterwimmer's (2015) analysis of bound DemPros

In contrast to English, German has two pronoun series: the personal pronouns (henceforth: PerPros) *er/sie/es* ('he'/'she'/'it') in their various forms and the so called demonstrative pronouns (DemPros) *der/die/das*, which are for the most part homophonous with the definite determiner in its various forms. Most research focuses on the difference between DemPros and PerPros as far as their co-referential options are concerned (see et al. 2003 and Bosch & Umbach 2007 and the references cited therein): While PerPros have a preference for picking up the individuals denoted by the grammatical subjects of the preceding sentence, but can in principle also pick up ones denoted by direct, indirect or prepositional objects, DemPros seem to have strong anti-subject bias, similarly to demonstrative pronouns in languages such as Finnish and Dutch (Kaiser & Trueswell 2008 and Kaiser 2010, 2011, 2013). This is evidenced by the fact that while the PerPro in (39) can in principle pick up both Paul and Peter (although it has a preference for Paul), the DemPro can only pick up Paul.

- (39) Paul<sub>i</sub> wollte mit Peter<sub>j</sub> laufen gehen. Aber {er<sub>i,j</sub>/der<sub>j</sub>} war leider erkältet.  
 [Paul wanted to go running with Peter. But {he/DemPro} unfortunately had a cold.]

(from Bosch et al. 2003)

As shown in Bosch & Umbach (2007), however, the anti-subject bias of DemPros can be overwritten in certain cases and is therefore more plausibly regarded as the default outcome of a different, pragmatic rather than syntactic constraint: DemPros are prohibited from picking up topics. Seen this way, the anti-subject bias is just a consequence of the fact that discourse topics have a strong tendency to be realized as grammatical subjects.

Concerning their binding options, it has been claimed by Wiltschko (1998) that DemPros do not receive BV-readings at all. This claim is based on contrasts like the ones in (40a,b): In contrast to the PerPros, the DemPros can in both cases

not be interpreted as co-referring with/bound by the respective grammatical subjects, but only as referring to some contextually salient male individual.

- (40) a. Peter<sub>i</sub> glaubt, dass er<sub>i</sub>/\*der<sub>i</sub> stark ist.  
 [Peter believes that {he/DemPro} is strong.]  
 b. [Jeder Mann]<sub>j</sub> glaubt, dass er<sub>i</sub>/\*der<sub>i</sub> stark ist.  
 [Every man believes that {he/DemPro} is strong.]

From these and similar observations Wiltschko (1998) concludes that DemPros are full DPs consisting of an overt determiner and a covert NP-complement that as such can not be interpreted as variables bound by an operator. PerPros, in contrast, she assumes to be ‘pure’ NPs, i.e. to lack a D-projection altogether, which allows an interpretation as either bound or free variables whose value needs to be compatible with the agreement features located in the N-projection. In Hinterwimmer (2015) it is shown that DemPros actually do allow BV-readings: When the potential binder is not a grammatical subject, but an indirect object, for example (see 41b), or contained in an adjoined phrase (see 41a), BV-readings are easily available.

- (41) a. Peter<sub>i</sub> glaubt von [jedem Kollegen]<sub>j</sub>, dass der<sub>j</sub>  
 Peter believes of every-DAT colleague that DemPro-NOM  
 klüger ist als er<sub>i</sub>.  
 smarter is than he  
 ‘Peter<sub>i</sub> believes of [every colleague]<sub>j</sub> that he<sub>j</sub> is smarter than him<sub>i</sub>.’  
 b. Peter stellte [jedem Studenten]<sub>j</sub> mindestens eine Frage,  
 Peter posed every-DAT student-DAT at-least one question  
 die der<sub>j</sub> nicht beantworten konnte.  
 which DemPro-NOM not answer could  
 ‘Peter<sub>i</sub> asked [every student]<sub>j</sub> at least one question that he<sub>j</sub> couldn’t  
 answer.’

(from Hinterwimmer 2015: 67, ex. 16–17)

Hinterwimmer (2015) proposes an analysis which relates the observation that DemPros cannot be bound by grammatical subjects to their co-referential behavior. Following Elbourne (2005) (see also Elbourne 2013, discussed in section 2.2 above) and contra Wiltschko (1998), both DemPros and PerPros are assumed to be the spell out of a definite determiner and a covert NP which denotes a free predicate variable. Binding in both cases comes about in the same way: The predicate variable is resolved to the property of being identical to an individual variable that is bound by a DP c-commanding the PerPro/DemPro at LF (see section 2.1.2 above). The difference in binding behavior between DemPros and PerPros is thus



not assumed to have anything to do with their status as NPs vs. DPs. Rather, it is accounted for as follows: While PerPros are in principle free to pick up any predicate as value for the free predicate variable that is sufficiently salient in the context – with a preference for the most salient one –, DemPros are prohibited from picking up the most salient one. What counts as the most salient predicate now depends on what configuration the DemPro is in: If it is in a potential binding configuration, i.e. if there is at least one suitable DP (i.e. one with compatible number and gender features) c-commanding it at LF, the predicate variable may not be resolved to the property of being identical to the variable bound by the structurally most prominent DP, where the structurally most prominent DP is the one functioning as the grammatical subject of the respective sentence. In non-binding configurations, i.e. in the absence of a potential binder, in contrast, the most salient predicate is the one denoted by the NP contained in the most recent DP functioning as topic. The lexical entries assumed in Hinterwimmer (2015) for the DemPro *der* and the PerPro *er* ('he') are given in (43) and (44). Note that  $s_n$  is a covert situation pronoun bearing the index  $n$  whose denotation is a free situation variable and  $NP_m$  is a covert NP bearing the index  $m$  whose denotation is a free predicate variable  $P_m$ . The notion of A-binding, which is employed in (44), is defined in (42).

(42) A-Binding:

$\alpha$  A-binds  $\beta$  iff  $\alpha$  is the sister of a  $\lambda$ -predicate whose operator binds  $\beta$ .

(from Reinhart 2006: 171)

(43)  $[[[er_{s_n} NP_m]]]^g = \lambda x(\text{male}(x)(g(s_n)) \wedge g(P_m)(x)(g(s_n)))$

where  $g$  is the assignment function.

(44)  $[[[[der_{s_n} NP_m]]]^g = \lambda x(\text{male}(x)(g(s_n)) \wedge g(P_m)(x)(g(s_n)) \wedge g(P_m) \neq P^*)$ , where  $P^*$  is the currently most salient property.

- a. In potential binding configurations,  $P^*$  is the property of being (identical to) a variable A-bound by the DP functioning as the grammatical subject of the sentence containing the respective D-pronoun.
- b. In non-binding configurations,  $P^* = P_{\text{TOP}}$ , where  $P_{\text{TOP}}$  is the property denoted by the NP contained in the most recent DP functioning as topic.

### 3 A Comparison of the Binding Behavior of DemDPs, DemPros and Definite Descriptions

In section 2.3 we have seen that DemPros in principle allow BV-readings, but that they may not be interpreted as bound by grammatical subjects. Since, as we have seen in sections 2.1 and 2.2, DemDPs and definite descriptions allow BV-readings as well as long as certain structural conditions are met, let us see what happens if we replace the DemPros in the examples discussed in section 2.3 by DemDPs and definite descriptions. If the resulting sentences allow BV-readings as well, this might be taken as an indication that all three types of DPs are subject to the same constraint – presumably (some version of) Principle C. Consequently, while Wiltschko (1998) was wrong in claiming that DemPros do not give rise to BV-readings, she may still have been right in assuming that they are subject to Principle C (although this need not be taken to show that DemPros are DPs and PerPros NPs). Let us thus consider the variants of (41a,b) given in (45).

- (45) a. Peter<sub>i</sub> glaubt von [jedem Kollegen]<sub>j</sub>, dass ?[der Kollege]<sub>j</sub> / [dieser Kollege]<sub>j</sub> klüger ist als er<sub>i</sub>.  
 ‘Peter<sub>i</sub> believes of [every colleague]<sub>j</sub> that ?[the colleague]<sub>j</sub> / [that colleague]<sub>j</sub> is smarter than him<sub>i</sub>.’
- b. Peter stellte [jedem Studenten]<sub>j</sub> mindestens eine Frage, die [der Student]<sub>j</sub> / [dieser Student]<sub>j</sub> nicht beantworten konnte.  
 ‘Peter asked [every student]<sub>j</sub> at least one question which [the student]<sub>j</sub> / [that student]<sub>j</sub> couldn’t answer.’

For some reason that I do not understand, the definite description in (45a) sounds slightly weird, both in the German sentence and in its English translation. The DemDPs are perfectly acceptable, though, in both the English and the German versions of both examples, and the definite description is fine in (45b) as well, in both the German and the English version. This can be seen as preliminary evidence that what has been taken as an anti-subject constraint in Hinterwimmer (2015) might actually be reducible to a violation of Principle C: After all, grammatical subjects c-command everything that is contained in their syntactic sister and thus everything that is contained in the complement clauses of the propositional attitude verbs in (40a,b). Concerning the sentences in (41a) and (45a), in contrast, we can be pretty sure that the respective quantificational DP does not c-command the DemPro/DemDP/definite description on the surface, but only at LF, after Quantifier Raising has applied: In both cases the DemPro/DemDP/definite description is

contained in a phrase headed by the preposition *von* ('of') and therefore does not c-command anything outside of that phrase.

The acceptability of (41b)/(45b), however, is unexpected under the assumption that DemPros/DemDPs/definite descriptions cannot be interpreted as bound by quantificational DPs c-commanding them on the surface: Sentences such as (46) provide evidence that indirect objects c-command direct ones, since the reflexive pronoun cannot only be interpreted as bound by the subject, *Hans*, but also as bound by the indirect object, *dem Studenten* ('the student') (see Grewendorf 2002 for discussion and further references). Likewise, the fact that the proper name *Maria* in (47a) cannot be interpreted as co-referential with the PerPro *ihr* can easily be accounted for as a Principle C violation if the indirect object c-commands the direct one and everything contained in it. Finally, (48a,b) show that also in the case of sentences headed by *stellen* (literally 'put') the indirect object c-commands the direct one. It has to be noted, though, that (47a) is far more degraded on the intended reading than (48b), which is definitely weird, but not completely unacceptable. It is intuitively appealing to relate this contrast in acceptability to the fact that the proper name in (47a) is closer to the pronoun c-commanding it both in terms of intervening lexical material and in terms of intervening syntactic nodes than the one in (48b).

- (46) Hans<sub>i</sub> zeigte [dem Studenten]<sub>j</sub> ein Bild von sich<sub>i,j</sub>.  
'Hans<sub>i</sub> showed [the student]<sub>j</sub> a picture of himself<sub>i,j</sub>.'
- (47) a. \*Hans gab ihr<sub>i</sub> Maria<sub>i</sub>'s Buch.  
'\*Hans gave her<sub>i</sub> Maria<sub>i</sub>'s book.'  
b. Hans gab Maria<sub>i</sub> ihr<sub>i</sub> Buch.  
'Hans gave Maria<sub>i</sub> her<sub>i</sub> book.'
- (48) a. Peter<sub>i</sub> stellte [dem Studenten]<sub>j</sub> eine Frage über sich<sub>i,j</sub>.  
'Peter<sub>i</sub> asked [the student]<sub>j</sub> a question about himself<sub>i,j</sub>.'  
b. ??Peter<sub>i</sub> stellte ihm<sub>j</sub> eine Frage, die Otto<sub>j</sub> nicht beantworten konnte.  
'??Peter<sub>i</sub> asked him<sub>j</sub> a question that Otto<sub>j</sub> could not answer.'

But the observation that (41b) is acceptable in spite of the fact that the DemPro is c-commanded by its binder on the surface of course does not provide evidence against the assumption that DemPros are subject to Principle C. After all, both variants of (45b), which contain full DPs that as such should definitely be constrained by Principle C, are acceptable as well. Now recall from section 2.2 above that there are sentences such as (32a) and (42a), repeated here as (the two variants of) (49a), which allow BV-readings of a DemDP or definite description that is already c-commanded by its binder on the surface.

- (49) a. [Every scientist who was fired from the observatory at Sofia]<sub>i</sub> was consoled by someone who knew [the scientist]<sub>i</sub>/[that scientist]<sub>i</sub> as a youth.
- b. [A linguist working on Binding Theory]<sub>i</sub> was so devoid of any moral sense that he<sub>i</sub> forced [a physicist working on particles]<sub>j</sub> to hire [the linguist]<sub>i</sub>'s girlfriend in his lab.

As already mentioned in section 2.2, similar examples, such as (49b), are discussed by Schlenker (2005), who takes them as evidence that Principle C is not a syntactic, but rather a pragmatic principle, which he dubs *Minimize Restrictors!* (henceforth: MR). Roughly speaking, MR does not allow the use of DPs containing redundant NPs in order to refer to highly salient individuals. Crucially, Schlenker (2005) sets his system up in such a way that individuals denoted by DPs which c-command potentially co-referring DPs count as highly salient at the point where the latter are evaluated. Consequently, in standard cases, MR makes exactly the same predictions as Principle C: In a sentence such as (47a), for example, the individual referred to by the pronoun is highly salient at the point where the proper name *Maria* is interpreted. Assuming *Maria* to be the overtly spelled out NP complement of a covert definite determiner that is (roughly) interpreted as *having the property of being named Maria* (Burge 1973, Larson & Segal 1995, Geurts 1997, Elbourne 2005, Matushansky 2006, Graff Fara 2015), MR prevents the proper name from being interpreted as co-referential with the pronoun. The reason is that it could have been replaced by a pronoun, too, i.e. the NP *Maria* is redundant in a situation in which the individual *Maria* is already highly salient in virtue of having been referred to by the c-commanding pronoun *ihr* ('her'). In the case of (49b), in contrast, the definite description *the linguist* can be interpreted as picking up the individual introduced by the indefinite functioning as the grammatical subject since the NP *linguist* is not redundant insofar as it serves a disambiguating function— replacing the definite description by a pronoun would result in ambiguity, since the pronoun could also be interpreted as picking up the individual introduced by the indefinite *a physicist working on particles*. Concerning (49a), matters are slightly different, since replacing the definite description by a pronoun, as shown in (50), does not lead to ambiguity: The pronoun can only be interpreted as being bound by the universally quantified DP, not by the indefinite.

- (50) [Every scientist who was fired from the observatory at Sofia]<sub>i</sub> was consoled by someone who knew him<sub>i</sub> as a youth.

Still, the NP *scientist* can be considered non-redundant insofar as it serves as a reminder as to what DP the definite description is dependent on, since the binder is intuitively quite distant from the bindee both in terms of intervening lexical ma-

terial (there are 15 words intervening between the token of *scientist* following the quantificational determiner and the one following the definite determiner) and in terms of intervening syntactic nodes (while the binder is contained in the matrix clause, the bindee is contained in a clause modifying an NP that is itself contained in a prepositional phrase modifying the matrix clause). Given this background, let us now return to the examples in (41b) and (45b). Let us start with (45b) and ask ourselves whether MR can account for its acceptability, i.e. whether there is a plausible reason to repeat the NP *Student*. As it turns out, there is a rather obvious one: Disambiguation. Replacing the definite descriptions by a PerPro, as shown in (51), results in ambiguity: It is unclear whether Peter asked questions that he could not answer himself, or questions that his students could not answer.

- (51) Peter<sub>i</sub> stellte [jedem Studenten]<sub>j</sub> mindestens eine Frage, die er<sub>i/j</sub> nicht beantworten konnte.  
 ‘Peter<sub>i</sub> asked [every student]<sub>j</sub> at least one question which he<sub>i/j</sub> couldn’t answer.’

It thus seems plausible that the definite description in (45b) can be interpreted as bound by the quantificational DPs c-commanding it on the surface already for exactly the same reason for which the definite description in (49b) can – namely, to avoid ambiguity. Let us now turn to (41b). At first glance, MR in contrast to Principle C does not seem to be applicable to sentences with DemPros, for the simple reason that DemPros in contrast to definite descriptions (including proper names; see above) do not contain any potentially redundant material to begin with – in other words, their restrictors seem to be as minimal as those of PerPros. Patel-Grosz & Grosz (2017) propose an analysis of DemPros that allows the application of a slightly extended version of MR, though: While they assume both DemPros and PerPros to be DPs with covert NPs, DemPros in their analysis come with an additional functional layer on top of the DP-shell, the projection of a deictic determiner.<sup>3</sup> What is crucial for our current purposes is that they propose to extend MR in such a way that it precludes the use of a lexical item if using an alternative item

<sup>3</sup> Patel-Grosz & Grosz (2017) assume the difference in functional structure between PerPros and DemPros to be related to an interpretive difference as well: The deictic determiner introduces a covert free variable ranging over individuals whose value is to be determined by the assignment function. Crucially, the individual denoted by the DemPro is required to be identical to the value of that variable, i.e. Patel-Grosz & Grosz (2017) assume a DemPro such as *der* to have the denotation shown in (i):

(i)  $\llbracket [\text{DeixP } 1 [\text{DP } \text{der}_{sn} \text{NP}_m]] \rrbracket^g = \iota\{x: \text{male}(x)(g(s_n)) \wedge g(\text{P}_m)(x)(g(s_n)) \wedge x = g(1)\}$   
 (adapted from Patel-Grosz & Grosz 2017: 262, ex. (8b))

with less functional structure does not lead to any differences in truth conditions and there is no other benefit. Patel-Grosz & Grosz (2017) consider three situations where such a benefit arises: Emotivity, disambiguation, and register, where disambiguation is obviously the one that is relevant in the case of (44b). Assuming grammatical subjects to be preferred antecedents or binders in general, the use of a DemPro instead of a PerPro on the account of Patel-Grosz & Grosz (2017) is licit whenever (a) there is more than one potential binder, and (b) signals that the less preferred potential antecedent or binder is to be chosen. The disambiguation function of DemPros is thus different from the one of definite descriptions or DemDPs: Since DemPros do not contain any lexical material that could indicate which of the potential antecedents or binders is to be chosen, a default strategy has to apply that links the more complex functional structure to the generally dispreferred interpretive strategy. Consequently, DemPros are expected to never be bound by grammatical subjects in sentences that contain a second potential binder, while definite descriptions and DemDPs are free to do so (as evidenced by (49b), which would be just as acceptable if the definite description *the linguist* was replaced by the DemDP *that linguist*).

Now, the assumption that the use of a DemPro in (41b) and of a DemDP or definite description in (45b) instead of a PerPro is only allowed in order to avoid ambiguity makes a clear prediction: The use of either phrase should become illicit if we alter the sentences in such a way that there is only one potential binder left – by replacing the second potential binder by a DP with incompatible person or gender features, for example. While this expectation is borne out with respect to definite descriptions and DemDPs in the case of (49b), as shown by the degradedness of the variant in (52) (see also Schlenker 2005: ex. (40)), all three variants of the sentence in (53) are just as acceptable as the ones in (41b) and (45b).

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The main evidence for such an analysis comes from the observation that DemPros differ from PerPros insofar as they require an explicitly introduced antecedent, and not just one whose existence can be inferred from the context. Patel-Grosz & Grosz (2017) relate this difference between DemPros and PerPros to the difference between the weak and the strong version of the definite determiner which is by many researchers (see Schwarz 2009 and the references cited therein) assumed to exist in German and many other languages (but not in English): More concretely, they assume DemPros to be the spell-out of a definite DP with a covert NP-complement that is headed by the strong definite article, and PerPros to be the spell-out of a definite DP with a covert NP-complement that is headed by the weak definite article. The interested reader is referred to Patel-Grosz & Grosz (2017) for detailed justification of this assumption, which involves parallels in behavior concerning contraction with prepositions as well as the necessity of an explicit antecedent.

- (52) ??[A linguist working on Binding Theory]<sub>i</sub> was so devoid of any moral sense that he<sub>i</sub> forced me / Mary<sub>j</sub> to hire [the linguist]<sub>i</sub>'s / [that linguist]<sub>i</sub>'s girlfriend in his lab.
- (53) Petra / Ich stellte [jedem Studenten]<sub>j</sub> mindestens eine Frage, die [der Student]<sub>j</sub> / [dieser Student]<sub>j</sub> / der<sub>j</sub> nicht beantworten konnte.  
'Petra / I asked [every student]<sub>j</sub> at least one question which [the student]<sub>j</sub> / [that student]<sub>j</sub> couldn't answer.'

An account along the lines of the one sketched for (49a) does not seem promising, either: First, there is far less lexical material intervening between the definite description and the respective binder in the case of (41b) and (45b) (and the variants in (53)) than in (49a). Secondly, there is also at least one less intervening syntactic node in (41b)/(45b) and (53) than in (49a): In the former, the binder is always contained in the matrix clause, while the bindee is contained in a relative clause modifying a DP contained in the matrix clause. In the latter, in contrast, the binder is again contained in the matrix clause, while the bindee is contained in a clause modifying a DP that is itself contained in a PP adjoined to the matrix clause. To make matters worse, if the number of syntactic nodes intervening between the quantificational DP and the bound DP in (41b)/(45b) and (53) were sufficient, (52) should be fine in spite of the absence of any ambiguity concerning the potential binder: The binder in (52) is contained in the matrix clause, while the bindee is contained in a DP that is itself contained in an embedded clause. So maybe the following contrast between (41b)/(45b) and (53a) (and (49a), for that matter), on the one hand, and (52), on the other, is crucial: In the former cases the bindee is always contained in a relative clause that in spite of modifying a DP c-commanded by the binder on the surface could in principle still have been moved away from the binder and right-adjoined to the clause containing the binder, thus failing to be c-commanded by it on the surface. In (52), in contrast, there is no way for the bindee to escape surface c-command by the binder.

Büring & Hartmann (1997) present sentences that are structurally similar to (49b), repeated here as (54b), as evidence that Principle C applies at LF, after right-adjoined clauses have been reconstructed into their base position. But now recall, first, the contrast between (47a), repeated here as (54a), on the one hand, and (48b)/(54b), on the other: While (47a)/(54a) is completely unacceptable on the intended reading, (48b)/(54b) is definitely weird, but not completely unacceptable.

- (54) a. \*Hans gab ihr<sub>i</sub> Marias<sub>i</sub> Buch. '\*Hans gave her<sub>i</sub> Maria<sub>i</sub>'s book.'  
b. ??Peter<sub>i</sub> stellte ihm<sub>j</sub> eine Frage, die Otto<sub>j</sub> nicht beantworten konnte.  
'??Peter<sub>i</sub> asked him<sub>j</sub> a question that Otto<sub>j</sub> could not answer.'

Secondly, Principle C violations are well known to be particularly severe when the DP c-commanding the proper name or definite description is a PerPro. As expected, replacing the PerPro by the proper name *Otto* in the matrix clause leads to an only very mildly deviant sentence in the case of (54b), as shown in (55b), while the corresponding variant of (54a) given in (55a) is still very odd. The same contrast holds between the two variants of (54a,b) given in (56a,b), where the proper names have been replaced by definite descriptions.

- (55) a. \*Hans gab Maria<sub>i</sub> Marias<sub>i</sub> Buch.  
       ‘Hans gave Maria<sub>i</sub> Maria<sub>i</sub>’s book.’  
 b. ?Peter stellte Otto eine Frage, die Otto nicht beantworten konnte.  
       ‘?Peter asked him<sub>i</sub> a question that Otto<sub>i</sub> could not answer.’
- (56) a. \*Hans gab [dem Dekan]<sub>i</sub> [das Buch [des Dekans]<sub>i</sub>].  
       ‘\*Hans gave [the dean]<sub>i</sub> [the dean]<sub>i</sub>’s book].’  
 b. ?Hans stellte [dem Dekan]<sub>i</sub> eine Frage, die [der Dekan]<sub>i</sub> nicht beantworten konnte.  
       ‘?Hans asked [the dean]<sub>i</sub> a question that [the dean]<sub>i</sub> could not answer.’

Let us thus tentatively assume that MR only applies to definite descriptions and DemDPs that are c-commanded by DPs co-referring with them or binding them on the surface, and that the oddity of sentences such as (54b) is due to some other factor. Unfortunately, I have nothing convincing to offer at the moment and thus have to leave this as a topic for future research. What matters for our purposes in this paper, however, is that so far we have not found any evidence against a unified explanation of the binding options of DemPros, on the one hand, and definite descriptions and DemDPs, on the other: All three types of DPs allow binding by DPs c-commanding them at LF, but not on the surface. This is exactly what we would expect if all three types of phrases were subject to Principle C in its classical version.

But now recall that there were good reasons for replacing Principle C in its classical version as a syntactic constraint by the pragmatic principle MR: Definite descriptions and DemDPs can be interpreted as bound by or co-referential with DPs c-commanding them on the surface if the overt lexical material contained in the NP-complement of the definite or demonstrative determiner is non-redundant insofar as it serves some purpose – disambiguation, for example (or expressing the speaker’s attitude towards the respective individuals, see Schlenker 2005 for extensive discussion of such cases). The crucial question is thus whether a unified account of the binding options of definite descriptions, DemDPs and DemPros in terms of MR works.



Let us have a look at the German translation of (49b), repeated here as (57a), in (57b), and compare the variants with the definite description or DemDP with the one containing the possessive version of the DemPro, *dessen* (note that in German complex DPs functioning as possessors follow the head noun, while simplex ones, i.e. PerPros, DemPros and proper names, precede it): In contrast to the definite description or DemDP, which can only be interpreted as bound by the c-commanding subject indefinite, the DemPro can only be interpreted as picking up the individual introduced by the (non c-commanding) object indefinite contained in the embedded clause, in spite of the fact that this results in a rather implausible reading.

- (57) a. [A linguist working on Binding Theory]<sub>i</sub> was so devoid of any moral sense that he<sub>i</sub> forced [a physicist working on particles]<sub>j</sub> to hire [the linguist]<sub>i</sub> / [that linguist]<sub>i</sub>'s girlfriend in his lab.
- b. [Ein Linguist, der zur Bindungstheorie arbeitet]<sub>i</sub> war so frei von jedem Moralgefühl, dass er<sub>i</sub> [einen Physiker, der über Partikel arbeitete]<sub>j</sub> zwang, die Freundin [des Linguisten]<sub>i</sub> / die Freundin [dieses Linguisten]<sub>i</sub> / dessen<sub>i/j</sub> Freundin in seinem Labor anzustellen.

As already said above, this contrast could in principle be accounted for by the extended version of MR proposed by Patel-Grosz & Grosz (2017): Since they contain more functional structure than PerPros, DemPros can in general (i.e. irrespective of whether they are c-commanded by their antecedents/binders or not) only be used if they serve some purpose that could not (or at least not equally well) be achieved by using a PerPro. In a case such as (57), the only plausible purpose is disambiguation. But since the DemPro by its very nature does not contain any overt lexical material that could indicate which of the two potential binders is to be chosen, a default strategy has to apply: The DemPro can only be interpreted as bound by the (all things being equal) dispreferred binder, which is the object indefinite contained in the embedded clause.

So far, so good. But as we have already seen above, such a unified account fails for DemPros when we turn to sentences where only one potential antecedent/binder is involved since the second DP has incompatible gender or person features: While definite descriptions and DemDPs behave as expected insofar as they can no longer be interpreted as co-referential with/bound by the respective antecedent/binder (see (52) above), bound readings continue to be available for DemPros as long as the remaining binder is no grammatical subject (see (53) above). This is further evidenced by the observation that the DemPro-variant of (57b) with a female subject indefinite given in (58) is just as fine as the original version (apart from the implausibility of the resulting interpretation).

- (58) [Eine Linguistin, die zur Bindungstheorie arbeitete]<sub>i</sub> war so frei von jedem Moralgefühl, dass sie<sub>i</sub> [einen Physiker, der über Partikel arbeitete]<sub>j</sub> zwang, dessen<sub>j</sub> Freundin in seinem Labor anzustellen.

Summarizing our discussion in this section so far, MR works for definite descriptions and DemDPs, but not for DemPros. But since we have not encountered a case so far where a DemPro is clearly *c*-commanded by its binder on the surface already, we could still argue that Principle C in its classical version accounts for the distribution of DemPros. This would bring us into the uncomfortable situation of having to make the extremely implausible assumption that DemPros are subject to a purely syntactic principle – namely Principle C in its classical version –, while DPs with an overt NP-complement, namely DemDPs and definite descriptions (including proper names), are subject to a pragmatic principle, MR. This amounts to assuming a syntactic principle that applies to DemPros exclusively. Given this state of affairs, it seems more plausible to me to stick with the assumption argued for in Hinterwimmer (2015) that DemPros come with a lexical presupposition preventing them from being interpreted in a way that makes them dependent on the currently most prominent DP, which, in potential binding configurations (i.e. ones involving *c*-command at LF), is the respective grammatical subject (see section 2.3 above).

But we can also gain clearer and more direct evidence against the assumption that DemPros are subject to Principle C, and in favor of the assumption that they cannot be bound by grammatical subjects. Recall the unacceptability of the sentences in (55a) and (56b), repeated here as (59a) and (59b), respectively, where there was no way for the proper name or definite description contained in the DP functioning as the direct object to escape surface *c*-command by the co-referring indirect object.

- (59) a. \*Hans gab Maria<sub>i</sub> Marias<sub>i</sub> Buch.  
       ‘\*Hans gave Maria<sub>i</sub> Maria<sub>i</sub>’s book’.
- b. \*Hans gab [dem Dekan]<sub>i</sub> [das Buch [des Dekans]<sub>j</sub>].  
       ‘\*Hans gave [the dean]<sub>i</sub> [[the dean]<sub>j</sub>’s book]’.

Consider now the sentences in (60). In each of them, a quantificational DP functioning as the indirect object binds a definite description or DemDP functioning as the possessor of a noun contained in the DP functioning as the direct object. Consequently, there is no way for the respective definite description or DemDP to escape surface *c*-command by its binder, and the sentences are all unacceptable on the intended interpretation, as expected.

- (60) a. \*Maria gab [jedem Studenten]<sub>i</sub> nach ein paar Tagen die Klausur [des Studenten]<sub>i</sub>/[dieses Studenten]<sub>i</sub> zurück.  
 ‘\*Maria gave [every student]<sub>i</sub> back after a few days [the student]<sub>i</sub>’s test / [that student]<sub>i</sub>’s test.’
- b. \*Otto kocht [jedem Gast]<sub>i</sub> auf Nachfrage das Lieblingsessen [des Gastes]<sub>i</sub> / [dieses Gastes]<sub>i</sub>.  
 ‘\*Otto cooks [every guest]<sub>i</sub> [the guest]<sub>i</sub>’s / [that guest]<sub>i</sub>’s favorite dish upon request.’
- c. \*Maria zeigte [jeder Schülerin]<sub>i</sub> das erste selbstgemalte Bild [der Schülerin]<sub>i</sub> / [dieser Schülerin]<sub>i</sub>.  
 ‘\*Maria showed [every female pupil]<sub>i</sub> [the pupil]<sub>i</sub>’s / [that pupil]<sub>i</sub>’s first self-painted picture.’

The sentences in (61), in contrast, which only differ from the ones in (60) insofar as the respective definite description/DemDP has been replaced by a corresponding DemPro (recall that while complex DPs functioning as possessors have to follow the head noun in German, simplex ones have to precede it), are all perfectly fine.<sup>4</sup>

- (61) a. Maria gab [jedem Studenten]<sub>i</sub> nach ein paar Tagen dessen<sub>i</sub> Klausur<sub>i</sub> zurück.  
 ‘Maria gave [every student]<sub>i</sub> back his<sub>i</sub> {DemPro} test after a few days.’
- b. Otto kocht [jedem Gast]<sub>i</sub> auf Nachfrage dessen<sub>i</sub> Lieblingsessen.  
 ‘Otto cooks [every guest]<sub>i</sub> his<sub>i</sub> {DemPro} favorite dish upon request.’
- c. Maria zeigte [jeder Schülerin]<sub>i</sub> deren<sub>i</sub> erstes selbstgemaltes Bild.  
 ‘Maria showed [every female pupil]<sub>i</sub> her<sub>i</sub> {DemPro} first self-painted picture.’

If the only potential binder is the grammatical subject, however, a DemPro functioning as the possessor of a noun contained in a direct object DP cannot be interpreted as bound. The DemPro-variants of the sentences in (62) are consequently unacceptable on the intended interpretation, while the PerPro-variants are all perfectly fine.

- (62) a. [Jeder Student]<sub>i</sub> gab Maria nach ein paar Tagen \*dessen<sub>i</sub> / seine<sub>i</sub> Klausur<sub>i</sub> zurück.  
 ‘[Every student]<sub>i</sub> gave Maria back his {\*DemPro<sub>i</sub>/PerPro<sub>i</sub>} test after a few days.’

<sup>4</sup> The contrast between sentences like those in (61) and ones like those in (62) has been confirmed by the results of a reading time study reported in Hinterwimmer and Brocher (2016, to appear).

- b. [Jeder Koch]<sub>i</sub> kochte Maria auf Nachfrage \*dessen<sub>i</sub> / sein<sub>i</sub> Lieblingsessen.  
 ‘[Every cook]<sub>i</sub> cooked Maria his<sub>i</sub> {\*DemPro<sub>i</sub>/PerPro<sub>i</sub>} favorite dish upon request.’
- c. [Jede Schülerin]<sub>i</sub> zeigte Otto \*deren<sub>i</sub>/ihr<sub>i</sub> erstes selbstgemaltes Bild.  
 ‘[Every female pupil]<sub>i</sub> showed Otto her {\*DemPro<sub>i</sub>/PerPro<sub>i</sub>} first self-painted picture.’

The contrast between the sentences in (60), on the one hand, and those in (61), on the other, thus provides direct evidence against the assumption that the binding options of DemDPs and definite descriptions are the same as those of DemPros: While DemDPs and definite descriptions can (in the absence of any pragmatic factors making the respective NPs non-redundant) only be interpreted as bound by DPs that c-command them at LF, but not on the surface, this is not the case for DemPros. As confirmed by the contrast between the sentences in (61), on the one hand, and the ones in (62), on the other, DemPros can in principle be bound by DPs that c-command them on the surface already, as long as those DPs are not grammatical subjects. From this I conclude that DemDPs and definite descriptions are subject to MR, while DemPros are subject to the constraint argued for by Hinterwimmer (2015), which is repeated in (63), and which in effect prevents DemPros from being bound by grammatical subjects.

(63)  $\llbracket [\text{der}_{sn} \text{NP}_m] \rrbracket^g = \iota x (\text{male}(x)(g(s_n)) \wedge g(P_m)(x)(g(s_n)) \wedge g(P_m) \wedge P^*)$ ,  
 where  $P^*$  is the currently most salient property.

- a. In potential binding configurations,  $P^*$  is the property of being (identical to) a variable A-bound by the DP functioning as the grammatical subject of the sentence containing the respective D-pronoun.
- b. In non-binding configurations,  $P^* = P_{\text{TOP}}$ , where  $P_{\text{TOP}}$  is the property denoted by the NP contained in the most recent DP functioning as topic.

Concerning the implementation of MR in a system like the one assumed in this paper, where not only DemPros, but also PerPros are full DPs with a covert NP, let us assume that overt NPs have to be deleted (replaced by covert ones) whenever the predicates they denote are easily recoverable from the context and thus in the absence of any other reason for retaining them (such as ambiguity avoidance, for instance) redundant. Crucially, a predicate  $P$  is easily recoverable from the context whenever it is denoted by an NP that is contained in a DP whose denotation depends (either via binding or via co-reference) on a structurally more prominent DP  $x$  containing an NP which denotes a predicate that contextually entails  $P$ , where

I assume a DP  $x$  c-commanding a DP  $y$  to be structurally more prominent than  $y$ . The account explains why DemDPs and definite descriptions in most cases cannot be interpreted as bound by/co-referential with DPs c-commanding them on the surface: The overt NPs they contain are easily recoverable from the context and thus redundant. At the same time, being a pragmatic principle, it leaves room for exceptions like the ones discussed above.

What remains an open question is the issue of DPs contained in (potentially) right-adjoined relative clauses modifying DPs that function as direct objects: They sometimes behave as if MR applied to them after reconstruction into the relative clause's base positions where they are c-commanded by DPs functioning as indirect objects, and sometimes as if MR applied to them in their surface position, where they are not c-commanded by indirect objects. More concretely, if the direct object is a PerPro, the base position of the relative clause seems to be relevant, while if it is a full DP (i.e. a proper name, a definite description, a DemDP or a quantificational DP), the surface position seems to be relevant. Since this is not immediately relevant to our concerns in this paper, I leave it as a topic for future research.

## 4 Conclusion

In this paper we have seen that not only PerPros, but also DemPros, DemDPs and definite descriptions allow for BV-readings. I have argued for an analysis according to which all four types of phrases are DPs and binding thus comes about indirectly, i.e. via the binding of a situation variable by a DP c-commanding them at LF (cf. Elbourne 2013). Concerning DemPros, I have shown that they are not subject to Principle C of Binding Theory, i.e. they are not prohibited from being bound by DPs c-commanding them on the surface. Rather, they cannot be bound by DPs functioning as grammatical subjects. Concerning DemDPs and definite descriptions, in contrast, I have argued that their binding behavior can plausibly be accounted for under the assumption that they are subject to (a slightly adapted version of) MR (Schlenker 2005), a principle that amounts to a pragmatic reconstruction of Principle C.

I would like to end this paper by mentioning an issue that has been entirely set aside so far. In Hinterwimmer & Bosch (2016, 2017) the question is explored of whether what seems to be an anti-topic constraint in non-binding configurations and an anti-subject constraint in binding configurations is ultimately reducible to a different constraint: DemPros are prohibited from being identical with the currently most salient perspectival center, where individuals functioning as about-

ness topics or ones denoted by DPs functioning as grammatical subjects in many cases are perspectival centers at the same time. Crucially, however, in Hinterwimmer & Bosch (2016, 2017) cases are discussed where the respective notions clearly diverge, and where DemPros can pick up aboutness topics or be interpreted as bound by DPs functioning as grammatical subjects. Concerning the latter, consider the sentence in (64) as an illustration, where the DemPro can be interpreted as bound by the quantificational DP functioning as the grammatical subject. This is in line with the assumption argued for by Hinterwimmer & Bosch (2017) since the perspectival center in this case is the individual denoted by the prepositional object DP, *Paul*.

- (64) [Jede Mathematikerin]<sub>i</sub> machte auf Paul den Eindruck, als würde deren<sub>i</sub> Intelligenz die seine bei weitem übersteigen.  
 ‘[Every female mathematician]<sub>i</sub> gave Paul the impression as if her {DemPro<sub>i</sub>} intelligence would surpass his own by far.’

Now, in the cases of subject avoidance discussed in Hinterwimmer (2015) the respective grammatical subject binding the DemPro is the subject of a propositional attitude verb and thus in a very intuitive sense the perspectival center with respect to the proposition denoted by the clause containing the DemPro. Concerning the novel data with DemPros discussed in section 3 above (i.e. the examples in (61) and (62)), matters are not so clear. Nevertheless, I assume for the time being that in these cases the grammatical subjects are perspectival centers by default since they are the external arguments of the respective verbs and thus more agentive than the respective goal arguments. Exploring this issue in further detail is, however, beyond the scope of this paper and I thus also leave it as a topic for future research.

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Jin Cui

# The unstressed distal demonstrative *na* in Chinese as a definiteness marker in bridging contexts

An experimental study

**Abstract:** Chinese is known as a language without a definite article. In the literature, it is often claimed that unstressed demonstratives in Chinese partially cover the uses of definite articles, especially with regard to the fact that the unstressed distal demonstrative *na* can be used in some bridging-expressions which generally cannot be coded by demonstratives. As shown via two experiments, the distribution and the behavior of unstressed *na* in bridging are not consistent. The experimental data serve as a preliminary evidence that unstressed *na* has partially reached a further stage of the grammaticalization process from a demonstrative to a definite article.

**Keywords:** definiteness, demonstrative, bridging NP, frame theory

## 1 Introduction

In the standard view, Chinese is a language that lacks simple definiteness markers such as the English definite article *the* or the German definite article *der/die/das*.<sup>1</sup> Simple definite descriptions are realized either as bare nouns or as demonstrative NPs in Chinese. In the literature, it is often claimed that demonstratives in Chinese partially cover the uses of definite articles, but should still be analyzed as real demonstratives (cf. Xu 1987; Chen 2004). In this paper, I present two experiments that show that the unstressed distal demonstrative *na* can or rather must be used in some specific bridging contexts. With respect to the fact that bridging is a special context in which the use of demonstratives is usually not allowed, I suggest that unstressed *na* should be regarded as a simple definiteness marker in Chinese in specific contexts. Taking unstressed *na* as an intermediate stage of the

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<sup>1</sup> In this paper, the following abbreviations are used: CLF classifier; NEG negation, negative; PASS passive; PRF perfect; Q question particle/marker.

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grammaticalization process from a demonstrative to a definite article will shed light on the current discussion about the development of definite articles.

The paper is organized as follows. In section 2, some background information is briefly introduced. In section 3, an overview of the realizations of definite descriptions in Chinese is given. First, I describe the distribution and the interpretation of bare nouns and demonstratives in Chinese. Then, I present some bridging cases in which the use of the unstressed distal demonstrative *na* is allowed or rather preferred in comparison to bare nouns. In section 4, I present the methods and materials of the experiments, discuss their results and propose that, especially in value-based bridging contexts, unstressed *na* should be analyzed as a simple definite marker rather than as a real demonstrative. Section 5 concludes and discusses some open questions.

## 2 Background

### 2.1 Demonstratives and Bridging

As a type of determiner for definiteness that, unlike the definite article, exists in every natural language, demonstratives originally have the function of providing spatial references for concrete objects, but they have been extended to other uses as well. According to Himmelmann (1996: section 5), the usage of demonstratives can be classified into four major types: situational deictic, discourse deictic, anaphoric and recognitional.

- (1) *situational deictic*:  
[Pointing at a book] Could you please give me **that book**?
- (2) *discourse deictic*:  
The women's garden has become a critical source of food. **This conclusion** is supported by a recent study.
- (3) *anaphoric*:  
Yesterday I read a book in my office. **This book** is written by a friend of mine.
- (4) *recognitional*:  
Do you remember **that weird murder case** in Stuttgart?

The referent of a situational deictic demonstrative phrase must be perceptible (visible, audible, etc.) to the addressee when the expression is uttered. An inferred existence of the referent from some contextual information cannot ensure the gram-

maticity of demonstratives. For example, it is unusual to say “Beware of that dog!” when you see a dog leash in a yard. The most natural expression in this situation should be “Beware of the dog!” (cf. Hawkins 1978, Lyons 1999). However, with an explicit demonstrative indication at the dog leash, the use of the indirect demonstrative is licensed, see (5).

- (5) Beware of **that dog** (pointing at the dog leash)!

In comparison with the simple definite description *the dog*, which refers to the unique existence of a dog in the current situation, the demonstrative NP *that dog* distinguishes the dog of the dog leash from all potential dogs (this phenomenon is discussed by Lücking, this volume).

Since the original function of demonstratives is to provide spatial references for concrete objects, we can also use demonstratives to refer to linguistic items if we consider discourses as situations on the linguistic level and linguistic items as concrete objects in such situations. As shown in (2), the demonstrative phrase *this conclusion* refers to the whole sentence expressed before.

A typical anaphoric expression is coreferential with a previous expression in the discourse (the antecedent). As illustrated in (3), *this book* refers to an object that is already introduced in the discourse via the indefinite phrase *a book* in the previous sentence. There is another type of anaphoric expression called ‘indirect anaphora’ or ‘bridging’, which is not coreferential with but linked to a previous expression. The relation between demonstratives and bridging contexts will be discussed later.

Furthermore, demonstratives can be used recognitionally, if the speaker refers to an object which has been introduced sometime previously and therefore exists in the shared background knowledge of both interlocutors, but is not activated in the current discourse and situation. In such cases, the speaker usually prefers a definite expression to suggest the addressee’s familiarity with the intended referent, rather than using an indefinite expression, which characterizes the referent as new and not identifiable. Demonstratives in such uses are typically accompanied by expressions like *you know* or *you remember*, as illustrated in (4).

In addition, demonstratives are found in some indefinite contexts, especially in spoken language. As illustrated in (6), the proximal demonstrative *this* in English can be used to introduce a new referent in the discourse (cf. Prince 1981, Ionin 2006). The same phenomenon is also found in German (cf. Deichsel & von Heusinger 2011, Deichsel 2015), see (7).

- (6) Becky wrote some thank-you notes using **a / this purple pen**, which suddenly exploded spilling purple ink all over Becky’s clothes and furniture.  
(Ionin 2006: 181)

- (7) Gestern in der Kneipe, da war **dieser / ein Fremde(r)**. Er hat mich angesprochen.

‘Yesterday in the pub, there was this / a stranger. He talked to me.’

(Deichsel 2015: 4)

As mentioned above, while the anaphoric use is one of the four major usage types of demonstratives, there is another type of anaphoric expression, called ‘indirect anaphora or bridging’, which is not coreferential with but linked to a previous expression. A well-known characteristic property of bridging-expressions is that they generally cannot be coded by demonstratives (Webber 1988, Himmelmann 1997, Gundel, Hedberg & Zacharski 2000). Consider the following examples:

- (8) Yesterday, when I passed by your office, **the door** was locked.  
 (9) #Yesterday, when I passed by your office, **that/this door** was locked.

The definite description *the door* in (8) is a typical bridging-expression, which is new in the discourse and linked to the expression *your office* in the previous sentence. Therefore, *the door* should be interpreted as the door of the addressee’s office. If we replace the definite article *the* with a demonstrative determiner, as in (9), the bridging reading disappears. The demonstrative phrase *that/this door* must be interpreted as a previously mentioned door or a door that is present in the current extra-linguistic context (for example, both interlocutors are in addressee’s office and talking about the opened cabinet door that is supposed to be locked). However, since counterexamples such as the sentence in (10) can be found in corpora, this property of bridging-expressions cannot serve as a categorical restriction against the usage of demonstratives in bridging-expressions.

- (10) Kaja’s wallet was stolen. I hope they catch **that thief**.

(Gundel, Hedberg & Zacharski 2000: 3)

As assumed by Gundel, Hedberg & Zacharski (2000), processing the preceding discourse in counterexamples such as (10) may actually require the addressee to construct a representation of the referent of the bridging-expression before its form is encountered, so that the referent is activated in this moment, even though it does not have an explicit linguistic antecedent. For example, if Kaja’s wallet was stolen, and if someone tries to process the information that Kaja’s wallet was stolen, then we must have constructed someone in our cognition who stole it, so that it is possible to use the demonstrative phrase *that thief* to refer to this already constructed individual. If we compare sentence (11) to sentence (10), we notice that the definite article in (11) cannot be replaced by demonstratives. The reason is quite simple: processing the information that Hans was murdered does not re-

quire the addressee to construct a representation of some knife, so that there is no activated knife that can serve as the antecedent of the demonstrative phrase.

- (11) Hans was murdered yesterday. **The** / **\*That knife** was found at the crime scene.

It is noteworthy to claim, that the demonstrative bridging in (11) can be licensed, if a contrast is exploited, as illustrated in (12), so that the identification of the appropriate knife is required (a detailed discussion and analysis of this phenomenon is presented by Lücking, this volume).

- (12) Peter was murdered last week. **The knife** was found at the crime scene. Hans was murdered yesterday. **That knife** was also found at the crime scene.

On the one hand, Gundel, Hedberg & Zacharski (2000: 22) claim that bridging-expressions with a demonstrative determiner are best analyzed as minor violations of rules for the appropriate use of demonstratives, so that the counterexample in (10) is better regarded as an exception rather than as systematic usage of demonstratives. And on the other, the counterexample in (12) is strictly dependent on a contrast in the local context. In this paper therefore, bridging without any contrastive configurations is considered as contexts where the use of demonstratives is generally not allowed.

## 2.2 Demonstratives and Grammaticalization

Definite articles do not only derive from demonstratives. In Sissala (spoken in Ghana), for example, the definite article *ná* has its source in the verb meaning ‘see’ (Blass 1990). However, demonstratives are definitely the most common source from which definite articles are derived. In the literature, there are different opinions regarding the process of grammaticalization of demonstratives to definite articles. Greenberg (1978) claims that the process of grammaticalization starts when a purely deictic element has come to identify an element as previously mentioned in discourse. More precisely, according to Greenberg’s view, definite articles that derive from demonstratives have their immediate source in the anaphoric use of demonstratives. An opposite view comes from Himmelmann (1997), who proposes that the context that should be regarded as the source for definite articles is the recognitional use of demonstratives. Lyons (1999: 332) uses a more general term in the discussion of the source of definite articles, namely the deictically unmarked demonstratives.

As originally described by Greenberg (1978), demonstratives develop into definite articles, then into general articles, and finally into gender markers on nouns. Seeing that Greenberg's theory is based on a range of African and American languages with a single-article-system, the extended version of his proposal into another languages has focused only on the first two stages: the stage where demonstratives are purely deictic elements (which Greenberg (1978) calls Stage 0) and the stage where definite articles are entirely developed (which Greenberg (1978) calls Stage 1). The stage between Stage 0 and Stage 1 is generally considered as the intermediate stage at which demonstratives are losing their deictic feature. Himmelmann (1997) and Greenberg (1978) share the view that the development of the definite article (Stage 1) is finished when the use of some linguistic element is obligatory for building definite NPs in deictically neutral contexts. In other words, if a linguistic element is used obligatorily to mark the identifiability of the referent in the contexts where the use of regular demonstratives is not allowed, it can be considered as an entirely grammaticalized definite article.

In this paper the criteria above will be followed when we examine the distribution of the unstressed distal demonstrative *na* in bridging contexts, since bridging contexts are considered as contexts where the use of demonstratives is generally not allowed. As I will show shortly, unstressed *na* in Chinese not only possesses some features of the intermediate stage, but also should be regarded as a simple definite marker in a special type of bridging contexts.

## 3 Definite descriptions in Chinese<sup>2</sup>

### 3.1 Bare nouns

Bare nouns in Chinese, by which I mean NPs in Chinese that are not marked by any determiners, can have more than one interpretation. It is a well-established fact in the literature that the reading of a Chinese bare noun depends on its syntactic position. Lyons (1999), for example, describes the preverbal position as the one that signals the definite reading of bare nouns. Also Cheng & Sybesma (1999) claim that Chinese bare nouns in postverbal position can be interpreted as indefinite, definite or generic, whereas in preverbal position they can only be interpreted as

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<sup>2</sup> It is always problematic to talk about the definiteness in a language without a simple definiteness marker, as in Mandarin Chinese. In this paper I will focus on the superficial phenomenon instead of on the meaning of definiteness. For a comprehensive discussion about the meaning of definiteness with consideration of *na* in Chinese (cf. Cui 2014, chapter 6).

definite or generic, but not as indefinite. Chen (2004) gives a more comprehensive view of the sentential positions that display an ‘inclination’ for definite or indefinite reading of bare nouns in Chinese:

- (13) *Definiteness-inclined positions in Chinese:*  
 subject  
 ba-object<sup>3</sup>  
 preverbal object  
 first object of ditransitive sentence
- (14) *Indefiniteness-inclined positions in Chinese:*  
 object of the presentational verb you ‘have, exist’  
 postverbal NP in presentational sentences  
 postverbal NP in existential sentences  
 second object of ditransitive sentences

This contrast can be illustrated as follows: The bare noun *zuoye* ‘homework’ in (15) tends to be interpreted as indefinite, because it is in the postverbal position. In contrast, the same bare noun in the preverbal object position (16), the sentence initial position (17) and the *ba*-object position (18) is preferably interpreted as definite.

- (15) Ta zuo wan **zuoye** le.  
 he do finish homework PRF  
 ‘He has finished some homework.’
- (16) Ta **zuoye** zuo wan le.  
 He homework do finish PRF  
 ‘He has finished the homework.’
- (17) **Zuoye** ta zuo wan le.  
 Homework he do finish PRF  
 ‘He has finished the homework.’
- (18) Ta ba **zuoye** zuo wan le.  
 he BA homework do finish PRF  
 ‘He has finished the homework.’

(Cui 2014: 33)

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<sup>3</sup> *Ba* is a function word in Chinese that moves the object to the position after *ba* and before the main verb, so that a SVO-sentence is transformed into a SOV-sentence. It is generally agreed in literature that the NP in the object position in a *ba*-construction tends to be definite (cf. Yip & Rimmington 2004, Chen 2004).



Generally, placing a bare noun in one of the definiteness-inclined positions is the most common strategy to formulate a simple definite description in Chinese. Nevertheless, it should be noted that none of the aforementioned definiteness-inclined positions guarantees the definite reading of bare nouns. It is just a matter of inclination, which can be increased as well as decreased by contextual information.

### 3.2 Demonstratives

Different from simple definiteness markers, demonstratives exist in every natural language (cf. Diessel 1999: 8). In Chinese, there is a proximal one *zhe* and a distal one *na*. If *zhe* and *na* are used as determiners for building a demonstrative NP, then it is almost obligatory to insert a classifier between the demonstrative and the noun, as shown in (19) and (20). The choice of the classifier depends only on the semantic features of the following noun and has no influence on the choice of demonstratives. For example, *ben* in (19) is the most suitable classifier for the noun *shu* ‘book’, and *ba* in (20) is the most suitable classifier for the noun *dao* ‘knife’.

(19) *zhe/na ben shu*  
this/that CLF book  
‘this/that book’

(20) *zhe/na ba dao*  
this/that CLF knife  
‘this/that knife’

As genuine demonstratives, *zhe* and *na* can be used situation-deictically, discourse-deictically, anaphorically and recognitionally.

(21) *situational deictic*: [pointing at a book]  
**Zhe ben shu** duoshao qian?  
This CLF book how-much money  
‘How much does this book cost?’

- (22) *discourse deictic*:  
 Guowang si le. Diantai gongbu le **zhe ge xiaoxi**.  
 King dead PRF radio announce PRF this CLF message  
 ‘The king is dead. This message is announced by the radio.’
- (23) *anaphoric*:  
 Congqian you yi ge guowang. Zhe ge guowang you yi ge  
 then exist one CLF king this CLF king have one CLF  
 nü’er.  
 daughter  
 ‘Once upon a time, there was a king. This king had a daughter.’
- (24) *recognitional*:  
 Ni hai jide zuotian na bu dianying ma?  
 you still remember yesterday that CLF movie Q  
 ‘Do you still remember that movie yesterday?’

It is often noted in the literature that unstressed *zhe* and *na* in Chinese and the weakened deictic component in their meanings are the closest to definite articles in other languages (cf. Lü 1990, Huang 1999, Tao 1999, Fang 2002, and Chen 2004). Many authors suggest that the unstressed demonstratives can be used in some cases as simple definite markers. In fact, they are found in some of the contexts in which definite articles are regularly used in other languages and where demonstratives are generally not allowed, as illustrated in the following examples.

- (25) *bridging*:  
 Wo kan le ben shu. Na ge zuozhe shi deguoren.  
 I read PRF CLF book that CLF author be German  
 ‘I read a book. The author is German.’
- (26) *definite description with restrictive relative clause*:  
 Zuotian kaoshi zuobi de na ge xuesheng bei kaichu  
 Yesterday examination cheat POSS that CLF student PASS remove  
 le.  
 PRF  
 ‘The student who cheated in the examination yesterday was expelled from the school.’

While it is clear that the demonstratives in the above examples serve some of the functions that are characteristic of the definite article in other languages, it is still believed in the standard view that they should not be analyzed as simple definite markers, but rather as demonstratives. The reason for this comes from the fact that the occurrence of the unstressed demonstratives in contexts such as (25)–(26) is always optional (and that the version without the unstressed demonstratives is

the most natural and primary one), on the one hand, and that the use of *zhe* and *na* in abstract situational contexts is generally not allowed (cf. (27)), on the other.

- (27) Qu (**\*na ge**) huochezhan zenme zou?  
 To that CLF train-station how go  
 'How do I get to the train station?'

As claimed by Chen (2004), the unstressed demonstratives in Chinese have started on the path of grammaticalization into definite articles, but evidence is still lacking that allows us to consider them as simple definite markers.

If *zhe* and *na* are used in contexts such as (23) and (24), distal *na* is by far the preferred one. According to Chen (2004: 1155), *na* is the more grammaticalized, or more unmarked, determiner of definiteness for referents which are neutral with respect to the deictically based distinctions. In the following, I will therefore focus on the distribution of the unstressed distal demonstrative *na* in bridging contexts.<sup>4</sup>

### 3.3 Unstressed *na* Bridging

According to my own intuitions, the unstressed distal demonstrative *na* in Chinese has different behaviors according to different types of bridging. In bridging contexts such as (28), the use of bare nouns is apparently preferred, whereas the use of unstressed *na* is disfavored; in other cases, such as (29), both types of definite expression are competing with each other. Finally, there are also cases such as (30), where the unstressed distal demonstrative *na* is preferred, whereas the use of bare nouns is not completely acceptable.

- (28) *part-whole-bridging*:  
 Nali you dong fangzi. (\*Na shan) men shi kai zhe de.  
 There exist CLF house that CLF door be open DUR DE  
 'There is a house. The door is open.'
- (29) *agent-event-bridging*:  
 Hansi zuotian bei shahai le. (Na ge) xiongshou yijing bei  
 Hans yesterday PASS murder PRF that CLF murderer already PASS  
 daibu le.  
 arrest PRF  
 'Hans was murdered yesterday. The murderer is under arrest.'

<sup>4</sup> The stressed version of *na* is also excluded from the discussion in this paper, because whenever *na* is stressed, it undoubtedly functions as an ordinary demonstrative.

(30) *instrument-event-bridging*:

Hansi zuotian bei shahai le. Renmen zai xianchang faxian le  
 Hans yesterday PASS murder PRF people at scene find PRF  
 \*(na ba) dao.  
 that CLF knife  
 ‘Hans was murdered yesterday. The knife was found at the scene.’

The standard view, namely that unstressed demonstratives are always optional and less favored, is only supported by the part-whole-bridging in (28). In the agent-event-bridging in (29), it is not clear which form is preferred, so that we cannot determine the unmarked option. Finally, in the instrument-event-bridging in (30), unstressed *na*, which is supposed to be optional and less favorite, becomes unmarked and more natural. The bare noun variant is obviously less preferred.<sup>5</sup>

With respect to the fact that bridging is a special context for which the use of demonstratives is not appropriate, the equal acceptance of unstressed *na* and bare noun in contexts such as in (29) and the preference of unstressed *na* in contexts such as in (30) might be regarded as two instances of evidence that unstressed *na* in such contexts is no longer a real demonstrative, but rather a simple definiteness marker. The crucial question here, of course, is what exactly it is that makes the difference in the distribution of unstressed *na* in (28)–(30). However, we also have to wonder whether the contrast between (28) and (29) and the contrast between (29) and (30) can be confirmed systematically by a larger number of Chinese native speakers. In order to answer this question, two experiments were carried out, which I will report on in the following section.

## 4 Two experiments

### 4.1 The first experiment

#### 4.1.1 Methods and materials

It is well-known that German exhibits a morphological characteristic: in certain environments, a preposition and a definite article following it can contract, as

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<sup>5</sup> While provisionally calling the examples in (28)–(30) part-whole-bridging, agent-event-bridging and instrument-event-bridging respectively, I am not intending to claim that they are the crucial feature behind the contrast, which will be found out via two experiments reported in section 4.

illustrated in (31); and in certain other environments, contraction is not allowed, as illustrated in (32).

- (31) Wie komme ich **zu dem** / **zum Bahnhof**?  
 ‘How do I get to the<sub>full</sub> / the<sub>contracted</sub> train station?’
- (32) Die Uni-Bibliothek hat ein neues Buch über Definitheit gekauft. Ich war gestern dort und habe **in dem** / **#im Buch** nach den Gebrauchsbedingungen des definiten Artikels gesucht.  
 ‘The university library has bought a new book about definiteness. I was there yesterday and was looking for the usage conditions of the definite article in the<sub>full</sub> / #the<sub>contracted</sub> book.’

Schwarz (2009: Chapter 2) observes that the contrast between the contracted form and the non-contracted form also exists in bridging contexts. As he reports, it is statistically confirmed that the contracted form of the definite article in German is preferred for the bridging cases which are based on a part-whole-relationship between the bridged definite description and its antecedent, more precisely, when the bridged definite description is a part of its antecedent, see (33).

- (33) Maria mochte Daniels Mantel sehr, vor allem weil **am** (**#an dem**) Kragen ein Muster aufgestickt war.  
 ‘Maria liked Daniel’s coat a lot, especially because a pattern was stitched onto the<sub>contracted</sub>/#full collar.’

(Schwarz 2009: 51)

As for bridging cases which are based on a producer-product-relationship so that the bridged definite description is the producer of its antecedent, the full form of the definite article is preferred, see (34).

- (34) Paul fand das Gedicht in der Zeitschrift sehr schön, obwohl er sonst nicht sonderlich viel **von dem** (**#vom**) Dichter hielt.  
 ‘Paul thought the poem in the magazine was beautiful, although he did not think very highly of the<sub>full</sub>/#contracted poet otherwise.’

(Schwarz 2009: 52)

As noted in Schwarz (2009: 50), the producer-product-cases are not claimed to be the theoretically relevant category here, but are rather chosen as they ensure a clear contrast with the part-whole-cases along the relevant dimension. In the author’s own words, the underlying difference between the two classes of bridging cases may be described as follows:

[...] when considering wholes and their parts, it is clear that there is a containment relationship between the two, which in turn ensures that whenever we are looking at a situation that contains the whole, it will also contain the part. This is not the case for the relationship between products and their producers.

(Schwarz 2009: 50)

For example, a situation containing a *Mantel* ‘coat’ definitely contains a *Kragen* ‘collar’, since a collar usually should be referred to a part of the coat; but a situation containing a *Gedicht* ‘poem’ does not generally contain the *Dichter* ‘poet’ of the poem, even though the poet is the creator of the poem. Thus the contrast between (33) and (34) can be subsumed under a more general contrast between the situational relationship and the non-situational relationship. As it is shown, the bridged NP is included in the situation which exemplifies its antecedent, as far as the situational relationship is concerned; the bridged NP is excluded from the situation which exemplifies its antecedent, as far as the non-situational relationship is concerned.

Apparently, the contrast above seems intuitively to be consistent with the contrast between (28) and (29). Based on our encyclopedic knowledge, the bridged definite description *men* ‘door’ in (28) is an obligatory physical part of the antecedent *fangzi* ‘house’. Therefore, whenever we have a situation that contains a house, it also contains a door. In contrast, the bridged definite description *xiongshou* ‘murderer’ in (29) does not necessarily require a situational interpretation. Its antecedent *shahai* ‘murder’ can be presented in different ways: as an ongoing event, as a state, as a criminal case, etc. The murderer necessarily exists in the situation that contains a murder only if we present the murder as an ongoing event. In (29), however, the murder is illustrated as a state after the murder-event so that the murderer does not exist in the same situation.

Following the idea in Schwarz (2009), the contrast between (28) and (29) can therefore be reformulated as a contrast between the situational relationship and the non-situational relationship. This intuitively plausible hypothesis offers the starting point for the design of the first experiment. Two categories were generated: the situational bridging cases and the non-situational bridging cases.<sup>6</sup>

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<sup>6</sup> Both terms *situational bridging* and *non-situational bridging* are used with regard to Schwarz’s situation semantical analysis of the contracted definite article in German bridging contexts. A bridging reference is therefore situational, if the referent necessarily exists uniquely in the situation which exemplifies the anchor, so that the use-condition of the definite article is satisfied alone with the situational uniqueness of the referent. Otherwise, the bridging reference is non-situational (for detailed discussion about the situation semantics and the contracted definite article in German see Schwarz (2009), section 4 & 5).

The category of situational bridging mostly consists of part-whole cases such as *car-trunk*, *essay-title*, *song-melody*, *dog-hair*. The category of non-situational bridging consists of cases such as *car-driver*, *essay-author*, *song-singer*, *dog-owner*. Identical antecedents were used in both categories. Contrast pairs were created for each bridging case, namely a bare-noun-version and an unstressed-*na*-version. In this way, I constructed a block with 4 test-sentences for every antecedent. One example is given in (35).

(35) The test-block of ‘song’

Antecedent sentence: Yesterday I heard a song on the radio.

Test sentences:

- a. Xuanlǔ feichang mei.  
Melody very beautiful  
‘The melody was very beautiful.’ (bare-noun-variation)
- b. Na ge xuanlǔ feichang mei.  
That CLF melody very beautiful  
‘The melody was very beautiful.’ (unstressed-*na*-variant)
- c. Geshou mei shenme mingqi.  
Singer NEG some fame  
‘The singer is not very famous.’ (bare-noun-variation)
- d. Na ge geshou mei shenme mingqi.  
That CLF singer NEG some fame  
‘The singer is not very famous.’ (unstressed-*na*-variant)

16 test-sentences were created in this experiment. Two counterbalanced questionnaires were created, either of which contained half of the test items. Participants thus saw all the bridging cases but only one of the two Chinese options. For example, (35a) and (35d) were in the first questionnaire, (35b) and (35c) belonged to the second questionnaire. In addition to the test items each questionnaire contains four filler sentences.

The questionnaires are designed to be judged in Mandarin environment. In order to avoid any influence of the various Chinese dialects, I have chosen 40 native speakers of Chinese among liberal arts undergraduates from 18 to 22 years old, which generally have a stronger education background especially in literature and language, as participants of this experiment. Participants were asked expressly to judge each of the sentences on a scale from 1 (very bad) to 4 (very good), based on whether they considered it as a well-formed Chinese sentence in Mandarin environment, according to their spontaneous intuition. Every participant completed exactly one questionnaire. Thus each test item was judged by 20 native speakers.

### 4.1.2 Results of the first experiment

The results of the first experiment are summarized in (36). In the case of situational bridging, the test sentences were judged worse when unstressed *na* was used, in comparison with the bare-noun-variations. On the contrary, in the case of the non-situational bridging both variations in Chinese were judged to be well-formed. These confirmed my own judgements.

(36) *Results of the first experiment in average rating:*

	bare noun	unstressed <i>na</i>
non-situational	3.12	2.99
situational	<b>3.09</b>	<b>2.27</b>

The data were analyzed by using a t-test for statistical significance. For the non-situational case, the mean judgment for the bare-noun-variant was 3.12, whereas the mean judgment for the unstressed-*na*-variant was 2.99. The difference between them is not significant ( $p > 0.05$ ), which confirmed, that in sentences such as (29) both variants in Chinese are well-formed. Therefore, there is not enough evidence to claim that one of the variations is the primary one.

For the situational case, the mean judgment for the bare-noun-variation was 3.09, compared to 2.27 for the unstressed-*na*-variant. This difference is statistically significant ( $p < 0.01$ ). In other words, for the situational case the bare-noun-variation is definitely the primary candidate, whereas the unstressed-*na*-variant is hardly to be judged as acceptable.

## 4.2 The second experiment

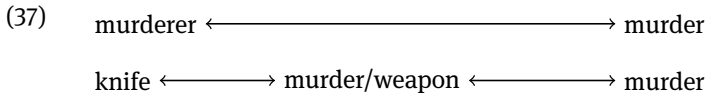
### 4.2.1 Methods and materials

Describing the contrast between (29) and (30) is relatively complicated. The parameter ‘situation’ is obviously irrelevant. Both the bridged definite descriptions *xiongshou* ‘murderer’ in (29) and *dao* ‘knife’ in (30) do not necessarily exist in the situation that contains their antecedent *shahai* ‘murder’.

The difference between both bridging cases presumably consists in the directness/indirectness of the relationship between the bridged definite description and the antecedent. While the definite description *xiongshou* ‘murderer’ in (29) is direct related to the antecedent *shahai* ‘murder’ (in view of the fact that murderer is an argument of the concept murder), there is no direct relation between the def-



inite description *dao* ‘knife’ in (30) and the antecedent *shahai* ‘murder’. In order to interpret *dao* ‘knife’ as a bridging-NP, we need to accommodate a transitional clue, namely that the murder weapon was a knife. Otherwise the definite description *dao* ‘knife’ in (30) is not interpretable. This contrast is illustrated as follows:



Given the common view that bridging is a frame-based usage of definite descriptions,<sup>7</sup> the frame theory developed by Barsalou (1992) may offer a solution to describe the difference between (29) and (30) formally. Barsalou claims that ‘the fundamental task for frame theorists is to provide satisfactory definitions for *attribute* and *value*’ (Barsalou 1992: 30). He then defines an attribute as ‘a concept that describes an aspect of at least some category member’ and a value as ‘a subordinate concept of an attribute’ (Barsalou 1992: 31). For example, *color* describes an aspect of *birds* and is therefore an attribute of *bird*, whereas *red* is a subordinate concept of *color*, thus a value of the attribute *color*. His definitions for attribute and value exactly provide an appropriate theoretical description for the underlying difference between (29) and (30). *Murderer* describes an aspect, more precisely the agent, of *murder* and is therefore an attribute of *murder*. Unlike *murderer* in (29), *knife* in (30) does not describe any aspect of *murder*, but a potential realization of the attribute *murder weapon* which describes the instrument of *murder*. Thus, *knife* in (30) should be judged as a value of *murder weapon*, which is an attribute of *murder*.

Taking the contrast between *attribute* and *value* as the starting point for the design of the second experiment, two categories were generated: the attribute-class and the value-class.<sup>8</sup> As in the first experiment, I chose four antecedents, namely *murder*, *wedding*, *surgery* and *interview*, and created a block with eight frame elements for each antecedent, whereas four of them are attributes and the other four are values. Following the method in the first experiment, pairs were created for each frame element, namely a bare-noun-variation and an unstressed-*na*-variant. Thus, each of the four blocks in the second experiment contains 16 test sentences. A partial representation of the test-block *murder* according to the test-

<sup>7</sup> For a pragmatic account of bridging cf. Lewis (1983), Erkü & Gundel (1987), Sperber & Wilson (1995), Wilson & Matsui (1998), Wilson (1998).

<sup>8</sup> In the original experiment four categories were created. The other two categories were based on the frame theory developed by FrameNet (Baker, Fillmore & Lowe 1998). For more details about the experiment cf. Cui (2014).

frame-elements *murderer*, *cold bloody man*, *murder weapon*, and *knife* is given in (38).

(38) The test-block of ‘murder’

Antecedent sentence: Hans was murdered yesterday.

Test sentences:

- a. Xiongshou meiyou liuxia renhe xiansuo.  
Murderer NEG leave any trace  
‘The murderer has not left any trace.’ (bare-noun-variation)
- b. Na ge xiongshou meiyou liuxia renhe xiansuo.  
that CLF murderer NEG leave any trace  
‘The murderer has not left any trace.’ (unstressed-*na*-variant)
- c. Lengxie de nanren meiyou liuxia renhe xiansuo.  
cold-bloody DE man NEG leave any trace  
‘The cold bloody man has not left any trace.’ (bare-noun-variation)
- d. Na ge lengxie de nanren meiyou liuxia renhe xiansuo.  
that CLF cold-bloody DE man NEG leave any trace  
‘The cold bloody man has not left any trace.’ (unstressed-*na*-variant)
- e. Xiongqi diaoluo zai di shang.  
murder-weapon drop on floor above  
‘The murder weapon lied on the floor.’ (bare-noun-variation)
- f. Na jian xiongqi diaoluo zai di shang.  
that CLF murder-weapon drop on floor above  
‘The murder weapon lied on the floor.’ (unstressed-*na*-variant)
- g. Dao diaoluo zai di shang.  
Knife drop on floor above  
‘The knife lied on the floor.’ (bare-noun-variation)
- h. Na ba dao diaoluo zai di shang.  
that CLF knife drop on floor above  
‘The knife lied on the floor.’ (unstressed-*na*-variant)

64 test sentences were created this way. Again, two counterbalanced questionnaires were designed, either of which contained half of the test items. Participants therefore saw all of the frame elements, but only one of the both Chinese versions. In addition to the test items, each questionnaire contains 8 filler sentences.

As in the first experiment, the questionnaires are also designed to be judged in Mandarin environment. Therefore, I have chosen 80 native speakers of Chinese among liberal arts undergraduates from 18 to 22 years old, which generally have a stronger education background especially in literature and language, as participants of this experiment. Participants were asked expressly to judge each of the sentences on a scale from 1 (very bad) to 4 (very good), based on whether they

considered it as a well-formed Chinese sentence in Mandarin environment, according to their spontaneous intuition. Each participant completed exactly one questionnaire. Thus, each test item was judged by 40 native speakers.

#### 4.2.2 Results of second experiment

The results of the second experiment are summarized in (39). They also confirmed my intuitive judgments. In the case of the value-bridging, the test sentences were judged better when unstressed *na* was used, in comparison with the bare-noun-variations. As for the attribute-bridging, the bare-noun-variation was as good as the unstressed-*na*-variant.

(39) *Results of the second experiment in average rating:*

	bare noun	unstressed <i>na</i>
attribute	2.98	2.91
value	<b>2.42</b>	<b>2.65</b>

The data here were also analyzed by using a t-test for statistical significance. For the attribute-bridging, the mean judgment for the bare-noun-variation was 2.98, whereas the mean judgment for the unstressed-*na*-variant was 2.91. The difference between them is not significant ( $p > 0.05$ ), which confirmed again that, in sentences such as (29), both variations are well formed.

For value-bridging, the mean judgment for the bare-noun-variation was 2.42, compared to 2.65 for the unstressed-*na*-variant. This difference is statistically significant ( $p < 0.05$ ). Therefore, it was also confirmed that, for value-bridging, the unstressed-*na*-variant is the primary choice, which is contradictory to the standard view in literature.

## 5 Discussion

The results from both experiments clearly confirm my intuition about the contrast between (28) and (29) as well as the contrast between (29) and (30).

In sentences such as (28), the standard view of the status of unstressed demonstratives in Chinese is supported by the data. In such contexts, the bare-noun-variation is undoubtedly the primary choice. The unstressed *na*-variant is obviously disfavored.

In sentences such as (29), the experimental data may not be in accordance with the standard view, since the unstressed-*na*-variant was judged as good as the bare-noun-variation. Even though the mean judgment for the bare-noun-variation is slightly higher than the mean judgment for the unstressed-*na*-variant in both experiments, the differences are not significant according to the t-test.

The crucial evidence against the standard view is offered by sentences such as (30). In such contexts, the unstressed-*na*-variant is significantly better than the bare-noun-variation. The use of unstressed *na*, which is supposed to be optional, becomes preferred. And the use of bare nouns, in contrast, seems more difficult to trigger the bridging reading. Therefore, analyzing unstressed *na* as a regular demonstrative in such contexts is not appropriate at all. Developing a new analysis for unstressed *na*, at least in the context where the unstressed-*na*-variant is the primary candidate, seems to be reasonable.

Therefore, the provisional names of the examples (28)-(30) should be replaced with three more reasonable terms, namely *situational bridging*, *attribute-based bridging* and *value-based bridging*. This triplex typology of bridging is supported by the distribution of unstressed *na* in bridging contexts, as illustrated in (40), and can be considered as an extension of Schwarz's suggestion that there were, with regard to morpho-syntactical data in German, two subclasses of bridging reference.

(40) *The distribution of unstressed na in bridging contexts:*

		bare noun	unstressed <i>na</i>
situational bridging		well-formed	not well-formed
non-situational bridging	attribute	well-formed	well-formed
	value	disfavored	preferred

In order to provide a more precise description of the status of the unstressed distal demonstrative *na* in Chinese, the distribution of unstressed *na* in comparison to the definite article and the demonstratives in English is given as follows.

(41) *The distribution of unstressed na:*

	Engl. demonstr.	Engl. def. article	unstressed <i>na</i>
deictic	yes	yes	yes
anaphoric	yes	yes	yes
recognitional	yes	yes	yes
situational			no
bridging attribute	no	yes	yes (optional)
value			yes (preferred)
abstract			
situational	no	yes	no

It should be mentioned that I am not claiming that the unstressed distal demonstrative *na* in Chinese is advancing quickly in a grammaticalization path leading to a definite article, so that it has extended its use to some new areas recently. Contexts such as (30) were not previously discussed in the literature because such examples exist predominantly in spoken Chinese, whereas previous works were exclusively based on written corpora.

## 6 Conclusion

In this paper, I reported two experiments that were designed to inspect the distribution of the unstressed distal demonstrative *na* in Chinese bridging contexts. The results show, on the one hand, a new typology of the bridging reference based on morpho-syntactical evidence in Chinese, and offer, on the other, some preliminary data against the standard view of the status of the unstressed demonstratives in Chinese. According to the experiments, I suggest that, in value-based bridging contexts, the unstressed distal demonstrative *na* should be regarded as a simple definite marker, because using *na* is the primary way to trigger the bridging reading. Thus, the unstressed distal demonstrative *na* has reached a further stage on the path of grammaticalization into a definite article.

The phenomenon discussed in this paper also raises a question in the current discussion about the development of definite articles. It is not surprising at all that demonstratives in Chinese have started to change on the path of grammaticalization into definite articles. But, surprisingly, they chose a strange starting point, namely bridging contexts. Especially, the context in which they conclude their grammaticalization process is a certain type of bridging where the relation between the bridged definite description and the anchor is extremely weak. This fact does not meet the theoretical expectation that the emergence of definite ar-

ticles starts in deictic and anaphoric contexts. In order to explain this fact, the nature of bridging case should be investigated more intensively in the future.<sup>9</sup>

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Andy Lücking

# Witness-loaded and Witness-free Demonstratives

**Abstract:** According to current theories of demonstratives, both discourse referentially (endophoric) and real-world referentially (exophoric) uses of demonstrative noun phrases (DemNPs) obey the same mode of reference. Based on the clarification potential of DemNPs and on data on bridging and deferred reference it is argued that only exophoric DemNPs allow for the identification of a demonstratum, while endophoric ones do not. Furthermore, the view that discourse reference does not involve a demonstration act is taken and, hence, contrary to standard assumption, the claim is made that both uses follow different modes of reference. In order to maintain a unified analysis of DemNPs, it is argued to spell out their semantics in terms of a grammar-dialog interface, where demonstratives and demonstration acts contribute to processing instructions for reference management. In this system, exophoric DemNPs are modeled as witness-loaded referential expressions, while endophoric DemNPs remain witness-free. A final claim is that the witness gives rise to manifold perceptual classifications, which in turn license indirect reference. The analysis is implemented in *Type Theory with Records* (which provides the notion of a witness) within Ginzburg's dialog framework called *KoS*. The dynamics of demonstratives is captured by a set of rules that govern their processing in dialog.

**Keywords:** demonstratives, demonstration, reference, deferred reference, witnesses, dialog

## 1 Introduction

Demonstrative noun phrases (DemNPs) like *this painting* can be used in two ways: *exophorically* and *endophorically* (the latter can be further distinguished into anaphoric and cataphoric). Depending on this use, demonstratives pick out their referent from one of two sets of referents (Kamp 2002). In exophoric (or deictic) uses, the referent is a *real world entity*, as in (1).

(1) This painting [*nodding towards a canvas*] is from Chagall.

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nature of such cases is due to the referent being unknown to the speaker (see Chen (1990) for a collection of uses of English demonstratives):

- (5) That student who scored one hundred on the exam is a genius.  
*(No demonstration no speaker referent use, King 2001: 3)*

We will not be deeply concerned with rhetoric uses here, assuming that they just trigger additional interpretation procedures on top of the canonical uses, procedures that are outside the scope of this chapter. However, rhetoric and descriptive uses contributed to giving up analyzing DemNPs in a directly referential manner in favor of descriptive or quantificational approaches. Accordingly, canonical DemNPs, are assumed to be a species of definite descriptions (see e.g. Roberts 2002): they obey the uniqueness constraint of definites plus  $X$ , where the proposals for  $X$  include

- speaker intentions (King 2001),
- familiarity presuppositions (Roberts 2003),
- anchoring relations (Asher 2010),
- contextually fixed relation variables (Elbourne 2008),
- resource situation anchors (Poesio & Rieser 2011).


Roughly speaking, the additional impact of demonstratives compared to definites is that they require their referent not only to be unique (relative to a certain situation), but also to be *identifiable* in the utterance context (see Arsenijević in this volume for (un)identifiability marking in Serbo-Croatian). Since the difference between endophorically and exophorically used DemNPs basically seems to reside only in finding the referent in one of two different kinds of contexts – utterance situation vs. co-text (i.e., discourse markers), respectively – the approaches each propose a unified semantics. For instance, according to the system of Elbourne (2008: 430), a DemNP is analyzed according to the following configuration:  $[_{\text{DemNP}} [[\text{that } i]R] \text{ NP}]$ , where  $i$  is a contextually given index and  $R$  is a contextually salient relation (possibly bridging between  $i$  and  $[_{\text{NP}}]$ , the common noun (CN) contribution of the DemNP) – the Nunbergian (1993) deictic and relational elements. The most relevant part of the account of Roberts (2003) for present purposes is the demonstratum condition of her presupposition definition of DemNPs. Its central logical form is as follows:  $\text{demonstratum}(w)(g(j), g(S), \delta)$ . Here,  $\delta$  is a demonstration act, which, depending on discourse or real-world referential use, is an exophoric demonstration act or a so-called *demonstration in discourse*. The speaker is denoted by  $g(S)$  and  $g(j)$  is the demonstratum, the value

of assignment  $g$  applied to *discourse referent*  $j$  at world  $w$  according to the current common ground.

However, in this chapter it is argued that in endophoric uses there is no demonstratum available – that is, there is no  $i$  and no  $g(j)$  (and neither a demonstration in discourse). Unified approaches, it is diagnosed, unduly conflate real world referents and discourse referents. This is motivated by observing that both uses of DemNPs exhibit a different range of possible *indirect references* (Section 2) and show different clarification potential (Section 3). Furthermore, using terminology from situation semantics and the theory of generalized quantifiers for interpreting  $i$  and  $g(i)$  as *witnesses*, it is argued that discourse referential DemNPs are *witness-free*, while real-world referential DemNPs are *witness-loaded* expression. Putting together the functioning of demonstration acts and witness loading, Section 4.1 argues that a unified theory of DemNPs has to build on discourse theory and dialog management. An implementation of this analysis is given in Section 4 in terms of *Type Theory with Records* and the formal dialog theory named *KoS* (Ginzburg 2012).<sup>1</sup> Finally, given this framework, in Section 5 it is sketched how witness-loaded but not witness-free expressions give rise to indirect reference.

## 2 Bridging Demonstratives and Deferred Reference

Both endophorically and exophorically used demonstratives allow for “indirect reference”, that is, the entity referred to is not identical to the referent provided by the context, but just somehow related to it. For endophoric uses, this phenomenon is known as *bridging* (Clark 1975), for exophoric uses it is known as *deferred reference* (Quine 1968; Nunberg 1993). Interestingly, while deferred reference (or *deference*, for short) seems to be broadly possible, bridging demonstratives are licensed only in specific contrastive configurations (Wolter 2006). For instance, one can proceed from a demonstrated painting (the *index* or *demonstratum*) to its painter:

(6) This[: *demonstrating a painting*] painter is my favorite one.

However, no such transition is possible with a bridging demonstrative from a mentioned painting, whereas this works with a canonical bridging definite:

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<sup>1</sup> Note that “KoS is not an acronym” (Ginzburg 2012: 2,fn.1).

- (7) In the museum there is a beautiful a painting.
- a. ?That painter is my favorite one.
  - b. That painting is my favorite one.
  - c. The painter is my favorite one.

While there is a unique painter detectable in context *via* a *necessary role* bridge (Clark 1975: 171), the stronger identifiability requirement seems not to be fulfilled, therefore the bridging definite but not the bridging demonstrative is licensed (this phenomenon is used by Cui (this volume) in order to distinguish a definite from a demonstrative use of the Chinese demonstrative 那, *nà*). However, there is an identifiable painting, the one introduced verbatim in the first sentence, so the painting is a possible (and actually the only) antecedent expression for the DemNP. Let us call this *identification by repetition* of linguistic material.

The stronger identifiable requirement is satisfied if the co-text offers a choice: demonstrative bridging is possible if a contrast is exploited, as is argued by Wolter (2006) by example of the following sentences:


- (8) a. A car drove by. The horn was honking. Then another car drove by. *That horn* was honking even louder.
- b. A car drove by. The horn was honking. Then another car drove by. ?*The horn* was honking even louder.
- c. ?A car drove by. *That horn* was honking.

As can be seen in (8b), however, the uniqueness requirement is not fulfilled (there are two horns involved in the described situation), which precludes the use of the definite. According to Wolter (2006), the bridging demonstrative is licensed due to a *shift of the resource situation* associated with the DemNP. In the example, the shifted salient situation is a sub-situation of the described one, namely the sub-situation containing only the second car, and its respective horn. This analysis matches nicely with the conclusions drawn by Bosch (2012), who argues, partly based on the topic avoidance of demonstrative pronouns in German (Bosch & Umbach 2007), that demonstrations “mark a shift in focus” (see also Hinterwimmer in this volume).

A shift in focus is also involved in deference. A demonstration act directs the attention of the interlocutors towards a perceptible situation. For instance, an “exophoric configuration” for the one in (8c) allows deferring from a perceptually accessible car to its honk:

- (9) [Context: *A car is driving by.*] *That*[~~the~~] *horn* is honking.

This also works for the contrastive set of two cars:

- (10) [Context: *Two cars are driving by.*] That[] horn is honking.

That is, while bridging demonstratives involve a shift within a contrastive context (where identifiability is ensured by eliminating the contrast and leaving just one option), deferred reference involves a shift of the focus of attention of the interlocutors.

At first glance, these examples suggest that bridging respectively deference is just a shortcut construction for something like *the X of that Y*, where *X* is the inferred referent and *Y* the demonstratum (see also Clark 1975; Nunberg 1993; Elbourne 2008). Rephrasing the examples along the line of this pattern obeys the canonical uniqueness and identifiability constraints of definites and demonstratives:

- (11) a. A car drove by. The engine stuttered. Then another car drove by. The engine of that/?the car stuttered, too.  
 b. A car drove by. The engine of that/the car stuttered.  
 c. [Context: *A car is driving by.*] The engine of that[ ] car stutters.

However, as illustrated in (11b), if the bridge is explicated the demonstrative is allowed even without contrast. The reason is that there is now an antecedent expression available of which the CN of the DemNP is a replication (identification by repetition, see above).

Furthermore, bridging demonstratives obey a sequentiality constraint: the bridging demonstrative can only relate to the last-mentioned discourse referent. On the contrary, demonstratives in deferred reference can pick out any car in any order (given that all three cars are perceptually accessible during the time of demonstrative reference).

- (12) a. A car drove by. The engine stuttered. Then another car drove by. That engine stuttered, too. Then, yet another car drove by. That engine stuttered, too.  
 b. [Context: *Three cars are driving by.*] The engine of that[ ] car stutters. The engine of that[ ] car stutters, too. The engine of that[ ] car stutters, too.

It follows from (12a) that contrast is not restricted to pairs of discourse referents. Rather, the discourse referents of a contrast set seem to be organized as a *sequence* or a *partially ordered set*, where the most recently introduced one precedes all previous ones.

The elements of the contrast set as well as the inferred referents furthermore have to be of the same or at least of a related type. This *semantic parallelism* constraint is illustrated in (13) and (14). Firstly, bridging is licensed only if the bridging demonstrative takes up the previous canonically licensed bridge:

- (13) a. A car drove by. The engine stuttered. Then another car drove by. *That engine* stuttered, too.  
 b. A car drove by. The engine stuttered. Then another car drove by. ?*That horn* was honking.

Secondly, the inferential bases (i.e., discourse referents) have to be sufficiently similar even in case of an uptake of the canonical bridge:

- (14) a. A car drove by. The horn was honking. Then a gnu walked by. ?*That horn* was scuffed.  
 b. A car drove by. The horn was honking. Then a motorbike drove by. *That horn* was honking, too.

Deferences, on the other hand, do not underlie semantic parallelism:

- (15) a. [Context: *A car is driving by.*] *That* [ ] engine stutters.  
 b. [Context: *Another car is driving by.*] *That* [ ] horn is honking.  
 (16) a. [Context: *A car is driving by.*] *That* [ ] horn is honking.  
 b. [Context: *Then a gnu is walking by.*] *That* [ ] horn is scuffed.

These data suggest that bridging demonstratives must piggy-back on a preceding bridging definite; they require a highly specific co-text in order to be licensed. The shift in focus then boils down to a co-text look-up: a matching expression registered by identification by replication is retrieved from previous constituents. Thus, as Klaus von Heusinger<sup>2</sup> rightly argues, what Wolter (2006) interprets as bridging demonstrative is a use of a DemNP that picks up a description of the form *the X of that Y*, where *X* and *Y* are taken from co-text, that is, an E-type DemNP. Seen from this perspective, the specific contrast configuration presumably allows for accommodation of the required bridge by copying it, licensed by structural parallelism. This includes the fact that there is no simple translation between the perceptual information of real world referents and descriptive conditions of discourse referents – they are not on a par wrt. inferential reference, as attested in examples (13) to (16). The explanation proposed here is, basically, to ascribe the difference between bridging demonstratives and deferred reference to different

<sup>2</sup> In a series editor's comment on this chapter.

notions of identifiability: discourse referents are distinguished numerically (i.e., by sameness of descriptions), real world referents are distinguished perceptually and allow for a plurality of classifications. This difference has repercussions on the respective *clarification potential* of demonstratives, which is examined in Section 3.

Note finally that there are certain couples of nouns that at first glance allow for indirect reference, namely hyponyms and their hypernyms:

(17) Chagall walks his/a/the poodle. This/That dog wants to go out every hour.

There is an asymmetry in the inferring direction, however: while one can proceed from hyponyms to hypernyms (as in (17)), the reverse is not permitted:

(18) ?Chagall walks his/a/the dog. This/That poodle needs to go out every hour.

However, since in (17) both the DemNPs pick out the discourse referent introduced by the antecedent NP and inherit its semantic value, no deferring is involved at all. This asymmetry can be explained by a variant of *inclusiveness* (Hawkins 1978): while all poodles are dogs, not all dogs are poodles (i.e., the set theoretical relation between the extension of the hyponymically related predicates). In a similar way, if we point at Chagall's pet, we can refer to it with both "this/that dog" and "this/that poodle" and neither is interpreted as involving deference.


*Caveat:* The example in (17), however, illustrates that the *identification by repetition* rule introduced above is too simplistic when repetition is understood as mere replication of linguistic form. Following the analysis of (17), repetition has to include at least sense relations. Furthermore, also implicitly saturated argument roles of verbs can give rise to identifiability in co-text, as illustrated in (19), taken from Gundel et al. (2000), quoted after Cui (this volume).

(19) Kaja's wallet was stolen. I hope they catch that thief.

Drawing on a repetition doesn't account for bare demonstratives at face value. They can be subsumed to this rule, however, if an elliptic resolution is applied, so that, for instance, the demonstrative in "My sister says she is ill, but I don't believe this." is resolved to *this claim*. Notwithstanding this caveat, in the remainder of the chapter the simplifying repetition rule is used.

### 3 Clarifying Demonstrations

The meaning of nominal expressions is revealed by their *clarification potential* (Purver & Ginzburg 2004) when used as *reprise fragments*. Applying this method to exophoric DemNPs, the object of clarification seems to be restricted to the identity of the referent/index, as illustrated in (20).

- (20) A: This[] painting is from Chagall.  
 B: This[ ] painting?  
 ~→ *The object over there?*  
 ~→ *?? What do you mean 'painting'?*  
 ~→ *?? Which one?*  
 A: Right, this painting. / No, the one to the left.  
 ?? Well, maybe it's a drawing.

The possible answers can each confirm or correct referent identification (see A's second move in (20)). B's clarification request cannot aim to clarify the meaning of the nominal constituent – requesting clarification of the meaning of the CN is possible but have to be produced either without the demonstrative (“painting?”), or with a strongly stressed CN (“this PAINTING?”).

Note that the demonstration act has to be part of B's clarification request in (20). If the demonstration is missing from the request, it will be taken to be the requested element:

- (21) A: This[ ] painting is from Chagall.  
 B: This painting?  
 ~→ *Which one? I missed your demonstration.*  
 ~→ *Which one? I don't see any painting.*  
 A: This[ ] one.

B can even modify or skip the CN in the clarification request, as can A in answering it, emphasizing the index-related clarifying potential of the DemNP:

- (22) A: This[ ] painting is from Chagall.  
 B: This[ ] one?  
 This[ ]?  
 This[ ] colored something?  
 ~→ *The object over there?*  
 A: Right. / No, the one to the left.



Likewise, the clarification potential of deferred reference concerns only the ind-sec:

(23) [Context: *A and B are looking at some painting (so A's 'it' is most likely just a nod).*]

A: This[ ] painter died at an early age.

B: This[ ] painter?

→ *What do you mean 'painter'?* (CN)

→ *Wouldn't be 'drawer' a better classification?* (bridge)

→ *The painter of this painting?* (index)

→ *Which one?* (index or referent)

→ *There is no painter, there is just a painting.* (referent)

A: ??Well, the painter of this painting.

?? Well, this drawer.

Yes, this one. / No, that one.

Note that the open clarification request “Which one?”, which might concern the index as well as the referent, is not possible. Furthermore, questioning exclusively the referent is not possible either. Therefore, (23) provides evidence against the proposal of Borg (2002), who argues to treat deference and direct reference alike.<sup>3</sup> Again, requesting clarification regarding the referent or the bridge has to be produced without the demonstrative or with a strongly stressed CN:

(24) [Context: *A and B are looking at some painting.*]

A: This[ ] painter died at an early age.

B: Painter?

→ *What do you mean "painter"?* (CN)

→ *Wouldn't be 'drawer' a better classification?* (bridge)

→ *?? The painter of this painting?* (index)

→ *Which one?* (index or referent)

→ *There is no painter, there is just a painting.* (referent)

A: Well, the painter of this[ ] painting (possibly followed by “idiot”).

Well, this drawer.

?? Yes, this one. / No, that one.

<sup>3</sup> The deference “This is my favorite author’ is true just in case the object demonstrated is the speaker’s favorite author; what changes here is that the object demonstrated may not be the object pointed at.” (Borg 2002: 508)

In case of anaphoric uses, however, requesting an index does not seem to be feasible, nor is it possible to address a discourse referent at all:

- (25) A: I saw a painting yesterday and this painting was shocking.  
 B: This painting?  
     ~> *Which one?*  
     ~> ?? *The object over there?*  
     ~> ?? *What do you mean 'painting'?*  
 A: The painting I saw yesterday. / The painting I just mentioned.  
     ?? This one.

The only available means for identifying discourse referents are the linguistic expressions that introduced them in the first place, complying to the identity by repetition constraint (subject to the caveat from the end of Section 2). Accordingly, the CN can neither be skipped nor modified:

- (26) B: ?? This one? / ?? This?  
       ?? This drawing?  
       ?? This colored something?

The same observation can be made in case of bound demonstratives:

- (27) A: Mary talked to no senator before that senator was lobbied.  
 B: That senator?  
     ~> *Which senator?*  
     ~> ?? *What do you mean 'senator'?*  
 A: (?) The group of senators Mary talked to.  
     The one from the group of senators Mary talked to.

B's clarification request in (27) is best answered with a repetition of the descriptive condition concerning an individual referent ('senator' is singular). This is at odds with the claim that "in this case the index is the group of senators talked to by Mary" (Elbourne 2008: 446) and provides clear evidence for unwarranted generalizations of unified theories concerning discourse and real-world referents.

In case of bridging demonstratives no index-specific request is within reach, but the unspecific "which" variant as well as referent requests are:

- (28) A: A car drove by. The horn was honking. Then another car drove by.  
       That horn was honking even louder.  
 B: That horn?  
     ~> *Which horn?* (index or referent)  
     ~> ?? *The horn of that car?* (index)

- ~→ ?? *What do you mean “horn”?* (CN)  
 ~→ ?? *Wouldn’t be ‘bell’ a better classification?* (bridge)  
 ~→ *I thought another car drove by?* (referent)  
 B: The horn of the second car. (index-related)  
     Oh, I haven’t told you about the horn yet. (referent-related)  
     ?? Well, maybe it was a bicycle bell. (CN)

A can resolve the unspecific clarification either in terms of the referent or the index. There is no good way to give an index-related answer other than counting antecedents, either in the order of appearance in the narrative or in the order of uttering the corresponding linguistic expressions (cf. Roberts 2002: 306). In particular, and in contrast to deferred reference, clarification requests cannot involve demonstrations themselves (which is why in (28) it is impossible to specifically request index-related information). B might employ a definite description, though, like “The horn of the first or the second car?”.

In sum, then, discourse referential DemNPs are individuated according to the descriptive conditions bound up with discourse markers. Real-world referential DemNPs are individuated according to the perception of their demonstrata. This ontological difference is not represented by the unified approaches briefly discussed in Section 1. In particular, according to the evidence collected above, no index  $i$  nor demonstratum  $g(j)$  is retrievable from endophoric DemNPs. In terms of situation semantics, this difference is captured in terms of *witness sets*, respectively *witnesses* (Barwise & Cooper 1981: 191 et seq.): exophoric DemNPs are witness-loaded while endophoric DemNPs are witness-free. At least the unified accounts of Elbourne (2008) and Roberts (2003) reviewed in Section 1, to the contrary, assume that even endophoric DemNPs relate to an (maybe hidden) index. If a unified account is given up, however, we are left with the option of treating endophoric and exophoric demonstratives as different lexemes. In order to avoid this undesirable option and maintain the unity of DemNPs, a unified theory is sketched in the following that rests on the function of demonstration acts and DemNPs in the grammar-dialog interface.

## 4 Witness-loaded and Witness-free DemNPs

### 4.1 Demonstratives as Processing Instructions

The natural place for demonstrations is dialog, anyway: there is no point for the speaker in demonstratively identifying something to him- or herself. Accordingly,

the observation that “referring expressions are no more than guidelines for retrievals” (Ariel 1988: 68) is not a new one. However, the findings from the previous discussion can be collected in the form of more precise retrieval instructions:

1. *If there is a demonstration act accompanying the DemNP, then the DemNP is witness-loaded and identifiable in the utterance situation.* This follows from Kaplan’s completeness constraint and the deictic force of demonstratives (cf. Section 1).
2. *If there is no demonstration act, but a repetition of a constituent, the DemNP remains witness-free but is anchored to the repeated constituent.* This rule captures endophoric as well as E-type uses of DemNPs (see Sections 2 and 3).
3. *Otherwise, the DemNP contributes a discourse referent, which is not required to be witness-loaded or identifiable.* This rule is intended to cover rhetoric uses of DemNPs like *no demonstration no speaker reference* and empathetic uses (see Section 1).

Recall that the second case eventually has to be modified according the caveat formulated at the end of Section 2. Rhetoric or empathetic uses typically have no antecedent in co-text, so they are not covered by the second rule. Note that by dint of the third rule, such DemNPs are likened to culturally grounded proper names like ‘Marc Chagall’.

Now suppose there is a management sheet that keeps track of discourse referents. Think, for instance, of a structured set of reference markers known from the DRSs of DRT (Kamp & Reyle 1993). A toy illustration is given in (29), where the first three columns systematize the requirements for demonstratives, and the right column hosts all further discourse referents (e.g., introduced by definites and indefinites), including perceptually accessible objects in the utterance situation.

(29)

witness-free	witness-loaded	identify-in	given
		context	
		co-text	
		none	

Given such a discourse referent sheet, the difference between the sentences from example (4), repeated in (30), is reflected in a different “reference marker management”.

- (30) a. Every farmer who owns a donkey<sub>*i*</sub> beats that donkey<sub>*i*/<sup>\*</sup><sub>*j*≠*i*</sub>.</sub>
- b. Every farmer who owns a donkey<sub>*i*</sub> beats that [W] donkey<sub>*i*/<sub>*j*≠*i*</sub>.</sub>

From (30a) we get two co-textually given discourse referents,  $x$  and  $y$ , from *every farmer* and *a donkey*, respectively. Since the DemNP is not accompanied by a demonstration act and its CN is an uptake of a previous expression, the second above-given rule applies and instructs to shift the discourse referent  $z$  of *that donkey* into the “witness-free/co-text” field. The result is as follows:

(31)

witness-free	witness-loaded	identify-in	given
		context	
$z(= y)$		co-text	$x, y$
		none	

Since there is a suitable antecedent,  $z$  can be identified in co-text with  $y$ .

The sentence in (33b) gives rise to the same given discourse referents. However, the demonstration act, according to rule 1 above, instructs to move the discourse referent of the DemNP into the “witness-loaded/context” field. Additionally, the demonstration itself indicates where the witness is to be found in the utterance situation:

(32)

witness-free	witness-loaded	identify-in	given
	$z(= a)$	context	$(a)$
		co-text	$x, y$
		none	

Finally, a *no demonstration no speaker reference* DemNP like that in (33) fills the “witness-free/none” field of the reference sheet, as illustrate in (34).

- (33) That woman who won the lottery yesterday must be really happy.

(34)

witness-free	witness-loaded	identify-in	given
		context	
		co-text	
$x$		none	

By means of bookkeeping instructions for discourse referents in dialog, a unified theory of DemNPs can be maintained. This section introduced a “pedagogic” sketch of the underlying rationale. In order for this sketch to work, its core ingredients have to be formulated in terms of a dialog theory. We use KoS, the dialog theory developed by Ginzburg (2012), for this purpose. Since KoS is implemented within a constructive type theory, the basic functioning of the type system is introduced subsequently.

## 4.2 A Short Primer to TTR

As the formal framework for representing DemNPs in dialog *Type Theory with Records* (TTR, Cooper 2005, 2012) is chosen. TTR provides semantic objects at both the token and the type level, structures to organize these objects (viz., records and record types), and (Montagovian)  $\lambda$ -abstraction and functional application. The basic notion in TTR is a *judgment* of the form  $a : T$ , meaning that object  $a$  is of type  $T$ . This gives rise to classifications with basic types like *Ind(ividual)*, *Time* or *Loc(ation)* as in (35a–d):

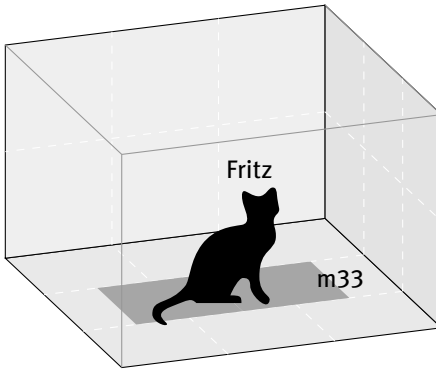
- (35)
- a.  $x : Ind$
  - b.  $y : Ind$
  - c.  $t : Time$
  - d.  $l : Loc$
  - e.  $s : sit-on(x, y, t, l)$

The judgment in (35e) involves a complex type, which has argument slots of a certain arity. It is the typ of situations where  $x$  sits on  $y$  at time  $t$  and location  $l$ . The obvious dependency between types as in (35) is captured in TTR in terms of *record types*. A record type is a set of fields of pairs of labels and (basic or complex) types. Judgments like those in (35) can be used to build the following record type which is associated to the declarative sentence “The cat sits on the mat.” (ignoring the semantic contribution of the definite article and time and location arguments for the sake of exposition):

(36) Record type that is assigned to the statement “The cat sits on the mat.”:

$$\left[ \begin{array}{l} x : Ind \\ c1 : cat(x) \\ y : Ind \\ c2 : mat(y) \\ c3 : sit-on(x,y) \end{array} \right]$$

Fig. 1: The cat sits on the mat.



A *witness* for the record type in (36) is a *record* that provides suitable objects for each field of the record type (and possibly more). A record is a set of fields of assignments from labels to values. For instance, the situation depicted in Figure 1 corresponds to the record in the left-hand part of (37). The witnesses for complex judgments are *proof objects* (Martin-Löf 1984). Since the record in (37) is of the type required by the record type, the type correctly classifies the situation in question.

$$(37) \quad \left[ \begin{array}{l} x = Fritz \\ c1 = cprf \\ y = m33 \\ c2 = matprf \\ c3 = sprf \end{array} \right] : \left[ \begin{array}{l} x : Ind \\ c1 : cat(x) \\ y : Ind \\ c2 : mat(y) \\ c3 : on(x,y) \end{array} \right]$$

In general, a record  $r$  is of record type  $RT$ ,  $r : RT$ , if all objects of the record are of the type required by the record type. The record in (38) is a witness for the record type just in case  $o_1 : T_1, o_2 : T_2(o_1), \dots, o_n : T_n(o_1, o_2, \dots, o_{n-1})$ .

$$(38) \quad \left[ \begin{array}{l} l_1 = o_1 \\ l_2 = o_2 \\ \dots = \dots \\ l_n = o_n \\ \dots \end{array} \right] : \left[ \begin{array}{l} l_1 : T_1 \\ l_2 : T_2(l_1) \\ \dots = \dots \\ l_n = T_n(l_1, l_2, \dots, l_{n-1}) \end{array} \right]$$

Although record types will be represented in the format given above, technically they involve Montagovian functions from individuals, not labels, to predicational types (but unlike in Montague’s system, simultaneous abstraction over several objects is allowed). That is, officially the “cat part” of the record type in (37) has the following structure:

$$(39) \quad \left[ \begin{array}{l} x : Ind \\ c1 : \langle \lambda v : Ind.cat(v), \langle x \rangle \rangle \end{array} \right]$$

The predicational type  $c1$  from (39) is a function from individuals to cats, i.e. it is of type  $\langle e, t \rangle$ , where the object abstracted over is to be found at path  $x$  in the record type. This function is characterized by the set of ordered pairs  $\{\langle v, cat(v) \rangle \mid v : Ind\}$  and thereby is linked to classical extension. Accordingly, the official architecture of the general record type in (38) is the one in (40):

$$(40) \quad \left[ \begin{array}{l} l_1 : T_1 \\ l_2 : \langle \lambda v_1 : T_1.T_2(v_1), \langle l_1 \rangle \rangle \\ \dots = \dots \\ l_n = \langle \lambda v_1 : T_1.\lambda v_2 : T_2(v_1).\dots.\lambda v_n : T_n(v_1, v_2, \dots, v_n), \langle l_1, l_2, \dots, l_{n-1} \rangle \rangle \end{array} \right]$$

### 4.3 Modeling DemNPs in Dialog

Within the dialog theory of Ginzburg (2012), the public part of dialogical exchange is regimented by a specific record type, a *Dialog Game Board* (DGB). DGB is an information state-based sheet for describing communicative interactions. The DGB from KoS tracks the interlocutors (*spkr* and *addr* fields), their dialog history (*Moves*), and the assumptions shared among the interlocutors (*Facts*).<sup>4</sup> A move is brought about by an utterance act (*c-utt*) of a speaker directed to an addressee at

<sup>4</sup> We make the simplification of ignoring dialog moves that are in the process of grounding (*Pending*) and the question(s) currently under discussion (*QUD*). Our concern here is simply to spell out the grammar-dialog interface for DemNPs, explicating dialog dynamics would lead us beyond the scope of this chapter.



a given utterance situation, i.e. at a certain time (*utt-time*) and place (*utt-loc*). The simplified TTR representation of a DGB following Ginzburg (2012) is given in (41):

$$(41) \left[ \begin{array}{ll} \text{spkr} & : \textit{Ind} \\ \text{addr} & : \textit{Ind} \\ \text{utt-time} & : \textit{Time} \\ \text{utt-loc} & : \textit{Loc} \\ \text{c-utt} & : \text{addressing}(\text{spkr}, \text{addr}, \text{utt-time}, \text{utt-loc}) \\ \text{Facts} & : \text{Set}(\textit{Prop}) \\ \text{Moves} & : \text{slist}(\textit{LocProp}) \end{array} \right]$$

What is important with regard to the concern intuitively sketched in Section 4.1 is that KoS implements a grammar-dialog interface. On the one hand, linguistic expressions are DGB-aware. On the other hand, linguistic expressions are involved in building objects of type *LocProp*, which in turn constitute dialog moves. Linguistic expressions are modeled as signs known from *Head-driven Phrase Structure Grammar* (HPSG; Pollard & Sag 1994). Using the TTR variant of HPSG defined in (Cooper 2008), a uniform framework can be used to model lexical and phrasal expressions (for details, see HPSG text books and Ginzburg (2012)):

$$(42) \textit{Sign} =_{\text{def}} \left[ \begin{array}{ll} \text{phon} & : \text{list}(\textit{phonform}) \\ \text{cat} & : [\text{cat} : \textit{PoS}] \\ \text{cont} & : \textit{SemObj} \\ \text{dgb-params} & : \textit{RecType} \\ \text{q-params} & : \textit{RecType} \end{array} \right]$$

The semantic objects allowed as content values of signs are individual objects (type *Ind*) or abstract objects like propositions. Propositions in TTR can be developed in an explicit Austinian (1950) way, where a proposition is individuated in terms of a situation and situation type (cf. Ginzburg 2011: 845).

$$(43) \textit{Prop} =_{\text{def}} \left[ \begin{array}{ll} \text{sit} & : \textit{Rec} \\ \text{sit-type} & : \textit{RecType} \end{array} \right]$$

Signs are building blocks of a special kind of proposition, namely *locutionary propositions* (*LocProp*; Ginzburg 2012), which can be defined as follows:

$$(44) \textit{LocProp} =_{\text{def}} \left[ \begin{array}{ll} \text{sit=Sign} & : \textit{Rec} \\ \text{sit-type} & : \textit{RecType} \end{array} \right]$$

For instance, the concrete but imperfect phonetic realization of *this* as /t̥ɛs/ is classified as belonging to the phonological type [ðɪs], i.e. [t̥ɛs : ðɪs] – likewise for other sign fields, resulting in a sign token-sign type judgment (i.e., a *LocProp*).

The content of nominal expressions is represented in terms of  $\lambda$ -abstracts over individuals into a descriptive condition. For example, the definite description *the thief* from an utterance like “The thief has stolen my purse.” can be represented as a function from *Ind* to individuals that have the property of being a thief:<sup>5</sup>

$$(45) \quad \left[ \begin{array}{l} x : Ind \\ c1 : thief(x) \end{array} \right]$$

Now, the referent of the definite *the thief* may be known to the interlocutors, namely when the culprit is part of the common ground of the discussants Clark et al. (1983). In this case, the semantic contribution of the definite is this witness. If not part of common ground, the definite has no speaker reference, amounting to saying “The thief, whoever he is, has stolen my purse.” Now, the contribution cannot be an individual (witness) but rather a property. Following the analysis of Purver & Ginzburg (2004) and Ginzburg & Purver (2012), referential NPs that acquire a witness in the process of grounding are separated from quantificational ones by contributing to two different sets of parameters of a dialog game board: the former contribute to contextual dialog game board parameters (dgb-params), the latter contribute to quantificational parameters (q-params) – see (42) above. The elements from the quantificational parameters do not receive a referential value in grounding, i.e. a witness, they are existentially quantified over and contribute to the descriptive content. Respectively, a witness-loaded interpretation of the definite description *the thief* is captured in (46a), while the witness-free one is expressed in (46b):

$$(46) \quad \begin{array}{l} \text{a.} \\ \text{b.} \end{array} \quad \left[ \begin{array}{l} \text{dgb-params} : \left[ \begin{array}{l} x : Ind \\ c1 : thief(x) \end{array} \right] \\ \text{q-params} : \left[ \right] \\ \text{cont} = \text{dgb-params.x} : Ind \\ \text{dgb-params} : \left[ \right] \\ \text{q-params} : \left[ \begin{array}{l} x : Ind \\ c1 : thief(x) \end{array} \right] \\ \text{cont} = \text{q-params.x} : Ind \end{array} \right]$$

<sup>5</sup> Recall from Section 4.2 that (i) makes use of a notational convention – the relation to  $\lambda$ -abstraction gets fully transparent in the official notation.

The mechanism of requiring referential witnesses for the elements of *dgb-params* in order to add the respective contribution to common ground while keeping *q-params* existentially quantified is exploited by the dialog management rules imposed by *DemNPs* (eventually in combination with demonstration acts). However, in order to capture the grounding of exophorically used *DemNPs* properly, their witnesses are not only part of *dgb-params* but are additionally required to be in the *focus of attention*. As motivated in Sections 1 and 2, a demonstration act not only divides exophoric from anaphoric uses, it also shifts the focus of attention towards some scene that makes the referent identifiable in the utterance situation (for a related view on demonstration acts as anchoring devices for resource situations see Poesio & Rieser (2011)). So far, dialog game boards and signs do not have a means for representing perceptual access. To this end, a new field of type *FoA* is introduced in the *Facts* field of a *DGB*.<sup>6</sup>

(47)  $FoA =_{def}$

foc-sit	:	<i>RecType</i>
JointAttention	:	<i>Ind</i>
c-foc	:	<i>member</i> (JointAttention, foc-sit)
spkr	:	<i>Ind</i>
addr	:	<i>Ind</i>
dgb-params	:	$\left[ \begin{array}{l} s1=foc-sit : RecType \\ dem : Dem \end{array} \right]$
c-dem	:	<i>triangle</i> (dgb-params.dem, spkr, addr, foc-sit)

*FoA* is instantiated by a demonstration act, which invokes a triangulation (Davidson 1991; Tomasello 1998) between the interlocutors and the focus situation. Instead of, say, a visual condition, the more abstract triangle relation is intended to cover the attention fixing aspect of demonstration in general.<sup>7</sup> The focus situation contains the referent and is also the value of the witness-loaded dialog game board parameters. In order to account for this achievement of demonstrations, they are represented as contextual parameters of dialog game boards.<sup>8</sup>

<sup>6</sup> *FoA* is similar to the *Visual Information* field used in Ginzburg & Moradlou (2013) to account for kinds of parent-child interactions which are about objects which are part of mutual visual attention.

<sup>7</sup> An anonymous reviewer came up with the following example: suppose the interlocutors are driving in a car and suddenly perceive a bump. Then the driver might say ‘Sorry, I didn’t see this pothole’. Here, no *visual* perception is involved.

<sup>8</sup> Taking demonstrations to be part of the context is the traditional way. A more provocative account would add demonstrations to the constituents of locutionary propositions. The role of

Given this set-up, the processing rules for DemNPs from Section 4.1 can now be spelled out more formally with respect to KoS. It is proposed that the dynamic semantics of DemNPs in dialog is governed by the following three-fold processing rule:

(48) **Processing Rule for Managing DemNPs in Dialog**

1. If there is a demonstration act, then the DemNP contributes to dgb-params and is witness-loaded in the focus of attention.
2. If there is no demonstration, but a repetition of an antecedent constituent, the DemNP contributes to q-params, is bound to the antecedent but remains witness-free.
3. Otherwise, the DemNP contributes to q-params and remains unbound.

Utilizing the processing rule from (48) and the new type *FoA*, the grammar-dialog-interface representation of the exophoric demonstrative *this*<sub>[*FoA*]</sub> *painting* is given in (49) (the path ‘dgb-params’ is abbreviated ‘dgb’):

(49) a. This<sub>[*FoA*]</sub> painting  
 b. 
$$\left[ \begin{array}{l} \text{phon} = [\delta\text{is } 'p\text{e}\text{m.ti}\eta] : \textit{Phon} \\ \text{facts.foa} : \left[ \begin{array}{l} \text{foc-sit} : [\text{u} : \textit{Ind}] \\ \text{JointAttention} = \text{foc-sit.u} : \textit{Ind} \\ \text{c-foc} : \text{member}(\text{JointAttention}, \text{foc-sit}) \\ \text{c-dem} : \text{triangle}(\text{dgb.dem}, \text{dgb.spkr}, \text{dgb.addr}, \text{foc-sit}) \end{array} \right] \\ \text{dgb-params} : \left[ \begin{array}{l} \text{s1} = \text{foc-sit} : \textit{RecType} \\ \text{spkr} : \textit{Ind} \\ \text{addr} : \textit{Ind} \\ \text{dem} : \textit{Dem} \\ \text{x} = \text{JointAttention} : \textit{Ind} \\ \text{c1} : \text{painting}(\text{x}) \end{array} \right] \\ \text{q-params} : [\ ] \\ \text{cont} : [\text{dgb-params.x} : \textit{Ind}] \end{array} \right]$$

The anaphoric use of DemNPs neither involves *FoA* nor a demonstration. Here, the content of the DemNP has to be found within the semantic values of the constituents of prior dialog moves, namely the semantic value of the constituent that matches the phonology of the head noun – in line with the identification by repetition constraint. The basic picture for discourse-referential DemNPs is given by example of *that horn* in (50):

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demonstration in clarification requests indeed can be seen as evidence for the more provocative way (cf. Section 3).

(50) a. That horn

$$\text{b. } \left[ \begin{array}{l} \text{phon} = [\text{ðæt hɔː n}] : \text{Phon} \\ \text{dgb-params} : \left[ \begin{array}{l} \text{constits} : \text{list}(\text{Sign}) \\ \text{a} : \text{Sign} \\ \text{c1} : \text{member}(\text{a}, \text{constits}) \\ \text{c2} : \text{match}(\text{a.phon}, \text{dtrs.hd-dtr.phon}) \\ \text{a.cont} : [\text{a.cont.x} = \text{dtrs.hd-dtr.cont.y} : \text{Ind}] \end{array} \right] \\ \text{dtrs} : \left[ \text{hd-dtr} : \left[ \begin{array}{l} \text{phon} : \text{Phon} \\ \text{cont} : [y : \text{Ind}] \end{array} \right] \right] \\ \text{q-params} : \left[ \begin{array}{l} \text{y} = \text{dtrs.hd-dtr.cont.y} : \text{Ind} \\ \text{c3} : \text{horn}(\text{y}) \end{array} \right] \\ \text{cont} : [\text{y} = \text{q-params.y} : \text{Ind}] \end{array} \right]$$

Note that the endophoric, demonstration-free DemNP in (50b) contributes to the quantificational parameters of the content. That means that it is exempted from the need to be witnessed in the process of grounding, as suggested in Sections 2 and 3.

In order to account for the contrast observed in Section 2, the discourse referents figuring as possible antecedents form a partially ordered set. The type for partially ordered sets is given in (51), where  $a : \text{po}(R, S)$  iff  $a = \langle R, S \rangle$  and  $R$  is a partial order on  $S$  (Cooper & Ginzburg 2015):

$$(51) \quad \text{Poset} =_{\text{def}} \left[ \begin{array}{l} \text{set} : \{T\} \\ \text{rel} : \left\{ \left[ \begin{array}{l} \text{left} : T \\ \text{right} : T \end{array} \right] \right\} \\ \text{c1} : \text{po}(\text{rel}, \text{set}) \end{array} \right]$$

Imposing a partially ordered set over DGB parameters captures that only the most recent (i.e., the left one in a *Poset*) of several matching expression is available as antecedent. The accordingly modified structure is shown in (52):

$$(52) \quad \left[ \begin{array}{l} \text{phon} = [\text{ðæt hɔː n}] : \text{Phon} \\ \text{dgb-params} : \left[ \begin{array}{l} \text{constits} : \text{list}(\text{Sign}) \\ \text{a} : \text{Poset}(\text{Sign}) \\ \text{c1} : \text{member}(\text{a.rel.left}, \text{constits}) \\ \text{c2} : \text{match}(\text{a.rel.left.phon}, \text{dtrs.hd-dtr.phon}) \\ \text{a.rel.left.cont} : [\text{a.rel.left.cont.x} = \text{dtrs.hd-dtr.cont.y} : \text{Ind}] \end{array} \right] \\ \text{dtrs} : \left[ \text{hd-dtr} : \left[ \begin{array}{l} \text{phon} : \text{Phon} \\ \text{cont} : [y : \text{Ind}] \end{array} \right] \right] \\ \text{q-params} : \left[ \begin{array}{l} \text{y} = \text{dtrs.hd-dtr.cont.y} : \text{Ind} \\ \text{c3} : \text{horn}(\text{y}) \end{array} \right] \\ \text{cont} : [\text{y} = \text{q-params.y} : \text{Ind}] \end{array} \right]$$

The previous examples illustrate that a unified theory of DemNPs that draws on the grammar-dialog interface is feasible. Since the underlying constructive type theory facilitates access on the level of tokens (that is, records), even deferred reference can be modeled.

## 5 Deference and Witness-loaded Demonstratives

In Section 2, data on bridging respectively deference was used to motivate referential differences between exophoric and endophoric uses of DemNPs. It has been shown that the witness of witness-loaded real-world referential DemNPs provide additional information that is exploited for deferred reference. In conclusion, the analysis from the preceding Section 4.3 is applied to a simple example in order to illustrate how witness-loading gives rise to deference.

Consider the scene depicted in Figure 2, in which a manikin, let us call it George,<sup>9</sup> is pointing towards a block table on top of which there is a coffee cup in sub-situation  $s_1$  and an egg in sub-situation  $s_2$  (the reader, as viewer of the figure, is invited to imagine him-/herself in the unfilled corner of the triangulation). At the table's feet there is a second egg (sub-situation  $s_3$ ). The “spatial extension” of George's demonstration act is indicated by its *pointing cone* (Lücking et al. 2015). The cone covers sub-situations  $s_1$  and  $s_2$  but not  $s_3$ . This kind of “fuzziness” of pointing gestures has been investigated empirically (Bangerter & Oppenheimer 2006; Lücking et al. 2015; Bangerter 2004; Clark & Bangerter 2004), strengthening the view that demonstrations function as attention directing (and not as directly referring) devices.

This example shall illustrate a number of things about exophoric demonstratives, including those given in (53). Given the scene and the pointing cone as depicted in Figure 2, then

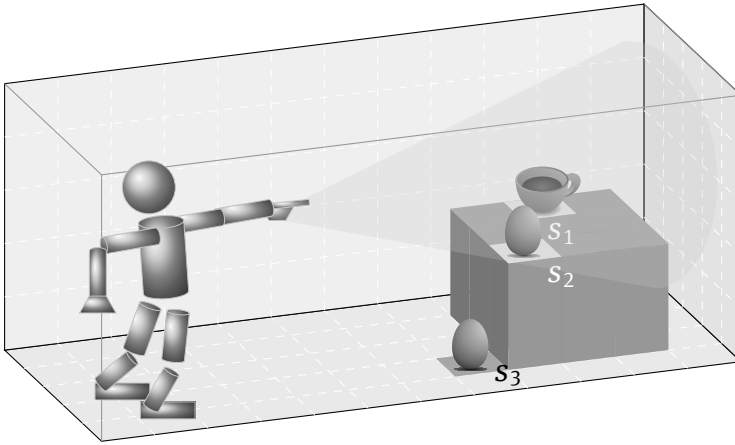
- (53) a. George can refer to the cup in  $s_1$  by “this cup”;  
 b. George can refer to the egg in  $s_2$  by “this egg”;  
 c. George cannot refer to the egg in  $s_3$  by “the egg”;  
 d. George can refer to the laying hen of the egg in  $s_2$  by “this hen”;  
 e. George cannot refer to the laying hen of the egg in  $s_3$  by “this hen”.

One of the assumptions underlying the examples in (53) is that descriptions are evaluated against situations (Austin 1950; Barwise & Perry 1983). According to this

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<sup>9</sup> The name ‘George’ is chosen reminiscent of the deference examples given by Clark (1996: 168).

**Fig. 2:** George referring to cups, eggs and hens – running example (using TikZ figures by per-cusse and Mark Wibrow from [www.texample.net](http://www.texample.net)).



conception, the pointing gesture restricts the evaluation domain of verbal descriptions – compare (53b) and (53c). In terms of Section 4: the demonstration shifts  $s_1$  and  $s_2$ , but not  $s_3$ , into FoA. Note that the pointing gesture itself is not able to identify a referent for the addressee – or could you decide whether George points at the cup, or at the egg in  $s_2$ , or possibly even at the wall? These observations require aggravate the problems that arise from introducing individual-valued indices  $i$  or demonstrata like  $g(j)$  in unified theories of demonstratives (cf. Section 1).

Suppose that, in the situation depicted in Figure 2, George utters “This hen has brown feathers”, involving a deference from an egg to its laying hen. In terms of the framework sketched here, the exophoric DemNP starting the utterance is of the type in (54):

$$(54) \left[ \begin{array}{l} \text{phon} \\ \text{facts.foa} \\ \text{dgb-params} \\ \text{cont} \end{array} \right. = \left. \begin{array}{l} [\ddot{o}is \ h\ddot{e}n] : Phon \\ \left[ \begin{array}{l} \text{foc-sit} : [z : Ind] \\ \text{JointAttention} : Ind \\ \text{c-foc} : \text{member}(\text{JointAttention}, \text{foc-sit}) \\ \text{c-dem} : \text{triangle}(\text{dgb.dem}, \text{dgb.spkr}, \text{dgb.addr}, \text{foc-sit}) \end{array} \right] \\ \left[ \begin{array}{l} \text{s1=foc-sit} : RecType \\ \text{spkr} : Ind \\ \text{addr} : Ind \\ \text{dem} : Dem \\ \text{x=JointAttention} : Ind \\ \text{c1} : \text{hen}(x) \end{array} \right] \\ \left[ \begin{array}{l} \text{x=dgb-params.x} : Ind \end{array} \right] \end{array} \right]$$

But what is an adequate representation of the focus situation? Witness-loading requires a record for the focus situation, which in the example is part of the block table George attends to in Figure 2. Being a token, a record necessarily has more information than a type (Waisman 1951). For instance, it can be readily seen that the cup is blue and filled with a liquid – probably with coffee. By the same token, one can assume that the egg is perceived as a hen’s egg, implying that there has to be a laying hen.<sup>10</sup> The scene in question provides, we can assume, *inter alia* the classifications in (55).

(55)

foc-sit =	x =  :	Ind	: RecType
	C <sub>egg</sub>	: egg(x)	
	y =  :	Ind	
	C <sub>cup</sub>	: cup(y)	
	C <sub>blue</sub>	: blue(y)	
	z	: Ind	
	C <sub>hen</sub>	: hen(z)	
	C <sub>lay</sub>	: lay(z, x)	
	u	: Ind	
	C <sub>coffee</sub>	: coffee(u)	
	C <sub>in</sub>	: in(u, y)	
	v =  :	Ind	
	C <sub>table</sub>	: table(v)	
	C <sub>on1</sub>	: on(x,v)	
	C <sub>on2</sub>	: on(y,v)	

Most importantly, (55) provides a witness for the predicational type  $c1 : hen(x)$  in (54), since ‘x’ is also the focused element ‘z’ (x = JointAttention = z, cf. (54)). The corresponding hen individual is available as a *weak discourse referent* as used in the (non-deferring) analysis of demonstratives of Roberts (2002) (the notion of *implicit discourse referents* has been introduced by Kamp & Rossdeutscher (1994)). However, unlike in the lexical extension approach of Irmner (2013), additional information that stems from witnesses is not part of the linguistic context and hence

<sup>10</sup> A misclassification in this respect, say, when the egg is actually a peacock egg, might lead to Donnellan (1966) cases of correct identification despite failed semantic reference. Likewise, of course, for the coffee hypothesis.



is out of reach of linguistic operations. This seems to be right since, for instance, the only anaphoric binder is the linguistic constituent, *hen* in this case.<sup>11</sup>

- (56) This hen has brown feathers.
- a. It (= hen) is not able to fly, anyway.
  - b. \*It (= egg) is not able to fly, anyway.

Using perceptual information for classifying focused scenes in a triangulation setting provides a systematic framework for accounting for deferred references. In particular, no hidden relation  $R$  has to be postulated on the level of logical form. As a result of dispensing with an external relation  $R$ , the account given here is more closely related to Nunberg's later view that the deferred referent is somehow made present in the context of the demonstratum (Nunberg 2004).

## 6 Conclusion

In this chapter, it was argued that endophorically and exophorically used DemNPs actually employ different modes of reference. While the former simply pick out a linguistic antecedent without a demonstration act, the latter employ a deictic act in addition to verbal reference. It is claimed that this difference is related to the ontological status of the respective referents, viz. discourse referents and real world referents.

Evidence for this claim was provided by drawing on the potential of endophoric and exophoric DemNPs for licensing inferential reference (i.e., bridging and deference) and for requesting clarifications. Both uses of DemNPs differ with respect to the following features:

- *identification by repetition*: discourse referents are identified numerically by repetition of their descriptive condition (modulo the caveat at the end of Section 2) while real world referents are identified perceptually and allow for a variety of classifications.
- *semantic parallelism*: bridging demonstratives are E-type demonstratives which require that the inferential bases are similar and pick up the bridge that has been introduced in the previous co-text.

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<sup>11</sup> The example is due to an anonymous reviewer who rightly insists that elements that are not realized linguistically lack linguistically relevant influence.

- *sequentiality*: bridging demonstratives refer to their immediate antecedent discourse referent, in the order of appearance. Deferring DemNPs can refer independently of the temporal order of their referents.
- *no index available as part of clarifying potential*: while the clarification potential of deferring DemNPs includes a demonstratum, bridging demonstrative come out as index-unaware and hence, as not involving a deictic act.

These observations provide evidence against current unifying conceptions of demonstratives that reduce both kinds of uses to just one mode of reference and in particular postulate an index in the endophoric use. Rather, the abstract status of discourse referents in contrast to real world referents seems to make them immune against demonstrative identification.

As a result of this discussion, and contrary to unified semantic theories of DemNPs: discourse reference and real world reference has to be clearly separated. This can be achieved in terms of *witness-free* vs. *witness-loaded* demonstratives. A witness-loaded DemNP is structurally similar to an Austinian proposition, a pairing of a semantic object with the scene it is about, where the link to this scene is established by a demonstration. As an alternative to unified approaches, a processing rule for demonstratives is given that captures the semantics of DemNPs in dialog. This analysis has been spelled out in the frameworks of TTR and KoS, which provide records as technical notions for witnesses and a dialog game board as systematic information sheet for keeping track of required internal and external parameters.

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Ekkehard König and Carla Umbach

# Demonstratives of manner, of quality and of degree

## A neglected subclass

**Abstract:** Demonstratives are a typologically well-established, elementary and possibly universal grammatical category. In this article we provide a concise and yet comprehensive analysis of a neglected subclass of demonstratives, viz. demonstratives of manner, quality and degree, exemplified by English *so*, *such*, by German *so*, *solch* and by French *ainsi*, *pareil*, *tellement*. Our analysis starts out from a cross-linguistic perspective, pointing out differentiations found across languages, in order to later zoom in on a semantic analysis for German and English, according to which demonstratives of manner, quality and degree express ‘similarity’. Evidence is provided that, in the case of manner and quality, these demonstratives generate ad-hoc kinds, thereby providing insight in the interplay of demonstration and similarity in kind formation.

**Keywords:** typology, deictic and ontological dimensions, endophoric and exophoric use, grammaticalization, comparative, similarity, kind formation, multi-dimensional attribute spaces

## 1 Demonstratives

Demonstratives are a typologically well-established, elementary and possibly universal grammatical category. They are a subclass of deictic expressions and, more specifically, of expressions whose reference can only be determined relative to a center of orientation, which may change with each act of utterance. This center of orientation, called ‘origo’ in Bühler’s foundational study of deixis (Bühler 1934), is typically provided by the coordinates of the speech situation, i.e. the place, time and participants involved in an utterance. Adverbs like English *here* or *there*, for example, identify space relative to the location of a speaker and/or an addressee. The use of demonstratives is often accompanied by a gesture, e.g. a pointing finger, a movement of the head, a direction of gaze, etc. In addition to

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identifying a referent relative to the situation of utterance the basic function of these expressions can be characterized as establishing a joint focus of attention between speaker and addressees (cf. Diessel 2006). Demonstratives are acquired early and gestures pointing out objects in order to share an experience with others can be found in the communicative behavior of children as young as 18 months.

As far as their distribution and syntactic properties are concerned, typological studies (Anderson & Keenan 1985; Diessel 1999; Dixon 2003; Krasnoukhova 2012) have shown that demonstratives are typically used as pronouns (Fr. *celui, celle*; Engl. *this, that*), as adnominal modifiers (Fr. *ce livre, cette femme*; Engl. *this/that book*), as adverbs (Engl. *here/there*) and as presentational (identificational) expressions (Fr. *voilà*, Ital. *ecco*, Russ. *vot*), but this list by no means exhausts the distributional potential found across languages. There are also demonstrative verbs (Dixon 2003; Guerin 2015) and, as our discussion of manner (quality, degree) demonstratives will show, demonstratives also occur in adjectival and adverbial positions in addition to their use as anaphoric replacements of embedded sentences.

The basic semantic structure of demonstratives is a very simple one. As a first step, demonstratives can, certainly as far as European languages are concerned, simply be described in terms of two dimensions, viz. a deictic one, indicating the distance, visibility, altitude, position, etc. of a referent relative to the center of orientation and a content dimension, assigning a referent to a certain ontological type (object, human being or animal, place, direction, time, sex, number, etc.). These ontological categories also play an important role in the differentiation of interrogative and indefinite pronouns across languages. It is in this list of ontological categories that we find the categories 'manner', 'quality' and 'degree', which will play a central role in what follows. Assigning demonstratives to one of these ontological categories is, of course, only the beginning rather the end point of a precise semantic analysis, as will be shown in the second part of this article.

As far as the use of demonstratives is concerned, additional synchronic distinctions are generally made. In a pragmatic analysis of demonstratives, various use types are distinguished, which – from a diachronic perspective – can also be regarded as focal points or stages in the grammaticalization of these deictic expressions: (i) an exophoric (gestural) use, where reference is made to entities in the external world surrounding the participants in a verbal interaction, providing the starting point of all further developments, (ii) an endophoric use, subsuming the two options anaphoric and cataphoric, where relations are established between the demonstratives and stretches of preceding or following discourse, (iii) a discourse use and (iv) a recognitional use, to mention only the most basic distinctions. These different uses provide the source and the stages of a variety of wide-spread processes of grammaticalization, i.e. of the development of demon-

stratives to markers of specific grammatical constructions (cf. Diessel 1999; König 2012; 2015; 2017).

The goal of this article is to provide a concise and yet comprehensive analysis of a neglected subclass of demonstratives, viz. demonstratives of manner, quality and degree (*MQD demonstratives* for short), exemplified by English *so*, *such*, by German *so*, *solch* and by French *ainsi*, *pareil*, *tellement*. Our analysis starts out from a cross-linguistic perspective, pointing out formal and semantic differentiations typically found across languages, in order to later zoom in on a detailed analysis of data from European languages comprising syntax, semantics, use types and historical extensions in meaning and use. The cooperation between language typology and formal semantics underlying this article is intended to lead to cross-fertilization and to more illuminating results in both thematic domains. Our typological sketch shows how wide-spread and important the relevant subset of demonstratives is across languages and how many differentiations in meaning can be expressed by its members in various languages, over and above the idiosyncrasies of an adverbial particle *so* in German (cf. Ehlich 1986). On the other hand, semantic analyses of demonstratives have so far restricted themselves to semantically classifying demonstratives in terms of a deictic and a content dimension. A formal semantic approach makes it possible to go beyond such simple classifications: What is referred to by demonstratives of manner, quality and degree are not ‘manners’, ‘qualities’ or ‘degrees’, but entities identified on the basis of similarity to some entity in the situation context or the preceding or following discourse.

Our analysis points to an additional parameter of classification, namely the relation between the referent and the demonstration target. While standard demonstratives like *this* denote identity of the referent and the demonstration target, MQD demonstratives denote similarity. The fact that the relation between referent and demonstration target need not be identity was already pointed out in Nunberg (1993). The similarity account, however, is the first systematic and formally explicit analysis of a relation other than identity. Combining it with an in-depth typological investigation of MQD demonstratives provides a solid empirical basis and, moreover, provides evidence that we are targeting a relevant feature of languages. Finally, our cooperation provides new avenues for the study of grammatical categories taking demonstratives as point of departure.

The article is structured as follows: section 2 offers a short typological sketch of the parameters of variation found in the formal and semantic properties of MQD demonstratives. In section 3, we will apply the well-known distinctions in the use of demonstratives (exophoric vs. endophoric: anaphoric vs. cataphoric) to our subclass, pointing out how the much more complex meaning of this subclass – in comparison to adnominal, nominal, local or directional demonstratives



– manifests itself in these different use types. The distinction between different use types will be taken further in section 3.3., where some wide-spread extensions in the use of MQD demonstratives will briefly be discussed. While in the preceding sections aspects and distinctions of meaning are only identified in terms of semantic labels and discussed only informally, a precise semantic analysis will be provided in the subsequent sections. In section 4, a semantic analysis will be proposed for German and English, according to which MQD demonstratives express ‘similarity’, thereby creating ad-hoc kinds. It goes without saying that we cannot assume that the relevant counterparts in other languages have exactly the same semantics. Several of our detailed comparative studies (König 2012, 2015; König & Nishina 2015) have shown, however, that major aspects of the analyses developed for German and English carry over to other languages. In section 5, constraints on the use of MQD demonstratives are discussed, providing further evidence for the similarity interpretation and showing that these demonstratives do what similarity is predicted to do from a Cognitive Science point of view, that is, sort things into kinds.

## 2 The subclass of manner, quality, degree demonstratives: a typological sketch

As was already mentioned, the semantic categories of ‘manner’, ‘quality’ and ‘degree’ are differentiations found in the content dimension of demonstratives alongside such well-known categories as ‘person’, ‘place’, ‘direction’, ‘time’, etc. In the West Germanic and North Germanic languages, these three categories are not clearly distinguished by expressions specialized for one dimension only. In German, for example, *so* can be used exophorically, i.e. accompanied by the appropriate gestures, to refer to a manner of walking, to a quality of a person or a car and to a degree, as the following examples show:

- (1) Hans geht *so* (+ mimicking or pointing gesture).  
‘Hans walks like this.’
- (2) a. Hans ist *so* (+ mimicking or pointing gesture).  
‘Hans is/looks like this.’  
b. So ein Auto/Ein solches Auto (+ pointing gesture) möchte ich.  
‘I would like to have a car like that./That’s the kind of car I would like to have.’

- (3) Der Fisch war so groß (+ gesture).  
 ‘The fish was so/this big.’

The preceding examples show that no formal distinction is drawn between the three ontological dimensions ‘manner’, ‘quality’ and ‘degree’, except for the purely syntactic one between *so* and *solch*, where the former precedes and the latter either precedes or follows the indefinite article.<sup>1</sup> The reason why we have chosen German rather than English examples is – apart from the fact that we are native speakers of that language – the fact that the parallel and cognate forms *so* and *such* in English have more or less lost their exophoric uses, as is indicated in the translations above. Degree deixis, by contrast, can still be expressed by *so* in English (cf. (3)), but even here this lexeme tends to be replaced by the adnominal and basically local forms *this* and *that*. In addition to a lack of differentiation between the three content dimensions, our three German examples also show that the gestures accompanying demonstratives of our subclass are not only pointing gestures, but may also be mimicking (imitative) ones. In addition to extensions in specific dimensions and qualities of various types, even complete events or situations may be enacted by these gestures.

There is not only a formal differentiation between our three ontological dimensions lacking in German, this language also lacks a two-term or three-term distinction in the deictic dimension, analogous to the one between *hier* ‘here’ and *dort* ‘there’ for location or *–hin* ‘hither’ and *–her* ‘thither’ for direction. If (2b) is used to point out the car of one’s dreams, *so* and *solch* are used irrespective of the vehicle’s distance from the speaker. The lack of differentiations in the content dimension is by no means a general feature of Indo-European or of other languages, as table 1 shows.

In identifying such differentiations in the content dimension, we often find that the relevant expressions are restricted to only one or two of the three use types (exophoric, anaphoric, cataphoric), generally distinguished for demonstratives. In French, for example, the degree adverb *tellement* does not have an exophoric use, which can only be expressed by the bi-partite demonstrative *comme ça* (*Il est grand comme ça*. ‘He is so/this tall’). In Russian, by contrast, the demonstratives *tak* ‘manner’ and *takoj* ‘quality, degree’ can only be used exophorically

<sup>1</sup> Moreover, *solche* (or colloquially *sone*) is used as plural for singular *so ein*. Note, however, that in Hole & Klumpp (2000) *sone* is analyzed as a separate article.

<sup>2</sup> Demonstratives of manner, quality and degree have received very little attention in the literature so far, with the exception of some studies on the ‘particle’ *so* in German or *zo* in Dutch. The comparative data presented in this section are therefore largely taken from earlier publications of one of the authors (König 2012, 2014).

**Tab. 1:** Formal differentiation of content dimensions<sup>2</sup>

	Manner	Quality	Degree
German	so	so/solch	so
English (arch.)	(thus)	(such)	so
French	ainsi/si/tant	tel/pareil	comme ça, (au)tant, tellement
Spanish	así	así	tan
Latin	sic	tālis	tantus
Japanese	koo, soo, aaa	konna, sonna, anna	konnani, sonnani
Polish	tak	taki	tak

if they combine with the identificational demonstrative *vot* (*On vot takoj bol'shoj*. + gesture 'He is this tall'). Our table also shows that in earlier periods of English different forms were used for the three dimensions and *thus* is in fact typically used as a gloss for demonstratives of manner in descriptive grammars of other languages written in English. The brackets around these two expressions are meant to indicate that the exophoric (deictic) use of these two expressions is marginal at best.

Many languages also draw a two-term or a three-term distinction in the deictic dimension, roughly corresponding to the distinction between proximal - medial - distal in locative (cf. Span. *aquí, ahí, allí*) or other deictic dimensions. In table 2 a few examples of such deictic systems are provided.

**Tab. 2:** Three-term distinctions in the deictic dimension of manner deictics

	Finnish	Hungarian	Japanese	Armenian	Maceratese (Italian)	
speaker proximal	näin	így	koo	ays-pes	kkuší	'this way'
hearer proximal	noin	úgy	soo	ayd-pes	ssuší	'that way'
medial						
distal	(niin)	amúgy	aa		lluši	
anaphoric	niin	(archaic)		ayn-pes		

This table shows that lexical differentiations in the deictic dimension of manner, quality and degree demonstratives are found *inter alia* in Finno-Ugric, in Japanese, in Armenian and in central Italian dialects. The following examples from Finnish and Japanese illustrate the relevant deictic distinctions:

- (4) *Finnish* (Aino Kärna, p.c.)
- a. Ota-t-ko sen **näin** ?  
 take-2SG-INT it Manner.Speaker.Prox  
 ‘Do you take it [the coffee] like this?’  
 (Speaker hands over coffee to hearer)
  - b. Ota-t-ko sen **noin** ?  
 take-2SG-INT it Manner.Hearer.Prox  
 ‘Do you take it like that?’  
 (Coffee is in front of the hearer)
  - c. Asia on **niin**.  
 matter is Manner.anaphoric  
 ‘That’s the way it is.’  
 (relating to preceding discourse)
- (5) a. On-ko sinu-lla tosiaan **näin** suuri koira ?  
 Be.3SG-INT 2SG-ADESS really Deg.Prox big dog  
 ‘Do you really have such a big dog?’  
 (Dog is so close to speaker)
- b. Onko sinulla tosiaan **noin** suuri koira? (Dog is close to hearer)
  - c. Onko sinulla tosiaan **niin** suuri koira?  
 (Dog is not visible, but topic of conversation)
- (6) *Japanese* (Yoko Nishina, p.c.)
- a. Hanako-wa **koo** (+gesture) odor-u.  
 Hanako-TOP like this dance-PRS  
 ‘Hanako dances like this.’  
 (speaker is dancing)
  - b. Hanako-wa **soo** (+gesture) odor-u.  
 Hanako-TOP like that dance-PRS  
 ‘Hanako dances like that.’  
 (hearer is dancing)
  - c. Hanako-wa **aa** (+gesture) odor-u.  
 Hanako-TOP like that dance-PRS  
 ‘Hanako dances like that.’  
 (a third person is dancing)

A third parameter of variation relates to the formal complexity of the relevant expressions. Demonstratives, in general, and members of our specific subclass, in particular, can be simple expressions, but they can also be complex ones, building up their meaning compositionally from two forms expressing the two relevant dimensions. Table 3 provides examples of such bi-partite forms.

**Tab. 3:** Complex demonstratives

	English	Mandarin	East Futunan	
speaker proximal	like this	zhè-yang	fene'eki	'this way'
hearer proximal	like that	nà-yang	fena'aki	'that way'
medial				
distal			fela'aki	
anaphoric	like that			

Both in the history of English and Mandarin these bipartite forms have replaced earlier simplex forms as a result of renewing earlier forms in their exophoric use (English *so*, Mandarin *ning*, *ruo*). As is well-known, the system of demonstratives in Japanese is consistently built up compositionally: two components can clearly be distinguished in all cases, the first denoting the deictic dimension (*ko*- 'speaker-proximal', *so*- 'hearer-proximal, medial', *a*- 'distal') and the second denoting the ontological dimension (*-ko* 'place', *-tira* 'direction', *-nna* 'quality', *-nnani* 'degree', lengthening of preceding vowel 'manner'):

**Tab. 4:** Compositional make-up of demonstratives in Japanese

Japanese	entity	ad-nominal	place	quality	degree	manner
speaker-related: <i>ko</i> -	ko-re	ko-no	ko-ko	ko-nna	ko-nnani	ko-o
hearer-related: <i>so</i> -	so-re	so-no	so-ko	so-nna	so-nnani	so-o
distal: <i>a</i> -	a-re	a-no	aso-ko	a-nna	a-nnani	a-a

Another example of the type where the content and the proximity dimension are differentiated and find separate expressions is Armenian, as illustrated by table 5:

**Tab. 5:** The system of Modern Armenian (Lena Ghazaryan, p.c.)

Proximity → Content ↓	Proximal	Medial	Distal
<b>Manner</b>	aypes	aydpes	aynpes
<b>Quality</b>	aypsisi	aydpisi	aynpisi
<b>Degree</b>	aqsqan/aqschap	aydkan/aydchap	aynkan/aynchap

To summarize, on the basis of the data available to us so far, we conclude that there are (at least) three major parameters of variation concerning the formal inventory of MQD demonstratives:

- (7) formal differentiation in the content dimension, comprising up to three options:
  - (i) no differentiation (German, Finnish)
  - (ii) two-term oppositions (Spanish)
  - (iii) three-term oppositions (French, Latin, Armenian, Japanese)
- (8) formal differentiation in the deictic dimension, comprising up to three options:<sup>3</sup>
  - (i) none (German *so*, Dutch *zo*, French *ainsi*, Cantonese *gam*, *gám*)
  - (ii) two terms (Ainu *taa – too*, Shoshone *inni – enni*, Indonesian *gini – gitu*)
  - (iii) three terms (Japanese, Finnish, Ambulas, Pangasinan, Matses, Haruai, Yucatec Maya, Makhuwa)
- (9) complexity of expressions
  - (i) simple expression(s): German (*so*), Finnish (*näin*, *noin*, *niin*)
  - (ii) (only) complex expressions: Mandarin (*zhè-yang*, *nà-yang*;) complex expressions for certain uses: English (*like this*, *like that*)

Of course, paraphrases of morphologically simplex expressions are possible in most and perhaps all languages. The crucial difference is between languages with and without morphologically simplex demonstratives.

In addition to these two parameters relating to the lexicon and to morphology, another parameter can be seen in the variability of the syntactic positions for these demonstratives. We will discuss this flexibility and variability in the distribution and category membership of the relevant demonstratives in some of the

<sup>3</sup> In Nivkh (isolate, Russia) nominal demonstratives contrast as many as five distances from the speaker: proximal > close > medial > remote > distal (Gruzdeva 2006: 193).

following sections. One striking fact should be mentioned at this point, however: in several regions of the world (e.g. Oceania, Australia, Africa and South America), demonstrative verbs are found that are precisely used for the dimension of manner in most cases (cf. Dixon 2003; Guerin 2015). In the vast majority of languages, however, this combination of features does seem not occur.

## 3 Use types

### 3.1 Exophoric uses

In all the languages described in some detail so far, demonstratives clearly have a variety of uses in addition to the exophoric one, but there seems to be general agreement among linguists that the exophoric use is the primary and basic one. There is rich evidence for this assumption: the exophoric use is acquired very early by children, it is closely tied up with a current speech situation and gestures and it is compatible with simple and short utterances. All of these facts suggest that demonstratives belong to a very basic layer in the evolution of languages, possibly representing a stage when communication heavily depended on gestures.<sup>4</sup> Moreover, as is shown in König (2012, 2015; 2017), most other uses can easily be derived from the exophoric one by general tendencies of semantic change, whereas the opposite direction would not allow analogous generalizations.

Let us now take a brief look at meanings expressible by the members of our subclass and how they interact with gestures, in order to prepare the semantic analyses of the chapters that follow. As pointed out in the introductory section, MQD demonstratives share many properties with the other demonstratives, but they also differ from them in striking ways: members of the subclass under analysis are much more complex in their possible range of meanings than the other demonstratives and this applies especially to manner and quality demonstratives. In sentences like (1)–(3), these demonstratives relate to a manner of walking, to properties of persons or cars and to a value in the dimension of length. In contrast to other demonstratives they can be accompanied either by a pointing gesture or by a mimicking, imitative one and thus may require some acting on the part of the speaker. In examples like the following, however, the question of possible gesture

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<sup>4</sup> We have to admit, though, that the existence of such a stage in the evolution of languages has never been clearly established and – as one reviewer pointed out to us – there appears to be reason to be skeptical that this hypothesis could ever be supported by clear evidence.

requires yet another answer. In such cases the contrastive function of demonstrative is more salient than it is in (1)–(3):

- (10) a. Ich bin jetzt SO hier (und kann das nicht ändern). ‘Now I am here like this and there is nothing I can do about it.’  
(reaction to a critical comment about the inappropriate attire of the speaker)
- b. (Wenn du dich beeilt hättest, hätten wir den Zug noch erreicht.) SO aber, müssen wir warten.  
(If you had hurried up we would have caught the train.) ‘As it is, we will have to wait.’<sup>5</sup>
- c. Beeil dich! Wir kommen SO schon zu spät.  
‘Hurry up! We are late as it is.’

Neither a pointing nor a mimicking gesture seems to be appropriate in these cases, which all relate to current situations involving the speaker and contrast with alternative situations expressible by counterfactual conditionals or directive speech acts.<sup>6</sup> Only (10a) could be accompanied by a vigorous gesture of both hands moving up and down the sides of the speaker’s body, palms facing upwards.<sup>7</sup>

A further introductory remark is required as far as the formal properties of exophorically used demonstratives of our subclass are concerned. These demonstratives frequently manifest what in historical linguistics is called ‘renewal’ or ‘renovation’ (cf. Poletto & Sanfelici, this volume), i.e. they are often reinforced by other, more elementary, demonstratives and may thus differ formally from other uses originally derived from these exophorically used demonstratives. The following examples are cases in point:

- (11) Latin: *si + ce > sic*; It. *ecco + si > così*; Fr. *accom sic > ensi > ainsi*; Swed. *så + här > såhär – sådär* (proximal – distal), etc.

<sup>5</sup> Note that English *as* is the result of a fusion of Old English *eall swa* ‘all/precisely so’.

<sup>6</sup> From a semantic point of view, these uses appear close to pure indexicals like *I*, *here*, *now* in accessing a quality of the speaker or manner of the utterance situation, rather than the quality or manner of the target of the pointing gesture, viz. the way the speaker looks like in (a), and the way the utterance situation is like in (b, c).

<sup>7</sup> This was pointed out to us by one of the reviewers.



### 3.2 Endophoric uses (anaphoric and cataphoric uses)

It is an established fact that demonstratives have endophoric uses, i.e. both anaphoric and cataphoric uses, in addition to their basic exophoric one. Information of this kind is not only available for well-described European languages, but is also found in most descriptive grammars of lesser described languages. The basic function of the endophoric use can be described as establishing and coordinating a joint focus on a discourse referent or topic of conversation ('topic continuity'; cf. Givón 1983; Himmelmann 1996; 1997; Diessel 2006). The antecedents of our subgroup of demonstratives differ of course from those relevant for the other ones: They are measure phrases or degree adverbs for degree demonstratives, attributive adjectives or relative clauses for quality demonstratives and manner adverbials or propositions for manner demonstratives (but see section 5 for the notion of antecedent in the similarity analysis; see also König 2015 for a detailed discussion).

(12) *German*

A: Der Fisch war 60cm lang – B: War der wirklich so lang?

'A: The fish was 20 inches long. – B: Was it that long?'

(13) *English*

A: We were together with people who did not speak any Spanish.

B: I would avoid such people.

- (14) a. (A: Your economic situation is precarious.) – B: I suppose so.  
 b. Apparently so.  
 c. If so, I will have to act immediately.  
 d. She only wanted to die and wished to do so where she had lived.  
 e. A: Did you enjoy it? – B: Very much so.

Anaphoric uses of manner demonstratives (propositional anaphors) as found in (14a) are restricted in English to verbs expressing propositional attitudes (*think, imagine, believe, expect, etc.*), evidential predicates (*appear, seem, say, etc.*) and a few other groups. Such anaphoric uses of manner demonstratives are also found in Russian, Japanese and Finnish, though not in German. The other examples listed in (14) for English would certainly justify drawing further distinctions in the syntactic analysis of anaphoric *so* for that language, between a propositional (14a) and a verb phrase anaphor (14d), for example, but this question will not be further pursued at this point.

Cataphoric uses of demonstratives relate to stretches of following discourse. Such uses are found in many languages for manner demonstratives. They invariably introduce stretches of direct speech and develop into quotative markers. In

his study of quotative indexes in African languages, Güldemann (2008: Chapter 5) shows that cataphorically used manner demonstratives frequently develop into reporting verbs or other quotative markers. In order to exemplify the phenomenon in question, we have to resort again to other languages, since English *so* has also lost its cataphoric use in addition to the exophoric one, using the nominal demonstrative *this* or the simulative preposition *like* instead:

- (15) *German*  
Ich will es mal so sagen: „...“  
‘Let me put it like this ‘...’
- (16) *French*  
DSK s’est exprimé ainsi: «...»  
‘DSK expressed himself like this: ‘...’
- (17) *English*  
She’s like ‘...’ And I’m like ‘...’

So far we have only discussed cases where a three-term lexical distinction in the system of demonstratives under discussion denotes either semantic distinctions in the deictic dimension (e.g. Finnish *näin*, *noin*, *niin*) or in the ontological dimension (e.g. Latin *sic*, *tālis*, *tantus*) and all three expressions have an endophoric use in addition to their primary exophoric one. Moreover, the data from the languages analyzed so far suggested that there were certain pervasive tendencies in the extension of exophoric uses to the endophoric ones: the proximal demonstrative tends to adopt a cataphoric use (e.g. Japanese *koo*), the distal member of a two-term or three-term set tends to develop an anaphoric use (e.g. Finnish *niin*) and the medial member extends its use to that of propositional anaphor, which relates more often than not to a preceding utterance of the interlocutor (e.g. Japanese *soo*). This picture, which could be used for a basic systematization in the sense of “Canonical Typology” (cf. Brown, Chumakina & Corbett, 2012), however, does not do justice to the facts of many languages. Let us briefly consider Turkish as a case in point.

In Turkish, the invariable adnominal (adjectival) demonstratives *bu*, *şu*, *o* provide the basis of the system of demonstratives, from which all the others are derived via affixation and or inflection:

- (18) a. *bu*, *şu*, *o* (adnominal, adjectival, determiners)  
b. *bunlar*, *şunlar*, *onlar* (pronouns, plural; ‘these, those’)  
c. *bura-*, *şura-*, *ora-* (locative adverbs; ‘here, there, over there’)  
d. *böyle*, *şöyle*, *öyle* (quality, manner; ‘such, like this/that’)

The lexical differentiation concerns the deictic dimension and ‘originally’ expressed a gradation in terms of proximity, roughly describable in terms of the general comparative terms ‘proximal - medial - distal’ (cf. Lewis 1967: 71f.; Göksel & Kerslake 2005: 180; 244f.). And on the basis of our preceding discussion, these distinctions found in the exophoric use could then be assumed to have been transferred to the endophoric ones. Recent grammars and the appropriate tests with native speakers of Turkish show, however, that this description may apply to a stage in the historical development of the demonstrative system in Turkish and may still have some relevance for the series in (18a,b), but is no longer adequate as a general description of modern usage. The major changes seem to be the following: the medial term *şu* and the expressions derived from it have acquired a cataphoric use and imply that the referent has not been under discussion before. Both the members of the *bu*-series and those of the *o*-series can be used anaphorically, but only the former can be used exophorically together with a gesture. For the demonstratives denoting quality, manner and degree our informants (inter alia Süheyla Schroeder) provided the following minimal pairs together with their possible contextual embedding:

- (19) a. Karl böyle bir araba al-dı.  
Karl like.this a car buy-Past.3SG  
‘K. bought a car like this one (+ gesture)’ QUALITY
- b. Karl şöyle bir araba al-dı.  
(speaker announces that s/he will describe the car through the gesture or words);
- c. Karl öyle bir araba al-dı.  
(speaker confirms that the description provided by interlocutor is correct)
- (20) a. Karl böyle koş-uyor.  
Karl like.this run-PRES.3SG  
‘Karl runs like this (+ gesture)’
- b. Karl şöyle koş-uyor. (announcement of a subsequent imitation)
- c. Karl öyle koş-uyor (confirmation of preceding description)

For deictic or endophoric reference to degrees, the basic adnominal demonstratives are combined with the postposition *kadar*, which derives from an Arabic noun meaning ‘amount’.

### 3.3 Further uses

#### 3.3.1 Equative comparatives

As already indicated above, demonstratives of manner, quality and degree – or the expressions derived from them – are also frequently found as markers of grammatical constructions in the synchrony of a wide variety of languages (cf. König 2012; 2015; 2017). To round off the general, typological part of our paper, three examples of such pervasive tendencies of grammaticalization will briefly be discussed, each starting out from a different demonstrative as source. Note that these tendencies will be described in terms of plausible reconstructions based on comparative evidence. Detailed historical and textual evidence demonstrating developments from ‘exophoric to anaphoric to connective’ are difficult, if not impossible, to provide. Note also that our three examples suggest that there are wide-spread, general tendencies of semantic change and grammaticalization, but also that the changes in question may be somewhat different even in closely related languages.

In a recent typological study of equative comparatives, Haspelmath (2017) draws a distinction between 6 major types of equative comparative constructions found in the languages of the world. The dominant strategy found in European languages (Germanic, Romance, Slavic, Balkan languages) is based on demonstratives of degree or manner, such as Germ. *so*, Engl. *as* (< *eall swa*) or Latin *tam*, as is shown by the following equivalent examples from German, English, French and Russian. A rough analysis of such constructions is given in (21e):

- (21) a. Karl ist **so** groß **wie** Peter.  
 b. Charles is as tall as Peter.  
 c. Charles est **aussi** grand **que** Pierre.  
 d. Kostja **tako**j umnyj **kak** ego sestra.  
 Kostya [so smart] [as his sister]  
 ‘Kostya is as smart as his sister.’  
 e. COMPAREE – copula – degree marker – parameter – standard marker  
 – STANDARD

In addition to the two expressions denoting the entities under comparison, such constructions contain an expression derived from a demonstrative of degree (a degree marker), a gradable adjective and an expression typically taken from the same notional domain as the demonstrative (*as* in English, the interrogative adverb *wie* in German, *som* in Swedish, *kak* in Russian) used as standard marker

(cf. (21e)).<sup>8</sup> The striking parallelism between the relevant exophoric use of the same demonstratives in combination with dimensional adjectives and the equative comparatives suggests that comparatives can be derived from the former simple construction by adding a relative clause to the exophorically used demonstrative. In German and English this relatedness is particularly clear (cf. Thurmair 2001; Jäger 2010; 2012):

- (22) a. Karl ist so (+ gesture) groß.  
           ‘Charles is this tall/as tall as this.’  
       b. Karl ist so groß wie Peter (groß ist).  
           ‘Charles is as tall as Peter (is tall).’

Note that the relative clause is generally reduced and that in English even a gestural demonstration of height can be formulated with the help of an equative comparative construction (*John is as tall as that*). If our speculations about the development of equative constructions go in the right direction, it is difficult to decide whether *so* or *as* in (21) are used anaphorically – a standard of comparison always concerns given information – or cataphorically, which seems to be supported by the facts of constituent order. In our view, equative comparatives are directly based on utterances with exophorically demonstratives of degree and involve the replacement of a demonstration by a description, exactly as we find it for nominal reference:

- (23) a. THIS MAN/He is the thief.  
       b. The man with the green coat is the thief.

### 3.3.2 Propositional anaphors and adverbial connectives

Our second example of a general process of grammaticalization involving demonstratives of our domain, in general, and manner demonstratives, in particular, leads to propositional anaphors and adverbial connectives as targets. These developments are clearly based on the anaphoric uses of the relevant demonstratives and are particularly evident in the form of propositional anaphors used as objects in languages like English, Japanese and Russian. As already mentioned above, after verbs of propositional attitude (*think, guess, suppose, imagine, etc.*)

<sup>8</sup> This description is a slight simplification of the variation found across European languages. Instead of a demonstrative used as degree marker we may also find an adjective with the meaning ‘equal’ (Swedish *lika*, Finnish *yhtä*) and the standard marker may also correspond to a complementizer (French *que*).

the anaphoric expression in object position that refers back to a preceding sentential antecedent typically takes the form *so* rather than *it*:

- (24) A: Our economic situation is very difficult.  
 B: I suppose/think/imagine... *so*./Apparently, *so*.

After some verbs (*say, expect, regret, etc.*) both *so* and *it* can be used, with a subtle contrast in meaning (*She said so* vs. *she said it*). Very similar extensions in the use of manner demonstratives can be found in Russian and in Japanese. In Japanese, it is the hearer-proximal (medial) demonstrative *soo* that is found in this use. Given that in dialogues of type (24) the anaphor relates to an utterance made by the previous speaker and current addressee, this choice is clearly functionally motivated:

- (25) *Japanese* (Nishina, p.c.)  
 A: Nihon-no keizei zyookyoo-wa kanari waru-i.  
 Japan-GEN economy situation-TOP pretty bad-PRS  
 'The economic situation of Japan is pretty bad.'  
 B: Watashi-mo soo omo-u.  
 1.SG-too DEM.MANNER think-PRS  
 'I think so, too.'

In both English and Japanese, to take again these two languages as examples, manner demonstratives are also frequently found as adverbial connectives, either in combination with another expression (Engl. *if so, even so, etc.*) or in isolation. This use is again based on the anaphoric one. The relevant use of basic manner demonstratives typically occurs in sentence-initial position. In addition to their connective meaning these uses of manner demonstratives may denote various adverbial relations, such as causality, conditionality, inference, concessivity, etc. either alone or in combination with other expressions. A variety of different uses of this type is available in English (cf. König 2015):

- (26) a. (It is pouring down outside.) So, we cannot leave right now. (causal)  
 b. Even so we could leave right now (if we take a taxi). (concessive)  
 c. So, you don't mind the rain. (inferential)  
 d. I would like to wait, so that I can get home dry. (resultative)

A conditional use of *so* is still found in formal and slightly archaic German and may introduce both the protasis, instead of the more common conjunction *wenn*, and the apodosis, replacing the more common and colloquial conjunctive adverb *dann*; such uses were also found in Early Modern English, but disappeared from language use a long time ago:

- (27) a. So er unseren Vorschlag annimmt, können wir morgen abreisen.  
 b. Nimmt er unseren Vorschlag an, so können wir morgen abreisen.  
 'If he accepts our proposal, we can leave tomorrow.'

In Romance languages, the basic manner demonstrative (*si*) is generally used as conditional connective.

Our list of examples shows that the relevant changes may differ even in languages as closely related as German and English. Whether the uses of the English conjunct *so* in examples like (26) are an instance of polysemy or of a vague univocal meaning will not be discussed further at this point.

In Japanese, too, we find adverbial connectives with the hearer-proximal (medial) manner demonstrative *soo*, in addition to those formed with the help of adnominal demonstratives. In contrast to what we saw in English, the relevant connectives are typically complex forms, combining expressions denoting an adverbial relation with the propositional anaphor *soo*. In the following list, the connectives are classified according to the relation they denote (cf. König & Nishina 2015: 25f.):

- (28) a. (conditional) *sositara* (< *soositara* < *soo s-itara* 'so do-cond'),  
*soosureba, sonnara*;  
 b. (causal) *souiwakede, sonde, sonotame*;  
 c. (inferential) *assoo; sonzya, soizya*;  
 d. (concessive) *soo-waitte-mo, soredemosorenanoni, sore-ga*  
 e. (resultative) *soo site, sorede, sonokekka*;

### 3.3.3 Markers of affirmation

A third example will be mentioned only briefly. Markers of affirmation are related to demonstratives of manner in a variety of languages. Clear examples are provided by Italian and Spanish *si*, by Polish *tak*, by English *yes* (< *yeah swa*). In some other languages, the relevant expressions have a less general meaning and can only be used for affirmation in specific contexts. In French, *si* can only be used after negative interrogatives (*Vous ne comprenez pas? – Si, si!*). In Finnish, the distal demonstrative of manner (*niin*) is only used in affirmations expressing certain reservations and in Russian *tak* can be used for affirmation but is used more rarely so than its counterpart in Polish. It is, moreover, interesting to note in this context that markers or particles of affirmation frequently occur as propositional anaphors, regardless of whether they derive from manner demonstratives or not.

- (29) a. (Ital.) Penso di sì. ‘I think so.’  
 b. (Spanish) Creo que sí.  
 c. (Germ.) Ich glaube ja.

## 4 The semantics of demonstratives of manner, quality and degree

### 4.1 Demonstratives expressing similarity

While in the first part of this paper, demonstratives of manner, quality and degree (*MQD demonstratives* for short) were examined from the point of view of typology and use type, the focus of the second part will be on their semantics. As mentioned in the introduction, demonstratives play a central role in natural language in creating a joint focus of attention and occur very early in language acquisition (Diessel 2006). Demonstratives also play a central role in semantics, their hallmark being the property of direct reference.

In (30a–c) examples of the exophoric/deictic use of MQD demonstratives are accompanied by a pointing gesture (analogous to the examples in (1)–(3) at the beginning of the paper). We will focus on German examples in this part of the paper since German provides a simple form for all of manner, quality and degree.<sup>9</sup> It seems safe to assume that the corresponding demonstratives in other languages, simple as well as complex ones, are equivalent in meaning in terms of the similarity analysis presented below. Compound expression like English *like this* or German *wie dies* are in fact transparent including a demonstrative component combined with a similarity component and suggest a compositional analysis (assuming that *like* / *wie* denote similarity, cf. Umbach in prep). For example, German *so ein Auto* (‘such a car’) is semantically equivalent, from the point of view of the similarity analysis, to *ein Auto wie dieses* (‘a car like this’).

- (30) a. (speaker pointing to someone dancing):  
 So tanzte Anna gestern auch.  
 ‘Yesterday, Anna danced like this, too.’  
 b. (speaker pointing to a mug on the table):  
 So eine Tasse hat Anna auch.  
 ‘Anna has such a mug / a mug like this, too.’

<sup>9</sup> See Ehlich (1986) for an early analysis of German *so* as a demonstrative.



- c. (speaker pointing to a person):  
 So groß ist Anna auch.  
 ‘Anna is this tall, too.’

The semantic analysis of MQD demonstratives starts out from the idea that they express similarity.<sup>10</sup> In (a), where the demonstrative occurs in an adverbial position, Anna’s manner of dancing is characterized as being similar in certain respects to the dancing event the speaker is pointing at. In (b), with the demonstrative occurring in the noun phrase, Anna’s mug is characterized as being similar in certain respects to the mug the speaker is pointing at. Finally, in (c) where the demonstrative combines with an adjective, Anna’s height is characterized as being similar to the height of the person the speaker is pointing at. Since similarity is, from a cognitive point of view, basic in classification processes, sets of similar items – “similarity classes” – appear closely related to kinds. It will in fact be argued that the similarity classes created by manner and quality demonstratives are ad-hoc created kinds – a subkind of dancing similar to the dancing pointed at in (30a) and a subkind of mugs similar to the mug pointed at in (30b). Degree demonstratives, however, appear slightly different, for example since they do not combine with the noun *kind*. Thus although degree demonstratives express similarity, too, the resulting similarity classes are not considered as kinds in this analysis.

Considering the typological data described in section 2, the asymmetry between manner and quality, on the one hand, and degree, on the other, might raise the expectation that manner and quality demonstratives coincide more frequently than either of them coincides with degree.<sup>11</sup> Some of the data confirm this expectation (e.g. Spanish: *asi/asi* vs. *tan*, Italian *così/così* vs. *tanto*). There are, however, also a number of languages in which quality and degree can be coded identically and differentiated from manner demonstratives (e.g. Russian (*vot*) *takoj* vs. (*vot*) *tak*), in addition to those where all three ontological categories are expressed differently (Latin, Armenian, Japanese) or are not differentiated at all (German, Polish).<sup>12</sup>

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**10** This is the reason why MQDs are called *similarity demonstratives* in Umbach and Gust (2014). Note, however, that the notion of similarity employed in this paper is adopted from Cognitive Science, and is more strict than the meaning of the adjective *similar* – similarity in this analysis is not mere resemblance but rather “near-sameness” or “indistinguishability with respect to certain features”.

**11** Many thanks to one reviewer who made this suggestion.

**12** In English, there are two ways of expressing the degree cases: *tall like this* and *this tall*, which might relate to different strategies in conceptualizing degree comparison (see, e.g., Beck et al. 2009).

The semantic analysis will begin with the issue of direct reference (section 4.2), and of the relation between the target of the demonstration gesture and the reference of the linguistic phrase (section 4.3). Formal spell-out of the similarity relation will only be sketched briefly (section 4.4). The pivotal question in invoking similarity in semantics is that of *respects of similarity*, or *features of comparison*, which is the topic of section 5. This topic will turn out to be closely connected to issues of concept formation, thus confirming the idea that MQD demonstratives create ad-hoc kinds (section 5.1, 5.2). Clues about the connection between features of comparison and properties of concepts stem from findings on genericity in the adnominal case and from findings on manner modification in the adverbial case (section 5.3, 5.4).

## 4.2 Direct reference

In his seminal paper in (1989), David Kaplan showed that demonstratives differ from predicates in being directly referential. Directly referential expressions take their values from the context of the utterance whereas predicates take their values from the circumstances of evaluation (possible worlds, past and future times) which can be shifted by, *inter alia*, a counterfactual premise. Suppose that the sentences in (31) are uttered in a situation where there are two mugs on the table, one with a Chinese decor and the other one with a Berlin advertising slogan. The Chinese one is in the middle while the other one is at the corner. Suppose, furthermore, that the speaker points to the mug in the middle of the table, so the sentence in (31a) is true. However, assuming that the speaker as before points to the mug in the middle, the sentence in (31b) is false. This is meant when saying that demonstratives must take their values from the context of utterance – the expression *that mug* in (31b) cannot be interpreted as being evaluated in the (counterfactual!) circumstance in which the mugs have changed places. In (31c), however, the mug is not picked out by a demonstrative but instead by the predicate *in the middle*. This sentence is true, which is evidence that predicates, unlike demonstratives, are sensitive to (possibly counterfactual) circumstances of evaluation.<sup>13</sup>

- (31) a. That mug is Chinese. (true)  
 b. If the mugs had changed places, that mug would be from Berlin. (false)  
 c. If the mugs had changed places, the mug in the middle would be from Berlin. (true)

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<sup>13</sup> For testing direct reference see also Coniglio et al. (this volume).

Kaplan considers demonstratives like *that* and *that man*, but not the MQD variety of demonstratives examined in this paper. So the question arises of whether MQDs qualify as demonstratives in the sense of being directly referential. Let us assume the same scenario as before, two mugs on the table, one from China and the other one from Berlin. The Chinese mug is in the middle and the Berlin mug is at the corner, and the speaker points to the Chinese one in connection with all of the utterances in (32) and (33). Furthermore, Anna has a mug resembling the Chinese one (and this is the only mug she has). On these premises, the sentences in (32a) and (33a) are true.<sup>14</sup> When shifting the circumstances of evaluation, as in (32b) / (33b), the referent of *so eine Tasse / a mug like this* is nevertheless one resembling the mug the speaker points to in the utterance context, that is, a mug resembling the Chinese one. So, as in the example in (31b), the sentences in (32b) / (33b) are false. Finally, if the MQD demonstrative is not used deictically but instead in an equative construction using the predicate *in der Mitte / in the middle*, the sentences are true since, as before in (31c), the predicate is sensitive to the circumstances of evaluation (cf. (32c) and (33c)).<sup>15,16</sup>

- (32) a. So eine Tasse hat Anna auch. (true)  
 b. Wenn die Tassen Plätze getauscht hätten, dann hätte Anna nicht so eine Tasse. (false)  
 c. Wenn die Tassen Plätze getauscht hätten, dann hätte Anna nicht so eine Tasse wie die in der Mitte. (true)
- (33) a. Anna has a mug like that, too. (true)  
 b. If the mugs had changed places, Anna would not have a mug like that. (false)

**14** Note that there is no difference between German and English, and between simple and complex MQDs.

**15** Readers wondering what happens if the MQD demonstrative is replaced by the predicate *ähnlich / similar* are referred to Umbach (2014).

**16** In Hinterwimmer (this volume) it is argued that (anaphorically/endophorically used) demonstratives allow for binding. The example below is evidence that MQD demonstratives allow for binding, too. Moreover, the domain of quantification in the example below is a domain of individuals (instead of kinds), which is further evidence for the claim in this paper that the demonstration targets of MQD demonstratives are individuals (or events) instead of kinds.

- (i) Für jedes Schmuckstück in dieser Vitrine gilt: so ein Schmuckstück wäre ein Verbrechen wert.  
 'For each piece of jewellery in this showcase it is true that such a piece of jewellery would be worth a crime.'

- c. If the mugs had changed places, Anna would not have a mug like the one in the middle. (true)

The data in (32a) / (33a) are evidence that MQD demonstratives are directly referential. There is a problem, however: Direct reference in Kaplan's terms not only means that the target of the demonstration gesture is the thing the speaker actually points to but, in addition, that the referent of the demonstrative phrase is identical with the target of the demonstration gesture. This seems trivial in the case of standard demonstratives as in *diese Tasse* or *that mug*. In the case of MQD demonstratives, however, it is plainly false: none of the sentences in (32a) and (33a) entails that Anna's mug is identical with the one the speaker points to.<sup>17</sup>

Lack of identity between the target of the pointing gesture and the referent of the phrase has been observed with demonstratives before. Nunberg (1993) discusses examples analogous to this: in pointing to the (female) minister of defense Ursula von der Leyen, someone says *That person is usually a man*. Nunberg analyzes these examples as involving deferred reference, i.e. as cases where the relation between the target of the pointing gesture and the referent of the demonstrative phrase is an arbitrary salient relation instead of identity. In the case of MQD demonstratives, by contrast, the relation between the target of the pointing gesture and the referent of the demonstrative phrase is not arbitrary: The referent of *so eine Tasse* or *a mug like that* is related to the mug the speaker is pointing at by similarity.

### 4.3 The target of demonstration gesture

When arguing that MQD demonstratives are directly referential, it was tacitly assumed that the target of the pointing gesture accompanying *so eine Tasse* / *a mug like that* in (32a) / (33a) is an individual, i.e. the actual mug the speaker is pointing to. This is the reason why identity of referent and target had to be rejected. One may, however, think that the speaker does not point to the actual mug but rather to the kind instantiated by the mug. On the assumption that the demonstrative refers to a kind, referent and target are identical. This type of analysis has been suggested by Carlson (1980) for the anaphoric use of English *such*, where *such* is considered as a pronominal element relating to kinds instead of individuals. Landman (2006) adapted Carlson's analysis to Polish *tak* and German *so*, including adverbial uses by postulating event-kinds as an ontological category in addition to (nominal) kinds. Recently, Anderson & Morzycki (2015) extended this

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<sup>17</sup> Though they could be identical by chance.

analysis to include ad-adjectival uses of Polish *tak* and German *so* by postulating degree-kinds (which are thought of as kinds of states of individuals).

Although this analysis readily captures the observed cross-categorical uniformity, it raises a number of questions. First, there is the problem of transparency: the assumption that MQD demonstratives refer to kinds precludes a transparent analysis of complex MQDs of the *like that* form. On this assumptions complex MQDs will have to refer to kinds as do simple ones, contrary to the intuition that they are composed out of a regular demonstrative (*that*) and a predicate (*like*). In contrast, the analysis proposed in this paper starts from the idea that MQDs include a demonstrative (*that*) and a similarity (*like*) component.

More severe objections can be addressed to Anderson & Morzycki's idea of kinds, which seems oversimplified in several respects. The idea of degree kinds appears doubtful when faced with the distribution of the noun *kind* in English or *Art* in German. If degrees are kinds of states of individuals one would expect that *this kind of being tall* / *diese Art von groß sein* are understood as denoting a degree. However, these expressions can only be understood as denoting a way of being tall – for example, having extremely long legs, which is clearly not a degree meaning. In the analysis proposed here cross-categorical uniformity of MQD demonstratives is accounted for by interpreting them as expressing similarity across categories – similarity between individuals in the adnominal cases, between events in the adverbial case, and between either individuals or events in the ad-adjectival cases (depending on whether the adjective is predicated on individuals or events). There is no need, then, to postulate degree kinds in order to maintain a cross-categorical uniform interpretation.

The second shortcoming concerns the status of kinds. It is well-known in the literature on generics that generic definite NPs require 'well-established' kinds, that is, kinds that are given independent of the context they appear in. This is the reason why *the coke bottle* is fine as a generic NP whereas *the green bottle* is bad in most contexts (see Krifka et al. 1995). It is shown below that in the case of MQD demonstratives there is no requirement for 'well-established' kinds. This finding cannot be accounted for with an unselectively kind-referring interpretation. The third objection against Anderson & Morzycki's simplified view of kinds relates to restrictions on the use of MQD demonstratives which cannot be explained in their account. These restrictions are discussed in section 5.

Consider the sentences in (34) and (35). The ones in (34) are uttered in the street and the ones in (35) are uttered in a flea market. Now compare the (a) versions: *Dieses Auto* ('this car') in (34a) allows for a token reading and also a generic/type reading – Anna may want to buy the actual car the speaker points at (token reading), or a car of the same type (generic/type reading). The availability of the type reading is easily explained by the fact that subkinds of the kind

denoted by *car* are well-established in the street context (and presumably in any other context). In contrast, *dieser Stuhl* ('this chair') in (35a) does not allow for a generic/type reading in the presumed flea market context – (35a) can only mean that Anna wants to buy the actual chair the speaker points at. A type reading would only be available in a context where *chair* subkinds are well-established, e.g., when shopping at Ikea. Now consider the examples in (34b) and (35b). In contrast to the (a) examples, there is no restriction to well-established kinds in the case of *so*: both sentences mean that Anna wants to buy a car/chair similar to the one the speaker points at.

(34) (speaker pointing to a car in the street):

- a. *Dieses Auto* will Anna kaufen. (token/type)  
'Anna wants to buy this car.'
- b. *So ein Auto* will Anna kaufen.  
'Anna wants to buy such a car.'

(35) (speaker pointing to a chair at a flea market):

- a. *Diesen Stuhl* will Anna kaufen. (token only)  
'Anna wants to buy this chair.'
- b. *So einen Stuhl* will Anna kaufen.

The examples in (34) and (35) are evidence that the interpretation of *so*-phrases does not hinge on the existence of previously established kinds. This does not entail, however, that there are no kinds involved, and it will in fact be shown in section 5 that there are kind-like restrictions on the similarity classes created by the use of MQD demonstratives. That is, it will turn out that the set of mugs similar to the one pointed at in (32) / (33) is not just an arbitrary subset of mugs, but one that qualifies for establishing a subkind of the mug kind. Since similarity is known in Cognitive Science to be basic in classification processes (Tversky 1977), it does not come as a surprise that similarity classes exhibit kind-like characteristics. Still, these kinds need not be given in advance. There is no need for a previously established subkind of mugs including the one pointed at, in order for the demonstrative in (30b) to be used felicitously; it is created ad-hoc by similarity.<sup>18</sup>

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**18** One reviewer pointed out that, from a Gricean perspective, the use of MQD demonstratives might even exclude well-established kinds. In fact, if the speaker wants to express that she bought the very same type of car she would use *dieses Auto* / *this car* instead of *so ein Auto* / *a car like this*. Similarly, if the speaker wants to express that she bought the token she points to she would use the definite NP instead of the MQD phrase. In Umbach (2014) this is said to result from a Gricean implicature – as suggested by the reviewer – which can be cancelled.

Ad-hoc kinds are described in the literature on concept formation, e.g., by Barsalou (1983) who considers complex NPs expressing manners and dispositions (*ways to make friends, things that can be walked upon*) (Barsalou speaks of *ad-hoc* categories). Carlson (1980), who introduced the notion of *reference to kinds* in semantics, discusses various ways to express kinds beyond simple common nouns and argues that even NPs like *old white houses that have been painted only once per decade* may be used as kind-denoting. On the other hand, there are NPs failing the test for a kind-denoting reading, e.g., *alligators in the next room*.<sup>19</sup> When we combine this finding with the one described above, there seems to be a three way distinction: well-established kinds vs. ad-hoc kinds vs. non-kinds (i.e. arbitrary sets). One way of creating ad-hoc kinds is by MQD demonstratives.

#### 4.4 The similarity relation

The notion of similarity is highly versatile, which is why Goodman (1972) deemed it useless: ‘Similarity, ever ready to solve philosophical problems and overcome obstacles, is a pretender, an impostor, a quack.’ (p. 437). Goodman’s major criticism is that similarity is trivial without specifying the relevant respects of similarity because any two items would be similar in infinitely many ways.<sup>20</sup> In examples like (30a,b) the respects of similarity may be obvious from the context, but the addressee could also ask for specification of the relevant respects: *In which respect is Anna’s mug like this one? In which respect was Anna dancing like this person?* In the example in (30c), however, asking for respects is infelicitous because the respect is given by the adjective: *??In which respect is Anna as tall as this person?* This difference between, on the one hand, the adnominal and adverbial cases, and, on the other, the adjectival case, will be made use of in the analysis.

Since the respects of similarity, or features of comparison, as we will call them here, are decisive in judging two items as similar, the relation of similarity has to be 3-place, combining two similar items and, as a third argument, a set of relevant features of comparison. The interpretation of the sentence in (30b) is shown in (36). The mug the speaker points at (*target*) and the mug owned by Anna (*x*) are asserted to be similar with respect to a set of features of comparison *F*. However, the interpretation in (36) would be pointless without spelling out the similarity relation in more detail. This is done by means of multi-dimensional attribute spaces, which are basically feature structures (as in, e.g., HPSG grammar, cf. Pol-

<sup>19</sup> This can be tested with the help of kind-selecting predicates like *common* and *extinct*, cf. Krifka et al. (1995).

<sup>20</sup> For example, a mug and a laptop both weigh less than 100kg, 101kg, 102kg, etc.

lard & Sag 1987), and are spanned by the features of comparison relevant in the case at hand. Such attribute spaces provide a conceptual level of representation, in addition to the level of semantics. They are close to Gärdenfors' (2000) conceptual spaces but they facilitate a qualitative (feature-based) similarity relation instead of a geometrical (distance-based) one, and they are integrated into truth-conditional semantics whereas Gärdenfors' conceptual spaces are isolated systems without connection to truth-conditional semantics.

- (36) [[Anna hat so eine Tasse]]  
 =  $\exists x. \text{sim}(x, \text{target}, F) \ \& \ \text{mug}(x) \ \& \ \text{mug}(\text{target}) \ \& \ \text{own}(\text{Anna}, x)$

Spelling out the similarity relation in more detail raises two questions: first, the question of which features are possible and relevant in a given case and, secondly, the question of how to make use of multi-dimensional attribute spaces in defining similarity. The latter question is fairly technical and will only briefly be addressed in the remainder of this section (for details see Gust & Umbach 2015). The first question addresses the interface between conceptual knowledge and semantics. It is elaborated in section 5.

The starting point of the similarity analysis in Umbach & Gust (2014) is the parallelism of MQD demonstratives: in (30a) there are two events, viz. Anna's dancing yesterday and the dancing event pointed at, which are similar with respect to, say, posture, rhythm, fluency, speed, etc. In (30b) there are two individuals, namely Anna's mug and the mug pointed at, which are similar with respect to, e.g., size, form, material, manner of decoration etc. In (30c) there are two individuals again: Anna and the person pointed at, which are similar with respect to height. There are, however, three important differences between the adnominal and the adverbial case, on the one hand, and the ad-adjectival case, on the other. First, while in the case of manner and quality there are several features of comparison, in the case of degree there is only one.<sup>21</sup> Secondly, whereas in the case of manner and quality, features of comparison have to be retrieved from the context, in the case of degree the feature of comparison is determined by the lexical meaning of the adjective. Thirdly, in the case of manner and quality the range of features values is not restricted to numbers. For example, the material of mugs may be classified as porcelain vs. crockery vs. plastics, and the size of mugs may be classified as small vs. medium vs. large, or alternatively be measured in cu-

<sup>21</sup> 'Dimensional' adjectives like *tall* are one-dimensional. There are also multi-dimensional adjectives like *healthy* (cf. Sassoon 2011), which are handled in the similarity analysis by multi-dimensional spaces.



bic centimeters. In the case of degree, however, the range of values of the (single) feature is metrical – height values, for example, are real numbers.<sup>22</sup>

From the point of view of measure theory, features are just dimensions and dimensions can be related to various scale types, e.g., ratio scales (with metric values), ordinal scales (where values are ordered but not metric) and nominal scales (with discrete values as with the material of mugs). This suggests generalizing the notion of measure function common in degree semantics (cf. Kennedy 1999) such that it covers (i) scales other than metrical ones and (ii) more than one dimension, which is harmless from a formal point of view. Thus while adjectival measure functions map individuals to degrees, that is, values in a single ratio scale dimension, *generalized measure functions* map individuals (or events) point-wise into multi-dimensional attribute spaces with dimensions of arbitrary scale types.<sup>23</sup>

Examples are provided in (37). In (a), an adjectival measure function  $\mu_{\text{height}}$ , as is common in the interpretation of e.g. *tall*, is shown. It maps persons to points on the height dimension, i.e. real numbers (indicating centimeters). The individual Anna, for example, is mapped to 180. In (b) a generalized measure function is shown. It maps mugs to points in a multi-dimensional attribute space given by four dimensions: material, size, form and decoration. The material dimension has a nominal scale with values *porcelain, crockery, plastics* etc. The size dimension has a scale with values *small, medium, large*, which are ordered. The form and the decoration dimensions are nominal again with values *round, straight-sided*, etc. and values *Chinese, Berlin-advertising*, etc. Mapping mugs to this space is done pointwise. Anna's mug, for example, is mapped to a point given by the vector  $\langle \text{crockery, medium, straight, Chinese} \rangle$ .

Two more remarks are in order. First, in mapping semantic entities (individuals/events) to points in attribute spaces, generalized measure functions warrant the integration of attribute spaces into truth-conditional semantics. Secondly, since the notion of generalized measure functions is a straightforward generalization of the notion of measure functions in degree semantics, they are familiar in semantics. In addition, the multi-dimensional attribute spaces described above are a straightforward generalization of the notion of dimensions in degree semantics. So neither generalized measure functions nor multi-dimensional attribute spaces are semantic aliens.

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**22** Evaluative adjectives like *beautiful* and *tasty* presumably lack metrical values, see Umbach (2016).

**23** If you are reluctant to speak of measuring in the case of generalized measure functions, call it *characterization*.

- (37) a.  $\mu_{\text{height}}: U \rightarrow \mathcal{R}$   
 e.g.  $\mu_{\text{height}}(\text{Anna}) = 180$
- b.  $\mu_{\text{mug}}: U \rightarrow \text{MATERIAL} \times \text{SIZE} \times \text{FORM} \times \text{DECORATION}$   
 where  $\mu_{\text{mug}}(x) = \langle \mu_{\text{material}}(x), \mu_{\text{size}}(x), \mu_{\text{form}}(x), \mu_{\text{decoration}}(x) \rangle$   
 and  $\mu_{\text{material}}(x) \in \{\text{porcelain, crockery, plastics, ...}\}$   
 $\mu_{\text{size}}(x) \in \{\text{small, medium, large}\}$   
 $\mu_{\text{form}}(x) \in \{\text{round, straight-sided, ...}\}$   
 $\mu_{\text{decoration}}(x) \in \{\text{Chinese, Berlin-advertising, ...}\}$   
 e.g.  $\mu_{\text{mug}}(\text{Anna's mug}) = \langle \text{crockery, medium, straight, Chinese} \rangle$

Finally, the similarity relation has to be defined. Note, first, that the range of values of features/dimensions can be of different granularity. For example, the size of a mug can be measured on a three value scale (small/medium/large), but also on a much more fine-grained metric scale of cubic centimeters. Thus the range of possible values determines the granularity of measuring (in Umbach & Gust 2014, granularity is implemented in a more complex way for reasons irrelevant here). Similarity is then defined as indistinguishability in a given attribute space (with fixed features and granularity): two individuals (or events) are *similar* if and only if the points they are mapped to by the generalized measure function cannot be distinguished. Attribute spaces of different granularity may be thought of as coarser or finer grained grid patterns. From this perspective, two mugs, for example, are similar in the sense defined here, if their values with respect to material, size, form and decoration yield points in the same cell of the grid pattern.

## 5 Features of comparison

In the previous section, the relation of similarity was defined as indistinguishability with respect to a given set of features of comparison (and the granularity of their range of values). Setting granularity aside, the features of comparison determine whether two items are similar. This raises the question of which features are relevant. One readily available answer would be that this is a matter of context, which is trivially true but at the same time unsatisfactory. Although it is clearly impossible to predict which features of comparison are relevant in a given case, there are constraints on which features can possibly serve as features of comparison in comparing given items. For example, the feature *number of doors* would be perfect when comparing cars but not when comparing mugs – mugs do not have doors, so the number of doors does not qualify as a feature of comparison

for mugs. But mugs as well as cars can be recently purchased and nevertheless *being recently purchased* does not qualify as a feature of comparison for neither cars nor mugs. Thus there seem to be certain constraints on which features are licensed in similarity comparison.

Constraints on licit features of comparison are found for adnominal as well as adverbial cases of MQD demonstratives. (Recall that in the case of ad-adjectival occurrences the problem of which features are relevant does not arise because there is only one feature of comparison, which is determined by the lexical meaning of the adjective.) In the adnominal cases the constraints can straightforwardly be related to connections between concepts and properties discussed in the area of generics. In the adverbial cases, there is no analogous discussion to refer to. There is, however, a surprising parallel in the literature on manner modification pointing in the same direction. It will be argued in this section that features of comparison – in the adnominal as well as the adverbial cases – are restricted to properties principally connected to the kind instantiated by the compared items, warranting that the resulting similarity classes are licit subkinds.

For ease of exposition we will use in this section anaphoric instead of deictic examples.<sup>24</sup> The examples consist of two sentences such that the first introduces an object or event with a certain property and the second includes an MQD demonstrative supposed to pick up this property. (For simplification we will speak of *picking up* or *accessing the property in the antecedent sentence* although according to the similarity analysis MQD demonstratives are no kind pronouns.) As before, we will use German examples.

## 5.1 Adnominal cases

The examples in (38) and (39) are about bikes. In (38a) the property of Anna's bike presented in the PP is readily picked up by *so*, leading to the interpretation that Berta's bike is also one with gears. In (38b) the property of Anna's bike presented by an attributive modifier is picked up just as readily, leading to the interpretation that Berta's bike is also an electric one. In (38c) there are two separate modifiers and in (38d) there is no modifier but instead a more specific noun. Still, the particular characteristics of Anna's bike are readily picked up by the MQD demonstrative in the subsequent sentence. So the examples in (38) seem to suggest that there are no problems at all.

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<sup>24</sup> Lücking (this volume) identifies certain differences between deictic uses and anaphoric uses of demonstratives. So one has to be careful when switching from deictic to anaphoric examples. The type of examples below are, however, not affected by the effects shown by Lücking.

- (38) a. Anna hat ein Rad mit Gangschaltung. Berta hat auch so ein Rad (nämlich mit Gangschaltung).  
 b. Anna hat ein elektrisches Rad. Berta hat auch so ein Rad (nämlich ein elektrisches).  
 c. Anna hat ein elektrisches Rad mit Gangschaltung. Berta hat auch so ein Rad (nämlich elektrisch mit Gangschaltung).  
 d. Anna hat ein Mountainbike. Berta hat auch so ein Rad (nämlich ein Mountainbike).  
 ‘Anna has a bike with gears /an electric bike / an electric bike with gears / a mountain bike. Berta has a bike like that, too (namely one with gears / an electric one / an electric one with gears /a mountain bike).’

In (39) judgments are more subtle. Can (39a) be understood such that Berta has a Greek bike? The problem speakers report with this example is that they don’t have a clear picture of Greek bikes. This is different in (39b) which is unproblematic, since Dutch bikes are a well-established kind in Germany (heavy, durable, upright sitting position ...).<sup>25</sup> In (39c) Anna’s bike is said to be a new one. But an interpretation such that Berta’s bike is also new is consistently rejected. Although Berta’s bike may share some other property with Anna’s bike, being new seems inaccessible for the demonstrative. This observation is confirmed in (39d) which can be interpreted such that Berta has a mountain bike, but not such that she has a new mountain bike.

- (39) a. ??Anna hat ein griechisches Rad. Berta hat auch so ein Rad (nämlich ein griechisches).  
 b. Anna hat ein holländisches Rad. Berta hat auch so ein Rad (nämlich ein holländisches).  
 c. #Anna hat ein neues Rad. Berta hat auch so ein Rad (nämlich ein neues).

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<sup>25</sup> One reviewer suggested that *holländisches Rad* has two readings, one that literally describes the country of origin and could include, e.g., mountain bikes, and one that describes a certain type of bicycle that does not necessarily come from the Netherlands. This type of bike is called *Hollandrad* in German; the English term is *roadster*. Another reviewer claimed that the roadster reading of *holländisches Rad* is blocked due to the existence of the lexical term *Hollandrad*, which is doubtful, however, since *holländisches Herrenrad* definitely has both readings. Considering *holländisches Rad* as being ambiguous matches perfectly with the analysis in the next section: features to be picked up by *so* must be features licit in creating a subkind. The reason why the sequence in (39b) is easily accepted is that there is the roadster interpretation. An analogous interpretation of *griechisches Rad* in (39a) is not available.

- d. Anna hat ein neues Mountainbike. Berta hat auch so ein Rad (# nämlich ein neues Mountainbike) / (nämlich ein Mountainbike).  
 ‘Anna has Greek / Dutch / new bike / new mountain bike. Berta has a bike like that, too (namely a Greek / Dutch / new bike / new mountain bike).’

If, however, *new* is interpreted in the sense of *newly developed* instead of recently purchased, it can be picked up by the demonstrative. In (40a), Anna bought a new iPhone because she lost her old one. As with the bike in (39c), an interpretation such that Berta’s iPhone shares with Anna’s iPhone the property of being newly purchased is ruled out. In (40b), by contrast, Anna bought an exemplar of a novel version of iPhones. This time, the second sentence is preferably interpreted such that Berta has the same novel version. Similarly, the property of being old is accessible if meant to characterize a kind of bikes, as in (40c). This suggests that a property is accessible for the demonstrative if it is not just accidental but in some sense characteristic of the kind denoted by the noun. Truly accidental properties such as having a parking fine notice, as in (40d), appear immune to access by the demonstrative.

- (40) a. #Nachdem sie sich wochenlang über den Verlust ihres iPhones geärgert hat, hat Anna schließlich ein neues iPhone gekauft. Berta hat auch so ein iPhone (nämlich ein neu gekauftes).  
 ‘After being angry about losing her iPhone for weeks, Anna finally bought a new iPhone. Berta has such an iPhone, too (namely a newly purchased one).’
- b. Anna geht immer mit der Zeit. Jetzt hat sie sogar ein neues iPhone. Berta hat auch so ein iPhone (nämlich die neueste Version).  
 ‘Anna is always up to date. She even has a new iPhone. Berta has such an iPhone, too (namely the latest version).’
- c. Annas Rad ist alt und verrostet. Berta hat auch so ein Rad (nämlich ein altes verrostetes, das niemand mehr stehlen würde).  
 ‘Anna’s bike is old and rusty. Berta has such a bike, too (namely an old and rusty one which no one would steal).’
- d. #Annas Auto hat einen Strafzettel. Berta hat auch so ein Auto (nämlich eins mit einem Strafzettel).  
 ‘Anna’s car has a parking fine notice (on it). Berta has such a car, too (namely one with a parking fine notice).’

Here is a caveat: features of comparison are not to be mistaken for properties. A feature is like an attribute in a frame-based representation, for example *color* or *number of doors* or *height*. A feature, or attribute, requires a value in order to turn

into a property, as in *color:red* or *number of doors:three* or *height:180*. Features encoding a full blown property with values *plus/minus* are borderline cases.

## 5.2 Principled connections between properties provide features of comparison

The examples in (38) – (40) demonstrate that some but not all properties qualify as features of comparison when combined with certain nominals, raising the question of how to characterize the difference. The examples suggest that properties qualifying as features of comparison must not be accidental (cf. *new*, *have a parking fine notice*). Moreover, the properties qualifying as features of comparison are at the same time licit specifications of a subkind of the kind denoted by the nominal. This is shown in the sentences in (41), which are acceptable with the properties that proved accessible for the demonstrative in (38)–(40) and unacceptable otherwise. To put it the other way around: only properties specifying a subkind of the kind denoted by the noun provide features of comparison to be used in the interpretation of the demonstrative. This confirms the hypothesis in section 4.3 that (in the adnominal and in the adverbial case) the similarity classes generated by MQD demonstratives constitute kinds, albeit ad-hoc ones.

- (41)
- a. A Dutch bike is a kind of bike.
  - b. ??A Greek bike is a kind of bike.
  - c. #A new bike is a kind of bike.
  - d. A/the new iPhone is a kind of iPhone.
  - e. An old and rusty bike is a kind of bike.
  - f. #A car with a parking fine notice is a kind of car.

The finding that features of comparison are restricted to properties specifying subkinds raises the question of how to characterize these properties, which is a prominent issue in the debate about concept formation in cognitive psychology. Only recently has this debate been connected to the topic of genericity in linguistics by Greenberg (2003) and Carlson (2010), and by the experimental studies in Prasada & Dillingham (2006) and Prasada et al. (2013) providing evidence that there are so-called *principled connections* between kinds and properties which an entity has, because it is the kind of thing it is.

Principled connections are different from mere factual (i.e. statistically correlated) connections between kinds and properties. Compare (42) and (43). It is true that dogs are four-legged, as it is true that barns (in the US) are red. It is true, moreover, that dogs are four-legged by virtue of being dogs. It is false, however,

that barns are red by virtue of being barns. This is evidence that being four-legged is a property principally connected to the dog kind, while being red is a property only factually connected to the barn kind (and only in the US). More evidence is provided by explanations: If you point to a dog asking why it has four legs, the answer will be: because it is a dog. But if you point to a barn asking why it is red, the answer cannot be: because it is a barn. Being of a kind provides an explanation for principally connected properties but not for mere factual properties. Finally, unlike mere factual properties principally connected properties license singular indefinite generics<sup>26</sup> (cf. the examples in (42) and (43) taken from Prasada 2010).

- (42) a. Dogs are four-legged.  
 b. Dogs, by virtue of being dogs, are four-legged.  
 c. Why does that (pointing to a dog) have four legs? Because it is a dog.  
 d. Dogs should be four-legged.  
 e. A dog is four-legged.
- (43) a. Barns are red.  
 b. #Barns, by virtue of being barns, are red.  
 c. Why is that (pointing to a barn) red? #Because it is a barn.  
 d. #Barns should be red.  
 e. #A barn is red.

Coming back to MQD demonstratives, properties qualifying as features of comparison can now be characterized as being principally connected to the subkind they specify, cf. (44). We have to be careful, however, and distinguish kinds and subkinds. While the property of having high handlebars is principally connected to Dutch bikes, the property of having (any sort of) handlebars at all is not principally connected to Dutch bikes, but instead to bikes in general (cf. (45a, b)). Thus the correlation between features of comparison and principally connected proper-

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**26** Greenberg (2003) already showed that indefinite singular generics, but not bare plurals, require *by virtue of* generalizations, i.e. principled connections between the kind and the predicated property. Ad-hoc categories may lead to unacceptable indefinite singular generics if there is no principled connection, cf. (a). But if there is a principled connection (the sitting causes the flatness of the banana) the indefinite singular generic is acceptable (even if low frequency):

- (i) a. #A carpenter in Amherst gives all his sons names ending with 'a' or 'g'.  
 b. Carpenters in Amherst give all their sons names ending with 'a' or 'g'.  
 (Greenberg 2003, p.33)
- c. A banana that has been sat on by a rhinoceros is flat.  
 d. Bananas that have been sat on by a rhinoceros are flat. (Carlson 2010: 17–18)

ties has to be described more precisely: Features qualify as features of comparison (in combination with a certain nominal expression) if and only if the property of having this feature (with an arbitrary value) is principally connected to the kind denoted by the nominal.<sup>27</sup>

- (44) A Dutch bike has high handlebars in virtue of being a Dutch bike.
- (45) a. #A Dutch bike has handlebars in virtue of being a Dutch bike.  
b. A Dutch bike / a bike has handlebars in virtue of being a bike.

### 5.3 Adverbial cases

Although the focus in the analysis of MQD demonstratives in this paper is on adnominal occurrences, let us briefly consider adverbial ones. In adverbial cases, the items to be compared are events instead of (ordinary) individuals. But as in the nominal cases they express similarity (cf. section 4.1). Therefore, as in the nominal cases, the question arises which features qualify as features of comparison. We will again use anaphoric examples consisting of two sentences. The first introduces an event with a certain property and the second includes an MQD demonstrative supposed to pick up this property. As before, we will use German examples.

The examples in (46) and (47) are about preparing poultry. In (46) the manner specified in the antecedent sentence is readily picked up by the demonstrative regardless of whether it is expressed by a locative modifier, as in (a), or by a manner adverbial, as in (b), or by a separate lexeme specifying a manner of preparing food, as in (c). In the examples in (47), there is again a locative modifier and an adverbial which are, however, inaccessible for the demonstrative.

- (46) a. Anna hat das Huhn im Wok zubereitet. Berta hat die Ente auch so zubereitet (nämlich im Wok).  
b. Anna hat das Huhn fettarm zubereitet. Berta hat die Ente auch so zubereitet (nämlich fettarm).  
c. Anna hat das Huhn gebraten. Berta hat die Ente auch so zubereitet (nämlich gebraten).  
'Anna prepared the chicken in the wok / low-fat style / in the frying pan. Berta prepared the duck like this, too (namely in the wok / low-fat style / in the frying pan).'

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<sup>27</sup> In Umbach & Gust (2014) these features are called *critical dimensions* of the kind.



- (47) a. #Anna hat das Huhn im Garten zubereitet. Berta hat die Ente auch so zubereitet (nämlich im Garten).  
 b. #Anna hat das Huhn heimlich zubereitet. Berta hat die Ente auch so zubereitet (nämlich heimlich).  
 ‘Anna prepared the chicken in the garden / secretly. Berta prepared the duck like this, too (namely in the garden / secretly).’

The examples in (48) are still about preparing poultry. In (48a) the manner adverb is not accessible by plain *so*. But it is accessible when combining the demonstrative with the preceding adverbial (cf. *so ungeru* lit: ‘so reluctantly’ in (48b)). This occurrence of *so* is reminiscent of the degree uses (as in example (30c)), expressing that Berta’s preparing of the duck was similar in the degree of reluctance (they might both be vegetarians). The example in (48c) is like (48a) in rejecting access by plain *so*. But unlike (48a) it licenses an interpretation picking up an implicit manner of preparing chicken (e.g. using Anna’s recipe). In (48d) the demonstrative is combined with the adverbial yielding a degree interpretation, as in (48b).

- (48) a. #Anna hat das Huhn ungeru zubereitet. Berta hat die Ente auch so zubereitet (nämlich ungeru).  
 ‘Anna prepared the chicken reluctantly. Berta prepared the duck like this, too (namely reluctantly).’  
 b. Anna hat das Huhn ungeru zubereitet. Berta hat die Ente auch so ungeru zubereitet.  
 ‘... lit: Berta prepared the duck so reluctantly, too.’  
 c. Anna hat das Huhn lecker zubereitet. Berta hat die Ente auch so zubereitet (?? nämlich lecker) (nämlich nach Annas Rezept).  
 ‘Anna prepared the chicken tastily. Berta prepared the duck like this, too (namely tastily) (namely following Anna’s recipe).’  
 d. Anna hat das Huhn lecker zubereitet. Berta hat die Ente auch so lecker zubereitet.  
 ‘... lit: Berta prepared the duck so tastily, too.’

Analogous to the adnominal cases, manner modifiers accessible by MQD demonstratives specify features of comparison required in similarity interpretation; Berta’s manner of preparing poultry is similar to Anna’s with respect to the method of cooking, that is, both use a wok. Moreover, as in the adnominal cases, there is a close connection to properties specifying subkinds. Consider the sentences in (49). Only those manner modifiers which qualify as features of comparison in (47) are acceptable in specifying subkinds of the kind denoted by the verbal predicate. We will not go into details concerning the nature of verbal kinds; it suffices to see that nominalizations of verbal predicates can be combined

with kind denoting expressions such as kind or sort etc.<sup>28</sup> Thus, analogous to the adnominal cases in (41), it can be concluded that similarity classes generated by manner demonstratives are in fact ad-hoc generated kinds.

- (49) a. Preparing a chicken in the wok is a kind of preparing a chicken.  
 b. Frying a chicken is a kind of preparing a chicken.  
 c. #Preparing a chicken in the garden is a kind of preparing a chicken.  
 d. #Preparing a chicken stealthily is a kind of preparing a chicken.

## 5.4 Event-internal modifiers

The findings on licit features of comparison in the nominal domain were traced back to the idea of principally connected properties discussed in the area of genericity – restrictions on features of comparison turned out to be constraints on kind-formation. There is no discussion of principally connected properties in the verbal domain. There is, however, a discussion about manner modification focusing on a closely related idea. In Maienborn & Schäfer (2011) and Schäfer (2013) various types of adverbial modifiers are distinguished, including event-external modifiers and event-internal modifiers. The two types of modifiers differ in German in their syntactic base position (see Frey 2003). Semantically, while event-external modifiers can be interpreted intersectively, event-internal modifiers cannot. For example, the locative modifier *im Garten* ‘in the garden’ in (47a) is classified as event-external since it can be interpreted as the place of the cooking event:  $\exists e.prepare-chicken-by-Anna(e) \ \& \ in(e, garden)$ . Such an interpretation would not be adequate in the case of *im Wok* ‘in the wok’ even though it is a locative modifier, since the wok is not the location of the cooking event but rather an instrument or method.

The difference between event-external and event-internal modifiers is described in Maienborn & Schäfer (2011) such that external ones modify the event as a whole while internal ones “specify some internal aspect of the verb’s event argument, whose exact role is left semantically implicit and can only be determined when taking into account conceptual knowledge about the respective event type” (p. 1411). This idea is surprisingly close to the notion of principally connected properties of a kind discussed in the previous section. We will not be able in this paper to prove equivalence between event-internal modifiers in the sense of Maienborn and Schäfer and principally connected properties in the sense of Prasada and collaborators. It shall be sufficient to consider the sentence in (50),

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<sup>28</sup> The minimal assumption about event kinds will be that they are instantiated by events. But see more committed accounts, for example Gehrke (2015).

which is of the same form as the sentences in (44) naming a property principally connected to a kind.

- (50) Preparing a chicken in the wok makes use of a wok by virtue of being the kind of cooking it is.

Let us finally look at the examples in (51) adapted from Schäfer (2013). Schäfer noted that the adverb *laut* ('loudly') has two interpretations, depending on whether it serves as an event-external or an event-internal modifier. The contexts in (a) and (b) are such that they facilitate one of these interpretations.<sup>29</sup> In (a) the singing of the club song by Anna was such that it could be heard from far away. In (b) Anna performed the Mimi role in *La Bohème* in a specific way, that is, *forte*.

- (51) a. Anna hat laut die Vereinshymne gesungen.  
'Anna sang the club song loudly.'  
b. Anna hat die Partie der Mimi laut / forte gesungen.  
'Anna sang the role of Mimi forte.'

The above examples demonstrate the difference between external and internal modification again: the modification in (a) pertains to the overall event while the one in (b) specifies an internal dimension of opera singing. In addition, the example confirms the finding in (48) that event external modifiers realized by gradable adjectives cannot be picked up by plain *so* but instead require the repetition of the adverbial. This is demonstrated in (52) again. The event-external modifier *laut* ('loudly') cannot be picked up by plain *so*, but only by combining *so* with the adverb, indicating that similarity pertains to the degree of loudness rather than to the manner of singing (cf. (52a, b)). In contrast, the event-internal modifier

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<sup>29</sup> Note that the position of the adverbials differs in (a) and (b) (cf. Frey (2003)). The syntactic reflection of the external/internal distinction seems to be paralleled by a syntactic reflection in the adnominal case, namely the default order of adnominal modifiers, for instance *number* < *time/space* < *quality/color* < *material/origin*. Without informational structure constraints (a) would be preferred over (b).

- (i) a. a new Japanese car  
b. #a Japanese new car

This observation is explained in Bouchar (2005) in such a way that the easier the adjectival property can be understood as denoting an ad-hoc concept when combined with the head noun, the closer to the noun will it be positioned. This explanation is surprisingly close to the similarity analysis.

*laut/forte* in (52c) can be accessed by plain *so*, similarity pertaining to categorical values (*piano, mezzo-piano, mezzo-forte, forte*) in this case.<sup>30</sup>

- (52) a. #Anna hat in der Umkleide laut die Vereinshymne gesungen. Berta hat sie auch so gesungen (nämlich laut).  
 b. Anna hat in der Umkleide laut die Vereinshymne gesungen. Berta hat sie auch so laut gesungen.  
 ‘Anna sang the club song loudly. Berta sang it like this, too. / lit: sang it so loud, too.’  
 c. Anna hat die Partie der Mimi laut / forte gesungen. Berta hat sie auch so gesungen.  
 ‘Anna sang the role of Mimi forte. Berta sang it like this, too.’

## 6 Conclusion

This paper focuses on demonstratives of manner, of quality and of degree, which have rarely received any attention so far. In the first part of the paper, a cross-linguistic sketch of their possible forms and uses was presented. The typological survey showed that the formal inventory varies along three major parameters. First, languages may use the same term for manner, quality and degree (e.g. German), but they may also distinguish two (e.g. Spanish) or even three of these semantic categories (e.g. French). Secondly, and analogously to other demonstratives, languages may exhibit a two-term or three-term opposition in the deictic dimension (proximal, medial, distal) or no differentiation at all. Finally, MQD demonstratives can be realized by simple expressions (e.g. German *so*) or by complex ones (e.g. English *like this*), in which the two semantic components are encoded separately. More often than not such complex expressions lose their transparent formal make-up as a result of lexicalization.

The use types generally distinguished for (ad)nominal or locative demonstratives (cf. Halliday & Hasan 1976: 31ff.) are also found in the semantic domain under discussion: MQD demonstratives have an exophoric (deictic) and an endophoric (anaphoric as well as cataphoric) use like other demonstratives. Due to their meaning, the referents they identify in their endophoric use may be much more complex, however, than those identified by other demonstratives. Analogously, the antecedents they relate to in their anaphoric use may be much more varied and complex than in the case of other demonstratives. In their cat-

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<sup>30</sup> Many thanks to Martin Schäfer for providing this example.

aphoric use they typically relate to stretches of direct speech or to ideophones. Like other demonstratives or interrogative pronouns, MQD demonstratives provide an important source for processes of grammaticalization and thus for the formal marking of various constructions. Three examples of such constructions were discussed: equative comparatives, exclamatives and adverbial clauses.

In the second part of this paper a semantic analysis of MQD demonstratives was presented, taking German *so* as its starting point. It was shown that MQD demonstratives pattern with standard demonstratives like *that* in being directly referential. Unlike standard demonstratives, however, they do not convey identity but instead similarity between the target of the demonstration gesture and the referent of the linguistic phrase. It was argued that MQD demonstratives express similarity uniformly across categories – between individuals in the adnominal cases, between events in the adverbial case, and between either individuals or events in the ad-adjectival cases (depending on whether the adjective is predicated on individuals or events). It was moreover argued that in the adnominal and the adverbial cases the resulting similarity classes constitute subkinds even if ad-hoc generated ones. Ad-adjectival cases seem not to yield kinds, which is obvious from the fact that they do not combine with nouns like *kind* / *Art*, etc.

The notion of similarity requires features of comparison with respect to which two items are similar. This is trivial in ad-adjectival cases, since there is only one feature of comparison which is, moreover, determined by the lexical meaning of the adjective. In adnominal and adverbial cases there are multiple features of comparison which have to be retrieved from the context. There are, however, constraints on the features licensed in similarity comparison that depend on the particular nominal or verbal predicate.

Making use of results from genericity and concept formation it was shown that features of comparison are restricted to properties principally connected to the kind instantiated by the compared items, thereby ensuring that the resulting similarity class can be understood as a subkind. Although stemming from the nominal area, it seems reasonable to adapt the notion of principally connected properties to verbal kinds. And although it would be premature to draw definitive conclusions, it appears plausible that event-internal manner modifiers are in fact principally connected to the kind of event they occur with.

MQD demonstratives are a neglected subclass and have rarely been subjected to detailed analysis up to now. We hope to have shown, however, that they are more than just a couple of lexical items that have been overlooked. First, they constitute an important subclass of demonstratives, exhibiting the referential and connective functions of deictic expressions. Secondly, they play an important role as grammatical markers of a wide variety of constructions. Finally, they are de-

vices for the ad-hoc generation of kinds, thereby providing insight in the general role of demonstratives in establishing kinds.

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