

# A Unified Account of the Properties of Demonstrative Pronouns in German\*

Stefan Hinterwimmer

University of Cologne

## 1. Introduction

The aim of this paper is to give a unified account of the way that German demonstrative pronouns (henceforth: D-pronouns) like *der*, *die* and *das*<sup>1</sup> behave (a) in sentences where they receive a coreferential interpretation, and (b) in sentences where they receive a covarying interpretation because they are in some way dependent on a quantificational expression – either via direct binding or indirectly, because the value they receive varies with the value that is assigned to the variable bound by an indefinite determiner.

Concerning the first type of sentence, the crucial observation is that German D-pronouns in contrast to ‘ordinary’ personal pronouns like *er* (he), *sie* (she) and *es* (it) can only be resolved to antecedents that are not maximally salient in the preceding sentence(s), at least if those sentences contain several possible antecedents. Concerning the second type of sentence, it has been claimed (by Wiltschko 1999) that D-pronouns cannot be interpreted as syntactically bound variables, while they can function as E-type pronouns. As we will see, this claim is not true: On the one hand, D-pronouns *can* be interpreted as directly bound variables under certain conditions. On the other hand, their interpretation as E-type pronouns is subject to structural constraints that are related to the constraints they have to obey in order to be interpreted as bound variables as well as to their behavior with respect to referential antecedents. It will turn out that for both the coreferential and the E-type readings, the notion of aboutness topicality is the key to understanding the behavior of D-pronouns. Concerning bound-variable interpretations, in

---

\* I would like to thank the audiences at the Pronoun Workshop at NELS 40, at the 11th Internal Workshop of the SFB 632 ‘Information Structure’, and at the University of Osnabrueck. In particular, I would like to thank Peter Bosch, Kai von Stechow, Andreas Haida, Irene Heim, Manfred Krifka, Sophie Repp, Carla Umbach and Malte Zimmermann for valuable comments and discussion, and two anonymous reviewers for their detailed and thoughtful comments on an earlier version of this paper. Special thanks are

<sup>1</sup> Although preliminary evidence suggests that the (variants of the) German demonstrative pronoun *diese(r)* behaves similarly in many cases, I will not discuss it in this paper, since it is basically confined to written texts and often sounds rather unnatural in oral conversation. The same holds to an even greater degree of the demonstrative pronoun *jene(r)*, which seems to have disappeared from oral conversation entirely and even is very rare in modern written texts.

contrast, the purely structural notion of subjecthood is decisive. I will argue for a unified analysis along the following lines: In each case, the value assigned to a D-pronoun is prohibited from being dependent on the contextually most salient DP, where in cases where no potential binding configuration obtains, the most recent DP functioning as an aboutness topic is the most salient one, while in cases where a binding relation obtains, the DP functioning as the grammatical subject of the respective sentence is the most salient one.

The paper is structured as follows: In section 2, the behavior of D-pronouns with respect to coreference is summarized. In section 3.1 some basic observations concerning covarying interpretations are presented, and the account of Wiltschko (1999) is briefly summarized. Section 3.2 presents some novel observations that lead to a refutation of Wiltschko's account. In section 4.1 the concept of aboutness topicality is presented and applied to the case of coreferential interpretations. Section 4.2 lays out the details concerning E-type readings, and in section 4.3 a concrete proposal is made as to how the behavior of personal pronouns vs. D-pronouns can be accounted for. Section 4.4 gives a detailed account of the conditions under which D-pronouns receive bound variable interpretations, and section 5 is the conclusion.

## 2. Coreferential Interpretations

As evidenced by the sentence in (1), German D-pronouns have a strong bias against being resolved to antecedents that are the subject of the immediately preceding sentence (*DEM* stands for *demonstrative pronoun*):

- (1) 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/*DEM*} had a cold.]  
 (from Bosch et al. 2003)

Crucially, while the personal pronoun *er* has a preference for the subject *Paul*, it can in principle also be resolved to the object of the preposition, *Peter*. The D-pronoun *der*, in contrast, can *only* be resolved to the object, *Peter*. Bosch et al. (2003) have shown in a reading-time experiment that in cases where the non-subject bias of D-pronouns clashes with world knowledge/hearer expectations etc., reading times are significantly longer than in cases where no such contrast arises. A case in point is the example in (2): On the one hand, the D-pronoun in contrast to the personal pronoun can only be resolved to the object of the preceding sentence, *the patient*. On the other hand, resolution to the subject *the head doctor* would be preferable in terms of plausibility.

- (2) [Der Chefarzt]<sub>i</sub> untersucht [den Patienten]<sub>k</sub>. {Er<sub>i,k</sub>/Der<sub>k</sub>} ist nämlich  
 Herzspezialist.  
 [[The head doctor]<sub>i</sub> is examining [the patient]<sub>k</sub>. {He<sub>i,k</sub>/*DEM*<sub>k</sub>} is a heart  
 specialist.]  
 (from Bosch et al. 2003)

Bosch and Umbach (2006) argue, however, that it is not the grammatical role of the antecedent that is decisive, but rather its status in terms of discourse topicality: D-

pronouns cannot be resolved to antecedents that function as the current discourse topic (while personal pronouns are free in this respect). This conclusion is based on the following observations:

- (a) D-pronouns can pick up antecedents introduced by subject-DPs occurring in non-canonical position.
- (b) D-pronouns can pick up subject-antecedents (even ones occurring in canonical position) if the context ensures that the entity denoted by the respective subject-DP is not the current discourse topic.

Ad (a):

In (3), for instance, where the subject *der Chefarzt* ('the head doctor') is preceded by the object *der Patient* ('the patient'), it seems to be much easier for the D-pronoun to pick up the subject-antecedent, i.e. there does not seem to be a conflict anymore between the reading that is favored on the basis of world knowledge and resolution preferences for the D-pronoun.

- (3)  $[_{DO} \text{Den Patienten}]_i$  untersucht  $[_{SU} \text{der Chefarzt}]_k$ .  $\text{Der}_k$  ist nämlich Herzspezialist.  
[[The patient] $_i$  was examined by [the head doctor] $_k$ .  $\text{DEM}_k$  is a heart specialist.]

This would be very surprising if the grammatical role of the antecedent was the decisive factor, while it is expected if discourse topicality is crucial: After all, topics crosslinguistically have a strong tendency to occur in clause initial position, and this is true of German, too. Note, however, that the reverse is not true: Not every fronted constituent needs to be topical. Focal constituents, for example (as well as expletives and sentence adverbs) are fine in clause initial position, too. That the first sentence in (3) is most naturally read with the fronted object DP de-accented, while the main accent falls on the subject DP, thus lends further support to the assumption that the individual referred to by the object DP functions as the topic and can therefore not be taken up by the D-pronoun in the following sentence.

Ad (b):

Even more strikingly, in cases like (4) the D-pronoun in contrast to the personal pronoun can only be understood as picking up the subject-antecedent (*Pro* stands for personal pronoun).

- (4) Woher Karl $_i$  das weiß?  $[_{SU} \text{Peter}]_k$  hat  $[_{DO} \text{es}]$   $[_{IO} \text{ihm}]_i$  gesagt.  $\{\text{Der}_k/\text{Er}_{i,k}\}$  war gerade hier.  
[How does Karl $_i$  know? Peter $_k$  told him $_i$ . He  $\{\text{DEM}_k/\text{Ppro}_{i,k}\}$  has just been here].

Likewise, in the structurally parallel mini-discourse in (5), where the D-pronoun cannot pick up the subject antecedent of the preceding sentence because of a clash in gender features and where the indirect object antecedent is the only one available, the variant with the D-pronoun is extremely odd.

- (5) Woher Maria<sub>i</sub> das weiß? [SU Peter]<sub>k</sub> has [DO es] [IO ihr]<sub>i</sub> gesagt. {<sup>??</sup>Die<sub>i</sub>/Sie<sub>i</sub>} war gerade hier.  
 [How does Maria<sub>i</sub> know? Peter<sub>k</sub> told her<sub>i</sub>. She {DEM<sub>i</sub>/Ppro<sub>i</sub>} has just been here].

According to Bosch and Umbach (2006), in both (4) and (5) the indirect object of the sentence preceding the one that contains the respective D-pronoun is understood as the discourse topic. Following Prince (1992), they assume that discourse topics are defined in the following way: They are referents that are *discourse-old*, i.e. they were introduced into the discourse before, but not as new referents in the immediately preceding sentence. Now observe that (the individual referred to by the proper name) *Karl* fulfils this requirement in the case of (4), while (the individual referred to by the proper name) *Maria* fulfils it in the case of (5): Both are introduced as the subjects of the questions opening the respective mini-discourses, and both are taken up by a pronoun in the following sentence. In addition to that, in both sentences preceding the ones that contain the respective D-pronoun, the main accent most naturally falls onto the subject, *Peter*, thus indicating that it is focus-marked. The (initially surprising) observation that the D-pronoun in (4) can only be resolved to the subject of the preceding sentence, while the impossibility of the one in (5) to be resolved in this way leads to a degraded status of the corresponding variant can thus naturally be accounted for if it is assumed that D-pronouns avoid discourse-topics as antecedents. It would be completely mysterious, however, if the grammatical category *subject* was decisive. According to Bosch and Umbach (2006), this assumption also accounts for all the other examples discussed in this section, since subjects are discourse topics by default, at least if they occur in canonical position and do not receive the main accent in the respective sentence.

### 3. Covarying Interpretations

#### 3.1 The Basic Observations

Wiltschko (1999) is not concerned with the discourse properties of D-pronouns. Rather, she focuses on their behavior in binding configurations. She observes that in sentences like (6a) and (6b) the respective D-pronoun cannot be interpreted as a variable bound by the subject of the matrix sentence, but only as referring to some other contextually salient male individual.

- (6) a. Peter<sub>i</sub> glaubt, dass er<sub>i</sub>/<sup>\*</sup>der<sub>i</sub> stark ist.  
 [Peter believes that he/DEM is strong.]
- b. [Jeder Mann]<sub>i</sub> glaubt, dass er<sub>i</sub>/<sup>\*</sup>der<sub>i</sub> stark ist.  
 [Every man believes that he/DEM is strong.]

From this she concludes that D-pronouns are (a) subject to Principle C of the Binding Theory, and (b) that they cannot be interpreted as bound variables. In her view, the ban against a bound-variable interpretation is not reducible to Principle C, since it also holds

in cases like (7), where the quantificational DP does not c-command the respective pronoun at the surface, but only at LF, after QR has applied.

- (7) ... dass die Frau [jeden Mann]<sub>i</sub> küsst, die ihn<sub>i</sub>/\*den<sub>i</sub> liebt.  
[that the woman every man kisses who him/DEM loves]

While it is true that a bound variable interpretation is completely unavailable for the D-pronoun in (7), the variant where the personal pronoun is interpreted as a bound variable also sounds extremely odd to me, and this intuition was shared by the native speakers I consulted. It is therefore difficult to tell on the basis of examples like (7) whether a ban against a bound variable interpretation is really needed in addition to Principle C. As we will see below, however, there are configurations where D-pronouns can be interpreted as variables bound by quantifiers anyway, so there is no need to further speculate on this issue in the context of the present discussion.

Simplifying somewhat, Wiltschko explains the contrast between D-pronouns and personal pronouns as follows: Since D-pronouns are full DPs consisting of an overt determiner (D-pronouns are for the most part homophonous with the various forms of the definite determiner in German) and a covert NP, they are referential expressions, just like full definite descriptions, and accordingly they cannot function as simple variables bound by an operator. Based on these assumptions, she furthermore argues that the acceptability of sentences such as (8) in both variants shows that donkey anaphora are neither interpreted as unselectively (Kamp 1981, Heim 1982) nor as dynamically (Groenendijk and Stokhof 1991) bound variables. Rather, they are interpreted as definite descriptions in disguise (Evans 1980, Heim 1990, Elbourne 2005), with the content of the covert NP being determined by the descriptive content of the respective indefinite DP.

- (8) Wenn [ein Bauer]<sub>i</sub> [einen Esel]<sub>k</sub> besitzt, dann schlägt er<sub>i</sub> ihn<sub>k</sub>/den<sub>k</sub>.  
[If [a farmer]<sub>i</sub> owns [a donkey]<sub>k</sub>, then he<sub>i</sub> beats it<sub>k</sub>/DEM<sub>k</sub>.]

Crucially, however, while (8) is fine in both variants, because understanding the D-pronoun as picking up the discourse referent introduced by the indefinite *a donkey* corresponds to world knowledge, the example in (9) is rather strange. This contrast is unexpected under Wiltschko's analysis, since she assumes both personal pronouns and D-pronouns to be equally fine as donkey pronouns.

- (9) Wenn [ein Bauer]<sub>i</sub> [einen Esel]<sub>k</sub> besitzt, schlägt der<sub>k</sub> ihn<sub>i</sub>.  
[If [a farmer]<sub>i</sub> owns [a donkey]<sub>k</sub>, DEM<sub>k</sub> beats him<sub>i</sub>.]

Intuitively, the oddity of (9) is due to the following reason: World knowledge would favor an interpretation where the D-pronoun picks up the discourse referent introduced by the subject indefinite. The D-pronoun can only be understood as picking up the one introduced by the object indefinite, however, not the one introduced by the subject indefinite. The example in (10), where no such conflict arises, is fine again:

- (10) Wenn [ein Bauer]<sub>i</sub> [einen Esel]<sub>k</sub> besitzt, tritt der<sub>k</sub> ihn<sub>i</sub>.  
[If [a farmer]<sub>i</sub> owns [a donkey]<sub>k</sub>, DEM<sub>k</sub> kicks him<sub>i</sub>.]

This contrast between personal pronouns and D-pronouns is in no way expected for E-type approaches in general, since not only D-pronouns, but also personal pronouns (at least in donkey sentences) are treated as definite descriptions in disguise. At first, it might seem that a mixed analysis, according to which only D-pronouns are definite descriptions in disguise, while personal pronouns are, for example, dynamically bound variables, would have the potential to explain the contrast under discussion: One could assume, for example, that direct binding (either under c-command or dynamically) is in principle preferred to indirect binding, where the latter term describes cases where the denotation of the pronoun depends on the denotation of an existentially quantified DP without the latter binding the former, but rather because both contain a situation variable that is bound by the same operator (a covert generic operator in the case of (10), for example). Because of this preference for direct binding, the option of indirect binding would only be employed if covariation with a less salient discourse referent was to be indicated. This does not go through, however, since definite descriptions may well pick up discourse referents introduced by subject indefinites, as shown by the example in (11).

- (11) Wenn ein Bauer einen Esel besitzt, schlägt der Bauer ihn/den Esel.  
 [If a farmer owns a donkey, the farmer beats it/the donkey.]

The pattern in (8) – (10) is highly reminiscent of the facts reported in section 1, though, where in the default case D-pronouns could not be interpreted as referring to individuals denoted by DPs in subject position. The parallelism is further strengthened by examples like those in (12) and (13):

- (12) Wenn [<sub>IO</sub> einem Hund] [<sub>SU</sub> ein WOLF] begegnet,  
 If a-DAT dog a-NOM wolf encounters  
 bellt er den an.  
 barks he-NOM DEM-ACC PART  
 ‘If [a dog]<sub>i</sub> encounters [a wolf]<sub>j</sub>, it<sub>i</sub> barks at it<sub>j</sub>’.

- (13) Wenn [<sub>IO</sub> einem Hund] [<sub>SU</sub> ein WOLF] begegnet,  
 If a-DAT dog a-NOM wolf encounters,  
 greift der ihn sofort an.  
 attacks DEM-NOM he-ACC immediately PART  
 ‘If [a dog]<sub>i</sub> encounters [a wolf]<sub>j</sub>, it<sub>i</sub> attacks it<sub>j</sub> immediately’.

In (12) and (13), the indirect object has been scrambled across the subject in the antecedent of the conditional, i.e. the subject does not occupy its canonical clause-initial position anymore. This seems to be the reason why, in contrast to the examples in (9) and (10), the D-pronoun in the consequent can be interpreted as picking up the discourse referent introduced by the subject indefinite in the antecedent. Since we have seen in section 2 that D-pronouns can be interpreted as coreferential with subject DPs in non-canonical position, a unified explanation is called for.

Unfortunately, however, the concept of discourse topicality that was invoked in order to account for the pattern discussed in section 2 does not apply to the examples under

discussion. The reason for this is that indefinites are by definition neither referring expressions nor ‘discourse old’: After all, the introduction of novel discourse referents is one of their defining properties (Heim 1982). As we will see in section 4, though, an alternative concept of topicality can be invoked that has the potential to account for the facts discussed in section 2 as well as the ones discussed in this section: the notion of *aboutness topicality* in the sense of Reinhart (1981). But let us first turn to a re-evaluation of Wiltschko’s (1999) claim that D-pronouns are (a) subject to Principle C of the Binding Theory and (b) cannot be bound by quantifiers.

### 3.2 Cases Where D-Pronouns Can Be Bound by Quantifiers

Recall the examples in (6a,b) from above (repeated here as (14a,b)), where the respective D-pronouns cannot be interpreted as bound variables:

- (14) a. Peter<sub>i</sub> glaubt, dass er<sub>i</sub>/\*der<sub>i</sub> stark ist.  
[Peter believes that he/DEM is strong.]
- b. [Jeder Mann]<sub>i</sub> glaubt, dass er<sub>i</sub>/\*der<sub>i</sub> stark ist.  
[Every man believes that he/DEM is strong.]

A bound-variable interpretation is available to D-pronouns, however, in examples like those in (15) – (17), where the quantificational DP binding the D-pronoun is not the subject, but rather (a) the direct object, (b) embedded in a PP, or (c) the indirect object.

- (15) Peter<sub>i</sub> lädt [jeden Syntaktiker]<sub>j</sub> zum Abendessen ein,  
Peter invites every-ACC syntactician for dinner PART  
wenn der<sub>j</sub> ihm<sub>i</sub> versichert, dass er<sub>j</sub> Montague gelesen hat.  
if DEM-NOM him-DAT assures that he Montague read has  
‘Peter<sub>i</sub> invites [every syntactician]<sub>j</sub> for dinner if he<sub>j</sub> assures him<sub>i</sub> that he<sub>j</sub> has read Montague’.
- (16) Peter<sub>i</sub> glaubt von [jedem Kollegen]<sub>j</sub>, dass  
Peter believes of every-DAT colleague that  
der<sub>j</sub> klüger ist als er<sub>i</sub>.  
DEM-NOM 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>.’
- (17) Peter stellte [jedem Studenten]<sub>j</sub> mindestens eine  
Peter posed every-DAT student-DAT at-least one  
Frage, die der<sub>j</sub> nicht beantworten konnte.  
question REL DEM-NOM not answer could  
‘Peter asked [every student]<sub>j</sub> at least one question that he<sub>j</sub> couldn’t answer’.

The examples in (15) – (17) show that D-pronouns can in principle be bound by quantifiers. In (15) and (16) the quantificational DP presumably does not c-command the D-pronoun at the surface: In the case of (15), the quantificational DP is contained in the

VP, while the adverbial phrase containing the DP is right-adjoined either to  $\nu$ P or to TP. C-command therefore only obtains at LF, after QR has applied, and the quantificational DP has adjoined to  $\nu$ P or TP. Likewise, in the case of (16), the quantificational DP is contained in the PP, and therefore does not c-command anything outside this PP before QR has applied. While these examples clearly show that the ban against bound-variable interpretations assumed by Wiltschko (1999) cannot be correct, it might still be true that the interpretation of D-pronouns is constrained by Principle C.

But let us now consider the example in (17), where the quantificational DP is the indirect object, while the D-pronoun it binds is contained in a relative clause that is part of the DP functioning as the direct object. Now, there is empirical evidence showing that the indirect object c-commands the direct one when both are in their respective base positions, i.e. if the latter has not been scrambled across the former (see Grewendorf 2002 for an overview and for further references): In (18a), for example, the reflexive pronoun cannot only be bound by the subject DP, *Hans*, but also by the indirect object, *dem Studenten* ('the student'). Likewise, (18b) is ungrammatical on the intended reading where the personal pronoun in indirect object position is coreferential with either a proper name or a definite description that is embedded in a relative clause modifying the direct object.

- (18) a. 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>i,j</sub> a picture of himself<sub>i,j</sub>.'
- b. \*Maria erzählte ihm<sub>i</sub> eine Geschichte, die Klaus<sub>i</sub>/[den Dekan]<sub>j</sub> beunruhigte.  
 'Maria told him<sub>i</sub> a story that upset the Klaus/the dean'.

Since binding of a reflexive pronoun requires (among other things) c-command, and since the ungrammaticality of (18b) can easily be explained as a violation of Principle C, according to which referential expressions may not be coreferential with DPs that c-command them, these examples clearly show that indirect objects (in their base position) c-command direct ones (in their base position). We thus not only have evidence against the claim that D-pronouns cannot function as bound variables, but also against the claim that they are subject to Principle C of the Binding Theory. What the examples in (15) – (17) have in common, however, and what distinguishes them from the ones in (14) is that the quantificational DP binding the D-pronoun is not in subject position. This is reminiscent of the facts discussed in section 2 and section 3.1 (although, as we will see in section 4.4, there are also important differences), and I will therefore propose a unified explanation.

## 4. A Unified Explanation

### 4.1 Aboutness Topicality and Coreferential Interpretations

Let me begin this section by a little terminological note whose purpose it is to avoid confusion: As will become clear below, I take the notion of aboutness topicality to be a semantic one, i.e. the aboutness topic of a sentence is the denotation of a DP contained in that sentence (possibly after typeshifting), not the DP itself, although structural factors



play a crucial role in determining which DP it is whose denotation functions as the aboutness topic of a sentence. Still, I will sometimes for the sake of brevity use phrases like “The DP functioning as the aboutness topic” instead of “The DP whose denotation functions as the aboutness topic”. No confusion should arise from this.

According to Reinhart (1981), whose basic understanding of topichood is built on Strawson (1964), the topic of a sentence is understood as the center of interest, i.e. the item the sentence is about. More formally, the topic is the logical subject of the predication that the remaining part of the sentence expresses, where the predication corresponds to the comment part of the respective assertion. In addition to that, Reinhart assumes that the topic of a sentence is the address where the information conveyed by the assertion is stored during the next context update.

Let us, following Reinhart (1981), interpret topic-comment structures as generalized subject-predicate structures: The (denotation of the) topical DP (irrespective of case-marking, agreement relations and thematic role) is the logical subject, and the comment is the predicate applying to this subject. Now, in the default case, the logical subject corresponds to the grammatical subject: With the latter occupying the highest argument position and thus canonically appearing in clause-initial position, the required configuration automatically holds at the surface, since the syntactic sister of the subject-DP is guaranteed to be a one-place predicate that can be applied to the denotation of that DP. As we have already seen in section 2, however, in languages like German it is also possible to put another XP in sentence-initial position. In many (but not all – focality might also be a reason) cases fronting serves to mark the fronted constituent as the aboutness topic, thus creating the configuration that holds for subjects and their syntactic sisters in the standard case via additional movement operations.

This is presumably the case in the second sentence of example (3) from above, repeated here as (19), which (as already mentioned) is most naturally read with the main accent on the noun *Chefarzt* (‘head doctor’), thus indicating that the whole DP is focus-marked, while the fronted DP is de-accented (and therefore cannot have been moved due to focality; see above):

- (19) [<sub>DO</sub> Den Patienten]<sub>i</sub> untersucht [<sub>SU</sub> der Chefarzt]<sub>k</sub>. Der<sub>k</sub> ist nämlich Herzspezialist.  
 [[The patient]<sub>i</sub> was examined by [the head doctor]<sub>k</sub>. DEM<sub>k</sub> is a heart specialist.]

Under the standard assumption that movement triggers lambda-abstraction over the variable denoting the trace left behind by the moved constituent (see Heim and Kratzer 1998), the fronted object DP *den Patienten* (‘the patient’) functions as the logical subject of the predicate denoted by its sister constituent, as shown in (20):

- (20) [ $\lambda x.\lambda s.$  examines( $x$ )( $\iota y.$  head\_doctor( $y$ )( $g(s_1)$ ))( $s$ )] ( $\iota z.$  patient( $z$ )( $g(s_2)$ )) =  
 $\lambda s.$  examines( $\iota z.$  patient( $z$ )( $g(s_2)$ )) ( $\iota y.$  head\_doctor( $y$ )( $g(s_1)$ ))( $s$ )  
 where  $s_1$  and  $s_2$  are free variables whose values are determined by the context (for other options, see below).

Concerning cases like (4) from above, repeated here as (21), recall that the second sentence is most naturally read with the main accent on the sentence-initial subject DP, *Peter*, thus indicating that the DP is focus-marked:

- (21) Woher Karl<sub>i</sub> das weiß? [<sub>SU</sub> Peter]<sub>k</sub> hat [<sub>DO</sub> es] [<sub>IO</sub> ihm]<sub>i</sub> gesagt. {Der<sub>k</sub>/Er<sub>i,k</sub>} war gerade hier.  
[How does Karl<sub>i</sub> know? Peter<sub>k</sub> told him<sub>i</sub>. He {DEM<sub>k</sub>/Ppro<sub>i,k</sub>} has just been here].

Let us assume that foci can be reconstructed into their base position at LF (see Hinterwimmer 2006, 2008 for discussion), and that the weak pronoun *es* has been moved across the indirect object for purely phonological reasons, i.e. at PF only (it is well known that weak pronouns in German matrix clauses have a very strong tendency to occur directly after the finite verb, which is presumably due to phonological requirements). The indirect object can then function as the logical subject and thus the aboutness topic in cases like these, too: At LF, where the focal subject-DP has been reconstructed into the specifier position of *v*P, and where neither the weak pronoun *es* nor the finite auxiliary verb *hat* have been moved out of *v*P (assuming that the movement of the finite verb to C does not have any interpretative consequences and is thus either undone at LF or happens only at PF anyway), the indirect object-DP *ihm* occupies the highest position in the clause, its syntactic sister denoting a one-place predicate. We thus again have the logical subject-predicate configuration that is constitutive of aboutness topicality, albeit not at the surface, but rather at the level of LF. Let us thus assume the following general principle: The aboutness topic of a sentence is the (object denoted by the) DP occupying the highest position at LF.

In this section, I have shown that we can also account for the facts discussed in section 2 if we take aboutness topicality instead of discourse topicality to be the relevant notion and assume that D-pronouns are prohibited from picking up antecedents that are aboutness topics. But what about the facts discussed in section 3?

## 4.2 Aboutness Topicality and Covarying Interpretations I: Adverbially Quantified and Generic Sentences

### 4.2.1 Indefinites as Aboutness Topics

Let us turn to donkey sentences first. Recall that D-pronouns may only pick up discourse referents introduced by subject indefinites if another DP has been scrambled across the subject, as in (12), repeated here as (22). In examples like (9) and (10), in contrast (repeated here as (23) and (24)), where the subject indefinite occurs in clause-initial position, the D-pronoun can only be understood as picking up the discourse referent introduced by the respective object indefinite.

- (22) Wenn [<sub>IO</sub> einem Hund] [<sub>SU</sub> ein WOLF] begegnet,  
If a-DAT dog a-NOM wolf encounters  
bellt er den an.  
barks he-NOM DEM-ACC PART  
'If [a dog]<sub>i</sub> encounters [a wolf]<sub>j</sub>, it<sub>i</sub> barks at it<sub>j</sub>.'  
  
(23) Wenn [ein Bauer]<sub>i</sub> [einen Esel]<sub>k</sub> besitzt, schlägt der<sub>k</sub> ihn<sub>i</sub>.  
[If [a farmer]<sub>i</sub> owns [a donkey]<sub>k</sub>, DEM<sub>k</sub> beats him<sub>i</sub>.]

- (24) Wenn [ein Bauer]<sub>i</sub> [einen Esel]<sub>k</sub> besitzt, tritt der<sub>k</sub> ihn<sub>i</sub>.  
 [If [a farmer]<sub>i</sub> owns [a donkey]<sub>k</sub>, DEM<sub>k</sub> kicks him<sub>i</sub>.]

While it is known since Reinhart (1981) that indefinites can in principle be aboutness topics, it is not obvious in which sense the notion of aboutness topicality applies to the examples above. The subject indefinite in (23) and (24) and the indirect object in (22) all occupy the highest DP position within their *if*-clause. Nevertheless, speaking of them as the logical subject of a predication provided by the rest of the sentence does not seem to make sense at first, since they seem to be interpreted as part of the *if*-clause and thus within the scope of whatever operator's restriction is provided by the *if*-clause (see below for discussion).

Endriss (2009) argues that the ability of indefinites to take exceptional (i.e. island-violating) wide scope can be accounted for by treating indefinites in such cases as aboutness topics. This is of no use for the cases under consideration, however. According to Endriss, topical indefinites are type-shifted (via minimal witness sets; see below) in such a way that they in effect function as the logical subjects of a predication that is provided by the rest of the sentence. The resulting readings, which are equivalent to the ones where the respective indefinites receive widest scope, are not what we need for examples such as (22) – (24): Intuitively, these sentences are not about a particular farmer, dog, etc., but rather about farmers, dogs, etc. in general, i.e. about the sets containing all individuals satisfying the respective predicate or about the corresponding kinds.

This intuition is further confirmed by the following observation. There is a standard test for checking whether a given DP  $\alpha$  is the aboutness topic of a sentence that works as follows: If the sentence sounds natural as an answer to the question *What about  $\alpha$ ?* or can naturally be preceded by a sentence like *I tell you something about  $\alpha$* , then  $\alpha$  is the aboutness topic, otherwise it is not. Frey (2004), for example, uses this test to show that DPs c-commanding sentence adverbs like *probably* at the surface in German are aboutness topics, while ones c-commanded by sentence adverbs are not:

- (25) Ich erzähle dir etwas über Maria.  
 I tell you something about Maria
- a. Nächstes Jahr wird Maria wahrscheinlich nach London gehen.  
 next year will Maria probably to London go  
 'Next year Maria will probably go to London'
- b. #Nächstes Jahr wird wahrscheinlich Maria nach London gehen.  
 (Frey 2004: 6, ex. (7))

Crucially, while an example such as (22) sounds natural as a continuation of the sentence in (26a), it is odd as a continuation of the one in (26c). This confirms our intuition that the sets/kinds corresponding to the clause-initial indefinites are the aboutness topics of the sentences under consideration.

- (26) a. Ich erzähle Dir etwas über Hunde.  
I tell you something about dogs
- b. Wenn [einem Hund]<sub>i</sub> [ein WOLF]<sub>j</sub> begegnet, bellt er<sub>i</sub> den<sub>j</sub> an.  
'If [a dog]<sub>i</sub> encounters [a wolf]<sub>j</sub>, it<sub>i</sub> barks at it<sub>j</sub>'.
- c. Ich erzähle Dir etwas über Wölfe.  
I tell you something about wolves
- d. # Wenn [einem Hund]<sub>i</sub> [ein WOLF]<sub>j</sub> begegnet, bellt er<sub>i</sub> den<sub>j</sub> an.

Now, it has been argued by several researchers (see von Fintel 1994 and Beaver and Clark 2008) that Q-adverbs like *always* and *usually* as well as the covert generic operator (Krifka et al. 1995), while not being directly focus-sensitive in the sense of Rooth (1985, 1992, 1995), are nevertheless indirectly sensitive to information structure in the following way: Their restrictor initially consists of a free variable ranging over situation/event predicates, and this variable needs to be resolved on the basis of contextual information, where sets of topical situations serve as prime candidates.

Based on this assumption, von Fintel (1994) has shown that Q(uantificational)V(ariability)E(ffect)s – i.e. readings according to which the quantificational force of the indefinite seems to vary with the quantificational force of the Q-adverb – in sentences such as (27) can be accounted for in the following way: The free variable in the restrictor is resolved in such a way that the Q-adverb quantifies over minimal situations containing dogs, i.e. over situations containing nothing but one dog each. In the case of example (27), this gives us a reading that can be paraphrased as *Most dogs are smart*, since in order for the situations quantified over to be distinct, the value assigned to the variable bound by the existential quantifier has to vary with the situations.

- (27) A dog is usually smart.

In a similar vein, Endriss and Hinterwimmer (2009) have proposed that topical indefinites cannot only be shifted in the way alluded to above, which results in (a reading that is equivalent to) widest scope, but also in a way that allows them to function as the restrictor of an overt Q-adverb or the covert generic operator – which results in a QV-reading.

In the first case, the quantificational DP is shifted to a minimal witness set in its original denotation, where (simplifying considerably) a minimal witness set of a generalized quantifier is a set in its denotation that contains no superfluous elements – in the case of a quantificational DP like *a dog*, for example, all sets containing exactly one dog and nothing else are minimal witness sets of the quantifier. Such a set can in turn be shifted to the unique individual it contains<sup>2</sup>. Since the respective individual directly provides the required logical subject, we get a reading that is equivalent to one where the indefinite receives widest scope. In the second case, i.e. in the case of a QV- or generic

<sup>2</sup> In cases where a plural indefinite is left-dislocated, a sum individual consisting of all the members of the minimal witness set is created.

reading, the indefinite is shifted to a set of situations each of which contains an individual satisfying the respective NP-predicate (more on this in section 4.2.4 below). Crucially, under the assumption that Q-adverbs take their arguments in reverse order (seen from the perspective of quantificational determiners; see Chierchia 1995) and thus combine with their nuclear scope first (i.e. the denotation of the whole sentence minus the Q-adverb), the set of situations provided by the topical indefinite (after typeshifting) can be viewed as a higher-order logical subject of a higher-order predicate. The idea is that the higher-order predicate is provided by the object that results from applying the respective Q-adverb to its nuclear scope. In the case of second-order predication, the predicate specifies the degree to which the nuclear scope applies to the restrictor, i.e. the degree to which the set provided by the restrictor is included in the set denoted by the nuclear scope (more on this in section 4.2.4 below). Concerning the sentence in (27), for example, this means that the degree to which the set of (minimal) situations containing a dog is included in the set of situations that can be extended to a set of (minimal) situations containing a smart dog is claimed to be rather high, since more than half of the elements of the first set are also elements of the second set.

We thus have an account that is in principle able to deal with the fact that indefinites in adverbially quantified sentences can function as aboutness topics. The problem is, however, that for the sentences under consideration the standard view since Lewis (1975) and Kratzer (1986) is that the restrictor of an overt Q-adverb or the covert generic operator is provided by the whole *if*-clause – which not only contains the topical indefinite, but also the other indefinite, which *can* be picked up by a D-pronoun in the consequent. According to these authors, *if*-clauses have no meaning of their own, but simply serve to provide a restrictor for any quantifier whatsoever – be it a Q-adverb, the covert generic operator, an overt modal operator or a covert epistemic operator with universal force, i.e. the covert counterpart of epistemic *must*. The latter operator is needed to account for the meaning of “ordinary” indicative conditionals such as (28a). In this view, the sentence in (28a) is equivalent to the one in (28b), which is intuitively correct.

- (28) a. If Paul is not at home (right now), he is in his office.  
 b. If Paul is not at home (right now), he must be in his office.

Concerning donkey sentences like the ones discussed in section 2, the details of the analysis depend on the question of whether Q-adverbs are viewed as unselective binders, capable of binding any free variable in their c-command domain (while indefinites have no quantificational force of their own, but only provide restricted variables to bind), as in Kamp (1981) and Heim (1982), or as quantifiers over situations/events exclusively (as in Berman 1987 and von Stechow 1994; see above). If we continue to stick with the latter assumption, and furthermore follow Elbourne (2001, 2005) in analysing personal pronouns as definite descriptions in disguise (i.e. as the spell-out of the definite determiner after its NP-complement has been elided) whose uniqueness conditions have been relativized with respect to the situations quantified over, we get (29b) as the (simplified) interpretation of the classical donkey sentence in (29a):

- (29) a. Wenn [ein Bauer]<sub>i</sub> [einen Esel]<sub>k</sub> besitzt, dann schlägt er<sub>i</sub> ihn<sub>k</sub>.  
 [If [a farmer]<sub>i</sub> owns [a donkey]<sub>k</sub>, then he<sub>i</sub> beats it<sub>k</sub>/DEM<sub>k</sub>.]

$$\begin{aligned}
 \text{b. } & \lambda s. \forall s_1 [s_1 \leq s \wedge EX(\lambda s. \exists x[\text{farmer}(x)(s) \wedge \\
 & \quad \exists y[\text{donkey}(y)(s) \wedge \text{own}(y)(x)(s)]](s_1) \rightarrow \\
 & \quad \exists s_2 [s_1 \leq s_2 \leq s \wedge \text{beat}(\iota y[\text{donkey}(y)(s_2)])(\iota x[\text{farmer}(y)(s_2)])(s_2)]]
 \end{aligned}$$

where  $EX(P)(s_1)$  means ‘ $s_1$  exemplifies  $P$ ’, and a situation  $s$  exemplifies a situation predicate  $P$  iff whenever there is a part of  $s$  in which  $P$  is not true, then  $s$  is a minimal situation in which  $P$  is true (Kratzer 2007, Schwarz 2009).

‘All situations  $s_1$  containing nothing but a farmer beating a donkey can be extended to a situation  $s_2$  such that the unique farmer in  $s_2$  beats the unique donkey in  $s_2$ ’.

The analysis just sketched gives us intuitively correct truth conditions for sentences like the ones under discussion. It is unable, however, to deal with the difference between personal pronouns and demonstrative pronouns that is the main focus of this paper, and that shows up in donkey sentences as well: Since the *if*-clause in its entirety restricts the covert generic operator (or the respective Q-adverb), there is no way to assign one of the indefinites in the *if*-clause a topic status that is linked to its being interpreted in the restrictor (and which would furthermore account for its inability to function as the antecedent of a D-pronoun), as in the analysis of Endriss and Hinterwimmer (2009) sketched above.

### 4.2.3 Sketch of the Proposed Analysis

There is a way out, however: For entirely independent reasons, I have argued in previous work (Hinterwimmer 2008b) against an analysis according to which *if*-clauses can restrict operators like Q-adverbs and the covert generic operator, and for an analysis according to which they can only restrict overt or covert modal operators. This has the consequence that in order to account for the observed readings of sentences like the ones under consideration, we have to assume a more complicated structure: A covert conditional operator whose restrictor is provided by the respective *if*-clause, and whose nuclear scope is provided by the consequent, is embedded under a Q-adverb/the covert generic operator. I.e. what we have in effect is a conditional sentence that is interpreted in the nuclear scope of an overt or covert quantifier over situations.

What is crucial for our current purposes is the following assumption: The restrictor of the Q-adverb/generic operator is determined in the usual way, namely via a set of situations functioning as the aboutness topic. This set can in principle either be determined on the basis of contextual information, or it can be provided by a constituent that is contained within the *if*-clause – either the constituent that occupies the default topic position (i.e. the subject position) or the one that has been marked as topical via fronting (i.e. scrambling across the subject). In the cases under consideration, it is thus the indefinite occupying the highest DP-position in the *if*-clause that ends up as being interpreted as the aboutness topic and thus the logical subject of a higher-order predication – where the higher-order predicate is again provided by the object that results from applying the Q-adverb to its nuclear scope (i.e. the conditional sentence as a whole), as in the analysis of Endriss and Hinterwimmer (2009) sketched above. Consequently, the

example in (24a) from above, repeated here as (30a), receives an interpretation that can (very roughly) be paraphrased as “Farmers in general are such that if they own a donkey, their donkey kicks them”. A slightly more accurate paraphrase is given in (30b).

- (30) a. Wenn [ein Bauer]<sub>i</sub> [einen Esel]<sub>k</sub> besitzt, tritt der<sub>k</sub> ihn<sub>i</sub>.  
 [If [a farmer]<sub>i</sub> owns [a donkey]<sub>k</sub>, DEM<sub>k</sub> kicks him<sub>i</sub>.]
- b. In general, minimal situations *s* containing a farmer *x* are such that in all hypothetical extensions of *s* where *x* owns a donkey *y*, *y* kicks *x*.

Crucially, it is only the (denotation of the) DP *ein Bauer* which, after having been shifted in such a way that it denotes a set of minimal farmer-containing-situations, ends up restricting the covert generic operator, not the (denotation) of the whole *if*-clause. The two indefinites are thus no longer treated on a par: Only the one occupying the highest DP-position within the *if*-clause is interpreted as the aboutness topic of the adverbially quantified sentence, which corresponds to its being interpreted in the restrictor. Before we turn to the details of how the analysis just sketched actually works, let me say a few words about its motivation independently of the facts under consideration. It has already been remarked by Lewis (1975) that *if*-clauses are not always interchangeable with *when*-clauses (in his view, however, there is nothing more at issue than mere stylistic variation):

- (31) a. Seldom was it before dawn when Cesar awoke.  
 b. <sup>?</sup>Seldom was it before dawn if Cesar awoke.  
 (Lewis 1975: ex. 45)

Intuitively, (31b) in contrast to (31a) sounds odd because it seems to suggest that it is an open question every morning whether Cesar wakes up. Similarly, von Fintel and Iatridou (2002) have observed contrasts like those between the minimal pair in (32), on the one hand, and the one in (33), on the other:

- (32) a. Every student will succeed if he studies hard. ≈  
 b. Every student who studies hard will succeed.  
 (von Fintel and Iatridou 2002: 1, ex. 1)
- (33) a. Every congressman who is from Florida is a Republican.  
 b. #Every congressman is a Republican if he is from Florida.  
 (von Fintel and Iatridou 2002: 9, ex. 32)

While (32a) and (32b) are intuitively equivalent, thus suggesting that the *if*-clause is interpreted in the restrictor of the quantificational determiner, (33b) is not equivalent to (33a), but rather sounds very odd. According to von Fintel and Iatridou, this is due to the fact that “for a given congressman it is not iffy whether he is from Florida or not” (von Fintel and Iatridou 2002: 9). Based on these and similar considerations, von Fintel and Iatridou also argue against an analysis according to which *if* has no meaning of its own and merely serves to mark the CP it heads as an all-purpose restrictor (as in Kratzer 1986,

based on Lewis 1975). Rather, they assume that *if*-clauses are always interpreted as the antecedents of conditionals, where they analyse conditionals as involving universal quantification over epistemically accessible worlds where the respective antecedent is true (von Fintel 1997, 1999; Nolan 2003; cf. Stalnaker 1975 for a slightly different, though related view).

Concerning examples like those in (32a) and (33b), von Fintel and Iatridou argue for an analysis according to which the respective quantificational DP scopes over a complete conditional, i.e. a sentence such as (33a) is interpreted (roughly) along the following lines: Every student *x* is such that in all worlds that are epistemically accessible from the world of evaluation where *x* studies hard, *x* will succeed. Now, concerning the sentence in (33a), the resulting interpretation can be paraphrased as follows: Every congressman *x* is such that in all worlds that are epistemically accessible from the world of evaluation where *x* is from Florida, *x* is a Republican. Since von Fintel and Iatridou assume that conditionals come with the presupposition that the antecedent is compatible with the worlds in the domain of quantification (i.e. compatible with what is known in the respective world of evaluation), the oddity of (33b) is predicted: In a natural context, it is not an epistemic possibility for every congressman that s/he is from Florida. Similar contrasts concerning adverbially quantified or generic sentences with indefinites have been observed by Hinterwimmer (2008b):

- (34) a. <sup>?</sup>If a farmer wakes up in the morning, he usually drinks a cup of black coffee.
- b. If a farmer wakes up in the middle of the night, he usually drinks a glass of water.
- c. When a farmer wakes up in the morning, he usually drinks a cup of black coffee.
- d. When a farmer wakes up in the middle of the night, he usually drinks a glass of water.

Intuitively, what is at issue is whether it is an open question with respect to the situations quantified over by the Q-adverb if they satisfy the antecedent predicate. Assuming that the Q-adverb quantifies either over (minimal) situations of a farmer waking up or over morning/middle-of-the-night situations containing a farmer in the case of (34a,b) – depending on what is taken as part of the set of topical situations – , the contrast can be explained as follows: At least in a natural context, it is clearly an open question whether any randomly picked situation of a farmer waking up is located in the middle of the night, or if any middle-of-the-night situation containing a farmer is a situation of the farmer waking up. Concerning a morning-situation containing a farmer, in contrast, or a situation of a farmer waking up, matters are different: It is just the default assumption that the former contains a waking-up event, and that the latter is a morning-situation. I.e. if we assume that the sentences in (34a,b) are interpreted as sketched above, namely as involving a conditional in the nuclear scope of a Q-adverb whose restrictor is provided by a topical indefinite in combination with some other salient background information, the contrast between (34a) and (34b) is not surprising - there is no need to



invoke universal quantification over worlds that are epistemically accessible from a situation where a certain predicate is true if the respective predicate is assumed to be true in this situation by default anyway. Concerning the minimal variants in (34c,d), where *if* has been replaced by *when*, the contrast disappears, as expected, since quantification over epistemically accessible worlds is no longer involved. Rather, the *when*-clause in its entirety is just interpreted in the restrictor of the Q-adverb. With the assumptions concerning the interpretation of *if*-clauses in adverbially sentences just sketched in mind, let us now turn to the technical details of the proposed analysis.

#### 4.2.4 The Technical Details

As already said in the last section, we need to ensure that in sentences such as (24), repeated here as (35), the indefinite occupying the highest DP-position within the *if*-clause is interpreted in the restrictor of the generic operator/the Q-adverb, while the conditional in its entirety is interpreted in the nuclear scope.

- (35) Wenn [ein Bauer]<sub>i</sub> [einen Esel]<sub>k</sub> besitzt, tritt der<sub>k</sub> ihn<sub>i</sub>.  
 [If [a farmer]<sub>i</sub> owns [a donkey]<sub>k</sub>, DEM<sub>k</sub> kicks him<sub>i</sub>.]

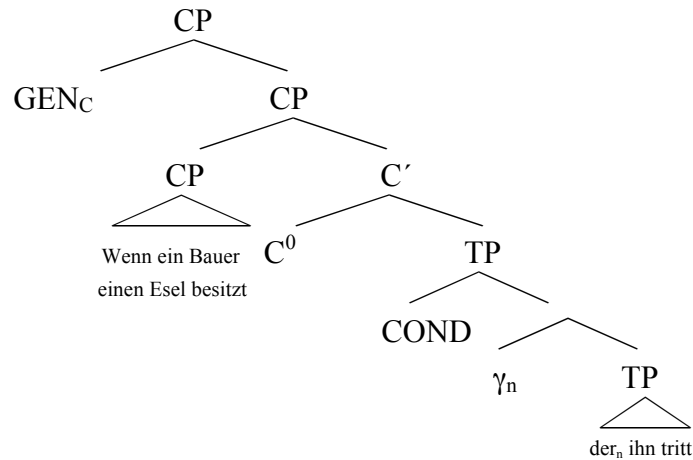
The first question that needs to be answered is therefore how the respective indefinite ends up being interpreted in the restrictor of the generic operator/Q-adverb. In principle, there are two options: First, we could follow von Stechow (1995) and Beaver and Clark (2008) in assuming that the restrictor of the generic operator/Q-adverb initially consists of a free variable ranging over situation predicates. The value of this variable is either determined on the basis of contextual information, or, in the absence of such information, on the basis of information structure by default. Now, we have already seen evidence that indefinites giving rise to QV-readings can function as aboutness topics, and that sentences such as (35) are natural as answers to questions like *What about X?*, *X* being the bare plural that denotes the kind corresponding to the indefinite occupying the highest DP-position in the *if*-clause. We could thus simply assume that the restrictor of the generic operator/Q-adverb is determined on the basis of the denotation of the respective indefinite, namely as the set of situations each of which contains an individual satisfying the respective NP-predicate.

Secondly, we could assume that at LF the indefinite is moved out of the antecedent of the conditional and adjoined to a position above the Q-adverb/generic operator, which has itself been adjoined to the matrix CP covertly. If we furthermore stick to the assumptions sketched in section 4.2.1, we also arrive at an interpretation where the indefinite ends up being interpreted in the restrictor. To repeat, we first have to assume that Q-adverbs take their arguments in reverse order (seen from the perspective of determiner quantification), i.e. that they combine with their nuclear scopes (i.e. the material they c-command at LF) first, before the result is applied to the restrictor (i.e. the material that c-commands them at LF). Secondly, the higher copy of the moved indefinite has to be shifted from its original denotation as a generalized quantifier to a set of situations each of which contains an individual satisfying the respective NP-predicate. Thirdly, the lower copy of the indefinite has to be interpreted as a definite description

whose uniqueness condition is relativized with respect to the situations quantified over by the Q-adverb.

Before making a decision as to which of the two options just sketched is to be preferred, let us have a closer look at both of them in turn. According to the first option, the sentence in (35) gets the simplified LF-representation in (36). Note that *if*-clause-internal QR of the indefinite *einen Esel* ('a donkey'), which (being a quantificational DP) cannot be interpreted in object position, has been suppressed to enhance readability. (Since German allows scrambling, the object DP can be assumed to have been adjoined to  $\nu P$ , i.e. to a position beneath the surface position of the subject DP):

(36)



Note first that *COND* is the covert conditional operator in whose restrictor I assume the antecedents of conditionals to be interpreted, while the respective consequents are interpreted in the nuclear scope (i.e. I assume that the conditional operator takes its arguments in the same order as Q-adverbs/ the conditional operator.) Secondly, I assume that the movement of the finite verb to  $C^0$  (i.e. the phenomenon known as V2 in the syntactic literature) has no semantic impact and is therefore either pure PF-movement or undone at LF via reconstruction of the finite verb into its base position. Thirdly,  $\gamma_n$  is a situation variable binding operator whose presence has the effect of turning any free situation variable in its scope that bears the same index into a lambda-bound variable, and thus in effect into a variable that is bound by the operator directly above  $\gamma_n$  (the reason for its presence will become clear below).

Let us assume the following simplified denotation for the generic operator, according to which it is treated on a par with overt Q-adverbs like *always*, *usually* etc., i.e. the modal component that presumably sets it apart from these (see Krifka et al. 1995 and the references cited therein for discussion) is ignored for the purposes of this paper:

$$(37) \quad [[\text{Gen}]]^g = \lambda Q. \lambda s. \forall s_1 [s_1 \leq s \wedge \text{EX}(g(C))(s_1) \rightarrow \exists s_2 [s_1 \leq s_2 \leq s \wedge Q(s_2)]]$$

where  $\text{EX}(g(C))(s_1)$  means ' $s_1$  exemplifies  $g(C)$ ', and a situation  $s$  exemplifies a proposition  $P$  iff whenever there is a part of  $s$  in which  $P$  is not true, then  $s$  is a minimal situation in which  $P$  is true (Kratzer 2007, Schwarz 2009).

Let us now turn to the conditional operator. Note that if we assume the denotation sketched in section 4.2.3, according to which it expresses universal quantification over epistemically accessible worlds where the antecedent is true, we run into the following problem: Recall that the C-variable in the restrictor of the generic operator is resolved to a set of situations each of which contains a farmer. Putting everything together, and assuming that both pronouns in the consequent of the conditional are treated as definite descriptions whose uniqueness conditions have been relativized with respect to the situations quantified over (see section 4.2.2 above), we thus get an interpretation that can (very roughly) be paraphrased as follows: All situations  $s$  exemplifying a situation containing a farmer can be extended to a situation  $s_1$  such that in all worlds that are epistemically accessible from  $s_1$  and that contain a situation  $s_2$  of a farmer owning a donkey also contain a situation of the unique donkey in  $s_2$  kicking the unique farmer in  $s_2$ . Now, the problem with this reading is that its truth conditions are too weak, since nothing requires the farmers contained in the situations quantified over by the generic operator to be identical to the ones contained in the worlds quantified over by the generic operator.

Fortunately, however, there is another option available, according to which conditionals do not express quantification over accessible worlds, but over counterparts of salient situations. Such an analysis has been proposed by Arregui (2009) for counterfactual conditionals. Abstracting away from various details that need not concern us here, the basic idea underlying her analysis is the following one: Counterfactuals express *de re* predication over situations where certain contextually salient facts hold. I.e. a counterfactual is true if all situations containing a counterpart of the respective salient situation where certain relevant laws hold and where the respective antecedent predicate is true can be extended to a situation where the consequent predicate is true as well. Note that Arregui follows Kratzer (1989) in assuming that situations are like individuals in that they can at most be part of one world, and therefore “are identified ‘across worlds’ via similarity-based counterparts” (Arregui 2009: 252). A sentence such as the one in (38a) is thus interpreted as given in (38b) (from Arregui 2009: 253, 3x. 9):

(38) a. If Sara had visited my house (last Monday), she would have sneezed.  
(Arregui 2009: 253, ex. 8)

b.  $\{s_L' : s \leq_m s_L' \ \& \ \text{Sara has visited my house in } s_L'\} \subseteq$   
 $\subseteq \{s_L' : \exists s_L'' . s_L' \leq s_L'' \ \& \ \text{Sara has sneezed in } s_L''\},$   
 where  $s_L$  is a situation that satisfies the set of laws  $L$  salient in the context,  $s$  is a situation where certain contextually salient facts hold, and  $s \leq_m s_L'$  means that  $s$  has a counterpart in  $s_L'$ , i.e. that there is some  $s'$  such that  $s'$  is a counterpart of  $s$  and  $s' \leq s_L'$ .

The sentence in (38a) would thus be true if it was predicated of a situation where Sara is allergic to cats and the speaker has a cat. Let us now extend this analysis to indicative conditionals and see what it would give us in a case like (35). First, we have to take into account that indicatives differ from counterfactuals insofar as the antecedent proposition has to be compatible with what is known in the respective context. I.e. we cannot simply assume universal quantification over modal extensions of given situations where some contextually relevant laws hold. Rather, we have to assume universal quantification over

modal extensions of given situations that are compatible with what is known in the respective context. Secondly, we have to give a lexical entry for the conditional operator that not only allows it to combine with its antecedent and its consequent in a compositional manner, but which also allows it to take situation variables bound by higher operators like the generic operator or a Q-adverb as arguments. Such an entry is given in (39):

$$(39) \quad [[\text{COND}]] = \lambda P. \lambda Q. \lambda s. \{s_{E'} : s \leq_m s_{E'} \wedge Q(s_{E'})\} \subseteq \\ \{s_{E'} : \exists_{E''} [s_{E'} \leq s_{E''} \wedge P(s_{E''})]\},$$

where  $s_{E'}$  is a situation that is compatible with what is known in the context, and  $s \leq_m s_{E'}$  means that  $s$  has a counterpart in  $s_{E'}$ , i.e. that there is some  $s'$  such that  $s'$  is a counterpart of  $s$  and  $s' \leq s_{E'}$ .

Let us finally turn to the definition of the situation variable operator  $\gamma_n$  (adapted from Buring 2004; see Hinterwimmer 2006, 2008a) that is inserted directly beneath the conditional operator in (36), and whose presence is needed to ensure that the uniqueness conditions associated with the pronouns in the consequent are relativized in the right way (recall that pronouns are analysed as definite descriptions in disguise, and as such contain free situation variables that can either be resolved to some salient situation or be bound by a suitable operator). As already said above, its presence has the effect of turning any free situation variable in its scope that bears the same index into a lambda-bound variable, and thus in the cases under consideration into a situation variable that is bound by the conditional operator. This is achieved in the following way: The assignment function is manipulated in such a way that all free situation variables bearing the respective index are replaced by a lambda bound variable. The resulting object is then vacuously applied to a situation variable in order to ensure that the respective XP, which already is a situation predicate, continues to be a situation predicate, and is thus of the right type to serve as an argument of the operator which eventually binds the initially free situation variables. The technical definition is given in (40):

$$(40) \quad [[\gamma_n \text{ XP}]]^g = \lambda s. [ [[\text{XP}]]^{g[n,s]} (s) ]$$

With these assumptions in place, let us now turn to the LF in (36) again. The denotation of the CP-segment c-commanded by the generic operator, which results from applying the conditional operator to the TP-segment it c-commands and to the CP that c-commands it in turn, is given in (41):

$$(41) \quad [[ [_{\text{CP}} [_{\text{CP}} \text{ Wenn ein Bauer einen Esel besitzt} ] [_{\text{C}'} \text{ C}^0 [_{\text{TP}} \text{ COND } [\gamma_n [_{\text{TP}} \text{ der}_n \text{ ihn tritt}]]]]]] ] ]^g = \\ \lambda s. \{s_{E'} : s \leq_m s_{E'} \wedge \exists x \exists y [\text{farmer}(x)(s_{E'}) \wedge \text{donkey}(y)(s_{E'}) \wedge \text{owns}(y)(x)(s_{E'})]\} \subseteq \\ \subseteq \{s_{E'} : \exists_{E''} [s_{E'} \leq s_{E''} \wedge \text{kick}(\iota y [\text{donkey}(y)(s_{E''})]) (\iota x [\text{farmer}(x)(s_{E''})]) (s_{E''})]\}$$

In the next step, the denotation of the generic operator is applied to this object, and finally, the C-variable in the restrictor of the Q-adverb is resolved as indicated above –

namely to a set of situations each of which contains a farmer. This gives us (42) as the denotation of the entire sentence:

$$(42) \quad [[ [_{CP} GEN [_{CP} Wenn ein Bauer einen Esel besitzt] [_{C'} C^0 [_{TP} COND [_{\gamma_n} [_{TP} der ihn tritt]]]]]] ] ]^g =$$

$$\lambda s. \forall s_1 [s_1 \leq s \wedge EX(\lambda s. \exists x[\text{farmer}(x)(s)])(s_1) \rightarrow$$

$$\exists s_2 [s_1 \leq s_2 \leq s \wedge$$

$$\{s_{E'} : s_2 \leq_m s_{E'} \wedge \exists x \exists y [\text{fa.}(x)(s_{E'}) \wedge \text{do.}(y)(s_{E'}) \wedge \text{owns}(y)(x)(s_{E'})\} \subseteq$$

$$\subseteq \{s_{E'} : \exists s_{E''} [s_{E'} \leq s_{E''} \wedge \text{kick}(\iota y[\text{do.}(y)(s_{E''})])(\iota x[\text{fa.}(x)(s_{E''})])(s_{E''})\}]]$$

This can (roughly) be paraphrased as follows: ‘All situations containing nothing but a farmer can be extended to a situation  $s_2$  such that all modal extensions of  $s_2$  that are compatible with what is known and which contain a farmer who owns a donkey can be extended to a situation where the respective donkey kicks the respective farmer’.

The first thing to note is that since no restriction is given in the form of a temporal adverb, the present tense marking on the verbs *besitzt* (‘owns’) and *tritt* (‘kicks’) is presumably understood as generic tense. Consequently, the situations quantified over are understood to be located in an interval that extends into the past as well as into the future of the world of evaluation to which the situation predicate in (42) is presumably applied by default. I.e. the sentence is understood to be not only about farmers existing at the time of utterance, but also about farmers existing in the past as well as ones existing in the future, and thus expresses a non-accidental generalization about farmers.<sup>3</sup>

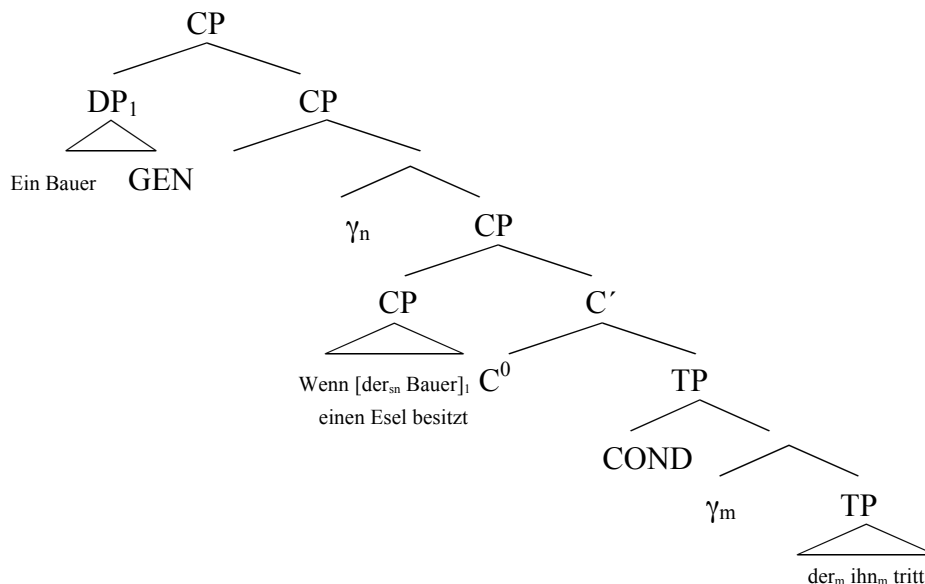
Secondly, it is still not strictly speaking guaranteed that the farmers introduced by the antecedent of the conditional are the same as (i.e. counterparts of) the ones indirectly quantified over by the generic operator: While the situations quantified over by the conditional operator are guaranteed to contain counterparts of the farmers indirectly quantified over by the generic operator, they may in principle be large enough to contain other farmers as well, and those might be the ones owning donkeys. This, however, would have the consequence that the uniqueness presupposition of the personal pronoun in the consequent would be violated. Situations containing more than one farmer can therefore be assumed to be filtered out from the domain of quantification of the conditional operator: This is the only way to avoid a presupposition violation.<sup>4</sup>

Let us now turn to a more detailed consideration of the second option sketched above, according to which the indefinite occupying the highest argument position within the antecedent of the conditional is moved out of the *if*-clause at LF, and adjoined to the matrix CP. The corresponding LF is given in (43) (*if*-clause-internal QR of the indefinite in object position has again been suppressed to enhance readability):

<sup>3</sup> Thanks are due to Florian Schwarz for pointing out (in his orally presented comments at the Pronoun Workshop at NELS 40) a problem regarding this issue as well as the one addressed in the next paragraph in the original version of the paper as it was presented at the Pronoun Workshop at NELS 40. Both paragraphs were written in response to his comments.

<sup>4</sup> Note that this is not true of the version sketched above employing possible worlds as the domain of quantification for the conditional operator: In order to avoid the bizarre consequence that the respective worlds are allowed to contain at most one farmer, donkey, etc., situations located within these worlds of which the antecedent is true have to be introduced, and the uniqueness presuppositions associated with the pronouns can easily be fulfilled with respect to these situations.

(43)



Note that moving the indefinite *ein Bauer* ('a farmer') out of the antecedent of the conditional at first seems to be illicit, since it violates the adjunct-island constraint (Ross 1967): It is well-known that *wh*-terms may not be moved out of conditional antecedents, and that the vast majority of quantificational DPs cannot be interpreted with scope over conditional antecedents, either. It is also well known, however, that indefinites headed by the indefinite article or an unmodified numeral can be interpreted specifically, i.e. with widest scope, even in cases where they are contained in an *if*-clause. This state of affairs has led numerous researchers to the conclusion that (at least some) indefinites are not quantificational DPs, but referential terms (Fodor and Sag 1982), or that the corresponding determiners introduce choice functions that are applied to the set denoted by the respective NP (Reinhart 1997, Winter 1997). But this is not the only reasonable conclusion: The peculiar behavior of unmodified indefinites can also be seen as an indication that it is possible to move such indefinites out of conditional antecedents at LF, and adjoin them to the matrix clause (see Endriss and Haida 2001 and Schwarz 2001, 2004 for discussion). If we furthermore take the fact into account that the only quantificational DPs that are allowed to take island-violating scope are the same as the ones that are (in contrast to all other quantificational DPs) allowed to occur in left-dislocated position in German, i.e. in a position that marks the respective constituent as aboutness topic (see Endriss and Hinterwimmer 2009), we can draw the following conclusion: While *wh*-movement and QR out of *if*-clauses is prohibited, (covert) topic movement is allowed.<sup>5</sup>

<sup>5</sup> See Endriss (2009) for a related proposal that also takes this coincidence as a starting point, but assumes structured propositions instead of covert movement. It only considers specific readings of indefinites, however, and does not take QVEs into account.

Let us now turn to the question of how the LF in (43) is interpreted. Concerning the generic operator, its denotation has to be altered slightly: It has to be allowed to take the indefinite c-commanding it as its second argument. Such a denotation is given in (44):

$$(44) \quad [[\text{Gen}]]^g = \lambda Q. \lambda P. \lambda s. \forall s_1 [s_1 \leq s \wedge \text{EX}(P)(s_1) \rightarrow \exists s_2 [s_1 \leq s_2 \leq s \wedge Q(s_2)]]$$

Secondly, as already mentioned above, the higher copy of the moved indefinite has to be shifted from its original denotation as a generalized quantifier to a set of situations each of which contains an individual satisfying the respective NP-predicate. This can be achieved via a simple type-shift, namely by applying it to the dummy predicate  $\lambda x. \lambda s. \text{in}(x)(s)$ , as shown in (45):

$$(45) \quad \begin{aligned} \lambda Q. \lambda s. \exists x [\text{farmer}(x)(s) \wedge Q(x)(s)] (\lambda x. \lambda s. \text{in}(x)(s)) = \\ = \lambda s. \exists x [\text{farmer}(x)(s) \wedge \text{in}(x)(s)] = \\ = \lambda s. \exists x [\text{farmer}(x)(s)] \end{aligned}$$

Let us now turn to the interpretation of the copy left behind by the moved indefinite. I follow Fox (2002) and Sauerland (2004) in assuming that in the lower copies of moved DPs the original determiner is replaced by the definite determiner. I differ from them insofar, however, as I assume the following operations to be only optional, whose effect is to ensure that the definite description denoted by the lower copy behaves like a variable bound by quantifier denoted by the higher copy: the insertion of a lambda-operator directly beneath the higher copy in combination with the intersection of the NP-predicate in the lower copy with the predicate  $\lambda x. \lambda s. \text{identical-to}(x)(y)(s)$ ,  $y$  being the variable that is bound by the lambda operator. Consequently, the lower copy may in principle also be interpreted like an ordinary definite description, and the (free) situation variable provided by the (covert) definite determiner, whose denotation is given in (46), may be bound by a suitable c-commanding operator (here: the generic operator) via the insertion of a situation variable binding operator (see Hinterwimmer 2008a for details).

$$(46) \quad [[\text{the}_{\text{sn}}]]^g = \lambda P. \iota x [P(x)(g(s_n))]$$

Assuming the same denotation for the conditional operator as the one given in (39) above, we arrive at (47) as the slightly simplified denotation of the CP-segment c-commanded by the generic operator. The simplification concerns the following fact: In order to be consistent, we have to assume that the copy of the indefinite *ein Esel* ('a donkey') that has been created by *if*-clause-internal QR (which has been suppressed; see above) is not simply translated as a variable, but rather in the way proposed by Fox (2002) and Sauerland (2004). This has been suppressed, however, to enhance readability.

$$(47) \quad \begin{aligned} [[ [\gamma_n [\text{CP} [\text{CP} \text{Wenn} [\text{der}_{\text{sn}} \text{Bauer}] \text{einen Esel besitzt}] [\text{C} \text{C}^0 [\text{TP} \text{COND} [\gamma_m [\text{TP} \text{der}_m \\ \text{ihn}_m \text{tritt}]]]]]]]] ] ] ]^g = \\ \lambda s. \{s_{E'}: s \leq_m s_{E'} \wedge \exists y [\text{donkey}(y)(s_{E'}) \wedge \text{owns}(y)(\iota x [\text{farmer}(x)(s)(s_{E'})])]\} \subseteq \\ \subseteq \{s_{E'}: \exists E'' [s_{E'} \leq s_{E''} \wedge \text{kick}(\iota y [\text{donkey}(y)(s_{E''}))](\iota x [\text{farmer}(x)(s_{E''}))](s_{E'})]\} \end{aligned}$$

Note that the situation variables of the pronouns in the consequent are bound by the situation variable binding operator inserted beneath the conditional operator, as in the first option above. The situation variable in the definite description that the lower copy of the moved indefinite has been turned into is bound by the situation variable operator inserted beneath the generic operator, in contrast. Since individuals (just like situations) can be part of one world at most, this has the consequence that the conditional operator quantifies over situations containing a counterpart of the individual that uniquely satisfies the NP-predicate with respect to the situations instantiating the lambda-bound situation variable (which ends up being bound by the generic operator).

Applying the generic operator to the object in (47), and combining the result with the denotation of the copy of the indefinite that c-commands the generic operator gives us (48) as the final result.

$$(48) \quad [[ [_{CP} \text{Ein Bauer} [_{CP} \text{GEN} [_{\gamma_n} [_{CP} [_{CP} \text{Wenn} [_{\text{der}_n} \text{Bauer}] \text{einen Esel besitzt}] [_{C'} C^0 \\ [_{TP} \text{COND} [_{\gamma_m} [_{TP} \text{der}_m \text{ihn}_m \text{tritt}]]]]]]]] ] ] ]^g = \\ \lambda s. \forall s_1 [s_1 \leq s \wedge \text{EX}(\lambda s. \exists x[\text{farmer}(x)(s)])(s_1) \rightarrow \\ \exists s_2 [s_1 \leq s_2 \leq s \wedge \\ \{s_{E'} : s_2 \leq_m s_{E'} \wedge \exists y[\text{donkey}(y)(s_{E'}) \wedge \text{owns}(y)(\text{tx}[\text{farmer}(x)(s_2)(s_{E'})])]\} \subseteq \\ \subseteq \{s_{E''} : \exists E'' [s_{E''} \leq s_{E''} \wedge \text{kick}(\text{ty}[\text{donkey}(y)(s_{E''})])(\text{tx}[\text{farmer}(x)(s_{E''})])(s_{E''})\}]]]$$

This can (roughly) be paraphrased as follows: ‘All situations containing nothing but a farmer can be extended to a situation  $s_2$  such that all modal extensions  $s_{E'}$  of  $s_2$  that are compatible with what is known and which contain a donkey such that (the counterpart of) the unique farmer in  $s_2$  owns that donkey can be extended to a situation where the respective donkey kicks the respective farmer’.

Before we can discuss the question of which of the two options just outlined is to be preferred, a problem raised by the second option needs to be addressed: Without further restriction, the flexibility in the treatment of the copies left behind by moved DPs, which allows us to derive the interpretation in (48), has the unwelcome consequence of allowing unattested absurd readings according to which there is no connection between the two copies. After all, nothing precludes the free situation variable in the definite description that the lower copy has been turned into from being resolved to some contextually salient situation, or (in the case of more complex examples) from being bound by operators that c-command the operator in whose restrictor the higher copy is interpreted (lower operators are not an option, since by assumption free variables can only be turned into bound variables via the insertion of a binding operator that c-commands the respective co-indexed variable, and which is itself c-commanded by the respective operator).

In order to preclude such readings, I suggest the following (informally stated) principle, which ensures that the copies left behind by moved DPs are “connected” to the higher copies even in cases where the Fox/Sauerland mechanism does not apply, i.e. where no lambda-operator is inserted beneath the higher copy, and where the NP-predicate in the lower copy is not intersected with the predicate  $\lambda x.\lambda s. \textit{identical-to}(x)(y)(s)$ ,  $y$  being the variable that is bound by the lambda operator :



- (49) The object denoted by the copy left behind by a moved DP needs to be in a binding configuration with the object denoted by the higher copy, which is the case iff
- a. the object denoted by the lower copy contains a variable that is bound by the object denoted by the higher copy, or
  - b. the situation variable in the object denoted by the lower copy is bound by the same operator that binds the situation argument of the object denoted by the higher copy.

A further question that needs to be answered is whether chains created by moving quantificational DPs other than unmodified indefinites can be treated in the same way as the chain headed by the indefinite *ein Bauer* ('a farmer') in (43). Now, in order to obtain an interpretable result, the higher copy of the moved DP would have to be in a position where (after having been shifted from a generalized quantifier to a situation predicate in the way outlined above) an operator combining with situation predicates can apply to it. Since (a) the only such operators are the conditional operator, the generic operator and Q-adverbs of varying quantificational force, (b) the restrictor of the conditional operator is always provided by an *if*-clause, and (c) the nuclear scope of the generic operator/an overt Q-adverb is always provided by the whole clause it occurs in (after the generic operator/Q-adverb has adjoined to the respective clause at LF), this leaves only one option: The quantificational DP would have to end up being interpreted in the restrictor of the generic operator/an overt Q-adverb.

Concerning strong quantificational DPs, i.e. ones headed by determiners like *most*, *every*, etc., it seems to be impossible to interpret them in the restrictor of the generic operator/an over Q-adverb: They either take scope over the respective operator, or (if a suitable restrictor can be accommodated) are interpreted in its nucleus. To see this, consider the contrast between the sentences in (50): While (50a) gets the familiar QV-reading, and (50b) can be interpreted as "Most situations containing more than three horses are such that the respective horses behave aggressively", (50c) can only be interpreted as "Every horse of Paul behaves aggressively in most relevant situations", not as "Most situations containing every horse of Paul are such that the respective horses behave aggressively".

- (50) a. A horse is usually aggressive.  
 b. More than three horses are usually aggressive.  
 c. Every horse of Paul is usually aggressive.

While I do not have a good answer to the question as to why this might be so (but see Hinterwimmer 2008 for some relevant discussion), I do not consider this to be a problem that is specific to the proposal under discussion, but rather one that arises for every approach to adverbial/generic quantification.

Let us now return to the question of which one of the two options discussed in this section is to be preferred: The one according to which the indefinite occupying the highest position within the *if*-clause determines the restrictor of the generic operator/Q-

adverb only indirectly, via the accommodation of a corresponding situation predicate, or the one according to which it does so directly, via moving to a position where it c-commands the Q-adverb at LF. Both options have in common that they allow us to make the desired distinction between the two indefinites in the antecedent of the conditional, and to treat the indefinites occupying the highest argument position within the *if*-clause as aboutness topics in the way alluded to in section 4.2.1: Assuming that topic-comment structures are generalized subject-predicate structures, with the topic being the logical subject of a predicate provided by the comment, the set of situations determined (either directly or indirectly) on the basis of the indefinite's denotation can be seen as the higher-order subject of a higher-order predication that is provided by the result of applying the generic operator/Q-adverb to its nucleus. While ordinary predication indicates that the respective individual is contained in the set provided by the predicate, the higher-order predication under discussion specifies the degree to which the set provided by its logical subject is contained in the set provided by the nuclear scope, i.e. how many elements of the former are contained in the latter (cf. Loebner 2000 for a similar view). In this respect, the only difference between the two options is that in the second case the (logical) subject-predicate (or topic-comment) structure actually obtains at the level of LF-syntax, while in the former this is not the case.

In terms of truth conditions, there is not much to choose between the two options: Assuming that the “re-quantification problem” (von Stechow 1994) arising from the fact that the indefinite is interpreted both in the restrictor and the nuclear scope is taken care of in the way indicated above, they are identical. Therefore, the two options need to be compared in terms of the complexity of the procedures by which the respective results are obtained. In the first case, all that is required is the standard mechanism of pronoun resolution on the basis of clause-internal information, while in the second case an additional covert movement operation needs to be assumed. Everything else being equal, the first option is thus to be preferred. Nevertheless, the second option should be kept in mind as a viable alternative if it turns out that the proposed solution of the re-quantification problem arising in the first option does not go through.

In this section we have seen that there is an empirically well-motivated way of analyzing adverbially quantified sentences with *if*-clauses in such a way that only the indefinite DP in highest position functions as the aboutness topic of the respective sentence and is thus interpreted in the restrictor of the Q-adverb. In principle, this allows us to account for the observation that D-pronouns in contrast to personal pronouns are prohibited from covarying with the structurally higher indefinite DP in a way that is consistent with the assumption that D-pronouns are allergic against aboutness topics. It is not clear, however, whether the principle banning the denotations of D-pronouns from being dependent on the denotation of DPs functioning as aboutness topics is a semantic principle, and should thus be encoded in the lexical entries of D-pronouns, or rather a pragmatic principle that follows from other, more basic principles. Let us thus first settle this matter, before we return to the case of D-pronouns bound by quantificational DPs.

### 4.3 D-Pronouns vs. Personal Pronouns

As already said in the last sections, I assume that pronouns in general are definite descriptions in disguise. More concretely, I assume that they contain a silent NP

introducing a free variable ranging over predicates that needs to be resolved to a salient predicate (cf. Elbourne 2008). A personal pronoun such as *er* ('he') is thus interpreted as shown in (51), i.e. it denotes the unique male individual that satisfies some salient predicate  $P_m$  with respect to the situation that the free situation variable  $s_n$  receives as value, if there is such an individual:

$$(51) \quad [[er_{s_n} NP_m]]^g = \iota \{x: \text{male}(x)(g(s_n)) \wedge g(P_m)(x)(g(s_n))\}$$

Assuming that D-pronouns are interpreted similarly, we need to ensure in an example such as (35) (repeated here as (52)) that in the case of the D-pronoun,  $P$  does not get resolved to the NP-predicate of the indefinite functioning as the aboutness topic of the sentence (i.e. the predicate *farmer*), but rather to the predicate of the other indefinite (i.e. the predicate *donkey*).

$$(52) \quad \text{Wenn [ein Bauer]}_i \text{ [einen Esel besitzt]}_j, \text{ tritt der}_i \text{ ihn}_j. \\ \text{[If [a farmer]}_i \text{ owns [a donkey]}_j, \text{ DEM}_i \text{ kicks him}_j].$$

If we decide to locate the allergy of D-pronouns against aboutness topicality on the semantic level and thus encode it directly in the lexical entry, this can be achieved as follows: We assume that D-pronouns come with the additional presupposition that the individuals they denote are not elements of the set functioning as the current aboutness topic, if the current aboutness topic is a set. Now, in the case at hand, the current aboutness topic is the set of (temporally maximal) situations containing nothing but a farmer, which is equivalent to the set of all farmers (recall from above that the sentence would be natural as an answer to a question like *What about farmers?*). Resolving  $P_m$  to *farmer* would thus have the consequence of turning the individuals the D-pronoun denotes with respect to the situations quantified over into elements of the current aboutness topic. In formulating the corresponding presupposition, however, we have to ensure that the cases discussed in section 4.1 are also taken care of, where coreference is at stake since the respective aboutness topic is an individual. The disjunctive formulation in (53) does the job, according to which the individual denoted by the D-pronoun may not be identical to the current aboutness topic if the current aboutness topic is an individual.

$$(53) \quad [[[\text{der}_{s_n} NP_m]]^g = \iota \{x: \text{male}(x)(g(s_n)) \wedge g(P_m)(x)(g(s_n)) \wedge \neg R^*(x, \text{TOP})\}, \\ \text{where } R^* = \lambda y. \lambda z. y = z \text{ iff TOP is of type } e \\ \text{and } R^* = \lambda y. \lambda P_{\langle e, t \rangle}. y \in P \text{ iff TOP is of type } et, \\ \text{and where } TOP \text{ is the current aboutness topic.}$$

There are several problems with this strategy, however. First of all, we have to be careful in defining what the *current* aboutness topic is. In an example such as (52), this is unproblematic, since it is quite natural to consider the aboutness topic of the sentence containing the D-pronoun as the current aboutness topic – which is the set of situations denoted (after shifting) by the indefinite *ein Bauer* ('a farmer'). But what about cases like (19), repeated here as (54), which were discussed in section 4.1, and where what seems to be crucial is not the question of what the aboutness topic of the sentence containing the

D-pronoun is, but rather the question of what the aboutness topic of the preceding sentence is.<sup>6</sup>

- (54) [<sub>DO</sub> Den Patienten]<sub>i</sub> untersucht [<sub>SU</sub> der Chefarzt]<sub>k</sub>. Der<sub>k</sub> ist nämlich Herzspezialist.  
 [[The patient]<sub>i</sub> was examined by [the head doctor]<sub>k</sub>. DEM<sub>k</sub> is a heart specialist.]

Secondly, to make things worse, if we only consider the second sentence in (54), the only plausible candidate for aboutness topicality is the individual denoted by the D-pronoun in subject position. Consequently, while the denotation of a D-pronoun cannot depend on the denotation of another DP functioning as aboutness topic, there does not seem to be a principled ban against the D-pronoun itself functioning as the aboutness of the sentence it occurs in. This is in conflict with the lexical entry in (53), however, at least if we do not add stipulations which ensure that in cases such as (54) the current aboutness topic is the topic of the preceding sentence, while in cases like (52) it is the aboutness topic of the sentence that the D-pronoun occurs in. One way to achieve this result would be to add the requirement that *TOP* is the aboutness topic of the sentence containing the D-pronoun, unless the D-pronoun itself is the aboutness topic of that sentence. In that case, *TOP* is the aboutness topic of the preceding sentence. As it stands, however, this is an entirely unmotivated stipulation whose sole purpose is to capture the observed facts.

A third, related problem consists in the perfect acceptability and naturalness of mini-discourses like the one in (55):

- (55) A: Gibts was neues von Maria?  
 Gives-it what new of Maria  
 ‘Any news about Maria?’  
 B: Die hab ich gestern auf Pauls Party getroffen.  
 DEM have I yesterday at of-Paul party met  
 ‘I met her yesterday at Paul’s party’.

According to standard assumptions, a question like the one asked by *A* in (55) clearly turns the (the denotation of the) DP *Maria* into an aboutness topic. An interpretation according to which the D-pronoun in *B*’s answer is coreferential with *Maria* thus seems to be in conflict with the anti-topicality requirement, contrary to fact. Note, however, that we need not assume that *Maria* is already the aboutness topic of *A*’s question, i.e. in my view it is quite plausible that while such a question unambiguously turns the denotation of the DP into the aboutness topic of the following sentence, it is not at the same time the aboutness topic of the question itself. This is consistent with the fact that the question is most naturally pronounced with the main accent on *Maria*, thus indicating its focality.

There are, however, cases like (56), where D-pronouns may pick up individuals that quite clearly function as aboutness topics:

---

<sup>6</sup> Thanks are due to Florian Schwarz for pointing out several problems with the original formulation in (53) in his written comments on an earlier version of this paper (Schwarz, this volume, sections 2.2 and 2.3, where he also sketches an alternative account). The preceding paragraph as well as the one following example (54) were written in direct response to his comments, which were also one of the main reasons for replacing the formulation in (53) by the one in (58) below.

(56) A: Hast Du was von Peter gehört?  
 Have you what of Peter heard  
 ‘Did you hear any news about Peter?’

B: Ja, er war gestern auch auf der Party.  
 Yes he was yesterday also at the party  
 Der hat schon wieder eine neue Freundin.  
 DEM has already again a new girlfriend.  
 ‘Yes, he was at the party yesterday, too. He has yet another new girlfriend.’

Now, in the second sentence of *B*’s answer, it is clear that the D-pronoun picks up the individual functioning as the aboutness topic of the first sentence, *Peter*. Thus, there seem to be cases where a D-pronoun *is* allowed to pick up an individual that is the aboutness topic of the preceding sentence. This is not necessarily inconsistent with the facts that are our main concern in this paper, and which originally motivated the anti-topicality constraint, though: It might be that whenever there is more than one DP available on whose denotation a D-pronoun might depend (either via coreference, co-variation or binding), the D-pronoun can only be interpreted as depending on the non-topical one. In cases where only one potential antecedent is available, however, the D-pronoun can in principle also be interpreted as depending on the denotation of a DP functioning as aboutness topic.

This does not mean, however, that D-pronouns and personal pronouns are always interchangeable in such cases. Rather, the choice of a D-pronoun then seems to indicate the presence of an additional, often emotive meaning component, while personal pronouns are just neutral in this respect. This is evident with regard to the second sentence of *B*’s answer in (56), where the choice of a D-pronoun in contrast to a personal pronoun evokes the impression that the speaker disapproves the fact that Peter has a new girlfriend. Consider next the contrast between (57a) and (57b): Concerning the second sentence in (57a), the variant with the D-pronoun is much worse than the one with the personal pronoun, while in (57b) it is entirely natural, perhaps even more so than the variant with the personal pronoun.

(57) a. Gestern hatte Paul eine gute Idee:  
 Yesterday had Paul a good idea  
 Er/<sup>??</sup>Der beschloss, Maria in die Opera einzuladen.  
 He/DEM decided Maria in the opera to-invite.  
 ‘Yesterday, Paul had a good idea. He decided to invite Maria to the opera.’

- b. Gestern hatte Paul eine gute Idee.  
 Yesterday had Paul a good idea  
 Er/Der hat einfach immer die besten Ideen!  
 He/DEM has simply always the best ideas  
 ‘Yesterday Paul had a good idea. He simply always has the best ideas!’

Now, in both cases the D-pronoun presumably picks up the aboutness topic of the preceding sentence, *Paul*. The obvious difference between them is, however, that only in (57b) the sentence containing the D-pronoun has a special emotive meaning component because of being an exclamative, while (57a) is neutral in this regard. A closer investigation of the additional meaning components that are expressed by the choice of a D-pronoun instead of a personal pronoun in cases where the only potential antecedent is the aboutness topic of its sentence is beyond the scope of this paper and will therefore be left for future work. Nevertheless, I think there is a way to reconcile those cases with the cases that are our main concern in this paper at least in principle. Let us assume that it is part of the meaning of D-pronouns in contrast to personal pronouns that the free predicate variable they introduce may not be resolved to the contextually most salient property, where the most salient property is the property denoted by the NP contained in the DP functioning as the current aboutness topic. If there is no other salient DP available, i.e. if being resolved to the “topical property” is the only available option, then that property is enriched, i.e. additional (expressive or other) content is added, which ensures that the resulting property is not identical with the topical property. This accounts for the fact that the use of a D-pronoun in such cases is often associated with an emotive flavor or expresses some form of (emotional) distance on the part of the speaker. Let us therefore assume that a D-pronoun such as *der* is interpreted as given in (58):

- (58)  $[[[\text{der}_{\text{sn}} \text{NP}_m]]^{\text{g}} = \iota\{x: \text{male}(x)(g(s_n)) \wedge g(P_m)(x)(g(s_n)) \wedge g(P_m) \neq P_{\text{TOP}}\},$   
 where  $P_{\text{TOP}}$  is the property denoted by the NP contained in the most recent DP functioning as an aboutness topic.

Note that in this formulation it is no longer problematic that the relevant aboutness topic is sometimes contained in the sentence in which the D-pronoun occurs, and sometimes in the preceding sentence. In both cases, the respective DP is the most recent one functioning as an aboutness topic. Likewise, the question of whether the D-pronoun itself is the aboutness topic of its own sentence or not is irrelevant: All that matters is that the predicate variable it introduces is not resolved to the property associated with the immediately preceding aboutness topic. Of course, the formulation in (58) leaves the question of how the algorithm determining  $P_{\text{TOP}}$  works entirely open. Rather, it just provides an informal description of the outcome of such a process. Still, given that in sections 4.1 and 4.2 I have made fairly detailed proposals as to how the aboutness topics of episodic sentences with referential DPs, on the one hand, and adverbially quantified or generic sentences with indefinites, on the other, are determined, (58) makes concrete, empirically testable hypotheses. Since the development of an algorithm determining the values of free predicate variables on the basis of available contextual (linguistic and non-linguistic) information is an important general task in its own right that goes well beyond the scope of this paper, I will leave it at that for the time being.

Finally, note that with respect to the “coreference cases”, i.e. the cases where the respective D-pronoun picks up an individual denoted by a proper name I make the following assumption: I assume that proper names are DPs with either an overt (as in *der Peter*) or a silent definite determiner whose NP-complement consists of the content of the respective name. I.e. in the case of a proper name such as (*der*) *Peter*, the NP *Peter* denotes the property of being called *Peter*, and the DP as a whole denotes the unique individual that has the property of being called *Peter* (see Elbourne 2005 and the references cited therein for discussion). Consequently, what happens in such cases is that the predicate variable introduced by the D-pronoun is resolved to the respective predicate. With these assumptions in place, let us finally return to the question of why D-pronouns in contrast to personal pronouns can only be bound by quantificational DPs that are not in subject position.

#### 4.4 Aboutness Topicality and Covarying Interpretations II: D-Pronouns as Bound Variables

Recall from section 3.2 the contrast between sentences such as (14b) (repeated here as (59a)), on the one hand, where the respective D-pronoun cannot be interpreted as bound by the quantificational DP, and sentences such as (16) and (17) (repeated here as (59b) and (59c), respectively), where this is unproblematic:

- (59) a. [Jeder Mann]<sub>i</sub> glaubt, dass er<sub>i</sub>/<sup>\*</sup>der<sub>i</sub> stark ist.  
[Every man believes that he/DEM is strong.]
- b. Peter<sub>i</sub> glaubt von [jedem Kollegen]<sub>j</sub>, dass  
Peter believes of every-DAT colleague that  
der<sub>j</sub> klüger ist als er<sub>i</sub>.  
DEM-NOM 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>.'
- c. 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.  
REL DEM-NOM not answer could  
'Peter asked [every student]<sub>j</sub> at least one question that he<sub>j</sub> couldn't answer'.

How can this contrast be accounted for in terms of the analysis of D-pronouns argued for in section 4.3? Now, on the one hand, there is strong empirical evidence that DPs headed by strong quantificational determiners such as *every*, *most* etc. cannot be aboutness topics: They are unacceptable in topic-marking constructions such as German Left Dislocation and they cannot be combined with topic markers such as Japanese *wa* (see Endriss 2009 and Endriss and Hinterwimmer 2009 and the references cited therein for discussion). On the other hand, we have seen in section 4.2 that the sets restricting situation quantifiers such as the generic operator or overt Q-adverbs can function as higher-order subjects of higher-order predicates, and thus as aboutness topics. We could

thus assume that what is true of situation quantifiers is true of individual quantifiers, too: The respective restrictor sets can in principle function as aboutness topics. The only difference would then be that in the case of quantificational DPs this is masked by the fact that the constituent providing the restrictor (namely the NP) always forms a constituent with the determiner.

We thus have to check whether contrasts like the one between (59a), on the one hand, and (59b,c), on the other, can be accounted for in terms of aboutness topicality – namely as a consequence of the fact that the restrictor of the quantificational DP on whose interpretation the interpretation of the D-pronoun is meant to depend is the aboutness topic of the respective sentence in (59a), but not in (59b,c). Let us therefore apply the same strategy that we applied in the case of the contrasts discussed in section 4.1 and 4.2, i.e. let us have a look at examples where it is clear that the aboutness topic does not coincide with the grammatical subject. The example in (60b) is a case in point:

- (60) a. A: Erzähl mir mal was über Peter.  
 ‘Tell me something about Peter.’
- b. B: [Den Peter]<sub>i</sub> hat JEder<sub>j</sub> bewundert,  
 The-ACC Peter has everyone admired  
 als der<sub>i/\*j</sub>/er<sub>i/j</sub> noch ein Kind war.  
 when he/DEM still a child was  
 ‘Everyone admired Peter when he was still a child.’

Although the object-DP *Peter* clearly functions as the aboutness topic of *B*’s answer to *A*’s request, the D-pronoun in contrast to the personal pronoun can only be understood as referring to *Peter*, not as being bound by the quantifier functioning as the grammatical subject. Interestingly, this is different in the case of the variants in (61b), where the object-quantifier has been replaced by a proper name/ a definite description/an indefinite DP (the focus-sensitive adverb *sogar* has been added to make the sentence sound more natural): There, the D-pronoun can only be understood as being coreferential with the individual denoted/introduced by the respective subject-DP.

- (61) a. A: Erzähl mir mal was über Peter.  
 ‘Tell me something about Peter.’
- b. B: [Den Peter]<sub>i</sub> hat (sogar)  
 The-ACC Peter has even  
 KLAUS<sub>j</sub>/[der PFARRer]<sub>j</sub>/[ein Freund seines VAters]<sub>j</sub> bewundert,  
 Klaus/[the pastor-NOM]/[a-NOM friend of-his father admired  
 als der<sub>\*i/j</sub>/er<sub>i/j</sub> noch ein Kind war.  
 when he/DEM still a child was  
 ‘Even Klaus/the pastor/a friend of his father admired Peter, when he was still a child.’

This shows that the conditions under which D-pronouns can be bound are different from the conditions under which they receive coreferential or E-type interpretations.



While in the latter cases, aboutness topicality is crucial, as argued for in sections 4.1 and 4.2, (grammatical) subjecthood seems to be decisive as far as binding is concerned. Recall from section 3.2 that the ban against being bound from subject position cannot be due to the necessity to avoid a Principle C violation: In a case such as (59c), the quantificational DP in indirect object position is able to bind a D-pronoun that is contained in a relative clause modifying the direct object, and there is clear evidence that indirect objects c-command direct objects (in their respective base positions). We thus have to look for another explanation.

Now recall from section 4.3 that in cases where an aboutness topic is the only available antecedent, D-pronouns can in principle also be resolved in such a way that they are coreferential with the aboutness topic. The sentence in (59a) suggests that if only one binder is available, the D-pronoun cannot be bound by it. Let us check if this is true in general, i.e. also in cases where the complement clause is not the object of a propositional attitude verb (cf. (62a)), in cases where the D-pronoun is contained in an adjunct clause (cf. (62b)), and in cases where the binder is not the grammatical subject, but the indirect object (cf. (62c)) or contained in a PP (cf. (62d)):

- (62) a. [Jeder Teilnehmer]<sub>i</sub> wurde gefragt, ob \*der<sub>i</sub>/er<sub>i</sub> etwas  
 Every participant was asked whether DEM/he something  
 essen will.  
 eat wants  
 ‘Every participant was asked whether he wanted to eat something.’
- b. [Jeder Mensch]<sub>i</sub> ist schlecht gelaunt, wenn \*der<sub>i</sub>/er<sub>i</sub> weniger als  
 Every human-being is bad-tempered when DEM/he less than  
 sechs Stunden geschlafen hat.  
 six hours slept has  
 ‘Everyone is bad-tempered when he has slept less than six hours.’
- c. [Jedem Studenten]<sub>i</sub> wurde eine Frage gestellt,  
 Every-DAT student-DAT was a question asked  
 die der<sub>i</sub>/er<sub>i</sub> nicht beantworten konnte.  
 REL.FEM DEM/he not answer could  
 ‘Every student was asked a question that he could not answer.’
- d. [Von jedem Politiker]<sub>i</sub> wurde schon einmal behauptet,  
 Of every-DAT politician was already once claimed  
 dass der<sub>i</sub>/er<sub>i</sub> korrupt ist.  
 that DEM/he corrupt is  
 ‘Every politician was claimed to be corrupt at least once in the past.’

The contrast between (62a,b), on the one hand, and (62c,d), on the other, confirms that what is at stake is (grammatical) subjecthood: It is only when the only available binder is the grammatical subject that a bound variable interpretation of the D-pronoun is strictly excluded. Interestingly, while proper names in subject position pattern with quantificational DPs if the D-pronoun is contained in a complement clause, they behave

differently if the D-pronoun is contained in an adjunct clause, and likewise for definite descriptions and indefinite DPs.

- (63) a. Peter<sub>i</sub> / [Mein Bruder]<sub>i</sub> / [Ein Freund von mir]<sub>i</sub> glaubt,  
 Peter / [My brother] [A friend of me] believes  
 dass \*der<sub>i</sub>/er<sub>i</sub> jedes Problem lösen kann.  
 that DEM/he every problem solve can  
 ‘Peter/My brother/A friend of mine believes that he can solve every problem.’
- b. Peter / [Mein Bruder]<sub>i</sub> / [Ein Freund von mir]<sub>i</sub> wurde gefragt,  
 Peter / [My brother] [A friend of me] was asked  
 ob \*der<sub>i</sub>/er<sub>i</sub> etwas essen will.  
 whether DEM/he something eat wants  
 ‘Peter/My brother/A friend of mine was asked whether he wanted to eat something.’
- c. Peter / [Mein Bruder]<sub>i</sub> / [Ein Freund von mir]<sub>i</sub> ist schlecht gelaunt,  
 Peter / [My brother] [A friend of me] is bad-tempered  
 wenn der<sub>i</sub>/er<sub>i</sub> weniger als sechs Stunden geschlafen hat.  
 when DEM/he less than six hours slept has  
 ‘Peter/My brother/A friend of mine is bad-tempered when he has slept less than six hours.’

How can we account for this at first sight puzzling contrast? A promising solution would be to argue that as far as non-quantificational DPs are concerned, it is only if the embedded clause is a complement clause that we can be sure that the subject-DP c-commands the embedded clause and everything it contains. If the embedded clause is an adjunct clause, in contrast, it could in principle have been right-adjoined to the CP whose specifier contains the subject-DP. Crucially, an interpretation according to which the interpretation of a pronoun (be it a personal pronoun or a D-pronoun) contained in the embedded clause depends on the interpretation of the subject-DP is available without the latter c-commanding the former – the predicate variable introduced by the pronoun need only be resolved to the property denoted by the NP contained in the respective subject-DP. If the pronoun is a personal pronoun, nothing else needs to be done, while if it is a D-pronoun, and if the subject-DP is furthermore the aboutness topic of the sentence, the respective property needs to be enriched in the way sketched in section 4.3.

But what about cases where the pronoun is contained in a complement clause and is therefore c-commanded by the subject-DP? Why is the same strategy not applicable there? Interestingly, Reinhart (2006) has argued that classical Principle C violations (i.e. sentences where a referential DP such as a proper name is c-commanded by another DP referring to the same individual) can be accounted for without special syntax-internal stipulations if one assumes a principle which (very roughly) can be stated as follows: Whenever two DPs are in a potential binding configuration (i.e. whenever one of them c-commands the other), but the potential binder cannot bind the potential bindee (because it is not a variable, for example, but a referring expression), it is not allowed to apply an alternative strategy in order to obtain a reading that is equivalent to the one that would be

obtained via binding. We will have a closer look at this principle below, and I will also propose a way to make it compatible with the analysis of pronouns argued for in this paper. But for the time being, let us simply assume that a principle like the one just stated informally is in effect.

Now, if it is true that D-pronouns may not be bound by quantificational DPs functioning as grammatical subjects, the contrast between (63a,b), on the one hand, and (63c), on the other, can be explained: In (63a,b), where the clause containing the D-pronoun is a complement clause, the only available derivation is one according to which the subject-DP c-commands the D-pronoun and is thus a potential binder for it. But since there is an independent principle banning D-pronouns from being bound by subject-DPs and binding is thus not allowed although a potential binding configuration obtains, applying an alternative strategy to derive an interpretation according to which the denotation of the D-pronoun depends on the denotation of the subject-DP is not an option either. In (63c), in contrast, where the clause containing the D-pronoun is an adjunct clause, a derivation is available according to which the subject-DP does not c-command the D-pronoun. If this derivation is chosen, binding is not an option, and a dependent interpretation of the D-pronoun can accordingly be derived along the lines sketched above.

But what about cases where the subject-DP is a (strong) quantificational DP? In those cases, the only way for a pronoun to be interpreted as depending on the quantificational DP is via binding, anyway. Consequently, the only available derivation is one according to which the subject-DP c-commands the pronoun, and hence the embedded clause it is contained in. Now, if the embedded clause is a complement clause, this is ensured anyway, while if the embedded clause is an adjunct-clause, it can easily be achieved by right-adjoining the adjunct clause to a constituent that is c-commanded by the subject-DP, namely VP or *v*P. In any case, a bound reading is not available if the pronoun is a D-pronoun, since D-pronouns may not be bound by subject-DPs.

If these assumptions are on the right track, we make a clear prediction concerning sentences involving more than one DP on whose interpretation a D-pronoun contained in an embedded clause could depend. Recall the examples in (61b) from above, repeated here as (64b), where in the sentences uttered by *B* a D-pronoun contained in an adjunct clause could be interpreted as depending on the denotation of a proper name/definite description/indefinite DP functioning as the grammatical subject because the object-DP clearly was as the aboutness topic of the sentence. If we now replace the sentences uttered by *B* in (61b)/(64b) by sentences where the D-pronoun is contained in a complement clause and hence unambiguously c-commanded by the subject-DP, it should no longer be possible for the D-pronoun to be interpreted as depending on the individual denoted/introduced by the subject-DP. This is borne out, as (65b,c) show:

- (64) a. A: Erzähl mir mal was über Peter.  
 ‘Tell me something about Peter.’
- b. B: [Den Peter]<sub>i</sub> hat (sogar)  
 The-ACC Peter has even  
 KLAUS<sub>j</sub>/[der PFARRer]<sub>j</sub>/[ein Freund seines VAters]<sub>j</sub> bewundert,  
 Klaus/the pastor-NOM/a-NOM friend of-his father admired

als der\*<sub>i/j</sub>/er<sub>i/j</sub> noch ein Kind war.  
 when he/DEM still a child was  
 ‘Even Klaus/the pastor/a friend of his father admired Peter, when he was still a child.’

- (65) a. A: Erzähl mir mal was über Peter.  
 ‘Tell me something about Peter.’
- b. B: [Dem Peter]<sub>i</sub> hat (sogar)  
 The-DAT Peter has even  
 KLAUS<sub>j</sub>/[der PFARRer]<sub>j</sub>/[ein Freund seines VAters]<sub>j</sub> gedroht,  
 Klaus/[the pastor-NOM]/[a-NOM friend of-his father] threatened  
 dass der\*<sub>i/\*j</sub>/er\*<sub>i/j</sub> ihn<sub>i/\*j</sub> nicht mehr einlädt.  
 that he/DEM him not any-longer invites
- c. B: [Dem Peter]<sub>i</sub> hat (sogar)  
 The-DAT Peter has even  
 KLAUS<sub>j</sub>/[der PFARRer]<sub>j</sub>/[ein Freund seines VAters] vorgeworfen,  
 Klaus/[the pastor-NOM]/[a-NOM friend of-his father] accused  
 dass der<sub>i/\*j</sub>/er<sub>i/\*j</sub> ihn\*<sub>i/j</sub> nicht mehr einlädt.  
 that he/DEM him not any-longer invites  
 ‘(Even) Klaus/the pastor/a friend of his father accused Peter that he does not invite him anymore.’

In (65b), the variants with the D-pronoun are odd, which is exactly what we predict: The D-pronoun cannot be understood as being bound by the respective subject-DP, while interpreting it as being bound by the indirect object-DP clashes with the meaning of the verb *threaten* in combination with the meaning of the complement clause. Concerning (65c), in contrast, where *threaten* has been replaced by *accused*, the variants with the D-pronoun are fine, since interpreting the D-pronoun as being bound by the indirect object-DP is unproblematic, again as predicted.

The examples in (65b,c) might thus be taken to show that the ban against being bound by the grammatical subject is stronger than the ban against depending on the interpretation of the most recent aboutness topic, which in the cases under consideration is the (denotation of the) indirect object-DP. This is the wrong way to look at these examples, however, if what we said in this section is true: Since the indirect object c-commands the complement clause and thus everything it contains, the only way for the D-pronoun to be interpreted as depending on the denotation of the indirect object DP is via binding. There does not seem to be a ban against being bound by the aboutness topic, however, but only a ban against being bound by the grammatical subject. In general, however, we have already seen evidence that the ban against being resolved to the property denoted by the NP contained in the most recent DP functioning as an aboutness topic has a different status from the ban against being bound by a subject-DP: If no other salient DP is available, a D-pronoun may well be resolved to the respective “topical property”, as discussed in section 4.3. In contrast to this, it may not even be bound by a subject DP if neither another potential binder nor another DP is available that would

provide a value for the predicate variable introduced by the D-pronoun. A potential explanation for this difference would be to assume that the fallback strategy that is available in the non-binding cases – namely to enrich the respective “topical property” – is for some reason blocked in the binding cases.

But before we turn to the question of how the “subject-binding-constraint” can be reconciled with the analysis of D-pronouns argued for in section 4.3, let us have a look at how pronoun binding is accounted for in the system I propose in general. Let us therefore ignore the meaning component that is responsible for the “anti-topicality constraint” in non-binding cases and the “anti-subject-constraint” in binding-cases and concentrate on the question of how a bound reading can be derived for D-pronouns (and personal pronouns as well) under the assumption that they are definite descriptions containing a free predicate variable.

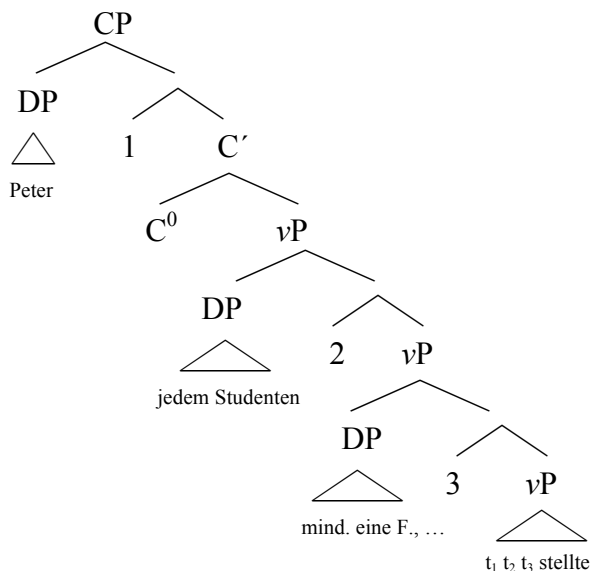
Let us have a closer look at the example in (59c), repeated here as (66), where a quantificational DP functions as the indirect object and is thus able to bind a D-pronoun contained in a relative clause modifying the direct object.

- (66) 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.  
 REL DEM-NOM not answer could  
 ‘Peter asked [every student]<sub>j</sub> at least one question that he<sub>j</sub> couldn’t answer’.

Since the grammatical subject of a sentence is the aboutness topic by default, and since there are no independent factors indicating deviation from the default in the case of (66), we can safely assume *Peter* to be the aboutness topic. Now recall our assumption that the (logical) subject-predicate configuration characterizing aboutness topicality obtains at the level that feeds semantic interpretation, i.e. at LF. Consequently, we need to ensure that this configuration is not destroyed by the need to move the quantificational DP in indirect object position into a position via QR where it c-commands the subject (since quantificational DPs cannot be interpreted in non-subject positions due to type-mismatch).

Technically, this can be achieved as follows: The quantificational DP need not be moved across the subject via QR at LF, because we can assume that it has already been adjoined to *vP* (where all arguments are base generated) at the surface via (vacuous) scrambling (and the same can be assumed for the direct object DP *mindestens eine Frage*). The LF representation of the sentence thus looks as shown in simplified form in (67) (instead of representing the copies left behind by moved DPs in accordance with the Fox/Sauerland mechanism discussed above, they are represented along the lines of the simpler mechanism found in Heim and Kratzer (1998), i.e. as indexed traces which are translated as variables ranging over individuals).

(67)



The subject DP *Peter* is thus the logical subject of the predicate provided by its sister. Now, in order to ensure that D-pronouns as well as personal pronouns can (in effect) be interpreted as a bound variables, we just need to assume that the free predicate variable they contain can be resolved to a predicate such as  $\lambda x. \lambda s. \textit{identical-to}(x)(y)(s)$ , with  $y$  being the variable that is bound by the lambda-operator whose insertion is triggered by the presence of the numerical index of the moved DP binding the respective pronoun (just as in Heim and Kratzer 1998), similarly to the Fox-Sauerland mechanism for the interpretation of the lower copies of moved DPs mentioned above (Fox 2002 and Sauerland 1998, 2004; cf. Elbourne 2008). Putting everything together, we get (68) as the (simplified) semantic interpretation of the sentence in (66):

$$\begin{aligned}
 (68) \quad & \lambda x. \lambda s. \forall y[\textit{student}(y)(s^*) \rightarrow \\
 & \quad \exists s_1 \leq s[\exists z[\textit{question}(z)(s_1) \wedge \\
 & \quad \quad \neg \textit{answer}(z)(\textit{uk.identical-to}(y)(k)(s_1))(s_1) \wedge \\
 & \quad \quad \quad \textit{ask}(z)(y)(x)(s_1)]]] \textit{(Peter)} = \\
 & \lambda s. \forall y[\textit{student}(y)(s^*) \rightarrow \\
 & \quad \exists s_1 \leq s[\exists z[\textit{question}(z)(s_1) \wedge \\
 & \quad \quad \neg \textit{answer}(z)(\textit{uk.identical-to}(y)(k)(s_1))(s_1) \wedge \\
 & \quad \quad \quad \textit{ask}(z)(y)(\textit{Peter})(s_1)]]]
 \end{aligned}$$

With these assumptions in place, let us now return to the question of how we can ensure that D-pronouns in contrast to personal pronouns cannot be bound by DPs functioning as grammatical subjects. Let us reconsider the analysis of D-pronouns argued for in section 4.3, i.e. let us have another look at the meaning of the D-pronoun *der* as stated in (58), repeated here as (69):

$$\begin{aligned}
 (69) \quad & [[[\textit{der}_{sn} \textit{NP}_m]]^g = \iota\{x: \textit{male}(x)(g(s_n)) \wedge g(\textit{P}_m)(x)(g(s_n)) \wedge g(\textit{P}_m) \neq \textit{P}_{TOP}\}, \\
 & \text{where } \textit{P}_{TOP} \text{ is the property denoted by the NP contained in the most recent DP} \\
 & \text{functioning as an aboutness topic.}
 \end{aligned}$$

It would be odd to postulate ambiguity at the level of the lexical semantics of the respective D-pronoun in order to capture the difference in the circumstances under which coreferential and E-type readings are available, on the one hand, and bound readings, on the other. Therefore, the obvious thing to do is to locate the difference at the point where it is specified what counts as the *currently most salient property*, which is identified with  $P_{TOP}$  in (69). Let us assume that we have to distinguish potential binding configurations – i.e. configurations where the respective D-pronoun is c-commanded by a DP matching the D-pronoun's phi-features (i.e. gender and number features) – from non-binding configurations – i.e. configurations, where no such DP is available. As far as non-binding configurations are concerned,  $P_{TOP}$ , i.e. the property denoted by the NP contained in the most recent DP functioning as an aboutness topic, continues to count as the currently most salient property. As far as binding configurations are concerned, in contrast, the currently most salient property is the property of being (identical to) a variable A-bound by the structurally most prominent DP of the respective sentence, where the grammatically most prominent DP of a sentence is the grammatical subject, and where *A-binding* is defined as in (70), taken from Reinhart (2006: 171, (11)):

- (70) *A-Binding*  
 $\alpha$  A-binds  $\beta$  iff  $\alpha$  is the sister of a  $\lambda$ -predicate whose operator binds  $\beta$ .

Let us thus replace (69) by (71):

- (71)  $[[[\text{der}_{sn} \text{NP}_m]]^g = \iota\{x: \text{male}(x)(g(s_n)) \wedge g(P_m)(x)(g(s_n)) \wedge g(P_m) \neq P^*\},$   
 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,  $P^* = P_{TOP}$ , where  $P_{TOP}$  is the property denoted by the NP contained in the most recent DP functioning as an aboutness topic.

Now, what reason might there be for determining the currently most salient property differently in binding and non-binding configurations? An obvious difference is that in binding configurations the relation between the respective pronoun and the DP on whose denotation the denotation of the pronoun depends is a purely structural one, defined in terms like sisterhood and c-command. In non-binding configurations, in contrast, the relation between the pronoun and the DP on whose interpretation its denotation depends is a more indirect, discourse-related one, since there is no particular structural relation that has to hold between the two DPs – it is not even necessary for them to be contained in the same sentence. Of course, structural factors like the hierarchical position occupied by the respective antecedent-DP (where the term *antecedent-DP* is used as a non-technical cover-term for DPs on whose denotation the denotation of the respective pronoun depends) and its being de-accented relative to other constituents play a role, but these can be explained as indirect effects insofar as they serve to mark the DP as an

aboutness topic, with DPs serving as aboutness topics being the most salient DPs and thus the most likely antecedents for pronouns in their unmarked variety.

Given this difference in the way the respective pronoun and its antecedent-DP are related in binding configurations, on the one hand, and in non-binding configurations, on the other, it is not surprising that different conditions apply as far as the specification of the way in which pronouns of the marked variety differ from non-marked ones is concerned. In both cases, a plausible reason for why the marked pronoun series exists at all is that it provides speakers with a means to indicate that it is not the default resolution strategy that is meant to apply. Hence, if the default resolution strategies are different in binding and non-binding configurations, the constraint imposed on the marked pronouns has to be flexible enough to prevent the respective default strategy in each case from applying. Since, as already said, the default strategy in the non-binding cases is sensitive to structural factors only indirectly, insofar as they are related to the marking of DPs as aboutness topic, the constraint on D-pronouns applying in these cases has to be spelled out accordingly. Concerning potential binding configurations, in contrast, which can be defined as such only in purely structural terms, it is reasonable to assume that the preferred binding option is specified in purely structural terms as well. Since among the DPs which can in principle (i.e. if they are contained in a superordinate clause) bind a pronoun contained in a subordinate clause the respective subject DP can reasonably be assumed to be the most prominent one (it bears the least marked case, can bind reflexives and control empty pronouns most easily, is associated with the highest argument role by default etc.), it is the obvious choice for a purely structurally defined “preferred binder”. Consequently, the constraint on D-pronouns applying in these cases has to be spelled out accordingly.

An additional factor that might play a role with respect to the fact that D-pronouns are subject to different constraints in binding and non-binding cases is that (as already mentioned above) there are many quantificational DPs that can bind pronouns, while they cannot be aboutness topics. While it is reasonable to assume that in such cases it is possible for the sets denoted by the NP-complements of the quantificational determiners to function as aboutness topics (see above), it might be that because of being DPs themselves the strategy according to which pronouns “look for” potential antecedents has to be sensitive to the properties of DPs, not to the properties that constituents contained in DPs have.

Let me end this section by addressing two loose ends: First, why are sentences/(mini-)discourses where there is (a) only one DP available as a potential antecedent for a D-pronoun, and (b) that antecedent would not be a possible antecedent in cases where another DP is available (because of being incompatible with the respective constraint), at least often interpreted in such a way that the (denotation of) the D-pronoun depends on the (denotation of the) only available antecedent if there is no binding involved, while this is never the case if binding is involved? In other words, what accounts for the difference between sentences such as (59a), repeated here as (72), on the one hand, and mini-discourses such as (55), repeated here as (73), on the other, given that in the first case a reading according to which the D-pronoun depends on *jeder Mann* (‘every man’) would violate the “anti-subject-constraint” applying in binding configurations and is thus not available, while in the second case a reading according to which the D-pronoun



depends on *Maria* violates the “anti-topicality-constraint” applying in non-binding configurations and is nevertheless available?

(72) [Jeder Mann]<sub>i</sub> glaubt, dass er<sub>i</sub>/<sup>\*</sup>der<sub>i</sub> stark ist.  
[Every man believes that he/DEM is strong.]

(73) A: Gibts was neues von Maria?  
Gives-it what new of Maria  
'Any news about Maria?'  
B: Die hab ich gestern auf Pauls Party getroffen.  
DEM have I yesterday at of-Paul party met  
'I met her yesterday at Paul's party.'

Secondly, recall that my account of the contrast between sentences such as (63a,b), on the one hand (repeated here as (74a,b)), and (63c) (repeated here as (74c)), on the other, rests on the following assumption: Whenever a binding configuration obtains, i.e. whenever a potential antecedent-DP c-commands a D-pronoun, it is not allowed for the D-pronoun to receive a dependent interpretation via its free predicate variable being resolved to the property denoted by the NP contained in the antecedent-DP, but only via being A-bound (in the sense spelled out in detail above) by the antecedent-DP. But why should that be, i.e. how exactly does the principle mentioned above prevent the non-binding strategy to obtain a dependent interpretation from applying?

(74) a. Peter<sub>i</sub> / [Mein Bruder]<sub>i</sub> / [Ein Freund von mir]<sub>i</sub> glaubt,  
Peter / [My brother] / [A friend of me] believes  
dass <sup>\*</sup>der<sub>i</sub>/er<sub>i</sub> jedes Problem lösen kann.  
that DEM/he every problem solve can  
'Peter/My brother/A friend of mine believes that he can solve every problem.'

b. Peter<sub>i</sub> / [Mein Bruder]<sub>i</sub> / [Ein Freund von mir]<sub>i</sub> wurde gefragt,  
Peter / [My brother] / [A friend of me] was asked  
ob <sup>\*</sup>der<sub>i</sub>/er<sub>i</sub> etwas essen will.  
whether DEM/he something eat wants  
'Peter/My brother/A friend of mine was asked whether he wanted to eat something.'

c. Peter / [Mein Bruder]<sub>i</sub> / [Ein Freund von mir]<sub>i</sub> ist schlecht gelaunt,  
Peter / [My brother] / [A friend of me] is bad-tempered  
wenn der<sub>i</sub>/er<sub>i</sub> weniger als sechs Stunden geschlafen hat.  
when DEM/he less than six hours slept has  
'Peter/My brother/A friend of mine is bad-tempered when he has slept less than six hours.'

Concerning the first question, I assume (as already alluded to above) that the strategy that is available in the non-binding cases to avoid a violation of the “anti-topicality constraint” is not available in the binding cases: Namely to add descriptive (potentially

expressive) content. Although I do not have a fully satisfactory explanation, I tentatively suggest that this difference is related to the fact that the dependency of the D-pronoun's denotation on the denotation of the antecedent DP comes about in quite different ways in the two cases: In the non-binding cases, it is the descriptive property denoted by the NP contained in the antecedent-DP that is relevant, while in the binding cases it is the purely formal property of being (identical to) a variable that is A-bound by the antecedent-DP. While it is quite natural to conjoin a descriptive property with another descriptive or expressive property, it would be rather odd to conjoin a purely formal property like the one of being (identical with) some bound variable with a descriptive or expressive property.

Let us now turn to the second question. As already mentioned above, Reinhart (2006) has shown that the classical Condition C effects can be derived without special syntax-internal stipulations if the following principle is adopted:

(75) *Modified Condition C(ovaluation)* (Reinhart 2006: 196, (29))

- $\alpha$  and  $\beta$  cannot be covalued in a derivation D, if
- a.  $\alpha$  is in a configuration to A-bind  $\beta$ , and
  - b.  $\alpha$  cannot A-bind  $\beta$  in D.

(76) *Covaluation* (Reinhart 2006: 172, (12))

- $\alpha$  and  $\beta$  are covalued iff neither A-binds the other and they are assigned the same value.

Now, this is not quite what we need yet, since the definition of covaluation was designed for a system where pronouns are treated as variables simpliciter. It is possible, however, to modify both (75) and (76) in such a way that they are compatible with the analysis of pronouns as definite descriptions in disguise adopted in this paper, as shown in (77) and (78):

(77) *Modified Condition C(ovaluation)* (version adopted in this paper)

- Two DPs  $\alpha$  and  $\beta$  cannot be covalued in a derivation D, if
- a.  $\alpha$  and  $\beta$  are in a potential binding configuration, with  $\alpha$  being the binder, and
  - b. It is not possible for  $\beta$  to be interpreted in such a way that it has the property of being (identical to) a variable bound by  $\alpha$ .

(78) *Covaluation* (version adopted in this paper)

- Two DPs  $\alpha$  and  $\beta$  are covalued iff neither is interpreted in such a way that the object it denotes has the property of being (identical to) a variable A-bound by the other, and one of them contains a predicate variable that is resolved to the property denoted by the NP contained in the other.

Stated this way, with the definition of covaluation in (78) being adopted, the principle in (77) is exactly what we need in order to distinguish between cases such as (74a,b), on the one hand, and (74c), on the other: In both (74a) and (74b) only a derivation is

available according to which the DP in subject position c-commands and is thus a potential binder for the respective pronoun. Now, if the pronoun is a D-pronoun, resolving its predicate variable to the property of being (identical to) a variable A-bound by the subject-DP is prohibited because of the “anti-subject-constraint”. Consequently, the principle in (77) prevents it from being covalued with the subject-DP, either. In (74c), in contrast, a derivation is available according to which the subject-DP does not c-command and is thus not a potential binder for the respective pronoun. Hence, the principle in (77) does not apply, even if the pronoun is a D-pronoun (what does apply, of course, is the “anti-topicality constraint”, which, if the only available antecedent is an aboutness topic, forces the predicate variable introduced by the D-pronoun to be resolved not simply to the property denoted by the NP contained in the antecedent-DP, but rather to some enriched property). Note finally that also in the version given in (77), the *Modified Condition C* still does the job it was designed for – namely to capture classical Principle C violations such as (79):

(79) \*She<sub>i</sub> does not think that Mary<sub>i</sub> is smart.

Now, the pronoun in subject position is (a) a potential binder for the proper name *Mary*, but (b) cannot bind it because as a proper name, it cannot be interpreted as denoting an object that has the property of being (identical to) a variable A-bound by the pronoun. At the same time, the principle in (77) prevents the two DPs from being covalued, either, thus correctly excluding an interpretation according to which the pronoun in (79) denotes the same individual as the proper name *Mary*.

## 5. Conclusion

In this paper I have argued for a unified explanation of the behavior of German D-pronouns: No matter whether they receive coreferential or bound readings or are interpreted as donkey pronouns, they always signal that a non-default interpretation is intended. This either means that they may not be interpreted in such a way that their denotation depends on the denotation of the most salient antecedent, or (as a fallback strategy that is available under certain conditions) that if their denotation is dependent on the denotation of the most salient antecedent DP they receive an enriched interpretation. I have shown that in cases where no potential binding configuration obtains, the most salient antecedent is the most recent DP functioning as an aboutness topic, while in cases where binding is possible the most salient antecedent-DP (i.e. binder) is the respective subject-DP. While preliminary evidence suggest that the principles argued for in this paper are in effect in other languages such as Russian as well that have in addition to unmarked pronouns a marked series derived from demonstrative determiners, this needs to be investigated more carefully and with respect to other such languages like Finnish, Dutch and Turkish. In addition to that, the conditions need to be investigated in detail under which D-pronouns in the absence of other potential antecedents may be interpreted as depending on DPs functioning as aboutness topics. As mentioned above, this is sometimes, but not always possible, and the “enrichment strategy” sketched in this paper does not in and of itself explain why this is the case.

To make a concrete, testable proposal, I have stated the relevant restriction directly in terms of a lexical presupposition that sets D-pronouns apart from ‘ordinary’ personal pronouns. It would be more desirable, however, to be able to derive this restriction from a more general property that D-pronouns share with full-fledged demonstrative DPs, which have recently (contra the classical direct reference account of Kaplan 1977/1989) been argued to be a special kind of definite DP by some researchers (Roberts 2002, Wolter 2006, Elbourne 2008; see King 2001 for a related view that treats them as quantificational DPs): After all, the name *demonstrative pronoun* is due to the fact that these pronouns are homophonous with the accented version of the definite determiner, which can also function as a demonstrative determiner in German, if it is stressed.

Although a detailed comparison of full-fledged demonstrative DPs with D-pronouns is beyond the scope of this paper, and therefore has to await another occasion, I would like to end this paper with a brief speculation concerning the property alluded to above: Demonstratives are typically used to direct the hearer’s attention to an entity that is not at the center of his/her attention at the time when the sentence containing the demonstrative is uttered (whether its use is accompanied by a pointing gesture or not). Now, since aboutness topics can plausibly be assumed to be at the center of the hearer’s attention by definition, and since grammatical subjects are arguably the structurally most prominent DPs within their respective sentences, it would be completely superfluous to use a device made for re-directing the hearer’s attention in order to indicate that the DP which is the most salient one anyway is the intended antecedent (at least, if this antecedent is picked up in the usual way). In other words: Why should one point at something that everybody is staring at anyway?

### References

- Arregui, A. (2009). On Similarity in Counterfactuals. *Linguistics and Philosophy* 32: 245-278.
- Beaver, D. I. and B. Z. Clark (2008). *Sense and Sensitivity: How Focus Determines Meaning*. Blackwell.
- Berman, S. (1987). Situation-Based Semantics for Adverbs of Quantification. *Issues in Semantics* 12: 45-68.
- Bosch, P., T. Rozario and Y. Zhao (2003). Demonstrative Pronouns and Personal Pronouns. German *der* vs. *er*. Proceedings of the EACL 2003. Budapest. Workshop on The Computational Treatment of Anaphora, pp. 61-68.
- Bosch, P. and C. Umbach (2006). Reference Determination for Demonstrative Pronouns. In Proceedings of the Conference on Intersentential Pronominal Reference in Child and Adult Language, pp. 39-51.
- Büring, D. (2004). Crossover Situations. *Natural Language Semantics* 12: 23-62.
- Chierchia, G. (1995). *Dynamics of Meaning: Anaphora, Presupposition, and the Theory of Grammar*. University Of Chicago Press.
- Chomsky, N. (1993). A Minimalist Program for Linguistic Theory. In K. Hale and S. J. Keyser (eds.), *The View from Building 20*, MIT Press: 1-52.
- Elbourne, P. (2001). E-Type Anaphora as NP-Deletion. *Natural Language Semantics* 9: 241-288.

- Elbourne, P. (2005). *Situations and Individuals*. MIT Press.
- Elbourne, P. (2008). Demonstratives as Individual Concepts. *Linguistics and Philosophy* 31: 409-466.
- Endriss, C. (2009). *Quantificational Topics – A Scopal Treatment of Exceptional Wide Scope Phenomena*. Studies in Linguistics and Philosophy, vol. 86, Springer.
- Endriss, C. and A. Haida (2001). The Double Scope of Quantifier Phrases. In Proceedings of NELS 31.
- Endriss, C. and S. Hinterwimmer (2009). Indefinites as Direct and Indirect Aboutness Topics. In C. Fery and M. Zimmermann (eds.), *Information Structure*. Oxford University Press: 89-115.
- Evans, G. (1980). Pronouns. *Linguistic Inquiry* 11: 337-362.
- von Stechow, P. (1994). Restrictions on Quantifier Domains. PhD thesis, University of Massachusetts, Amherst.
- von Stechow, P. (1997). Bare Plurals, Bare Conditionals, and *Only*. *Journal of Semantics* 14: 1-56.
- von Stechow, P. (1999). NPI Licensing, Strawson-Entailment, and Context-Dependency. *Journal of Semantics* 16: 97-148.
- von Stechow, P. and S. Iatridou (2002). If and When *If*-Clauses Can Restrict Quantifiers. ms, MIT.
- Fodor, J. D. and I. A. Sag (1982). Referential and Quantificational Indefinites. *Linguistics and Philosophy* 5: 355-398.
- Fox, D. (2002). Antecedent-Contained Deletion and the Copy Theory of Movement. *Linguistic Inquiry* 33: 63-96.
- Frey, W. (2004). Notes on the Syntax and the Pragmatics of German Left Dislocation. In H. Lohnstein and S. Trissler (eds.), *The Syntax and Semantics of the Left Periphery*, Mouton de Gruyter: 203-233.
- Grewendorf, G. (2002). Left-Dislocation as Movement. In S. Mauck and J. Mittelstaedt (eds.), *Georgetown University Working Papers in Theoretical Linguistics* 2: 31-81.
- Groenendijk, J. and M. Stokhof (1991). Dynamic Predicate Logic. *Linguistics and Philosophy* 14: 39-100.
- Grohmann, K. (2000). Prolific Peripheries: A Radical View from the Left. PhD thesis, University of Maryland, College Park.
- Heim, I. (1982). The Semantics of Definite and Indefinite Noun Phrases. PhD thesis, University of Massachusetts, Amherst.
- Heim, I. (1990). E-Type Pronouns and Donkey Anaphora. *Linguistics and Philosophy* 13: 137-177.
- Heim, I. and A. Kratzer (1998). *Semantics in Generative Grammar*. Blackwell.
- Hinterwimmer, S. (2006). The Interpretation of Universally Quantified DPs and Singular Definites in Adverbially Quantified Sentences. In Proceedings of the 25th West Coast Conference on Formal Linguistics (WCCFL 25), pp. 195-203.
- Hinterwimmer, S. (2008a). *Q-Adverbs as Selective Binders: The Quantificational Variability of Free Relatives and Definite DPs*. Mouton de Gruyter.
- Hinterwimmer, S. (2008b). *If vs. When, Wenn vs. Als*: Microvariation in the Semantics of Conditional and Temporal Complementizers in English and German. In Proceedings of the 37th Conference of the North Eastern Linguistic Society (NELS 37).

- Kamp, H. (1981). A Theory of Truth and Semantic Representation. *Formal Methods in the Study of Language* 1: 277-322.
- Kaplan, D. (1977/1989). Demonstratives. In J. Almog, J. Perry and H. Wettstein (eds.), *Themes from Kaplan*, Oxford University Press: 565-614.
- King, J. C. (2001). *Complex Demonstratives*. MIT Press.
- Kratzer, A. (1986). Conditionals. In A. v. Stechow and D. Wunderlich (eds.), *Handbuch Semantik/Handbook Semantics*, Mouton de Gruyter: 651-656.
- Kratzer, A. (1989). An Investigation of the Lumps of Thought. *Linguistics and Philosophy* 12: 607-653.
- Kratzer, A. (2007). Situations in Natural Language semantics. In E. N. Zalta (ed.), *Stanford Encyclopedia of Philosophy*, CSLI Publications.
- Krifka, M. et al. (1995): An Introduction to Genericity. In G. N. Carlson and F. J. Pelletier (eds.), *The Generic Book*, University Of Chicago Press: 1-124.
- Lewis, D. (1973). *Counterfactuals*. Blackwell.
- Lewis, D. (1975). Adverbs of Quantification. In E. L. Keenan (ed.), *Formal Semantics of Natural Language*, Cambridge University Press: 3–15.
- Loebner, S. (2000). Polarity in Natural Language: Predication, Quantification and Negation in Particular and Characterizing Sentences. *Linguistics and Philosophy* 23: 213-308.
- Nolan, D. (2003). Defending a Possible Worlds Account of Indicative Conditionals. *Philosophical Studies* 116: 215-269.
- Prince, E. F. (1992). The ZPG Letter: Subjects, Definiteness, and Information-Status. In W. Mann and S. Thompson (eds.), *Discourse Description: Diverse Analyses of a Fund Raising Text*, John Benjamins: 295-325.
- Reinhart, T. (1981). Pragmatics and Linguistics: An Analysis of Sentence Topics. *Philosophica* 27: 53-93.
- Reinhart (1997). Quantifier Scope: How Labor is Divided Between QR and Choice Functions. *Linguistics and Philosophy* 20: 335-397.
- Reinhart, Tanya (2006). *Interface Strategies*. MIT Press.
- Roberts, C. (2002). Demonstratives as Definites. In K. van Deemter and R. Kibble (eds.) *Information Sharing: Reference and Presupposition in Language Generation and Interpretation*, CSLI Press: 89-196
- Ross, J. R. (1967). Constraints on Variables in Syntax. PhD thesis, MIT.
- Rooth, M. (1985). Association with Focus. PhD thesis, University of Massachusetts, Amherst.
- Rooth, M. (1992). A Theory of Focus Interpretation. *Natural Language Semantics* 1: 75-116.
- Rooth, M. (1995). Indefinites, Adverbs of Quantification and Focus Semantics. In G. N. Carlson and F. J. Pelletier (eds.), *The Generic Book*, University Of Chicago Press: 265-299.
- Sauerland, U. (1998). The Meaning of Chains. PhD thesis, MIT.
- Sauerland, U. (2004). The Interpretation of Traces. *Natural Language Semantics* 12: 63–127.
- Schwarz, B. (2001). Two Kinds of Long Distance Indefinites. In Proceedings of the Thirteenth Amsterdam Colloquium, pp. 192-197.
- Schwarz, B. (2004). Indefinites in Verb Ellipsis. *Linguistic Inquiry* 35, 244-253.

- Schwarz, F. (2009). Two Types of Definites in Natural Language. PhD thesis, University of Massachusetts, Amherst
- Stalnaker, R. (1975). Indicative Conditionals. *Philosophia*, 5: 269-286.
- Strawson, P. F. (1964). Identifying Reference and Truth Values. *Theoria* 30: 96-118.
- Wiltschko, M. (1999). On the Syntax and Semantics of (Relative) Pronouns and Determiners. *Journal of Comparative Germanic Linguistics* 2: 143-181.
- Winter, Y. (1997). Choice Functions and the Scopal Semantics of Indefinites. *Linguistics and Philosophy* 20: 399-467.
- Wolter, L. K. (2006). That's That: The Semantics and Pragmatics of Demonstrative Noun Phrases. PhD thesis, University of California at Santa Cruz.