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Possessives in Context

Issues in the Semantics of Possessive Constructions

A dissertation submitted in partial satisfaction

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Doctor of Philosophy in Linguistics

by

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Storto, Gianluca 1997. Domande e focus: Aspetti della dinamica dello scambio informazionale ('Questions and focus: Aspects of the dynamics of information exchange', in Italian). Tesi di Laurea. Università di Siena, Italy.

——— (ed.) 1999. *Syntax at Sunset 2*. UCLA Working Papers in Linguistics **3**. Los Angeles, Cal.: Department of Linguistics, UCLA.

——— 2000. On the structure of (so-called) possessive DPs. M.A. Thesis. University of California, Los Angeles.

——— 2000. Indefinite possessives and (non-)specificity. Paper presented at the *Conference on (Preferably) Non-lexical Semantics*. CNRS. Paris, France.

——— 2000. Double genitives aren't (quite) partitives. In Arika Okrent and John Boyle (eds.), *Papers from the Thirty-Sixth Regional Meeting of the Chicago Linguistic Society*, vol. 1, pp. 501–516. Chicago, Ill.: CLS, University of Chicago.

——— 2000. On the structure of indefinite possessives. In Brendan Jackson and Tanya Matthews (eds.), *Proceedings of Semantics and Linguistic Theory X*, pp. 203–220. Ithaca, NY: CLC Publications, Cornell University.

——— 2001. Agreement in Maasai and the syntax of possessive DPs (I). In *Proceedings of the 25th Penn Linguistic Colloquium*, PWPL **8**.1. Philadelphia, Penn.: Department of Linguistics, University of Pennsylvania. To appear.

——— 2001. Agreement in Maasai and the syntax of possessive DPs (II). In William E. Griffin, Kristina Collins, and Brian Reese (eds.), *The Role of Agreement in Natural Language: TLS 5 Proceedings*. Munich: LINCOM Europa. To appear.

——— 2002. On the compositional interpretation of Italian "bare partitives". Paper presented at the *Annual Meeting of the Linguistic Society of America*. San Francisco, California.

——— 2002. Possessives in context. Invited talk at the Department of Linguistics, University of Ottawa. Ottawa, Canada.

——— 2002. Possessives in context. Invited talk at the Center for Language Sciences, University of Rochester. Rochester, New York.

——— 2003. On the status of the partitive determiner in Italian. In Josep Quer, Jan Schroten, Mauro Scorretti, Petra Sleeman, and Els Verheugd (eds.), *Romance Languages and Linguistic Theory 2001 ('Going Romance 2001')*, pp. 317–332. Amsterdam: John Benjamins. To appear.

——— 2003. Possessives in context. In *Proceedings of the UMass Workshop on the Semantics/Syntax of Possessive Constructions*. Amherst, Mass.: GLSA, University of Massachusetts. To appear.

Abstract of the Dissertation

Possessives in Context

Issues in the Semantics of Possessive Constructions

by

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Possessive constructions seem amenable to conveying that a very heterogeneous range of relations hold between two entities (*possessor* and *possessum*). This *interpretive flexibility* has been accounted for by assuming that—excluding cases where the meaning of the *possessive relation* is determined by the semantics of the possessum (*inherent interpretations*)—the meaning of the possessive relation is *entirely* determined by contextual information (*extrinsic interpretations*).

Contra this assumption, it is shown that not all types of possessives license the unrestricted interpretive flexibility predicted by this model: only a *proper* subset of extrinsic interpretations are licensed by all types of possessives. In particular, it is shown that only *definite* and *partitive* possessives license an essentially unrestricted interpretive flexibility. And it is argued that the *restricted* interpretive flexibility that characterizes other types of possessives indicates that the meaning of the possessive relation is specified in the semantic composition of the possessive construction.

Two types of extrinsic interpretations are thus distinguished. It is proposed

that this distinction is determined by a basic ambiguity of the syntactic construction that encodes the possessive relation between possessor and possessum: the meaning of the possessive relation can be specified entirely within this structure (*control interpretations*), or left unspecified (*free interpretations*). In control interpretations the meaning of the possessive is determined independently of its context of use: this meaning constrains the (pragmatic) uses that the possessive can be put to when uttered in context. In free interpretations the meaning of the possessive is determined by contextual information: the possessive relation is encoded by a free relational variable, whose value is contextually determined (unrestricted interpretive flexibility follows).

Finally, the restricted distribution of free interpretations is argued to show that referential pronouns do not constitute the paradigm for the interpretation of free variables in discourse. It is suggested that the distribution of free interpretations follows from the interaction between a general restriction on the assignment of contextually determined values to free variables (modeled on Heim's (1982; 1983a) *Novelty Condition*) and the presuppositional requirements imposed by the (Fregean) semantics of the definite determiner on the predicate that embeds the variable encoding the possessive relation.

CHAPTER 1

The Semantics of Possessives: An Introduction

> *'Twilight Zone'*
> *Now Judge Kevin McCarthy, who is hearing the case without a jury, has to decide who wins this match.*
> *At the heart of the debate is what exactly constitutes "possession".*
> *Referring to Mr. Popov's catch Mr. McCarthy said: "OK, there was some degree of control, and I'm struggling with how much control there must be."*
> *He said that there was a "grey area" between securely catching the ball and not touching it at all.*
> *"We can't get out of (the grey area). We're stuck in it. It's kind of like the Twilight Zone," Mr. McCarthy said.*
>
> BBC News World Edition (`http://news.bbc.co.uk`), November 18, 2002

1.1 Setting the stage

1.1.1 The *interpretive flexibility* of possessives

Consider a possessive construction like the English Saxon genitive DP John's dog. It is quite evident that the meaning conveyed by this DP depends on the meaning of the noun John and the meaning of dog: the actual denotation of John's dog cannot be determined unless the denotations of John and dog are known. It is equally evident that knowing the meaning of John's dog does not amount simply to knowing who John is and what kind of animal a dog is, but to knowing in addition that the individual denoted by John's dog is a dog that stands in a certain particular relation to the individual called John.

Thus, three semantic pieces seem to contribute to the meaning of John's dog: (i) the meaning of John, (ii) the meaning of dog, and (iii) a relation

holding between the two. This conclusion can be generalized to all possessive constructions. The semantics of *possessives* involves three components: (i) the denotation of the *possessor*, (ii) the denotation of the *possessum*, and (iii) the *possessive relation* holding between the two.

Is there anything interesting to be said about the semantics of possessives? Intuitively, out of the three semantic pieces listed above, the possessive relation constitutes the semantic contribution of the possessive construction. Thus, the answer to the first question seems to depend in great part on the answer to the more specific question: is there anything interesting to be said about the semantics of the possessive relation?

A cursory look at the interpretation of possessives raises the suspicion that this might not be the case, and a semantic analysis of possessive constructions is hardly a topic worth a thesis. Consider the possessive DPs in (1). Any two of these DPs are normally interpreted as involving rather different possessive relations.

(1) a. John's car   [ownership]
     b. John's dog   ["ownership"]
     c. John's legs   [inalienable possession]
     d. the table's top   [part-whole]
     e. John's uncle   [uncle-nephew]
     f. John's picture   [ownership/authorship/subject-of]

Indeed, even in the case of e.g. John's car vs. John's dog an argument could be made that the ownership relation holding between John and his car is quite different from the "ownership" relation that holds between John and his dog (most dog owners would not list their pets together with their house and car, but rather list them along with their family members). A similar argument can and probably should be made with respect to the relation holding between John and

one of his limbs (1c): the relation of inalienable possession seems to be essentially different from the relation of ownership, and is instead akin—if not identical—to the part-whole relation that holds between an inanimate entity like a table— which is intuitively not a possible owner—and its top (1d). And, going one step further, one can consider examples like (1e), where the possessive relation is normally taken to express the uncle-nephew relation, a relation that is intuitively quite different from both the ownership and part-whole relations.

An additional fact to be taken in account is that often the same possessive seems to license distinct alternative interpretations involving different possessive relations. The ambiguity of possessives like (1f) has been discussed often in the literature: John's picture can be taken to denote a picture portraying John, or a picture taken by John, or a picture owned by John. Each of these interpretations seems to involve a different possessive relation. But this kind of ambiguity is a more pervasive phenomenon than one could assume just on the basis of examples like (1f). Whereas it is true that few possessives seem to license multiple interpretations when considered outside of a context of use (or within the same context of use), it is quite evident that the same possessive DP can receive very different interpretations when used in different contexts. For example, Williams (1982) points out that, given an appropriate context of use, a DP like John's cat can refer to the cat that John owns, the cat that is sitting on John's lap, the cat that John just stepped on, and so forth.

The upshot of this quick overview is that possessives display a high degree of *interpretive flexibility*: not only does the possessive construction in the abstract seem amenable to expressing very different possessive relations, but even specific instances of possessives seem to license very different interpretations for the possessive relation.

Before proceeding further, I would like to clarify my use of the term

'possessives' (or 'possessive constructions'). Initially, I use this term as a classificatory label that refers to: (i) so-called possessive DPs, and (ii) copular be sentences in which the postcopular material is a predicate containing a possessor. Eventually, the label is intended to become contentful in that I argue that these constructions have a common semantic core: they are all built upon the semantics of a general relation of which the relation of ownership—the most common interpretation ascribed to possessives—is a particular instance.[1]

1.1.2 A semantics for possessives?

The interpretive flexibility of possessives raises a serious challenge for a semantic analysis: the variety of interpretations licensed by possessives seem hard to reduce to a single possessive relation with a well-defined semantic content. A single basic semantics for the possessive relation that can be argued to be involved in e.g. all the examples in (1) must by necessity be quite weak. Pursuing this reasoning to the limit, if the interpretive flexibility of possessives is completely unrestricted, it follows that the possessive relation must be completely devoid of content. But if no real semantic content can be ascribed to the possessive relation, trying to develop a semantic analysis of possessive constructions looks like quite a futile endeavor. Given these premises it is hard to escape the conclusion that the *semantics* of possessives is rather trivial.

Some authors have explicitly defended this position: they more or less implicitly assume that the interpretation of the possessive relation is completely unrestricted, and conclude that the semantics of possessives is—therefore—trivial. For example, Williams (1982) argues that "the relation between the

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[1]Let me point out explicitly that I do *not* consider be sentences in this thesis. Impressionistically, these seem to share the same basic semantic core as the possessive constructions mentioned above. But I prefer to defer a thorough investigation of the semantics (and syntax) of have sentences to future research.

possessive NP [the possessor, G.S.] and the following N′ [the possessum, G.S.] can be any relation at all" (Williams, 1982, p. 283). Which, in effect, amounts to concluding that there is not much interesting to be said about the semantics of possessives in general, and about the possessive relation in particular: possessives entail the existence of a relation holding between possessor and possessum, but do not impose any restriction on the semantics of this relation.[2]

However, many authors have pointed out that this way of dismissing the relevance of a semantic analysis of possessives is too hasty. The interpretation of possessives seems to be subject to *grammatical* constraints: the availability of certain interpretations for possessives depends on the syntactic/semantic properties of the specific possessive construction considered. This leads to the hypothesis that—their interpretive flexibility notwithstanding—possessives constitute a legitimate object of semantic research: a semantic analysis of possessives aims at accounting for the nature of the restrictions imposed on the possessive relation.

In substantiating this hypothesis, most authors have focused their attention on the fact that the syntax/semantics of the possessum noun seems to constrain the interpretation of the possessive relation: depending on the choice of possessum the possessive relation can express only certain relations and not others. Notice that the argument is not simply that the choice of possessum determines restrictions on the interpretation of possessives,[3] but that the choice of possessum seems to

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[2]A similar conclusion is suggested in (Kempson, 1977). Possessives are given as an example of phrases whose meaning is vague, i.e. indeterminate: "In the face of this [interpretive, G.S.] variety, it seems clear that we can say little about the meaning of possessive constructions other than that there must be some relation of association between the 'possessor' and the 'possessed'." (Kempson, 1977, p. 125).

[3]This would still be compatible with the hypothesis that the semantics of the possessive relation is trivial: the attested restrictions on the interpretation of possessives could be argued to follow from the fact that the interpretation of the possessum is incompatible with the content that the speaker wants to convey using a certain possessive.

make unavailable interpretations that in principle *should be compatible with the interpretation of the possessum.*

For example, contrasts like (2) have been discussed often in the literature concerning deverbal nouns (Chomsky, 1970, a.o.).

(2)   a.   John's gift
             √the object that John received / √the object that John gave

       b.   John's purchase
             √the object that John bought / *the object that John sold

The verb from which the noun purchase is derived describes a transaction that takes place between two parties, a buyer and a seller. In this it does not seem to differ from the verb from which the noun gift is derived, another verb that describes a transaction between two parties, a giver and a receiver. Still a difference exists between possessives whose possessum is the noun gift (2a) and possessives whose possessum is the noun purchase (2b). The former license two interpretations, which differ according to which of the two terms of the transaction described by the verb give the possessor is taken to denote. But the latter only license one interpretation: e.g. the possessor in John's purchase *cannot* be taken to denote the seller in the transaction described by the verb purchase.

Contrasts of this sort are accounted for by arguing that the *thematic role structure* (Chomsky, 1970, a.o.) of the two nouns gift and purchase is quite different. The details of the explanation are not really relevant here.[4] What is relevant is that contrasts like (2) are accounted for in terms of grammatical properties of the possessive constructions considered, in particular properties of

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[4]The different interpretation of the two possessives in (2) is reduced to a difference in the thematic structure of the two nouns gift and purchase similar to the one that is traditionally assumed to hold between the verbs give and purchase, which the two nouns can be argued to derive from. Only in the case of give/gift are both parties involved in the transaction represented in the thematic structure as arguments of the noun/verb. In the case of purchase only one of the two parties—the buyer—is selected as an argument by the noun/verb.

the possessum. The fact that John's purchase cannot denote the object that John sold cannot be explained in purely *pragmatic* terms, but must be accounted for in terms of the syntax/semantics of the possessum noun and the way in which different syntactic/semantic properties of the possessum noun contribute to the syntax/semantics of the possessive construction as a whole.

Grammatical restrictions of this sort are not specific to possessives whose possessum is a deverbal noun. Simple but striking contrasts like (3)—adapted from Barker (1995)—provide a strong argument in favor of the conclusion that possessives constitute a legitimate object of semantic analysis.

(3)   a.   the table's leg
       b.   *the leg's table

The two possessive DPs in (3) differ only in that the possessor and possessum are reversed in the two cases. Now, if the hypothesis is correct that constraints on the interpretation of possessives arise only from the incompatibility between the interpretation of possessor and/or possessum and the content that the speaker wants to convey using a certain possessive, it may be expected that both DPs in (3) should be either well-formed or ill-formed depending on whether there is some possessive relation that can be taken to hold between the possessor and the possessum.

The interesting fact is that (3b) cannot be taken to denote the table of which the relevant leg is a part, even if there is no apparent reason that prevents the possessive relation from expressing the converse of the part-whole relation that is expressed by (3a).[5] If (3a) can express the part-whole relation because this is a

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[5]Let me qualify this statement. The interpretation mentioned in the text is probably available if the DP in (3b) is used in an appropriately formulated context, in which the information is provided that e.g. tables are "identified" in terms of one their four legs, for example the leg on which the manufacturer's tag is applied. The relevant observation is that the DP in (3a) allows for the parallel interpretation pointed out in the text even when uttered "out of the blue" in a context in which information of this kind is not explicitly provided.

relation that can hold between tables and their legs, why is it that the converse relation—which obviously holds of the same entities—cannot be expressed by (3b)? World knowledge alone does not seem sufficient to differentiate the relation holding between an object and its constitutive parts from the relation holding between parts and the object that they constitute: grammatical knowledge of some kind must be resorted to in order to account for the contrast in (3).[6]

Once the existence of grammatical constraints on the interpretation of possessive constructions is acknowledged, not only does the task of developing a semantic analysis become interesting, but it becomes clear that such an analysis must accomplish a delicate "balancing act": accounting for both the attested interpretive flexibility of possessives and the fact that this interpretive flexibility is restricted to range within certain boundaries. The existence of interpretive constraints argues that possessive constructions have a non-trivial semantics: possessives have one or more *meanings* constraining the use that they can be put to. But it is an empirical question to determine how many such meanings should be postulated in order to account for the variety of *interpretations* that possessives seem to license.

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[6]The nature of this grammatical knowledge is addressed explicitly by Barker and Dowty (1993b). Following the theory of verbal argument selection proposed by Dowty (1991), Barker and Dowty propose that argument selection in *ultra-nominal* (i.e. non-deverbal) relational nouns depends on comparing argument positions according to how many *thematic proto-roles* the noun entails for each argument. In particular, they suggest that the *non-verbal* proto-roles that are relevant for nominal argument selection are what they call *Proto-Part* and *Proto-Whole* and that a grammatical principle (the *Nominal Argument Selection Principle*) requires that "the argument for which the predicate denoted by the noun entails the greatest number of Proto-Whole properties will be lexicalized as the object of the preposition of or as the prenominal possessor; the argument having the greatest number of Proto-Part entailments will be lexicalized as the head argument" (Barker and Dowty, 1993b, pp. 55–56). Within Dowty's (1991) theory of argument selection, it is predicted that languages lexicalize non-deverbal relational nouns like leg_{rel} (meaning 'the leg that is part of x') and not relational nouns like table_{rel} (meaning 'the table that x is part of'). For some discussion of why the Nominal Argument Selection Principle should be part of the grammar of natural languages I refer the reader to (Barker and Dowty, 1993a, §5), an unpublished draft of an expanded version of (Barker and Dowty, 1993b) that can be downloaded from David Dowty's webpage at `http://www.ling.ohio-state.edu/~dowty`.

1.2 Overview of the thesis

1.2.1 Issues

Much of this thesis can be seen as an attempt to address explicitly the empirical question pointed out above, i.e. as an attempt to reign in the interpretive flexibility of possessives. In particular, the class of so-called *extrinsic interpretations* constitutes the main target of empirical investigation. And Italian constitutes the main source of data.

Extrinsic interpretations have been distinguished in the literature (Partee, 1983/1997; Barker, 1995) from *inherent interpretations* on the basis of the following intuition. In certain possessive constructions—e.g. John's uncle—the interpretation of the possessive relation seems to be contributed by the lexical semantics of the possessum noun. But such inherent interpretations are not the general case: in most instances of possessives the interpretation of the possessive relation does not seem to be contributed by either the possessum or the possessor. In such cases—it has been argued—the interpretation of the possessive relation is determined by the context of use of the possessive construction.

Extrinsic interpretations have not been subject to thorough empirical scrutiny in the literature. This is somewhat surprising. Extrinsic interpretations are assumed to be the main source of the interpretive flexibility of possessives—the interpretation of the possessive relation being determined by the context of use—but little attention has been paid to the nature of this process of contextual determination of the interpretation of the possessive relation and to the conditions under which it takes place.

This oversight is much less surprising if the consequences of the characterization of extrinsic interpretations that is (often implicitly) assumed throughout the literature are taken into account. The assumption that seems to be commonplace

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in the literature is that the interpretation of the possessive relation in extrinsic possessives is determined *entirely* by their context of use. That is, it is assumed that the semantics of the possessive relation is left completely unspecified in the semantic composition of an extrinsic possessive, and that the meaning of the possessive construction can be calculated only when a context of use specifies the semantics of the possessive relation.

Within this setting there is not much interesting to be said about extrinsic possessives: the availability of a specific instance of extrinsic interpretations is simply a matter of the context determining a suitable interpretation for the possessive relation. And the apparently parallel interpretive properties of referential pronouns suggest an explicit characterization of the role played by the context of use in the interpretation of extrinsic possessives: the possessive relation is encoded as a free relational variable, whose value is specified by a contextually determined assignment of value. This is explicitly proposed by Barker (1995).

> More precisely, I will assume that the extrinsic possession relation is vague in the same way that the use of a personal pronoun can be vague. [...] So, just as an expression involving a free pronoun cannot be evaluated against a model until there is some assignment of variables to entities, an expression involving a possessive cannot be evaluated until there is some assignment of the possession relation to a particular extension. Thus in the fragment presented in section 2.7, the extrinsic possession relation π is treated as a variable over two-place relations whose value is fixed by the context of use. (Barker, 1995, p.74–75)

This thesis argues that the derivation of extrinsic interpretations is not such a simple issue. Unless further qualifications are added, it is predicted that—

given an appropriate context of use—*all types of possessive constructions* will license *any interpretation of the possessive relation*. This prediction—which has not been explicitly discussed before—is easily proven incorrect: (i) not all types of possessive constructions license the unrestricted interpretive flexibility that is predicted by the model proposed a.o. by Barker, indeed (ii) only a *proper* subset of extrinsic interpretations are licensed by all types of possessives.

In particular, it is shown that only *definite* and *partitive* possessives license an essentially unrestricted interpretive flexibility. And it is argued that the *restricted* interpretive flexibility that characterizes other types of possessive constructions indicates that the semantics of the possessive relation is, in most instances of extrinsic possessives, specified in the semantic composition of the possessive construction. The meaning of the whole possessive construction is determined independently of its context of use, and this meaning constrains the (pragmatic) uses that the construction can be put to when uttered in a given context.

1.2.2 Results and implications

One first result achieved in this thesis, thus, is demonstrating that extrinsic interpretations for possessives do not constitute a homogeneous class. Two types of extrinsic interpretations can be distinguished, which—it is argued—correspond to distinct meanings for possessive constructions. And it is proposed that the distinction between the two types of interpretations is determined by a basic ambiguity of the syntactic construction that encodes the possessive relation between possessor and possessum: the meaning of the possessive relation can be specified entirely within this structure, or left completely unspecified.

In particular, it is suggested that the possessive relation is introduced in the semantic composition by a syntactic head—a preposition—whose meaning can be either (i) a constant denoting a general relation called CONTROL or (ii) a relational

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variable that remains free in the semantic composition of the possessive.

In the first case the semantics of the possessive relation is determined entirely within the possessive construction, whose meaning can be calculated independently of a context of use. The meaning of a possessive construction under a *control interpretation* is not context-dependent in any formal sense, and the role played by contextual information in further specifying the nature of the relation expressed by the possessive is strictly pragmatic: the general meaning of CONTROL is used in a particular context to express some more specific relation.

The semantics of the CONTROL relation determines the restrictions that seem to characterize the interpretive flexibility of possessives in the general case: possessives can be felicitously used only in contexts that make relations salient that are compatible with the general meaning of CONTROL. For example, it is argued that the "natural" interpretation according to which possessives express the relation of ownership is an instance of control interpretations: the relation of ownership can be taken to be a specification of CONTROL.

This treatment of the relation of ownership—and of the whole subset of extrinsic interpretations that belong to the class of control interpretations—is rather different from the analysis proposed a.o. by Barker (1995). According to Barker, all extrinsic interpretations—and ownership in particular—are *contextual*, in that the meaning of the possessive relation is determined by the context of use of the possessive construction. In this thesis it is maintained that an important subset of extrinsic interpretations are actually *lexical*, in that the meaning of the possessive relation is determined entirely within the possessive construction.

Indeed, it is proposed that CONTROL is the basic semantics of possession, this relation being the lexical meaning of the preposition in the syntactic construction that encodes possession both within possessive DPs and in copular be sentences. All possessive constructions are expected to license control interpretations,

which provides a theory-internal argument in favor of the conclusion that some constructions that are labeled as possessives in the literature are instead instances of some different syntactic/semantic construction (see the discussion of English DPs of the form the/some N of DP in chapter 6).

The alternative meaning for the possessive construction leaves the semantics of the possessive relation completely unspecified: the possessive relation is encoded by a free variable, whose value must be determined by the context of use of the possessive. The meaning of a possessive construction under a *free interpretation* is context-dependent: the meaning of the whole possessive can be calculated only when a contextually determined assignment of value to the free variable in the possessive construction provides the meaning of the possessive relation.

The gist of Barker's analysis of extrinsic interpretations is thus maintained only for the restricted class of free interpretations. And, similarly to Barker's proposal, it is predicted that possessives that license free interpretations display an unrestricted interpretive flexibility: given an appropriate context, any relation can be expressed by these possessive constructions.

Still, it is argued that the observation that free interpretations are available only with definite and partitive possessives requires that the formal system of semantic interpretation differentiate the relational variable in possessive constructions from the case of referential pronouns. Relational variables can receive a contextually provided value only when they are embedded within definite or partitive DPs. Referential pronouns, on the other hand, can (and arguably must) always be interpreted as denoting a contextually provided individual, irrespective of the nature of the phrase that embeds them.

Extending the analysis originally proposed by Heim (1982, 1983a) for the interpretation of indefinites, it is argued that the unavailability of free interpretations should be reduced to a reformulated version of Heim's Novelty

Condition, which prevents the relational variable in most possessives from denoting a familiar (i.e. contextually salient) relation. And the availability of free interpretations with definite and partitive possessives is accounted for in terms of the [+definite] specification of the DP within which the possessive relation is established, which obtains the result that the free variable encoding the possessive relation is not subject to the provisions of the Novelty Condition.

Differently from Heim's original proposal, however, it is proposed that the effects of the [+definite] specification of a DP on the interpretation of free variables are to be reduced to the Fregean characterization of the semantics of definiteness. It is argued that the anaphoric interpretation of definite DPs, which Heim's Familiarity was intended to model, follows from the requirement that the maximality presupposition triggered by the definite determiner is satisfied in the discourse model. And it is suggested that satisfaction of this requirement obtains the result that variables of which the reformulated Novelty Condition would otherwise hold can denote familiar relations.

Within this system, the different interpretive properties of free variables in possessives vs. referential pronouns can be reduced to the [+definite] specification of the latter. Indeed, it is speculated that pronouns do not constitute the paradigm for the interpretation of free variables in discourse, but a special case: the case of free variables that are always embedded within a [+definite] DP. And it is suggested that the Novelty Condition that holds of the relational variable in most possessives is a general interpretive principle that applies to free variables of all semantic types, a principle that can be overridden by the requirements imposed by the presuppositional semantics of the definite determiner.

Finally, arguments are presented that an analysis of the restricted availability of free interpretations for possessives that reduces their distribution to *semantic* requirements—the reformulated Novelty Condition and the presuppositional

semantics of the definite determiner—is superior to any attempt to reduce the distribution of free interpretations to differences in the structural properties of specific possessive constructions. The analysis proposed for the licensing of free interpretations is shown to be rather independent from the syntax adopted for Italian possessives, and it is argued that some version of this semantic proposal should be maintained even within a more ambitious analysis of the interpretation of possessive constructions on a wider crosslinguistic basis.

Overall, the investigation reported in this thesis characterizes the interpretive flexibility of possessive constructions as a rather "ordinary" linguistic phenomenon. Part of this flexibility is to be ascribed to pragmatics: like other expressions that are uncontroversially assumed to be semantically contentful, possessives can be used to express more than their actual meaning, within the limits imposed by their core semantics. The remainder of this flexibility is to be ascribed to another phenomenon attested in language: the possibility of "shifting the burden" onto the context of use to provide the meaning of a syntactic constituent through the determination of an assignment of value to a free variable.

1.2.3   Outline of the thesis

The structure of the argumentation is the following. The main empirical observations are laid out in **chapter 2**. It is first shown that the predictions of the "classic" assumptions concerning extrinsic interpretations are not substantiated in a variety of languages. Then, focussing on data from Italian, the two classes of control and free interpretations are distinguished, both in terms of their semantic restrictiveness and in terms of their distribution across possessive constructions.

Chapter 3 introduces and (partially) motivates the basic syntax of (Italian) possessive constructions assumed in this work. It is proposed that a single structure—a "possessive" PP containing the possessor—encodes possession both

in the DP-internal and in the sentential case. Still, the two differ in the nature of the category projected by the possessum that combines with this PP: a full DP in the sentential case, a smaller category (NP) in the DP-internal case.

The main contribution of **chapter 4** is arguing that the two types of interpretations constitute distinct meanings for the possessive construction, and spelling out the semantic derivation of control interpretations. A first attempt is made towards an account for the derivation of free interpretations, but the result is rejected as inadequate. The formal system of interpretation adopted in this thesis is spelled out in this chapter as well.

Chapter 5 is entirely concerned with the derivation of free interpretations, and in particular the problem of accounting for their restricted availability. Departing from an obvious parallelism between the discourse-referential properties of definite vs. indefinite DPs and the availability of free interpretations with definite vs. indefinite possessives, the analysis is built in a stepwise fashion by expanding and generalizing Heim's (1982; 1983a) Novelty Condition. The outcome is a formal system bearing little resemblance to Heim's Familiarity/Novelty theory of (in)definiteness: the restricted distribution of free interpretations results from the interaction of a general interpretive principle—the Generalized Novelty Condition—with the presuppositional semantics of the definite determiner.

The analysis developed for Italian is applied to English possessives in **chapter 6**. Not only is it shown that the proposal *can* account for the English data, but it is furthermore argued that the gist of the analysis proposed for Italian *must* be maintained even within analyses that attempt to reduce some of the interpretive differences displayed by different types of English possessives to structural properties of these constructions.

Finally, **chapter 7** summarizes the empirical observations and the components of the analysis, and provides a brief assessment of the results achieved.

CHAPTER 2

The Interpretation(s) of Possessives

2.1 *Types* of interpretations

Our point of departure is the observation made in chapter 1 (§1.1.2) that the possessive relation cannot be taken to express any kind of relation whatsoever: there are constraints on the interpretation of possessives. Minimally, a semantic analysis of these constructions should be able to account both for the interpretive flexibility of possessives and for the existence and the nature of boundaries within which this interpretive flexibility can range.

It should be clear from the outset that the research task does not (and should not) simply consist in defining the nature of the various interpretations that are available for the possessive relation in different possessive constructions. An adequate analysis of the semantics of possessives should, in addition, provide some clues—or, even better, an explanation—as to why the class of syntactic constructions that we label as 'possessive' can encode all these different interpretations. In other words, some characterization of the "core semantics" of the class of possessive constructions should be provided.

This additional requirement rules as inadequate those traditional approaches to the semantics of possessives that limit themselves to providing detailed taxonomies of the kinds of semantic relations that the possessive relation can be taken to express across the various types of possessive constructions and/or of the contexts in which these can be used.

Indeed, as argued by Taylor (1996), approaches of this kind[1] are unsatisfactory in that, while providing a list of interpretations that possessives can have, they do not account in any way for why exactly these interpretations are available: "We are left with the impression that the possessive construction is not so much multiply polysemous (in that it expresses a range of different semantic relations), but that it is multiply homonymous (in that the different semantic relations are not related to each other)" (Taylor, 1996, p.7).

Furthermore, as soon as some basic semantic polysemy is postulated to exist in possessive constructions, not only is it desirable to argue that this polysemy is not (entirely) accidental, but the problem even arises to account for the fact that in general possessives are not felt to be multiply ambiguous. For example, with the exception of (f) the possessives in (1) seem to have only one salient interpretation:

(1)   a.   John's car   [ownership]

        b.   John's dog   ["ownership"]

        c.   John's legs   [inalienable possession]

        d.   the table's top   [part-whole]

        e.   John's uncle   [uncle-nephew]

        f.   John's picture   [ownership/authorship/subject-of]

Obviously, these concerns do not seem to arise for approaches that propose that all possible interpretations for possessives are derived from a single basic meaning that is encoded in the syntactic/semantic structure of these constructions. Still, approaches of this second kind are faced with a different problem: that of identifying the correct "grain" for the single meaning they attribute to possessive constructions. This meaning should be rather weak, on

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[1]Taylor gives as examples of these approaches the treatment of possessives in grammars of English like (Poutsma, 1914–16) and (Quirk et al., 1985).

one hand, in order to account for the interpretive flexibility that possessives lend themselves to. But at the same time it should be strong enough to derive the empirically attested boundaries within which this flexibility obtains.

However, even considering only the examples in (1) it seems hard to avoid the conclusion that a semantic characterization for the possessive relation that can be argued to hold in general for all instances of possessive constructions will be too devoid of content to determine any real boundaries to their interpretive flexibility.[2] This casts some doubts on the feasibility of an analysis that rules out the possibility that possessive constructions are subject to a certain degree of polysemy.

I thus pursue a weaker approach in this work, allowing for the possibility that some basic polysemy characterizes possessive constructions.[3] But at the same time I try to keep in mind the concerns expressed by Taylor by postulating only a *minimal* amount of polysemy.

In principle, the smaller the degree of polysemy proposed by the theory, the easier the task of addressing Taylor's concerns. This leads me to adopt the following methodological principle: posit a distinction between different *types* of interpretations (= meanings) only when this assumption is strictly necessary; and reduce the variety of specific interpretations that are licensed by possessive constructions to this small set of alternative meanings.

What makes the postulation of a distinction between two types of interpretations for possessives necessary? On the one hand there is the observation

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[2]Analyses like those in (Kempson, 1977; Williams, 1981, 1982) constitute a case in point: these authors suggest that the semantics of possessives merely states the existence of a relation holding between possessor and possessum.

[3]A radically different solution is pursued by Taylor (1996). Following the proposal in (Langacker, 1995), Taylor claims that an adequate account of the semantics of possessives can be given only in terms of their *function*.

that not all the attested interpretations for the possessive relation seem—so to speak—to be born equal: some interpretations seem to depend closely on the semantics of the possessor and (especially) the possessum between which the possessive relation holds; other interpretations seem to be available across the board, irrespective of the choice of possessor and possessum; other interpretations seem to be available only in specific contexts of use; and so forth.

But even if these intuitive differences seem to support the conclusion that the interpretive flexibility of possessives should be accounted for in terms of the existence of a handful of distinct types of interpretations, I still think that they do not provide by themselves sufficient evidence that this conclusion is necessary. Stronger evidence for this conclusion is provided by the different *distributional properties* that intuitively distinct types of interpretations display. It can be observed that certain interpretations are not available for possessive constructions that at the same time license other interpretations.

One obvious way to account for the differences in distributional properties that hold between two given interpretations is to link these differences to the interaction between the syntax/semantics of the possessive constructions which license only one of the two interpretations and some syntactic/semantic properties that distinguish the two interpretations. The observation that different interpretations have different distributional properties suggests the conclusion that these interpretations have a different syntax/semantics.

Thus I take the existence of distributional differences between interpretations to provide a strong argument for the conclusion that possessive constructions are polysemous. Of course, not every single interpretation constitutes a distinct meaning associated with possessive constructions: multiple interpretations display the same distributional properties and can in principle be reduced to a single type, i.e. to a single meaning for possessives. The research task is

that of identifying the different types of interpretations and accounting for their distributional and interpretive properties.

Methodologically, the above considerations lead to taking distributional evidence as a relevant factor in determining whether two different interpretations that possessives can receive constitute separate meanings or just different specifications of the same meaning.[4]

2.2 *Inherent* vs. *extrinsic* interpretations

Let me begin by reviewing a well-known distinction between two types of interpretations that has been discussed in various places in the literature. Intuitively, the relation that a possessive DP is taken to express can be either contributed by the lexical semantics of the possessum or by contextual information. This intuition has led various authors to postulate the existence of a formal distinction between interpretations of these two types. And the postulation of such a formal distinction seems to be supported by distributional evidence: certain possessive constructions apparently license only interpretations belonging to one of the two types.

Consider first a possessive DP like (1e): John's uncle, under its most salient interpretation, refers to an individual who stands in the uncle-nephew relation to the individual that John refers to. That is, under this interpretation of John's uncle the possessive relation expresses the uncle-nephew relation. Then consider a possessive DP like (1a): John's car, under its most salient interpretation,

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[4]Of course, there is no guarantee that two distinct meanings for possessive constructions necessarily correlate with distributional differences. Theoretical considerations can lead to the conclusion that two meanings should be distinguished even if they are distributionally indistinguishable. Still, distributional evidence is the obvious methodology to resort to in order to get an initial basic taxonomy of the interpretations licensed by possessive constructions, which is the first step required in order to build a theory that can lead the further development of the investigation.

refers to a vehicle that is owned by the individual referred to by John. Under this interpretation of John's car the possessive relation expresses the relation of ownership.

Partee (1983/1997) points out that possessives of the first kind are conceptually different from those of the second kind in that the interpretation of the possessive relation in possessives of the first kind *depends* on the semantics of the possessum. For an individual to be described as an uncle there must be another individual that stands in the uncle-nephew relation to the first individual. That is, the existence of the second individual is inherent to the meaning of noun uncle: this suggests the hypothesis that the noun uncle denotes a *relation* between individuals, and it is this relation that is expressed by the possessive relation in John's uncle. Partee proposes that in the semantic composition of possessives of this kind, the interpretation of the possessive relation is contributed directly by the semantics of the possessum noun.

This is not the case in John's car: nothing in the meaning of car requires the existence of an individual that stands in the relation of ownership to the object to which this description applies. Differently from uncle, the noun car does not denote a relation between individuals. Thus the relation of ownership expressed by the possessive relation in John's car is not contributed by the semantics of the possessum noun, but must have a different source in the semantic composition. Partee suggests that for possessives of this second kind the interpretation of the possessive relation is provided by the context of use.

The formal distinction between these two types of possessives is developed in detail in (Barker, 1995). Barker argues (following Löbner, 1985, a.o.) that common nouns do not all denote one-place predicates but can have a richer semantic structure as well. In particular, whereas nouns like car denote a set of entities, nouns like uncle denote a relation between pairs of entities. Barker calls

the former *monadic* nouns, and the latter *relational* nouns.

Barker exploits the distinction between monadic and relational nouns to characterize the difference between the two types of possessives discussed by Partee. In the first type of possessives the possessum is a relational noun and the possessive relation expresses the relation denoted by the possessum. I will call the interpretation of possessives of this kind *inherent* (4).[5] In the second type of possessives the possessum is a monadic noun and the possessive relation is contextually determined. I will call the interpretation of possessives of this kind *extrinsic* (5).[6]

According to Barker, relational nouns include derived nominals (4a), kinship terms (4b), body-part terms (4c), nouns denoting entities that stand in a generalized part/whole relation with respect to another entity (4d), and nouns denoting other types of relations (4e):

(4)   *Inherent possessives*

    a.   John's purchase

    b.   John's child

    c.   John's nose

    d.   the table's top

    e.   the woman's pen pal

(5)   *Extrinsic possessives*

    a.   John's cat

    b.   John's yogurt

    c.   John's firetruck

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[5]Barker (1995) calls these *lexical* interpretations. For reasons that will become clear later—in chapter 4 (§4.3.2) it is argued that a a subclass of extrinsic interpretations are still lexical and not "contextual" or "pragmatic"—I choose to adopt the terminology proposed by Partee (1983/1997).

[6]This is the terminology adopted by Barker (1995). Partee (1983/1997) calls these *free* interpretations, a term that I adopt in §4.3 to refer to a subset of this class of interpretations.

2.2.1 The roles of the lexicon and of the context of use

The different role played by the possessum in inherent vs. extrinsic possessives is evident when considering some differences in the use of possessives of the two kinds that are pointed out in (Barker, 1993): whereas inherent possessives with a definite possessor can always be used felicitously to introduce discourse-novel entities, the same does not hold for extrinsic possessives with a definite possessor. Witness the examples in (6):

(6) A man came into the pub.
- a. **His daughter** was waiting at the door.
- b. **His car** was idling outside.
- c. ??**His giraffe** had to wait outside.
- d. #**His hurricane** was about to hit town.

All the possessives in (6) are definite—e.g. they are not licensed in the post-copular position of existential sentences—and as such they should not be felicitous when used to refer to discourse-novel entities (Heim, 1982). But this is clearly not the case for the inherent possessive in (6a), which can be used to introduce an individual—the man's daughter—whose existence was not known at a previous stage in the discourse.

Barker (1993) argues that this use of possessives is licensed when: (i) the possessor is discourse-familiar, and (ii) the possessive relation expresses a discourse-salient relation. In all the possessives in (6) the possessor is discourse-familiar, so the differences in the acceptability of the various examples must be due to the different salience of the relation expressed by the possessive relation. The felicitousness of (6a) follows from the fact that the relation expressed by the possessive relation in inherent possessives is contributed and made salient by the semantics of the possessum noun.

On the other hand, notice the different acceptability of the examples of extrinsic possessives in (6b–d). The felicitousness of (6b) can be explained if—as claimed by Barker (1995)[7]—the relation of ownership is in general quite salient in discourse. According to Barker the fact that extrinsic possessives can in general be interpreted as expressing the relation of ownership follows from the fact that this relation is salient even in very empty contexts of use.

Indeed, as soon as one considers extrinsic possessives that—because of world knowledge—make it less likely to take the possessive relation as expressing the relation of ownership, one notices a sharp decrease in the acceptability of these possessive when used to introduce discourse-novel entities. Witness the relative unacceptability of his giraffe in (6c), and the ill-formedness of (6d), which contains a possessive like his hurricane that seems to rule out altogether the possibility for the possessive relation to express the relation of ownership.

If Barker's (1993) account of this "entity-introducing" use of definite possessives is correct, the data in (6) provide additional arguments for the conclusion that the possessum noun plays a crucial role in determining the interpretation of the possessive relation in inherent possessives. The relation expressed by the possessive is salient in all contexts because this relation is introduced by the semantics of the possessum noun. In the case of extrinsic possessives, conversely, the possessum noun plays—at most—an auxiliary role, making it more or less likely for the possessive to be taken to express a given contextually salient relation. The interpretation of the possessive relation in extrinsic possessives is provided

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[7]Barker (1993) does not explicitly discuss cases like (6b) and, using examples like (6c), argues that extrinsic possessives are not felicitous when used to introduce discourse-novel entities. The well-formedness of (6b) shows that this is not necessarily the case. Similar objections to Barker's proposal are raised in (Vikner and Jensen, 2002).

by their context of use, rather than by the semantics of the possessum.[8,9]

2.2.2 Distributional facts

These differences in the "source" for the interpretation of the possessive relation, and in particular in the role played by the semantics of the possessum, provide an intuitive argument for differentiating between inherent and extrinsic interpretations. The question that needs to be asked at this point is whether there is evidence to back up this intuitive distinction and conclude that inherent and extrinsic interpretations constitute distinct *meanings* for possessive constructions.

Inherent interpretations, being dependent on the lexical choice of possessum, have a more restricted distribution than extrinsic interpretations. The latter are in principle available with all types of possessum nouns, and indeed it can be argued that possessives like John's mother or John's child can have both inherent and extrinsic interpretations, the latter being derived by reducing the relational

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[8]As a matter of fact, I am not sure that Barker's argument is completely correct. Indeed, the well-formedness of (6a) seems to require more than contextual salience of the possessive relation. Possessives like his purchase or his pen pal are much less felicitous in a context like (6). This is surprising: according to Barker (1995) both DPs are instances of inherent possessives (4), in which the semantics of the possessum noun should make the relation that they express salient. What seems to be relevant in (6) is rather whether, for each possible possessor, a (single) individual satisfying the descriptive content of the possessive DP is generally assumed to exist. This suggests that *accommodation* (cf. Lewis, 1979) of the discourse referent corresponding to the denotation of the possessive DP plays a role in the phenomena discussed by Barker (1993). Still, it is likely that the relative salience of a possessive relation has an effect on the ease and plausibility of this process of accommodation: knowing what possessive relation is at stake seems to be a prerequisite for assessing whether this relation is or can be taken to be *total*—relating at least a single individual to each possessor—and (possibly) *functional*—relating at most a single individual to each possessor.

[9]The strength of Barker's argument is diminished somewhat by the observation that violations of Heim's Familiarity Condition seem very widespread; e.g. definite DPs with a relative clause—the giraffe that belonged to the man—do not seem as ill-formed in the context of (6) as Heim would expect them to be. Indeed, the case can be made that Heim's Familiarity Condition is not a proper characterization of the semantics of definite DPs. See chapter 5 for discussion.

denotation of mother or child to a monadic one.[10] Inherent interpretations, instead, are available only when a relational noun is used as possessum.

But this type of distributional difference does not provide a strong argument for the conclusion that the two interpretations constitute distinct meanings. The dependence of inherent interpretations on the lexical choice of possessum is compatible with the assumption that both types of interpretations are instances of the same basic meaning for the possessive relation. It could be maintained that a single syntactic/semantic structure characterizes possessives under both inherent and extrinsic interpretations, a structure which determines a basic meaning which underlies both types of interpretations. And the differences between the two cases could be reduced to the fact that further specification of this basic meaning is in one case provided by the lexical choice of possessum and in the other by contextual information.

More compelling evidence for the conclusion that inherent and extrinsic interpretations constitute distinct meanings that can be associated with possessive constructions is provided by the observation that only one of the two types of interpretations is available in certain possessive constructions. The classic argument presented in the literature is constituted by the different availability of the two types of interpretations in possessive be sentences like those in (7) (Stockwell et al., 1973; Partee, 1983/1997).

Before discussing these data, however, let me add one word of caution: the classic paradigm in (7) is incomplete and—as a matter of fact—rather misleading.

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[10]This process can be construed as the existential closure of the possessor argument position of the relation that constitutes the basic denotation of a relational noun. In the case of child the result of this process has probably been lexicalized if, as Barker (1995) claims, only the monadic denotation of child requires that the individual denoted is young (e.g. John's child under an extrinsic interpretation can only refer to a young individual that John is taking care of, whereas under the inherent interpretation it can refer to the 35-year-old offspring of the soon-to-be-retired John). Not all the speakers I consulted agree that this is the case, however.

I present it here both because it is commonly used in the literature to argue for the conclusion that inherent and extrinsic interpretations constitute two distinct meanings for possessive constructions and because this conclusion can anyway be reached on the basis of better examples whose discussion—however—requires a greater amount of detail than it is advisable to introduce at this point.[11]

(7)   a.   This car is **John's**.
        b.   #This uncle is **John's**.

The sentence in (7a) can be used to state that a relation of ownership holds between John and the vehicle pointed at. This indicates that in possessive **be** sentences it is possible to assign an extrinsic interpretation to the possessive relation established between the pre-copular possessum and the post-copular possessor. Conversely, the sentence in (7b) cannot be used to state that the individual pointed at stands in the uncle-nephew relation to the individual called John. In possessive **be** sentences it is not possible to assign an inherent interpretation to the possessive relation established between the pre-copular possessum and the post-copular possessor.

The differences in the availability of inherent vs. extrinsic interpretations in possessive **be** sentences has been taken (Partee, 1983/1997) to provide a sufficient argument for the conclusion that inherent and extrinsic interpretations constitute two distinct meanings associated to possessives. The idea is that the syntax of these constructions "interferes" with the syntactic/semantic encoding of inherent

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[11]Some of these examples are discussed in §2.4.2. The issues concerning the English data in (7) are addressed in chapter 6. As a preview for the reader, let me point out that the ill-formedness of (7b) is to be traced to the properties of the subject of the **be** sentence, and not to the postcopular material, which can be argued to be the elliptical version of a full possessive DP within which the possessive relation is established.

interpretations,[12] accounting for the unavailability of the latter in sentences like (7b). And the fact that the syntax of possessive be sentences does not affect the availability of extrinsic interpretations shows that their syntax/semantics differs from that of inherent interpretations.

2.2.3 Summarizing

Following intuitions about the differences in the semantics of the possessum noun and its role in the derivation of inherent vs. extrinsic interpretations, it has been proposed in the literature (Partee, 1983/1997; Barker, 1995, a.o.) that these two types of interpretations are encoded differently in the syntactic/semantic structure of possessives. Whereas the structure of possessive DPs like John's child is ambiguous—i.e. compatible with the syntax/semantics that encodes both inherent and extrinsic interpretations—the structure of predicative possessive constructions like This uncle is John's is not: the latter constructions are not compatible with the syntactic/semantic encoding of inherent interpretations.

So far so good. Of course a full account of the semantics of possessives

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[12]Informally, the semantic encoding of inherent interpretations requires that possessor and possessum be combined within the same DP and not across a copula. A similar restriction seems to characterize the relation holding between a noun and its PP arguments. I illustrate this by using data from Italian possessive be sentences, where it can be argued that the postcopular material is a "bare" possessor and not an elliptical possessive DP (see §2.4.2).

i.   il   maestro di Gianni.
    the teacher of Gianni

ii. # Questo maestro è di Gianni.
    this   teacher is of Gianni

iii. il   professore di fisica
    the professor of physics

iv. # Questo professore è di fisica.
    this   professor is of physics

The similarity between the case of inherent possessives and the case of DPs in which a PP is an argument of the head noun suggests the hypothesis that the possessor is a syntactic argument of the possessum in inherent possessives.

along these lines has to provide an explicit characterization of the two different structural encodings of inherent vs. extrinsic interpretations, and account for their distributional properties in terms of their different syntactic/semantic structure. This task, however, has been accomplished only in part in the existing literature: while various authors have dealt in detail with the properties of inherent interpretations, much of the syntax/semantics of extrinsic interpretations has been left implicit.

In particular, no author in the literature—to my knowledge—has addressed in detail the problem of how extrinsic interpretations are derived. All authors seem to agree on the following two general points: (i) in the derivation of extrinsic interpretations the syntactic/semantic structure of possessive constructions must leave the nature of the possessive relation underspecified; (ii) contextual information plays a crucial role in specifying the nature of the relation expressed by the possessive relation. But no explicit justification or elaboration of either of these general conclusions has been provided.

What does it mean for the relation between possessor and possessum to be left underspecified in the syntactic/semantic structure of the possessive construction? And how does the context contribute to the specification of the nature of this relation? In the remainder of this chapter I turn my attention to some facts that show that providing an answer to these questions is not as straightforward as has been implicitly assumed in the literature.

2.3   Two types of extrinsic interpretations?

The assumption that seems to be implicit in most analyses of the semantics of extrinsic interpretations is the following: the specific interpretation that is derived for a possessive depends entirely on the *contextual salience* of a particular relation

in a given context of use.[13]

I think that this assumption is problematic. Unless further qualifications are added, the conclusion is derived that—given a context of use—(i) *any specific interpretation of the possessive relation* will be either available or unavailable (ii) *irrespective of the nature of the possessive constructions considered.* But neither of the two prongs of this conclusion seems to be substantiated. There seem to exist differences among contextually salient relations that possessives should in principle be capable of expressing: some but not all instances of extrinsic interpretations seem to be sensitive to semantic properties of the possessive construction considered.

2.3.1 Extrinsic interpretations are not always available

In (Storto, 2000a) I used examples like (8) to argue that contextual salience of an appropriate relation is not sufficient to license a certain extrinsic interpretation for possessives.

The possessive DP John's dogs in (8a) can be interpreted as denoting the set of dogs that attacked John that is introduced in the context-setting sentence. That is, the possessive relation in John's dogs can be taken to express the relation according to which the possessum is the attacker of the possessor. Let's call this relation ATTACK. The availability of this interpretation for John's dogs in (8a) shows that the relation ATTACK is salient in the context set up in (8).

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[13]One caveat: by 'contextual salience' of a relation I do not mean the requirement that an explicit "antecedent" that expresses the relevant relation exist in the context of use of a possessive. I assume that a relation is contextually salient if the context of use *supports* the interpretation of the possessive construction as expressing the relevant relation. This is the case in all the examples provided in this thesis: I take the target relation to be salient in the context provided in each example not just because this relation is explicitly introduced by the context-setting sentences, but because it can be shown that (some) possessive constructions are able to be interpreted as expressing this relation when used in the given context.

(8)   Yesterday John and Paul were attacked by (different) groups of dogs;

   a.   . . . unfortunately **John's dogs** were rabid.

   b. #. . . unfortunately **some dogs of John's** were rabid.

Now notice the difference between (8a) and (8b). In contrast to John's dogs
in (8a), the possessive DP some dogs of John's in (8b) is *not* interpreted as
denoting part of the set of dogs that attacked John, but tends to be interpreted
as denoting part of the set of dogs owned by John. This is the reason why the
whole sentence in (8b) sounds odd: (8b) feels like a non-sequitur because it seems
to provide information about the dogs owned by John without mentioning why
this information should be relevant in the context of the situation described by
the first sentence.

But this means that, for some reason, the possessive relation in some dogs of
John's cannot be taken to express the relation ATTACK, which—as just argued—is
salient in the context set up by the first sentence in (8).

The existence of minimal pairs like (8) leads to two interesting conclusions.
The first is that the derivation of extrinsic interpretations—i.e. the process
through which contextual information contributes to determining a specific
interpretation for the possessive relation—is not as straightforward as is implicitly
assumed in the literature. The mere contextual salience of a relation does not
guarantee the availability of the interpretation according to which a possessive
expresses this relation. The derivation of extrinsic interpretations is subject to
constraints that should be investigated and accounted for.

The second conclusion concerns the nature of these constraints. In (8) the
lexical choice of possessor and possessum is kept constant between the (a) and (b)
examples, and the context of use of the possessive is kept constant as well. This
suggests that the grammatical constraints that are responsible for the contrast
between the (a) and (b) sentences are sensitive to the nature of the *whole*

possessive construction considered: it must be something about the difference between **John's dogs** and **some dogs of John's** that determines the contrast in (8).

Contrasts like (8), then, provide evidence for the existence of a type of constraint on the interpretation of possessives that has not been noticed before in the literature.[14] If it can be argued that these restrictions are grammatical in nature the case for a semantic analysis of possessives becomes even stronger.

Before investigating further the nature and the extent of the restrictions on the interpretation of possessives exemplified in (8), I want to point out that the relevant facts are not peculiar to English. Similar contrasts seem to arise in many other languages. Below I give examples from German, Spanish, and Italian.[15]

(9)   *German*

Gestern   wurden Johann und Paul von zwei (verschiedenen) Gruppen von
yesterday were   Johann and Paul by two (different)   groups   of
Hunden befallen;
dogs   attacked

a.   ... leider   hatten **Johanns Hunde** Tollwut.
         unfortunately had   Johann's dogs   rabies

b. #... leider   hatten **einige Hunde von Johann** Tollwut.
         unfortunately had   some   dogs   of Johann rabies

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[14]Essentially, all the interpretive constraints that have been discussed in the literature depend on the syntactic/semantic properties of the possessum. One exception is constituted by some facts discussed in (Partee and Borschev, 2001), which show one particular instance of the basic contrast that I discuss at length in this dissertation.

[15]As far as I could check, the facts pointed out originally in (Storto, 2000a) for English hold constant on a crosslinguistic basis. I tested the validity of the generalizations presented below in the text in Germanic languages (English, German, Dutch), Romance languages (French, Spanish, Italian), and one Semitic languages (Hebrew). A comprehensive crosslinguistic investigation of the phenomena discussed in this thesis is complicated by the fact that—for the case of possessive DPs—the relevant interpretive restrictions are not expected to arise in languages that do not have an indefinite/quantificational form for possessive DPs that is distinct from a partitive construction (indeed, as shown shortly below in the text, partitive possessive DPs pattern with definite possessive DPs in contexts like the one set up in (8)). This property— unfortunately—seems to characterize only a small subset of the world's languages (a fact that itself calls for an explanation, which is not attempted in this thesis).

(10)   *Spanish*

Ayer   Juan y   Pablo fueron atacados por dos grupos (diferentes) de
yesterday Juan and Pablo were   attacked by two groups (different) of
perros;
dogs

    a.   . . . desgraciadamente **los perros de Juan**   tenían la   rabia.
            unfortunately   the dogs   of Gianni had   the rabies

    b. #. . . desgraciadamente **algunos perros de Juan**   tenían la   rabia.
            unfortunately   some   dogs   of Gianni had   the rabies

(11)   *Italian*

Ieri   Gianni e   Paolo sono stati attaccati da due gruppi
yesterday Gianni and Paolo were   attacked by two groups
(distinti)   di cani;
(different) of dogs

    a.   . . . sfortunatamente **i   cani di Gianni** avevano la   rabbia.
            unfortunately   the dogs of Gianni had   the rabies

    b. #. . . sfortunatamente **alcuni cani di Gianni** avevano la   rabbia.
            unfortunately   some   dogs of Gianni had   the rabies

All the above examples display a contrast similar to the one that occurs between the English sentences in (8). In one respect, however, the English (and German) examples introduce a level of analytical complexity that is absent in the case of Italian (or Spanish).

For the case of English one could try to reduce contrasts like (8) to the different syntactic properties of the possessive DPs involved. Simple word-order considerations point towards the conclusion that the syntactic structures of **John's dogs** and **some dogs of John's** might be substantially different. But for the case of the Italian examples in (11) a similar analytic option looks less plausible. Apparently, the DP **i cani di Gianni** 'the dogs of Gianni' differs from the DP **alcuni cani di Gianni** 'some dogs of Gianni' only in the choice of determiner, the relevant extrinsic interpretation being available for the possessive DP headed by

the definite determiner i and unavailable for the possessive DP headed by the indefinite determiner alcuni.

(12) i cani di Gianni   = *definite possessive*
      alcuni cani di Gianni = *indefinite possessive*

Let's call possessives of the first kind *definite possessives* and possessives of the second kind *indefinite possessives*. The Italian data suggest the hypothesis that it is a *semantic* property of the whole possessive DP—its definiteness specification as determined by the definiteness/indefiniteness of its determiner—that correlates with the availability of the relevant extrinsic interpretation. Definite possessives license the ATTACK interpretation, indefinite possessives do not seem to.

In order to avoid the additional analytical complexity that characterizes the English examples,[16] I concentrate at first on data from Italian. In chapter 6 I return to the case of English and address the issue of whether the contrast in (8) should be accounted for exactly along the same lines that I propose for the Italian data. As a preview, I argue that the *semantic* theory developed for the case of Italian in chapters 4 and 5 is general enough to deal with the case of English, even under the assumption that substantial differences hold between the syntactic structure of Italian possessives and English possessives. Some discussion about whether and how the analysis proposed for Italian and English extends to other languages can be found in chapter 7.

2.3.2 Extrinsic interpretations are not a homogeneous class

The data in (11) show that indefinite possessives do not seem to license certain interpretations that are licensed by definite possessives. But what is the nature of these interpretations?

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[16]The syntactic analysis of DPs like some dogs of John's is a controversial issue. See chapter 6 (§6.3) for discussion.

The interpretations at stake in (8)–(11) are all extrinsic: the interpretation of the possessive relation (i) is not determined by the semantics of the possessum noun, and (ii) seems to be specified by information provided by the context of use of the possessive DP. Thus one obvious hypothesis is the following: indefinite possessives do not license extrinsic interpretations. For some reason, indefinite possessives do not lend themselves to contextual specification of the interpretation of the possessive relation.

But, as things stand, this hypothesis is already incompatible with the observation that, like **some dogs of John's** in (8), the Italian indefinite possessive **alcuni cani di Gianni** in (11b) can and actually tends to be interpreted as denoting part of the set of dogs owned by Gianni. Indeed, definite and indefinite possessives do not seem to differ in terms of the possibility of licensing the interpretation according to which the possessive relation expresses the relation of ownership.

For example, both sentences in (13) can be used to convey the information that some of the cars owned in the past by Gianni turned out to be unreliable:

(13)   In genere sia   Gianni che Paolo comprano auto affidabili;
          generally both Gianni and Paolo buy   cars reliable

      a.   … ma talvolta   **le auto di Gianni**
              but sometimes the cars of Gianni
          si sono rivelate dei pessimi affari.
          turned out to be lemons

      b.   … ma **alcune auto di Gianni** si sono rivelate dei pessimi affari.
              but some   cars of Gianni turned out to be lemons

If we follow (Partee, 1983/1997; Barker, 1995, a.o.) in assuming that the interpretation according to which a possessive expresses the relation of ownership is just a type of extrinsic interpretation, the lack of contrast between definite and indefinite possessives in (13) provides evidence against the hypothesis that extrinsic interpretations are generally unavailable for indefinite possessives.

On the other hand, it could be argued that the latter conclusion does not necessarily follow. The relation ATTACK in (11) and the relation OWN (= the relation where the possessor is the owner of the possessum) in (13) seem to be quite different from each other in terms of their salience across contexts. Building on the observation that the ownership interpretatio is generally available for possessives in all contexts of use, one could conclude that it does not constitute a type of extrinsic interpretation. The observation that the ownership interpretation does not seem to be context-sensitive suggests that it may not be context-determined after all.

And only under the assumption that ownership constitutes an instance of context-determined interpretations do the data in (13) provide an argument against the hypothesis that indefinite possessives do not lend themselves to contextual specification of the interpretation of the possessive relation. But additional facts show that this hypothesis cannot be maintained after all. Indefinite possessives *do* license interpretations in which the interpretation of the possessive relation is intuitively determined by their context of use.

A clear example of this is given by sentences like (14). The noun bambini, like its English translation children, has a relational interpretation according to which it denotes the relation holding between individuals and their offspring. Still, (14) can be felicitously used without conveying either the information that the children mentioned are part of Maria's offspring, or the information that the relation between Maria and the relevant group of children and Maria is the relation of ownership.

(14) **Alcuni bambini di Maria** si   sono sentiti male dopo aver   mangiato.
      some   children of Maria SELF felt   sick after having eaten

Of course, this requires some contextual support, which is exactly the point at issue here. For example, the sentence in (14) can be used by an employee in a

preschool or day-care center to inform a fellow employee about the reasons why the management has suddenly decided to select a different provider for the food served at lunchtime. In this context, the children referred to are not Maria's own offspring, but are among the children that Maria regularly takes care of, part of the group of children whose activities are usually led by Maria.[17]

Examples like (14) argue that the relation expressed by the possessive relation in indefinite possessives need not be ownership: indefinite possessives can express relations which are intuitively "related" to ownership proper, but whose exact nature is specified by their context of use. The skeptical reader might think that this conclusion is a little too hasty: the interpretation at stake in (14) might be lexicalized to a certain extent.[18] But it seems to me that examples can be constructed in which indefinite possessives can be used felicitously even if the nature of the relation expressed (i) is rather "distant" in semantic terms from ownership proper, and (ii) cannot be plausibly treated as an instance of lexicalization.

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[17]The same holds in English, as far as I can tell. As a matter of fact, data equivalent to those presented in (14) were initially pointed out to me by Chris Barker (p.c.) as an argument against the conclusion—drawn in Storto (2000a,b)—that indefinite possessives do not allow for contextual determination of the nature of the possessive relation.

[18]E.g., it could be argued that in the scenario that I presented in the text the noun bambini in (14) is (re-)interpreted as having a meaning similar to the relational noun pupils, and that the interpretation that i bambini di Gianni licenses in this scenario is actually intrinsic: the possessive relation is determined by the semantics of the possessum noun. An analysis along these lines, in my opinion, can be maintained only by assuming that this alternative meaning for bambini is somehow lexicalized as a consequence of the (cultural) fact that children are usually entrusted to adults who are not related to them during the day, and that normally a group of children is under the supervision of the same adult every day. But as soon as relations are considered for which "cultural" lexicalization becomes implausible—as in (15a)—it is clear that the hypothesis that indefinite possessives do not license extrinsic interpretations can be maintained only by arguing that a general *semantic* strategy exists according to which the meaning of non-relational possessum nouns can be "lifted" to denote a relational entity, and that contextual information may play a role in determining the result of this process. This, of course, simply amounts to reformulating the problem in a new guise—why is it that this semantic process distinguishes between different types of contextually salient relations in the case of indefinite possessives and not in the case of definite possessives?

Speakers' judgments about examples of this type vary, but—in my opinion, and in the opinion of some of the speakers that I consulted—the sentence in (11b), repeated below in (15), is quite felicitous as a follow-up to the sentence in (15a). The indefinite possessive alcuni cani di Gianni is easily interpreted as referring to part of the set of dogs that Gianni brought to the animal shelter when (11b) is uttered in the context set up by (15a). Thus, alcuni cani di Gianni seems able to license the interpretation according to which the possessive relation expresses the relation TAKE.TO.SHELTER (= the relation where the possessor takes the possessum to the animal shelter).

(15) a.   Ieri   Gianni e   Paolo si sono imbattuti in due gruppi
           yesterday Gianni and Paolo came across   two groups
           (distinti) di cani randagi e   li   hanno portati al   rifugio
           (different) of dogs stray   and them took   to the shelter
           per animali;
           for animals

      b. # Ieri   Gianni e   Paolo sono stati attaccati da due gruppi
           yesterday Gianni and Paolo were   attacked by two groups
           (distinti) di cani;
           (different) of dogs

      . . . sfortunatamente **alcuni cani di Gianni** avevano la   rabbia.
             unfortunately   some   dogs of Gianni had   the rabies

The example given above is rather "extreme" and indeed not all speakers seem to agree with the judgment that a sentence like (11b) is felicitous as a follow-up to (15a). I chose to discuss this example because the interpretation made salient in (15a) involves a relation that is quite remote from what one would intuitively describe as an instance of ownership and at the same time cannot plausibly be treated as being lexicalized.[19] Now, this interpretation is uncontroversially

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[19]An example like (18) later in the text is less extreme in that the relation made salient in the context is intuitively "closer" to the semantics of ownership. Unsurprisingly, the number of speakers who perceive a clear contrast in the acceptability of the sentence containing an indefinite possessive in contexts like (18) vs. contexts like (11) is greater than the number of speakers who perceive a contrast between the cases of (15a) and (15b).

context-sensitive—e.g. it is not available in the empty context—and thus seems to be as much contextually determined as the ATTACK interpretation that is at stake in (11). Nevertheless, for the relevant group of speakers the contrast between the felicitousness of (11b) in the TAKE.TO.SHELTER context (15a) and the awkwardness of the same sentence in the ATTACK context (repeated in (15b)) is quite stark.

The existence of interpretive contrasts like those exemplified in (14)–(15) has two consequences. First, it forces us to abandon the hypothesis that indefinite possessives do not allow for the context to specify the interpretation of the possessive relation. And, second, it suggests the hypothesis that extrinsic interpretations *do not constitute a homogenous class*: two distinct types of extrinsic interpretations can be distinguished on the basis of their distribution.

While indefinite possessives (15) seem to license only one of the two types of interpretations, both types of interpretations seem to be available for definite possessives: the sentence in (11a) containing the definite possessive i cani di Gianni is felicitous both in the TAKE.TO.SHELTER context (16a) and in the ATTACK context (16b).

(16) a. Ieri   Gianni e   Paolo si sono imbattuti in due gruppi
          yesterday Gianni and Paolo came across   two groups
          (distinti) di cani randagi e li hanno portati al   rifugio
          (different) of dogs stray   and them took   to the shelter
          per animali;
          for animals

      b. Ieri   Gianni e   Paolo sono stati attaccati da due gruppi
          yesterday Gianni and Paolo were   attacked by two groups
          (distinti) di cani;
          (different) of dogs

          ... sfortunatamente **i   cani di Gianni** avevano la   rabbia.
          unfortunately   the dogs of Gianni had   the rabies

2.4 What is the difference?

I hope that the data presented up to this point argued convincingly that there is much to be said about the derivation of extrinsic interpretations for possessive constructions that is left unaccounted for in the literature. Contrary to the (implicitly) assumed wisdom, contextual salience of an appropriate relation is not sufficient to guarantee the derivation of a specific extrinsic interpretation: the (semantic) nature of the possessive construction as a whole seems to impose constraints on this process. Furthermore, distributional data suggest that extrinsic interpretations do not constitute a homogeneous class either: two types of such interpretations can be distinguished on the basis of their different sensitivity to these interpretive constraints.

Let's provisionally call these two types of extrinsic interpretations *type-1* and *type-2*. Up to this point we have seen that (i) the two types of interpretations have a different distribution across possessive constructions: only type-1 interpretations seem to be available with indefinite possessives; and that (ii) we can distinguish the two types of interpretations on the basis of their semantic restrictiveness: type-1 interpretations license the possibility for the possessive relation to express only certain relations (e.g. TAKE.TO.SHELTER) and not others (e.g. ATTACK), but type-2 interpretations do not seem subject to the same constraint.[20]

Stronger generalizations seem to be called for. What semantic properties characterize those relations that are compatible with type-1 interpretations?

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[20]From the data in (16) it is not clear whether type-2 interpretations impose constraints of a different sort or leave the possessive relation unconstrained. The possibility for the possessive relation in definite possessives to express the contextually salient relation TAKE.TO.SHELTER in (16a) lends itself to two alternative analyses: (i) it can be argued that this follows from the possibility for definite possessives to license type-1 interpretations as well, or (ii) it can be argued that type-2 interpretations do not impose interpretive constraints. I return to this issue in §2.4.2.

And what is the full picture concerning the distribution of the two types of interpretations? These issues are addressed in §2.4.1 and §2.4.2.

2.4.1 *Control* relations

A very obvious difference between the relations ATTACK and TAKE.TO.SHELTER at stake in (15)–(16) is constituted by the different roles played by possessor and possessum in the two cases.

Extensionally, the relation TAKE.TO.SHELTER that is made salient in the (a) context corresponds to the set of ordered pairs of individuals ⟨possessor,possessum⟩ such that the first individual took the second individual to the animal shelter. That is, the relation TAKE.TO.SHELTER is such that the possessor constitutes the agent in the event that relates the possessum to it. On the other hand, the role of possessor and possessum in the relation ATTACK that is made salient in the (b) context is exactly the opposite. This relation corresponds to the set of pairs ⟨possessum,possessor⟩ such that the first individual attacked the second individual. In this case the possessum constitutes the agent in the event that relates it to the possessor.

(17)   a.   TAKE.TO.SHELTER = {⟨possessor,possessum⟩ | the possessor takes the possessum to the animal shelter}

        b.   ATTACK = {⟨possessum,possessor⟩ | the possessum attacks the possessor}

It could be thought that this difference constitutes the discriminating property between relations that are compatible with type-1 interpretations and relations that are not. The semantics of type-1 interpretations is such that the possessive relation can only express contextually salient relations where the possessor behaves (more or less) as an agent.

However, this criterion does not seem to correctly characterize the class of

relations that are compatible with type-1 interpretations. This is argued by the fact that indefinite possessives seem to be able to express contextually salient relations like BE.ENTRUSTED.TO (= the relation where the possessum is entrusted to the possessor), as shown by (18a).

(18) Ieri   a Gianni e   Paolo sono stati affidati   due gruppi
     yesterday to Gianni and Paolo were   entrusted two groups
     (distinti)   di cani;
     (different) of dogs

    a.   ... sfortunatamente **alcuni cani di Gianni** avevano la   rabbia.
             unfortunately   the   dogs of Gianni had   the rabies

    b.   ... sfortunatamente **i   cani di Gianni** avevano la   rabbia.
             unfortunately   the dogs of Gianni had   the rabies

In the relation BE.ENTRUSTED.TO the possessor can hardly be described as an agent.[21] The absence of a contrast in the acceptability of the follow-up sentences in (18a) and (18b) argues that the hypothesis must be abandoned that the semantics of type-1 interpretations is such that the possessive construction can only express relations that satisfy the "agenthood" condition outlined above.

What properties then characterize the class of relations that are uncontroversially available for indefinite possessives? I propose the following hypothesis:[22]

(19) *Possession as Control*
    The semantics of type-1 interpretations requires that the relation expressed by the possessive relation be able to be construed as an instance of a general relation of *control*.

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[21] The observation that the relation BE.ENTRUSTED.TO seems to entail the existence of some sort of temporary ownership-like relation does not undermine the relevance of this example, I think. If anything, it provides an additional argument against the use of the agenthood criterion that is proposed in the text to discriminate between relations. Even in the case of the relation of ownership the possessor can hardly be described as an agent. And it has already been shown in (13) that indefinite possessives *do* license the interpretation according to which the possessive relation expresses the relation of ownership.

[22] A similar notion of control has been independently proposed for the analysis of possessive constructions in (Vikner and Jensen, 2002). See chapter 6 (§6.1) for some discussion of Jensen and Vikner's proposal.

A little more formally, calling CONTROL the relation holding between a possessor that has some sort of physical/volitional control of the possessum and/or of his bearing a relation to the possessum (20), we can say that the class of relations that are compatible with type-1 interpretations is the set of all subsets of CONTROL (i.e. the power set of CONTROL).

(20)   CONTROL = {⟨possessor,possessum⟩ | the possessor has some sort of
                    control of the possessum or of his bearing a relation to
                    the possessum}

Clearly, this definition of CONTROL is still quite vague and should probably be improved upon. What is relevant, however, is that—even given the vague definition of CONTROL in (20)—the hypothesis that the possessive relation can express only "control relations" constitutes a significant restriction on the semantics of those possessive constructions that—like indefinite possessives— seem to license only type-1 interpretations. The existence of this restriction predicts that indefinite possessives do not express relations like ATTACK and HIT in (21) because these cannot be construed as specifications of CONTROL.

(21)   *Non-control relations*
        a.   ATTACK = {⟨possessum,possessor⟩ | the possessum attacks
                        the possessor}
        b.   HIT = {⟨possessum,possessor⟩ | the possessum hits the possessor}

The other prediction that follows from this hypothesis concerning the nature of the restriction imposed by type-1 interpretations is that if a relation can be construed as an instance of control it should be possible—given an appropriate context of use—for it to be expressed by indefinite possessives. Some examples of relations that satisfy this requirement are given in (22).

(22)   *Control relations*

    a.   TAKE.TO.SHELTER = {⟨possessor,possessum⟩ | the possessor takes
                         the possessum to the animal shelter}

    b.   TAKE.CARE.OF = {⟨possessor,possessum⟩ | the possessor takes care
                         of the possessum}

    c.   BE.ENTRUSTED.TO = {⟨possessum,possessor⟩ | the possessum is
                         entrusted to the possessor}

    d.   OWN = {⟨possessor,possessum⟩ | the possessor owns the possessum}

Summarizing, the empirical generalization that can be drawn at this point is that, apparently, the interpretation of indefinite possessives is more restricted than that of definite possessives. Whereas the latter can express both control and non-control relations, the former seem able to express only control relations. These facts are summarized in table 2.1.

w.r.t.	definite possessive	indefinite possessive
control	√*i cani di Gianni* the dogs of Gianni	√*alcuni cani di Gianni* some dogs of Gianni
non-control	√*i cani di Gianni* the dogs of Gianni	#*alcuni cani di Gianni* some dogs of Gianni

Table 2.1: Definite vs. indefinite possessives and contextually salient relations

I argued that—at least in descriptive terms—these facts provide evidence for the need of distinguishing between two types of extrinsic interpretations. Type-1 interpretations impose the restriction to control relations that characterizes the interpretation of indefinite possessives. Let's then call these interpretations *control* interpretations. And let's call those interpretations—formerly known as type-2—that are not subject to the restriction to control relations *free* interpretations.

(23)   *control interpretations* = the possessive relation *must* express
                               a control relation
    free interpretations   = the possessive relation *can* express
                               a non-control relation

Ownership as a control relation

Before trying to characterize in more detail the distribution of control vs. free interpretations, let me address briefly the interpretation according to which the possessive relation expresses the relation of ownership.

The absence of a contrast in the acceptability of definite and indefinite possessives in examples like (13) shows that indefinite possessives can express the relation of ownership. In §2.3.2 I pointed out that this fact can lead to the conclusion that the ownership interpretation does not constitute an instance of extrinsic—i.e. context-dependent—interpretations.

This is explicitly argued for in (Storto, 2000a,b). But once it is assumed that being an instance of CONTROL is the relevant property that characterizes those relations that can be expressed by indefinite possessives, the fact that indefinite possessives can express the relation of ownership does not provide any evidence for this conclusion. Indeed, the relation OWN *can* be construed as an instance of CONTROL (22c).

Thus, the interpretation according to which the possessive relation expresses the relation of ownership can still be analyzed as being determined by the context of use of a possessive. Ownership is one of the contextually salient relations that are compatible with the restriction imposed by the meaning of CONTROL. Furthermore, ownership is intuitively a very salient—possibly the most salient—instance of CONTROL. And this property—as Barker (1995) suggests—can be resorted to in order to account for the fact that possessives can express the relation OWN in very empty contexts.

2.4.2 The full paradigm (an idealized picture)

The data considered in the previous section show that control and free interpretations have different distributional properties. In particular, the observation that indefinite possessives apparently do not express control relations argues that free interpretations are not available for indefinite possessives. Control interpretations, on the other hand, seem to be available with both definite and indefinite possessives. I thus take the data discussed in the previous sections to support the hypothesis that free interpretations have a more restricted distribution than control interpretations. These facts are summarized in table 2.2.

	definite poss.	indefinite poss.
control	√	√
free	√	*

Table 2.2: Distribution of control vs. free interpretations

The paradigm in table 2.2 might suggest the conclusion that the interpretive contrast—i.e. the differences in the availability of free interpretations—singles out the class of indefinite possessives. Definite possessives are not sensitive to the distinction between control and free interpretations: apparently this distinction matters only for indefinite possessives. This leads to the hypothesis that some property that characterizes the class of indefinite possessives is not compatible with the semantic derivation of free interpretations.

But as soon as other types of possessives are considered it can be seen that they do not all pattern with definite possessives in licensing both control and free interpretations. Consider the data in (24):

(24) Ieri   Gianni e   Paolo sono stati attaccati da due gruppi
     yesterday Gianni and Paolo were   attacked by two groups
     (distinti)   di cani;
     (different) of dogs

   a.   . . . sfortunatamente **i   cani di Gianni** non sono stati catturati.
        unfortunately   the dogs of Gianni not have been captured

   b.   . . . sfortunatamente **alcuni**/**pochi**/**molti**/**due dei   cani di Gianni**
        unfortunately   some/few/many/two   of the dogs of Gianni
        non sono stati catturati.
        not have been captured

   c.   . . . fortunatamente **ognuno dei   cani di Gianni** è   stato
        fortunately   each one of the dogs of Gianni has been
        catturato.
        captured

   d.   [#]. . . sfortunatamente **alcuni**/**pochi**/**molti**/**due cani di Gianni** non
        unfortunately   some/few/many/two   dogs of Gianni not
        sono stati catturati.
        have been captured

   e.   [#]. . . fortunatamente **ogni cane di Gianni** è   stato catturato.
        fortunately   each dog of Gianni has been captured

As argued already, the context-setting sentence in (24) makes the ATTACK relation—a non-control relation—salient: this is shown by the fact that the definite possessive i cani di Gianni can express this relation, making (24a) felicitous as a follow-up to the context-setting sentence.

The first new piece of data is that the sentences in (24b,c) that contain *partitive possessives*—i.e. possessive DPs that have a partitive structure—can be used felicitously as continuations to the context-setting sentence. By the same reasoning used in the case of definite possessives, it can be concluded that partitive possessives can express the ATTACK relation, which in turn means that these possessives license free interpretations. Interestingly, partitive possessives like those in (24b)—e.g. alcuni dei cani di Gianni—license free interpretations even though for what concerns the [±definite] specification of the whole DP they would

normally be grouped with possessive DPs like alcuni cani di Gianni, which do not seem to license interpretations of this kind.

The reader might already correctly infer why partitive possessives like alcuni dei cani di Gianni pattern with definite possessives, rather than with indefinite possessives like alcuni cani di Gianni. In partitive possessives the relation holding between possessor and possessum is established within what seems to be an embedded definite DP. An account for the availability of free interpretations with definite possessives should extend directly to cover the case of partitive possessives as well.

A second relevant piece of data is constituted by the ill-formedness of (24e). In a way parallel to the case of (24d), the possessive DP ogni cane di Gianni 'each dog of Gianni' does not seem able to express the contextually salient relation ATTACK but rather tends to be interpreted as denoting each of the dogs owned by Gianni. This, as already argued, results in the feeling that the utterance of (24e) is "out of place" in the context set up by the first sentence. But, of course, possessive DPs like ogni cane di Gianni in (24e) are *not* indefinite. Indeed, their semantics is more similar to that of partitive possessive DPs like ognuno dei cani di Gianni 'each of the dogs of Gianni' in (24c), which can express the ATTACK relation.[23]

The generalization that can be drawn from the data in (24) is that for the case of possessives headed by an indefinite (24b,d) or quantificational determiner (24c,e) the presence vs. absence of an overt partitive structure seems to be relevant. Partitive possessives, like definite possessives, can express non-control

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[23]One word of caution concerning the data in (24e). This sentence probably introduces an additional complication, due to the very strong distributivity that characterizes the quantifier ogni in Italian. The sentence might have resulted not felicitous for some of the speakers that I polled because it is not immediately obvious that the predicate used in the sentence licenses/requires this strong distributivity. See the appendix to this chapter for some discussion.

relations. *Quantificational possessives*, like indefinite possessives, cannot.[24]

These empirical observations are summarized in table 2.3: apparently non-control relations can be expressed only by definite possessives (24a) and partitive possessives (24b,c); indefinite (24d) and quantificational (24e) possessives seem to be restricted to expressing control relations.[25] In terms of the distribution of control vs. free interpretations this means that, while the former type is available across the board with all kinds of possessive DPs, the latter type is licensed only by definite and partitive possessives: indefinite and quantificational possessives are incompatible with free interpretations.

	definite poss.	partitive poss.	indefinite poss.	quantificational poss.
control	√	√	√	√
free	√	√	*	*

Table 2.3: Distribution of control vs. free interpretations (revised)

The case of *predicate possessives*

The distinction between control and free interpretations is relevant not only in the case of possessive DPs, but more generally in other types of possessive constructions.

Consider the case of possessive be sentences, like the English example in (7a): This car is John's can be interpreted as expressing the relation of ownership. In §2.2.2 it was argued that examples like (7) show that possessive be sentences license extrinsic interpretations. Now we can be more precise and conclude

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[24]For simplicity, I use the label *indefinite/quantificational possessives* to refer to non-partitive possessives headed by an indefinite or a quantificational determiner. A more precise label would be *non-partitive indefinite/quantificational possessives*, which I do not wish to adopt for obvious reasons of space.

[25]In table 2.3 I keep the cases of definite and partitive possessives distinct. But, as already argued above in the text, the interpretive properties of the two are eventually to be reduced to a common explanation.

that possessive be sentences license a class of extrinsic interpretations: control interpretations. But what about free interpretations? Are these licensed in possessive be sentences?

Unfortunately, this question cannot be answered on the basis of English sentences like (7). As argued by Partee and Borschev (2001), English sentences of this kind are potentially misleading: the argument can be made that the post-copular material in (7a) is not a predicate, but an elliptical referential possessive DP. Thus the case of English sentences like (7) reduces to the case of possessive DPs, the possessive relation being established within the postcopular DP. I return to this issue in chapter 6 (§6.2).

Other languages provide less ambiguous data. Partee and Borschev (2001) point out that in Dutch possessive be sentences the occurrence of the demonstrative die 'that' disambiguates the post-copular material: only when die is present can this material constitute an elliptical possessive DP; when die is absent the post-copular material is a *predicate possessive*—a "bare" possessor used as a predicate.

(25)   a.   Die docent is $^{\#}$(die) **van Jan**.
                  that teacher is $^{\#}$(that) of   Jan

           b.   Die auto is (die) **van Jan**.
                  that car   is (that) of   Jan

The choice of predicate possessives vs. elliptical possessive DPs as post-copular material correlates with the availability of inherent interpretations. Inherent interpretations are available only when the post-copular material is an elliptical possessive DP (25a). Only extrinsic interpretations are licensed when the post-copular material is a predicate possessive—i.e. when die is absent (25b).

Of course, the interpretation at stake in (25b) involves the relation of ownership, and is thus an instance of control interpretations. Partee and Borschev

(2001) do not explicitly address the issue whether the Dutch constructions that they discuss license free interpretations.[26]   Fortunately, predicate possessives parallel to the examples in (25) can be constructed in Italian as well:

(26)   a.   Questo maestro è #(quello) **di Gianni**.
            this   teacher is #(that)   of Gianni

       b.   Questa auto è (quella) **di Gianni**.
            this   car is (that) of Gianni

Again, when the post-copular material in (26) is a predicate possessive rather than an elliptical possessive DP—i.e. when *quello/a* is absent—the whole possessive sentence cannot receive an inherent interpretation (26a), but can only receive an extrinsic interpretation (26b).

We can thus inspect Italian data to answer the question whether predicate possessives license free interpretations. And one example is sufficient to show that the answer is negative. Consider a scenario similar to the one described in (16b): Gianni and Paolo were attacked by two different groups of dogs, but the dogs were all captured and brought to the dog pound.

(27)   a.   Questi cani sono quelli **di Gianni**.
            these   dogs are   those of Gianni

       b.   #Questi cani sono **di Gianni**.
            these   dogs are   of Gianni

Within this scenario a speaker *cannot* use a sentence like (27b) to mean that the dogs that she is pointing at are those that attacked Gianni, but must use a sentence like (27a), where the post-copular material is an elliptical (definite) possessive DP.

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[26]But later in their paper Partee and Borschev draw—on the basis of German data— essentially the same conclusions that I reach in the text about the interpretation of predicate possessives.

Predicate possessives are another class of possessive constructions that—like indefinite and quantificational possessives—are restricted to control interpretations. The availability of free interpretations seems to be a property that distinguishes definite and partitive possessive DPs from other types of possessive constructions. This is summarized in table 2.4.

	definite poss.	partitive poss.	indefinite poss.	quantif. poss.	predicate poss.
control	√	√	√	√	√
free	√	√	*	*	*

Table 2.4: Distribution of control vs. free interpretations (final revision)

2.5 Conclusion

Distributional evidence points towards the necessity of distinguishing different types of interpretations for possessive constructions. In addition to the basic distinction between inherent and extrinsic interpretations proposed in (Partee, 1983/1997; Barker, 1995), I argued that a further distinction should be made between two types of extrinsic interpretations: control and free interpretations. We thus end up with three distinct types of interpretations: under the assumption that their distributional differences can be accounted for in terms of differences in their syntactic/semantic encoding, each of these types potentially constitutes a distinct meaning that can be ascribed to possessive constructions.

As I mentioned already, the case of inherent interpretations has received a reasonable amount of attention in the literature, so I will not be extremely concerned with it here: I return to the overall taxonomy of interpretations licensed by possessive constructions in chapter 7. The remainder of this work is primarily aimed at accounting for the properties of control vs. free interpretations: what determines the interpretive constraints that characterize control interpretations,

how the restricted distribution of free interpretations follows from their non-restrictive semantics, what role contextual information plays in the derivation of the two types of interpretations.

The analysis of extrinsic interpretations proves fruitful in addressing the general issue of the interpretive flexibility of possessives. In both types of extrinsic interpretations the context of use seems to contribute to the determination of the interpretation of possessive constructions, but it is clear that—at least in the case of control interpretations—the contribution of contextual information builds upon a non-trivial semantic content. The interplay between contextual information and the semantics of CONTROL, I argue in the next chapters, provides the basis for accounting for the observation that the interpretive flexibility displayed by most possessive constructions ranges within well-defined boundaries. Greater interpretive flexibility is displayed by the class of possessive constructions that license free interpretations: interpretations whose distribution is restricted by grammatical constraints.

Appendix: What do the facts mean?

Above I presented evidence in favor of the following generalizations concerning the semantics of extrinsic interpretations for possessives: (i) there seem to be constraints on the availability of extrinsic interpretations that are not expected under the treatment of extrinsic interpretations (implicitly) suggested in the literature, and (ii) two types of extrinsic interpretations seem to be distinguished by their different distributional properties across types of possessives.

These generalizations suggest two interesting hypotheses: that the constraints in (i) are grammatical in nature, and that the two types of extrinsic interpretations in (ii) constitute distinct meanings that can be ascribed to possessive constructions. Of course, these hypotheses do not immediately follow from the generalizations supported by the data: it is possible that the distinction between control and free interpretations does not correspond to a difference in the semantics of possessive constructions, and that the constraints that are responsible for the restricted distribution of free interpretations are not grammatical in nature.

That the latter might be the case is strongly suggested by the fact that the interpretive facts are not as clear as the idealized picture presented in the previous section would lead one to expect: not only is it the case that—as I already mentioned in connection with example (15)—speakers' judgments with respect to more "extreme" cases of context-dependent control interpretations differ, but there seems to be a certain variability in whether speakers allow for free interpretations with indefinite and quantificational possessives as well. Below I present arguments to the effect that—this variability in speakers' judgments notwithstanding—the data require a grammatical solution.

A problem: The idealized picture is too categorical

Up to this point the following two generalizations have been suggested about the Italian data:

(28) *Empirical generalizations (the idealized picture)*

    a.   control interpretations are available across the board (with all types of possessive DPs and with predicate possessives)

    b.   free interpretations

        i.   are available with definite and partitive possessives

        ii.   are not available with indefinite possessives

        iii.   are not available with quantificational possessives

        iv.   are not available with predicate possessives

However, both generalizations can be criticized as being too categorical. The generalization in (28a) can be criticized on the basis of the fact that not all speakers seem to accept indefinite possessives in contexts like e.g. (15a) which supposedly make a control relation salient. Points (ii) and (iii) in the generalization in (28b) can be criticized on the basis of the fact that many speakers do seem to marginally allow for free interpretations—e.g. the interpretation according to which the possessive expresses the relation made salient in (15b)—with indefinite and quantificational possessives.

Steady facts

Judgments concerning the availability of extrinsic interpretations for possessives are unfortunately delicate, but as far as I could test, the generalizations in (28a) and (28b.i,iv) are solid: control interpretations are available across the board (28a), definite and partitive possessives can express any contextually salient relation (28b.i), and predicate possessives seem to categorically exclude the possibility of expressing non-control relations (28b.iv).

I assume that it is not necessary for me to argue for the correctness of (28b.i): in a sense, it is this generalization which is responsible for the hypothesis, suggested in the literature, that "anything goes" in the semantics of possessives. If the interpretive properties of definite (and partitive) possessives are taken as paradigmatic for the whole class of possessive constructions, the conclusion that there is little to be said about the semantics of possessives is hard to avoid.

The correctness of the generalization in (28b.iv) is argued for by the observation that even speakers who seem to license the possibility for indefinite and quantificational possessives to express non-control relations like the one made salient in (15b) strongly disallow the same interpretation with predicate possessives in cases like (27b).

As for (28a), it seems to me that the variability in speakers' judgments concerning the possibility of e.g. taking an indefinite possessive like alcuni cani di Gianni to express the relation TAKE.TO.SHELTER made salient in (15a) does not argue against the strength of this generalization. Indeed, it seems natural to assume that deciding whether a contextually salient relation counts as a control relation—i.e. whether it constitutes an instance of CONTROL—is a task left to the single speaker, and different speakers might have different opinions concerning "extreme" cases like the relation TAKE.TO.SHELTER which is made salient in (15a). Indeed when more "typical" control relations are made salient in a context—relations that are closer in semantic terms to the prototypical instance of control, the relation of ownership—there does not seem to be any problem in interpreting all types of possessive DPs and possessive predicates as expressing those contextually salient relations.

Of course, ownership is the "limit" case, and indeed naturally occurring examples of indefinite possessives expressing the relation of ownership can be

found by performing simple searches on the web.[27] But the relation expressed need not be ownership. Even nouns like hurricane—a noun that given basic world knowledge seems to rule out altogether the possibility that the relation expressed by the possessive is the relation of ownership—can be used in predicate possessives—a class of possessives that categorically excludes free interpretations—if the context makes a suitable control relation salient:

(29)   Questi due uragani   sono **di Gianni**.
        these   two hurricanes are   of Gianni

For example, the sentence in (29) could be appropriately used by the head of a weather forecasting service in handing out the assignments for the coming week to his collaborators, conveying the interpretation that Gianni is supposed to monitor those two (developing) hurricanes.

Less clear cases

The two generalizations in (28b.ii,iii), on the other hand, seem to be too strong in the face of the data. Indeed, whereas it seems to be the case that free interpretations are dispreferred for all speakers to various degrees with indefinite and quantificational possessives, still it is *not* the case that all speakers definitely reject indefinite or quantificational possessives in contexts that make non-control relations like ATTACK in (15b) salient.

For the case of indefinite possessives, the facts can be summarized as follows: (i) for all speakers the status of free interpretations with indefinite possessives is much more degraded than with definite or partitive possessives, but still (ii) speakers seem to allow for free interpretations with indefinite possessives, and (iii) there seems to be a trend according to which DPs like un cane di Gianni 'a/one dog of Gianni' and alcuni cani di Gianni 'some dogs of Gianni' resist free

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[27]I used the Google search engine, at `http://www.google.com`.

interpretations more strongly ($< 40\%$ ok) and DPs like molti/pochi cani di Gianni 'many/few dogs of Gianni' resist free interpretations the least (roughly 60% ok), with DPs like due/tre cani di Gianni 'two/three dogs of Gianni' in between the two (roughly 50% ok).[28]

The case of quantificational possessives is a little different. I have reached the conclusion that some of the test sentences that I used in the past (30) introduce additional complications for the speaker: the quantificational determiner ogni in Italian is very strongly distributive, and the sentences in (30) might not be felt by the speaker to license this strong distributivity.[29]

(30)   a.   Fortunatamente **ogni cane di Gianni** è stato catturato.
           fortunately   each dog of Gianni was   captured

        b.   Sfortunatamente **ogni cane di Gianni** non è stato catturato.
           unfortunately   each dog of Gianni not was   captured

I polled a small subset of speakers with sentences in which distributivity of ogni is more properly licensed (31) and their judgements concerning the availability of free interpretations improved.[30]

(31)   Paolo e' stato piú fortunato: **ogni cane di Gianni** sembra aver   fatto
        Paolo was   luckier   each dog of Gianni appears to have done
        da solo tanti   danni quanto tutti i cani di Paolo messi assieme.
        by itself as much damage as   all   the dogs of Paolo taken together

This leads me to suspect that the perceived ill-formedness of sentences like (30a) in the ATTACK context might be due—at least in part—to the lack of

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[28]The figures are relative to the number of speakers who allowed for free interpretations with the given type of possessive DP. Of course, these figures are not meant to be anything more than suggestive. The sample of speakers that I polled was quite small (15 native speakers of Italian), and the data were not collected in a controlled experimental setting.

[29]Furthermore, there is an additional problem with (30b) in that many speakers do not seem to allow for the $\forall > \neg$ interpretation that this sentence would like to express. For those speakers, sentences like Sfortunatamente non ogni cane di Gianni è stato catturato—where each...not is changed with not each—improve a lot, and they are more prone to allow free interpretations for these sentences.

[30]This sentence is supposed to be read in the ATTACK context in (15b).

proper licensing of distributivity of **ogni**, and that free interpretations are (maybe marginally) available for this class of possessive DPs.

Thus, let me revise the generalizations in (28b.ii,iii) as follows:

(28)   *Empirical generalizations (the idealized picture)*

    a.   control interpretations are available across the board (with all types of possessive DPs and with predicate possessives)

    b.   free interpretations

        i.   are available with definite and partitive possessives

        ii.   are not available with indefinite possessives

        iii. are not available with quantificational possessives

        iv.   are not available with predicate possessives

(32)   *Revisions to the empirical generalizations*

    b.   free interpretations

        ii.   are marginally available with indefinite possessives, but

           –   indefinite possessives under free interpretations are (much) worse than the corresponding partitive possessives

           –   some indefinite possessives seem to be worse than others

        iii. are (marginally?) available with quantificational possessives, but

           –   quantificational possessives under free interpretations are (possibly) worse than the corresponding partitive possessives

Ideally, a satisfactory analysis of the derivation of extrinsic interpretations in possessive constructions should be restrictive enough to predict the steady facts in (28a) and (28b.i,iv) but leave room to account for the less categorical generalizations in (32).

A doubt: Are we dealing with a grammatical phenomenon?

The variability of the data concerning, in particular, the availability of free interpretations with indefinite possessives raises the doubt that the phenomena

discussed in the previous sections might be non-grammatical in nature. In particular, one might think that the degraded status of indefinite possessives in contexts like (15) might be due to the interaction of two factors that conspire to render the intended interpretation highly disfavored: (i) the fact that the more "usual" interpretation according to which the possessive expresses the relation of ownership is available, and (ii) the fact that in general the use of partitives is preferred to indefinites when a speaker intends to refer back to part of a group of entities which have already been introduced in the discourse. Below I argue that neither hypothesis can be maintained.

Dismissing (i)

A completely non-grammatical analysis of the facts concerning indefinite possessives would go as follows. Consider again the contrast in (11) repeated below:

(11)　Ieri　　　Gianni e　Paolo sono stati attaccati da due gruppi
　　　yesterday Gianni and Paolo were　　　attacked by two groups
　　　(distinti)　di cani;
　　　(different) of dogs

　　　a.　. . . sfortunatamente **i　cani di Gianni** avevano la　rabbia.
　　　　　　unfortunately　the dogs of Gianni had　　the rabies

　　　b. [#]. . . sfortunatamente **alcuni cani di Gianni** avevano la　rabbia.
　　　　　　unfortunately　some　dogs of Gianni had　　the rabies

Both the definite possessive i cani di Gianni and the indefinite possessive alcuni cani di Gianni can express the relations OWN and ATTACK, i.e. both types of interpretations can be derived with either type of possessive DP. But the latter interpretation is highly disfavored in the case of indefinite possessives not only because the former is more common, but even because under the latter interpretation the indefinite possessive would be taken to denote part of the set of dogs introduced in the context-setting sentence, an interpretation which is

pragmatically disfavored because the speaker did not use a partitive DP.[31]

Of course, for this to provide an account of the contrast in (11) the pragmatic dispreference for indefinites to link to entities introduced in the discourse is crucial: no contrast arises in the case of definite possessives, which leads to the hypothesis that the fact that the interpretation expressing the relation of ownership is more common might not play a role at all. Indeed, it is my opinion that the contrast in (11) has nothing to do with an alleged "interference" due to the the availability of this interpretation.

First, (11b) seems to behave quite differently from well-known cases of lexical ambiguity in which one of the meanings is used more infrequently. Take, for example, the case of the noun bank in English: everybody would agree that its meaning describing a financial institution is by far more frequent than its meaning describing the side of a watercourse. Still, when discourse cohesion requires that the latter meaning be selected, speakers seem to have no particular difficulty in doing so.

(33)   It was a beautiful warm day, and I decided to go sunbathing by the river. I tried the area near the Washington Mutual branch, but unfortunately the bank was already crowded with people.

In (33) there seem to be no problems for speakers to take the bank in the last sentence to refer to the bank of the river and not to the Washington Mutual building. And it seems to me that it is only discourse cohesion that rules out the interpretation according to which the sentence would convey the information that the Credit Union building was crowded with people. The question, then, is why discourse cohesion does not suffice to select the less common interpretation for indefinite possessives in contexts like (11).

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[31]This could be modeled as a consequence of the Gricean maxim of Manner.

In addition, the hypothesis that the availability of the ownership interpretation plays a role in the contrast in (11) would predict the absence of a parallel contrast in the case of possessives that—because of the lexical choice of possessum—do not license the interpretation according to which the possessive relation expresses the relation of ownership.

(34)   Gianni e   Paolo (due famosi navigatori in solitaria) sono stati colpiti
            Gianni and Paolo (two famous solo sailors)   were   hit
            molte volte da tremendi uragani;
            many times by terrible   hurricanes

        a.   . . . a volte   **gli uragani**   **di Gianni** hanno quasi   affondato
                  sometimes the hurricanes of Gianni have   almost sunk
           la sua barca.
           his   boat

        b. #. . . **alcuni uragani**   **di Gianni** hanno quasi   affondato la sua
                some   hurricanes of Gianni have   almost sunk   his
           barca.
           boat

But, as (34) shows, this is not the case. Parallel to the case of (11b), the indefinite possessive alcuni uragani di Gianni does not seem to express the relation HIT (21b) that is expressed by the definite possessive gli uragani di Gianni in (34a), and the whole sentence in (34b) feels like a non-sequitur to the context-setting sentence. Indeed, speakers seem to want—against what basic world knowledge dictates—to interpret alcuni uragani di Gianni as expressing the relation of ownership.[32]

Dismissing (ii)

It seems to me that if the availability of the ownership interpretation does not play a role in contrasts like (11), a non-grammatical account for these contrasts

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[32]Thus, the ill-formedness of (34b) is due—in addition to a violation of general principles of discourse cohesion—to this clash between the interpretation that speakers seem to select for the indefinite possessive DP and basic world knowledge.

becomes much less plausible. In particular, for a non-grammatical account to be feasible, it is not only necessary to maintain that free interpretations are available for indefinite possessives like alcuni cani di Gianni and only pragmatically dispreferred, but even that the derivation of free interpretations is not a case of context-dependency and the meaning of a possessive under a free interpretation is uniquely determined independently of its context of use. I argue below that—given these assumptions—contrasts in (11) would not be expected to arise.[33]

The argument is a little complex, so let me outline its steps and conclusions from the beginning. I first argue (I) that it is not the case that a general requirement exists in language that rules out the use of indefinites—rather than partitives—in contexts where the entities referred to were already introduced in the previous discourse. Then (II) I argue that a similar requirement does not hold for the smaller class of possessive DPs either: indefinite possessives in general can refer to entities mentioned in the preceding discourse. The conclusion (III) is that it is the *nature* of the possessive relation that matters.

But it is not clear that this observation can be accounted for under the hypothesis that all the interpretations that seem to be licensed by possessive constructions arise from the same basic syntactic/semantic structure. The best attempt at such an account that I can imagine (IV) is to argue that the possessive relation is always encoded in the syntax/semantics of possessives by a constant

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[33]In addition, notice that—under the hypothesis that the interpretation expressing the ATTACK relation is available in indefinite possessives and just less salient because of the way in which indefinites vs. partitives are used in discourse—some additional explanation should be provided for the generalization in (28b.iv). If the same interpretation can be derived for predicate possessives like di Gianni, it is not clear why this interpretation is completely unavailable in sentences like (27b). I.e. it must be argued that the syntax/semantics of predicate possessives differs from the syntax/semantics of possessive DPs in that the former cannot encode free interpretations. Under this assumption, the generalization in (28b.iv) can be maintained, but possibly the problem arises to explain how the learner of Italian is supposed to acquire the different semantics of di Gianni when it appears in possessive DPs vs. when it is used as a predicate. Not an extremely strong argument, I admit, but still a concern that must be addressed eventually.

with a very "bleached" meaning and that the stronger interpretations derived when possessives are used in context are due to pragmatic inferences. Yet, what is not clear under this suggestion is why such a sharp contrast seems to exist between control and non-control relations.

A solution in terms of defaults (V) is briefly considered and rejected, because it essentially leads to the conclusion that two distinct meanings for possessives should be distinguished anyway, one of which imposes non-trivial restrictions on the semantics of the possessive relation. Given this conclusion, the only option left for a non-grammatical account is to argue for a systematic ambiguity of possessive constructions: all possessives license two distinct interpretations (one of which—in the case of indefinite possessives—may be filtered by pragmatic preferences), but neither of them involves a direct dependence on the context of use. I argue (VI) that the hypothesis that the meaning underlying free interpretations does not entail a direct context-dependency cannot be maintained. And, finally, I conclude (VII) that as soon as an account of free interpretations in terms of a direct context-dependency is attempted, the hypothesis that a pragmatic preference for the use of partitives might explain the unavailability of free interpretations with indefinite possessives must be rejected.

I. It is well-known that—even granting the existence of a preference for the use of partitives—indefinites can be used when reference is made to part of a group of entities introduced in the previous discourse. E.g., no ill-formedness arises in (35) where discourse cohesion requires that the indefinite DP due cani is taken to denote two of the dogs introduced in the previous sentence.[34]

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[34]This is what Enç (1991) calls the *discourse specific* interpretation of indefinites. Lest the reader be left wondering, let me point out that the well-formedness of (35) does not depend on the choice of an indefinite DP headed by a numeral: indefinites headed by other determiners— e.g. alcuni 'some', molti 'many—can be substituted in (35) and the sentence remains well-formed.

(35)   Nella stanza c'   erano parecchi cani e   un paio   di gatti. Quando
       in the room there were various dogs and a couple of cats   when
           sono entrato tutti gli animali dormivano, ma **due cani**
       (I) entered   all   the animals slept   but two dogs
       si sono svegliati e   mi   sono venuti incontro scodinzolando.
       woke up   and to me came   towards wagging their tails

II.   Furthermore, the hypothesis that the contrast in (11) is somehow due to the
possessive nature of the indefinite DP alcuni cani di Gianni cannot be maintained
either: no ill-formedness arises in examples like (36), where due cani di Gianni
expresses the relation of ownership and must be interpreted as referring to part
of the group owned by Gianni that is introduced in the first sentence.

(36)   Nella stanza c'   erano i   cani di Gianni e   un paio   dei   cani
       in the room there were the dogs of Gianni and a couple of the dogs
       di Paolo. Quando   sono entrato tutti gli animali dormivano, ma **due**
       of Paolo when   (I) entered   all   the animals slept   but two
       cani di Gianni si sono svegliati e   mi   sono venuti incontro
       dogs of Gianni woke up   and to me came   towards
       scodinzolando.
       wagging their tails

Indeed, naturally occurring examples can be found of sentences in which an
indefinite possessive expressing the relation of ownership is used to refer to part of
a group of contextually salient entities. Three such examples are reported below.

(37)   Uno dei   due albanesi   era   affittuario in **un appartamento della**
       one of the two Albanians was a tenant   in an apartment   of the
       signora presa di mira.
       lady   targeted

                                    [from "Il Resto del Carlino", web edition, 8/6/2002]

(38)   Le schede e   le foto   di **alcune auto del   museo**
       the specs and the photos of some   cars of the museum

                                    [from (unofficial) website describing the Car Museum in Torino]

(39) I   cani da adottare sono quelli ospitati dal   Canile Municipale […]
      the dogs to adopt   are   those hosted by the city pound
      Presso il   Canile Municipale sono attualmente custoditi 250 cani […]
      at   the city pound   are presently   kept   250 dogs
      Naturalmente chi   deciderà   di adottare **un cane del**
      obviously   those who will decide to adopt   a   dog   of the
      Canile…
      pound

[from City of Ravenna website]

In the cases of (37) and (38) the sentence containing the indefinite possessive was used in a context which already entailed the existence of entities satisfying the possessive description. (37) is from a newspaper article whose title was 'They were blackmailing the(ir) landlady', which I assume should make the existence of a group of apartments owned by the lady mentioned in the article salient, and still the indefinite possessive un appartamento della signora 'an apartment of the lady' is used in place of a partitive. (38) was found in a webpage describing the Car Museum in Torino, Italy, a topic which should by itself entail the salience of a group of cars on display at the museum, but again the indefinite possessive alcune auto del museo 'some cars of the museum' is used. Finally, in the case of (39) the group of entities satisfying the description cani del Canile 'dogs of the pound' is explicitly introduced twice in the text preceding the sentence containing the indefinite possessive un cane del Canile.[35]

III. Thus, it is not the possessive structure per se that is responsible for the contrast in (15): the nature of the contextually salient relation to be expressed by the possessive seems to matter. Indeed, the contrast between the well-formedness

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[35]Actually, I am not sure that in any of these examples I would characterize the relation expressed by the possessive DP as being the relation of ownership proper. If the relations expressed by these DPs are actually other instances of CONTROL, even better: the examples constitute naturally occurring sentences in which an indefinite possessive expressing a control relation is used to refer to part of a group of contextually salient entities.

of (36)—where the relation expressed is OWN—and the ill-formedness of (40)—where the target relation is ATTACK—is rather stark.

(40) #Nella stanza c'   erano i   cani che hanno attaccato Gianni e   un
     in the room there were the dogs that attacked   Gianni and a
     paio dei   cani che hanno attaccato Paolo. Quando   sono entrato
     couple of the dogs that attacked   Paolo when   (I) entered
     tutti gli animali dormivano, ma **due cani di Gianni** si sono svegliati e
     all the animals slept   but two dogs of Gianni woke up   and
     mi   sono venuti incontro scodinzolando.
     to me came   towards wagging their tails

Of course, a relevant difference between the relation OWN and the relation ATTACK seems to be that the latter, but not the former, needs to be introduced explicitly in the context for a possessive to express this relation in the first place. E.g. John's dog in an empty context is taken to refer to the dog that John owns, certainly not the dog that attacked John. The contrast between (36) and (40) seems to indicate that the derivation of free interpretations *depends* on the possibility of linking the possessive DP to an entity introduced in the discourse. But what does this mean exactly?

If the *semantic* derivation of free interpretation—so to speak—does not "converge" in the case of indefinite possessives, it is hard to escape the conclusion that the constraints at work in (11) are grammatical in nature. Still, one could try to deny this premise, and argue that the semantic derivation of free interpretations goes through just fine in indefinite possessives, and the perceived ill-formedness of indefinite possessives in non-control contexts like (11) is essentially a pragmatic effect.

IV. Let me be more concrete. Assume that in the semantic derivation of indefinite possessives the meaning of the possessive relation is defined by a relational constant. The meaning derived for a possessive construction is not

context-dependent in any formal sense, but the meaning of the constant encoding the possessive relation is very "bleached", and the impression that a possessive DP expresses a more contentful relation is due to pragmatic inferences made by the speaker on the use of this weak meaning in specific contexts. By default—in the empty context—the pragmatic inference is that this weak meaning is used to convey the more contentful relation OWN, but when contextual information is present it can be assumed that this weak meaning is used to express other more contentful relations. In addition, it can be postulated that linking the meaning of a possessive DP to a group of entities that are introduced in the previous discourse is the best (or possibly the only) trigger for these pragmatic inferences. And this is why the difference between (36) and (40) arises: only in the latter case is the relative dispreference for using an indefinite DP to refer to part of an already established entity expected to have an effect.[36]

V. So far so good. However, it is not clear how the different availability of what I called control and free interpretations with e.g. indefinite possessives should be accounted for within this analysis. For example, in (18) the possessive DPs in (a) and (b) are interpreted as expressing the contextually salient relation BE.ENTRUSTED.TO and not the default relation OWN, but it is not clear why triggering the pragmatic inferences that—so to speak—derive this relation should be easier than triggering those inferences that derive the relation ATTACK. Still, the contrast observed between definite possessives and indefinite possessives in (11) does not seem to arise in (18).

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[36]As an aside, notice that the conclusion that linking to an established entity in the context is the only trigger for the relevant pragmatic inferences is probably required if the lack of free interpretations with predicate possessives—remember the generalization in (28b.iv)—is to be derived without postulating that the semantics of the predicate possessives is completely different from the semantics of possessive DPs.

(18) Ieri   a Gianni e   Paolo sono stati affidati   due gruppi
     yesterday to Gianni and Paolo were   entrusted two groups
     (distinti)   di cani;
     (different) of dogs

     a.   . . . sfortunatamente **alcuni cani di Gianni** avevano la   rabbia.
               unfortunately   the   dogs of Gianni had   the rabies

     b.   . . . sfortunatamente **i   cani di Gianni** avevano la   rabbia.
               unfortunately   the dogs of Gianni had   the rabies

One hypothesis that could explain the difference between (11) and (18) is that the farther one tries to stray from the default relation of ownership, the greater the need for contextual support of those pragmatic inferences that determine the impression that the weak meaning of the possessive construction is used to convey a more contentful relation. This hypothesis amounts to claiming: (i) that there is a default relation—say OWN—that constitutes the typical example of the semantics of the possessive relation, and (ii) that the semantics of the possessive relation is compatible with other relations that differ from OWN, but still (iii) that some properties, possibly abstract properties, of the default relation OWN constrain the range of relations that plausibly can be taken to instantiate the possessive relation.

The latter point, it seems to me, amounts to saying that the constant that encodes the possessive relation has a non-trivial semantics. But then the question arises how it is possible that for the case of definite possessives, given the proper context, there do not seem to be constraints on the range of relations that the possessive construction can express. Short of taking definite possessives that express relations that are not compatible with the meaning of the constant encoding the possessive relation to be metaphorical uses of the possessive

construction,[37] it seems unavoidable to conclude that possessive constructions can encode a second meaning that is not associated with the default corresponding to the relation OWN.

VI. Apart from the fact that, in my opinion, once two distinct meanings for possessive constructions are distinguished, there is no need for the analysis in terms of a default,[38] the real problem that I see with this analysis is that—if a non-grammatical account of the contrast between the interpretation of indefinite and partitive possessives is to be maintained—the second meaning available in principle for possessive constructions should be encoded by a constant whose meaning is completely null. That is, it must be maintained that (i) possessives are semantically ambiguous—depending on the choice of one or the other constant, different meanings for the possessive constructions are determined—and (ii) both meanings are in principle available for all possessive constructions, but (iii) one of the two meanings is essentially null, stating only the existence of a relation holding between the possessor and the possessum.[39]

It is this third point that seems quite problematic to me, and leads me to

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[37]This seems dubious to me. As far as I can see, even when taken to express very "extreme" relations like ATTACK, definite possessives do not sound at all "metaphorical" or "jocular". In particular this is true if focal stress is placed on the possessor: if there is no need to distinguish, say, the dogs that attacked John from those that attacked Paul it is not clear why the possessive construction would be used in the first place. Let me add that this is why all the context-setting sentences in my examples sound a little bit wordy and artificial: in each of them I tried to make two groups of e.g. dogs salient in the context in order to license the use of a possessive DP in the follow-up sentence.

[38]Essentially, the two meanings can correspond to the distinction between control vs. free interpretations. And, as suggested already, the variability in the speakers' judgments concerning the availability of "extreme" cases of control interpretations could be explained in terms of the need for the speakers to decide whether the contextually salient relation qualifies as a control relation.

[39]The need for a link to entities already introduced in the discourse should be maintained as a condition for triggering pragmatic inferences that specify what information the possessive is used to convey, if the contrast between definite and indefinite possessives in contexts like (11) is to be accounted for.

conclude that a non-grammatical account for the contrasts presented in the previous section is not feasible. A non-grammatical account requires one to adopt the assumption that free interpretations for definite possessives are not essentially context-dependent, that behind all instances of free interpretations is the same unique semantics which simply states the existence of a relation holding between possessor and possessum and constitutes the basis for contextually triggered pragmatic inferences. The latter inferences give the impression that free interpretations are context-dependent, but this impression is actually misleading: formally, the meaning behind the variety of free interpretations is a constant meaning which is not context-dependent.

This conclusion seems wrong to me. First of all, a constant with no real meaning is a semantic object whose properties are, to say the least, questionable: in every model, the evaluation function should assign to the alleged constant the great union of the denotation of all relations defined in the model. Calling the domain of the model $\mathcal{D}$ it seems to me that this set would likely contain all pairs in $\mathcal{D} \times \mathcal{D}$. Indeed, for each two individuals a and b in $\mathcal{D}$, a suitable relation that relates the two can be easily defined extensionally as the singleton set $\{\langle \mathsf{a}, \mathsf{b} \rangle\}$. And, second, even granting that a semantic object of this kind is a legitimate one, the unwelcome result is obtained that—leaving the effect of the pragmatic inferences triggered by contextual information aside—the denotation of the property cani di Gianni in a possessive DP like i cani di Gianni would be the same as the denotation of the property cani in a DP like i cani. Any pair of individuals will be in the denotation of the constant that encodes the (null) meaning of the possessive relation, so in our example all the entities that satisfy the property denoted by cani will be in the denotation of cani di Gianni. But this seems to clash with the intuition that the possessive construction behaves like a restrictive modifier in possessive DPs: intuitively, i cani di Gianni is normally

used to denote a proper part of the entity that would be denoted by i cani.

Trying to resolve the latter problem by claiming that the meaning of the constant actually states the existence *in the discourse domain* of a relation holding between possessor and possessum amounts to sneaking back in through the window the direct context-dependency of the interpretation of possessives. And even under this reformulation the theory seems unsatisfactory in that—in my opinion—it is not capable of accounting for the difference in acceptability between sentences like (35) and (40). The meaning derived for indefinite possessives under this alternative suggestion is not different in formal terms from any other indefinite DP containing a restrictive modifier, thus it is not clear why just indefinite possessives under free interpretations—and not more generally indefinites containing a restrictive modifier—should be prevented from referring to entities mentioned in the preceding discourse.[40]

VII. An alternative solution, the solution that I will be exploring in the next chapters, is to bite the bullet and argue that the data concerning the distribution of free interpretations should be accounted for by assuming an explicitly context-dependent semantics for possessives, in which the variety of free interpretations arise from the fact that the context of use provides a value for a *variable* that encodes the possessive relation in the semantic composition of the possessive. Of course, once this assumption is made the conclusion must be drawn that the constraints that determine the (un)availability of free interpretations are squarely in the semantics: they concern the possibility of assigning a contextually determined value to a variable. Thus, I conclude that the new interpretive

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[40]In addition—under this hypothesis—the semantics of indefinite possessives makes direct reference to their context of use, which—if anything—should make it more likely for indefinite possessives to "link" to their context of use, thus making an account for their interpretive properties in terms of a pragmatic preference in favor of the use of partitives even less plausible.

constraints that I presented in this chapter are grammatical in nature and further strengthen the conclusion that a semantics of possessives might be a worthwhile endeavor after all.

Last but not least, it should be pointed out that if the (un)availability of free interpretations depends on the possibility of assigning a contextually provided value to the variable that encodes the possessive relation, the pragmatic preference for using partitives to refer to elements in a group of entities that was already introduced in the discourse cannot *by itself* account for the perceived ill-formedness of indefinite possessives under a free interpretation. Indeed, it can be argued that the possibility of interpreting an indefinite DP as denoting part of entities that have previously been introduced in the discourse vs. novel entities does not correspond to a semantic ambiguity of indefinite DPs.[41] If this ambiguity were encoded in the semantics, it would amount to imposing in one case the restriction that the entity denoted by the indefinite DP be related to some entity already introduced in the discourse, and in the other case the restriction that the entity denoted by the indefinite DP not be related to any entity already introduced in the discourse.

(41) a. Several boys danced on the piano.
      b. **A silly boy** danced on the fireplace.
      c. He was in fact one of the boys that danced on the piano.

But—as argued in (Condoravdi, 1997, p. 125)—this entails that, depending on the interpretation chosen for the indefinite DP a silly boy in (41b), the sentence

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[41]Enç (1991) argues that Accusative-marked indefinites in Turkish are specified in the semantics as being linked to entities that are introduced in the previous discourse. Essentially, Enç argues, Accusative-marked indefinite DPs in Turkish are interpreted as partitive indefinite DPs are in English. Without taking a stance here on the Turkish facts, it is clear that even if Enç's proposal is correct for Turkish, her hypothesis that the two interpretations licensed by English indefinites correspond to a semantic ambiguity cannot be maintained. See Condoravdi's argument immediately below in the text. The same conclusion must be drawn for Italian indefinites: the argument in (41) can be reproduced in Italian as well.

in (41c) would be either uninformative or contradictory. Yet the intuition is that (41c) is neither contradictory nor uninformative. The conclusion is that the difference between the two interpretations for indefinites is not determined in the syntax/semantics of indefinites. Thus the meaning of indefinites is not different under the two interpretations, and taking the indefinite to be discourse-linked probably constitutes an instance of *domain narrowing*: the same semantics is used with respect to the whole domain of the model or a smaller contextually determined domain. If this is the case, it is not clear how a pragmatic preference for the non-discourse-linked interpretation could be held responsible for the impossibility of assigning a contextually provided value to the variable that encodes the possessive relation.

Summarizing

I hope to have achieved two results in this appendix. The first is alerting the reader about data that do not fit the idealized picture summarized in (28): the simple generalizations in (28b.ii,iii) must be replaced by the more complex generalizations in (32). The second is arguing that the constraints that are responsible for the restricted distribution of free interpretations are grammatical in nature. The restrictions on the availability of free interpretations seem to go beyond what would be predicted by a strictly non-grammatical account of the facts based on some sort of "masking effect" due to the availability of the more usual ownership interpretation and/or to the preference for interpreting indefinite DPs as non discourse-linked that renders an otherwise available interpretation minimally salient in the case of indefinite possessives.

In arguing for the latter conclusion I suggested that free interpretations should be analyzed as instances of direct dependence of the semantics of possessives on their context of use, and that the unavailability of free interpretations should be

accounted for in terms of the impossibility of assigning a contextually provided value to a variable encoding the possessive relation.

In addition, I hope that the discussion in this appendix further highlighted how accounting for the derivation of extrinsic interpretations in possessives is not a trivial matter, which makes the lack of discussion of this topic in the literature quite remarkable. Ultimately, accounting for the derivation of extrinsic interpretations amounts to characterizing: (i) the nature of the contribution of contextual information to the interpretation of possessives—Is it direct? Is it indirect? How does it come about?—(ii) the constraints that prevent contextually available information from contributing to the interpretation of possessives—not all contextually salient relations seem to be able to contribute in all cases—and (iii) how these interact with the syntax, semantics, and pragmatics of specific possessive constructions to determine the (complex) pattern of interpretive facts summarized in (28)+(32).

That is, a successful analysis should account for both the steady facts and the less clear generalizations concerning the interpretation of possessives. For practical purposes, however, I will first work keeping in mind the simpler idealized picture summarized in (28), without even dealing explicitly with the case of quantificational possessives. Once the basic analysis is in place, I will again address the issue of whether it is sufficiently (and "appropriately") weak to account for the more complex picture in (28)+(32).

CHAPTER 3

The Syntax of (Italian) Possessives

As a first step towards a semantic account of the interpretive contrasts presented in chapter 2, I introduce in this chapter a simple syntax for possessive DPs and constructions involving possessive predicates in Italian. Even though I outline below some of the conceptual and empirical reasons which lie behind my adoption of these particular syntactic assumptions, this chapter is by no means intended to provide a full argumentation in favor of them. For the purpose of this thesis this is merely an auxiliary chapter, providing an explicit syntax upon which a compositional analysis of the semantics of possessives in Italian can be built.[1] With this in mind, the reader might want to focus only on §3.1.3 and §3.2.2 and move on to the following chapters.

3.1 The syntax of possessive DPs

The debate concerning the syntax of possessive DPs has centered around two distinct but intimately related issues: (i) what syntactic relation holds between possessor and possessum, and (ii) what explains the uniformity of the surface form of possessive DPs within a given language. The two issues are related in that it has long been pointed out in the literature that possessive DPs most likely do

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[1]For more detailed discussion of the syntax of possessives see (Storto, 2000c). Some further remarks on the syntax of possessives—in particular English possessives—can be found in chapter 6.

not constitute a syntactically unitary category for what concerns the underlying structural relation holding between possessor and possessum, but these differences are by and large blurred in the "surface structure" of these DPs (Chomsky, 1970).

In some possessive DPs the possessum noun can be argued to be a syntactic argument-taking category. For example, Grimshaw (1990) argues that in possessives like the city's destruction the possessum noun destruction—a deverbal *process nominal* in Grimshaw's terminology—is a syntactic argument-taking category, i.e. a category that, like verbal heads, projects an argument structure. Accounting for the insertion of the possessor in the syntactic derivation of possessives of this kind is quite unproblematic: the possessor DP is selected as the syntactic argument of the possessum noun in a structural configuration like (42).

(42)

```
            N′
          /    \
        N        NP
        |        /\
   destruction  the city
```
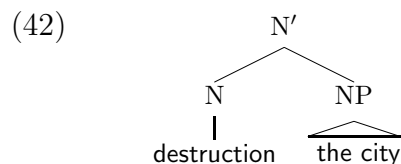
On the other hand, in many possessive DPs the possessum noun is arguably not a syntactic argument-taking category. For example, the noun dog in John's dog does not project an argument structure under standard analyses. The licensing of the possessor in DPs of this kind cannot be accounted for along the lines proposed for the first class of possessive DPs: the semantic relation holding between possessor and possessum must be encoded in the syntax in a structural configuration different from (42). Possessive DPs of this second type, of course, constitute the main object of analysis of this thesis.

3.1.1 Possessors in Spec,NP

Within the syntactic framework of Chomsky (1981), the main difference between possessives like the city's destruction and John's dog has been assumed to be that

the prenominal position of the possessor is *derived* (from a base structure like
(42)) in the first case, whereas it is *base-generated* in the second case. The
possessor in John's dog is inserted directly as a (leftward) sister to N′:[2]

(43)

```
          N′
         /  \
       NP    N′
       /\    |
     John    N
             |
            dog
```
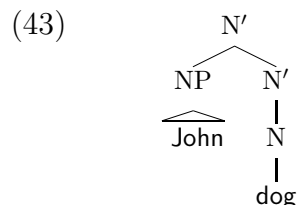
To maintain the full generality of the *Theta Criterion*—which stipulates that
each NP in a sentence be assigned one and only one *thematic role* (θ-role)—
Chomsky (1986) proposes that the NP John in (43) is assigned a POSSESSOR
θ-role by the noun dog. But this assumption seems to be quite ad-hoc: the
peculiar properties of the postulated POSSESSOR θ-role seem to set it apart from
the other θ-roles discussed in the literature.

Thematic roles can be seen as the syntactic encoding of (part of) the semantic
relations holding between a predicate and its arguments. A thematic role is a
bundle of *thematic relations* holding between a predicate and one of its arguments,
relations which encode the selectional (and, in later developments of the theory,
subcategorizational) restrictions that the predicate imposes on that argument.
Thus, in general thematic roles have the following properties: they (i) depend on
the meaning of the lexical head that assigns them and (ii) impose interpretive
restrictions on the relation holding between the θ-role assigner and the NPs they
are assigned to. But it is easy to see that neither property characterizes the

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[2]Actually, Chomsky proposes that the possessor is inserted in Spec,NP. I slightly adapt
Chomsky's proposal to highlight some of its features that are—in my opinion—a little less
transparent in Chomsky's original formulation. Keeping with the terminology adopted in
(Chomsky, 1981), I do not distinguish between DP and NP in this section, and I use NP
to refer to the maximal syntactic projection corresponding to nominals. In the tree structures
in (43)–(45) in the text I represent only the N′ constituent, a syntactic constituent that is
selected as a complement by an article/determiner in order to form a full NP.

POSSESSOR θ-role proposed by Chomsky: the POSSESSOR θ-role is assigned by all non-derived nouns—independently of their meaning—and it does not seem to impose any restrictions on the nature of the relation holding between a possessum noun and the possessor NP it is assigned to—given an appropriate context of use, the possessive relation in a possessive like John's dog can be taken to express any relation whatsoever.

Chomsky (1986) is conscious of these problems, and proposes an alternative characterization of the POSSESSOR θ-role: he suggests that POSSESSOR is not assigned by the possessum noun, but by the structural configuration $[_{\text{N}'}\_\_\text{N}']$:[3] POSSESSOR is a *structural* θ-role.

One problem with this proposal is purely semantic: even assuming that the possessor is structurally licensed in a structure like (43) as Chomsky proposes, it is not clear how the correct interpretation for the possessive NP can be derived. John's dog denotes an entity, so—assuming that the semantics of a null definite determiner (type $\langle e, \langle e, t \rangle \rangle$) applies to its result—we want the semantic composition of the structure in (43) to determine a semantic object of type $\langle e, t \rangle$.

(44)

$$
\begin{array}{c}
\text{N}'_{\langle e,t \rangle} \\
\diagup \quad \diagdown \\
\text{NP}_e \quad \text{N}'_{\langle e,t \rangle} \\
\frown \qquad | \\
\text{John} \quad \text{N}_{\langle e,t \rangle} \\
\qquad | \\
\qquad \text{dog}
\end{array}
$$

Composition of the meaning of NP and N′ in (44) is possible only if one of the two meanings is shifted into an entity of a semantic type that can be combined with the meaning of the other via the rules of *Functional Application* or *Predicate Modification* (Heim and Kratzer, 1998).[4] Given traditional assumptions about

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[3]Of course, the relevant structural configuration is $[_{\text{NP}}\_\_\text{N}']$ in (Chomsky, 1986).

[4]See the formal system presented in the appendix to chapter 4.

type-shifting (Partee, 1987), the meaning of NP can first be type-shifted into a semantic object of type $\langle e, t \rangle$—the property characterizing the singleton set whose only element is the individual called John—and then composed as a modifier with the meaning of N′. But even under this scenario the meaning that is derived is not correct: the result of the composition is the property that characterizes the set containing a single entity which is a dog and is equal to John.

The problem with (44) is that the possessive relation holding between John and the relevant dog never enters the semantic composition. Actually, this problem can be solved quite easily by taking the Saxon genitive affix 's to contribute the meaning of the possessive relation. For example, following (Anderson, 1983), we can propose that the Saxon genitive morpheme 's is a kind of adposition—with syntactic and semantic properties akin to those of a genuine preposition—that combines with the possessor NP to form a possessive phrase (PossP) that then combines with N′:

(45)

$$
\begin{array}{c}
\text{N}'_{\langle e,t \rangle} \\
\diagup \quad \diagdown \\
\text{PossP}_{\langle e,t \rangle} \qquad \text{N}'_{\langle e,t \rangle} \\
\diagup \quad \diagdown \qquad \mid \\
\text{NP}_e \quad \text{Poss}_{\langle e,\langle e,t \rangle \rangle} \quad \text{N}_{\langle e,t \rangle} \\
\mid \qquad \mid \qquad \mid \\
\text{John} \qquad \text{'s} \qquad \text{dog}
\end{array}
$$
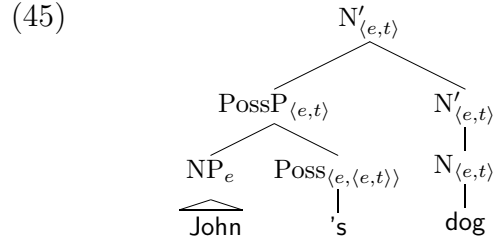
In the structure in (45) semantic composition proceeds as desired without the need of type-shifting operations. In addition, the semantics of the Saxon genitive affix can be defined in such a way that the meaning of the PossP node is the property describing the set of entities that stand in the possessive relation to John. This property can be combined as a modifier with the meaning of the N′ node, deriving the property describing the set of entities that are dogs and stand in the possessive relation to John, intuitively the desired result.
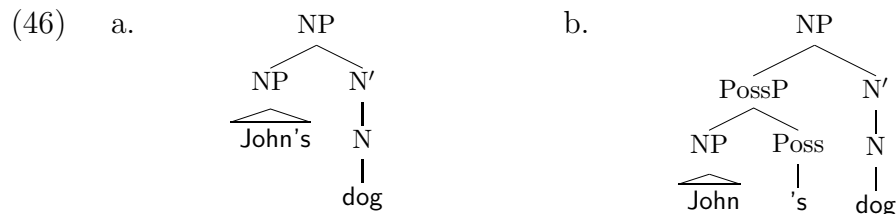
But once a structure like (45) is adopted there is no need to maintain the hypothesis that the possessor NP is ever assigned the POSSESSOR θ-role by the possessum noun or within a structural position related to the N′ projected by the possessum: in (45) the NP John can and should be licensed within PossP by the affix 's, which—like prepositions in general—is a θ-role assigner.

In my opinion the structural configuration in (45)—which is essentially equivalent to the one proposed by Anderson (1983)—provides a more satisfactory implementation of the ideas that seem to be behind Chomsky's (1986) proposal. That POSSESSOR is a structural θ-role as Chomsky proposes amounts to the conclusion that the possessor NP is not licensed directly by the possessum noun. Anderson obtains this result without postulating such a novel thing as a structural θ-role: the possessor is licensed by the affix 's. Furthermore, the semantic problem that I pointed out above can and was probably intended to be addressed within Chomsky's system in a way similar to that discussed for (45). Indeed, Chomsky does not take just the possessor NP to be generated as a sister to N′, as I have depicted in (43), but the Saxon genitive form of the possessor, i.e. John's. Thus, the possibility of taking the affix 's to contribute the semantics of the possessive relation is left open within Chomsky's proposal as well: the meaning of the possessive relation can be introduced in the lexical entry for the inflected NP John's. The only difference is that within Chomsky's system there seems to be a tension between the syntactic category of John's—it is an NP, like John—and its interpretation and use—this NP must denote a property and behave like a modifier and can never denote an entity and be used as an argument. This problem, obviously, does not arise in Anderson's system: John's is a PossP, not an NP.

To set the record straight, I can now undo the little modification that I took the liberty of making to both Chomsky's and Anderson's proposals. In reality

both authors assume that John's is base-generated in Spec,NP, and that the semantics of the null definite determiner that I mentioned when discussing (44) is part of the meaning of the material in Spec,NP.[5] The structures proposed by Chomsky and Anderson for the NP John's dog are, respectively, (46a) and (46b):

(46) a.

NP
├── NP
│   └── John's
└── N'
    └── N
        └── dog

b.

NP
├── PossP
│   ├── NP
│   │   └── John
│   └── Poss
│   └── 's
└── N'
    └── N
        └── dog

The adoption of Anderson's structural analysis (46b) provides a way to address the issues concerning the semantic composition of possessives whose possessor receives—using Chomsky's (1986) terminology—a structural θ-role. But a second problem, which affects both structures in (46), arises as soon as one considers the differences between possessives like John's dog and the city's destruction in the light of the Theta Criterion. Differently from the case of John's dog, the prenominal position of the possessor in the city's destruction is syntactically derived: the possessor is licensed within N' as an argument of the possessum noun (42) and then raises to Spec,NP to receive Case. The resulting surface structure is as in (47):[6]

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[5]The trees in (46) represent full NPs, whose denotation is an entity of type e (or a quantifier of type $\langle\langle e, t\rangle, t\rangle$). Thus, for a proper interpretation of these syntactic structures to be derived it must be assumed that the constituent in Spec,NP—the possessor NP or PossP, respectively—incorporates the semantics of a (definite) determiner. For concreteness, it can be assumed that the semantics of this null determiner is part of the meaning contributed by the affix 's.

[6]The affix 's on the city could be taken to be generated with the possessor NP in the complement position of destruction or to be added after the possessor has moved to Spec,NP. The choice between the two options is—as far as I can see—immaterial to the argument presented in the text. For concreteness, let's say that 's is added after the possessor has moved to Spec,NP.

(47)

NP
├── NP₁
│   └── the city's
└── N'
    ├── N
    │   └── destruction
    └── NP
        └── t_1
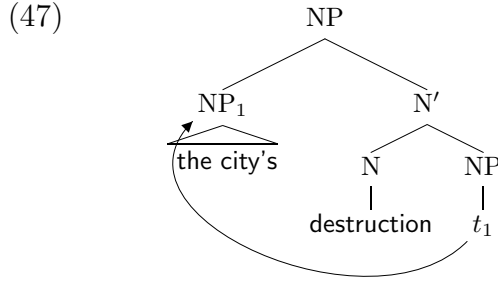
The problem is that, evidently, (47) satisfies the structural description of the configuration within which the POSSESSOR θ-role is assigned to the material in Spec,NP. But the city receives a θ-role already in its base position: if POSSESSOR is assigned in Spec,NP in (47) the Theta Criterion is violated. To solve this contradiction, assignment of the structural θ-role of POSSESSOR must be optional (Chomsky, 1986).

Unfortunately, the problem raised by (47) does not reduce simply to the question of whether POSSESSOR is only optionally realized.[7] Once again looking at Anderson's proposal can help us appreciate the additional ramifications of the problem. According to (46b) the possessor NP is θ-licensed by the affix 's, thus it is not expected that movement of the possessor to Spec,NP violates the Theta Criterion in (47). But this holds only if the affix 's in the city's destruction is just a syntactic case marker and not the syntactically and semantically potent adposition that is present in (46b). The same conclusion can be reached on the basis of semantic considerations. In the possessive NP the city's destruction the possessive relation is already introduced by the semantics of the possessum noun: we do not want the semantically potent affix 's that occurs in (46b) to add another relation to the mix.

The moral is that optional realization of the POSSESSOR θ-role in the system proposed by Chomsky (1986) actually amounts to postulating a lexical ambiguity

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[7]After all, this assumption would already be needed in order to account for the fact that there are plenty of well-formed NPs that do not contain a possessor.
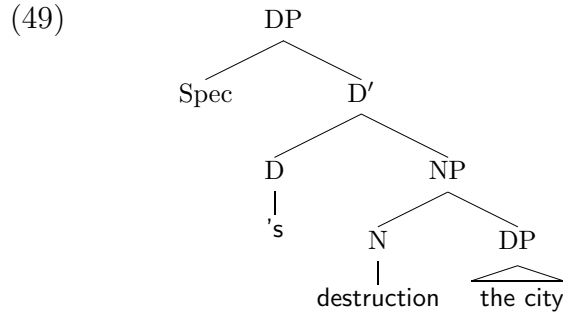
for the affix 's, which is either a syntactically and semantically contentful adposition, or a semantically vacuous syntactic case marker. This might not be a knock-down argument against Chomsky's proposal—after all, a similar dual status has been argued to characterize certain prepositions, in English and in other languages—but it seems reasonable to prefer an analysis that does not require postulating a lexical ambiguity for the affix 's, if such an analysis can be formulated.

3.1.2 Possessors as predicates

The postulated ambiguity of the affix 's can be eliminated from the theory: the additional syntactic and semantic contribution of the affix 's in possessives like John's dog could be ascribed to some non-overt syntactic head, and the affix 's could be uniformly treated as a case marker. Reverting to the terminology of the DP-hypothesis, this amounts to concluding that in both types of possessives in (48) the possessor appears in Spec,DP as a consequence of movement, and the Saxon genitive marking is licensed in that position in both cases.

(48)   a.   the city's destruction

        b.   John's dog

Concretely, we could suggest that 's is a syntactic head, which not only marks syntactic case on the DP in its specifier, but contributes the semantics of a (definite) determiner as well: the affix 's is inserted in D. In both types of possessives in (48) the possessor is licensed in a lower position in the tree and then raises to Spec,DP.

(49)

```
            DP
          /    \
       Spec     D′
              /    \
             D      NP
             |     /   \
            's    N      DP
                  |     /\
             destruction  the city
```

The two types of possessives differ only in terms of the category that licenses the possessor: in the case of (48a) the possessor is licensed by the possessum noun (49), in the case of (48b) the possessor is licensed by a phonologically null Poss syntactic head within a PossP which is adjoined as a modifier to the NP projected by the possessum noun (50).[8]

(50)

```
              DP
            /    \
         Spec     D′
                /    \
               D      NP
               |     /   \
              's  PossP    NP
                  /  \      /\
                DP   Poss  dog
                /\    |
              John    ∅
```
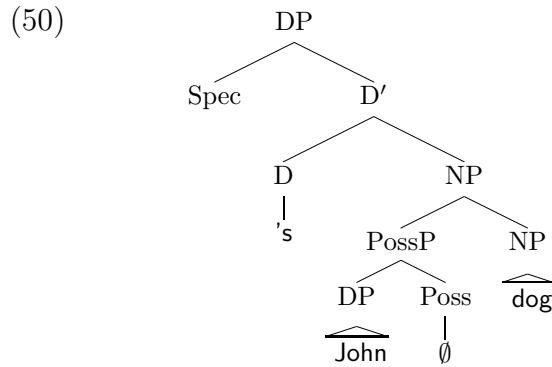
In the structure in (50) the PossP modifier applies to the possessum below the level at which the semantics of the definite determiner is introduced. This is intuitively the correct result: the possessor in John's dog is interpreted as a *restrictive* modifier of the possessum. The meaning of John's dog is *not* built by applying the meaning of the definite determiner to the meaning of dog and then predicating that the relevant entity stands in the possessive relation to John. Rather, it is the meaning of the definite determiner to be applied to the set

---

[8]In (50) I maintain a close parallelism to the syntactic structure proposed by Anderson (46b). This parallelism is arguably too close: below in the text I argue that the PossP adjunct should be treated as a right-adjoined PP.

of dogs which stand in the possessive relation to John, a set which is derived by applying the restriction imposed by the possessor to the denotation of the predicate contributed by the possessum.
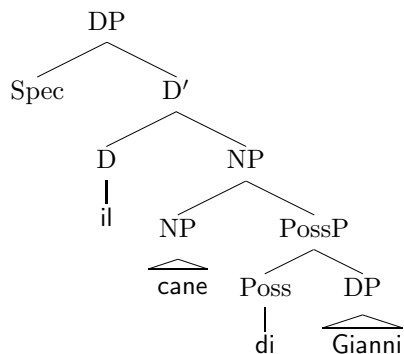
In other words: John's dog is taken to denote the contextually unique entity that is a dog that belongs to John rather than the contextually unique entity that is a dog, which in addition happens to be owned by John. Splitting the syntactic and semantic contribution of the affix 's between two syntactic heads not only allows for a uniform treatment of 's as a syntactic case marker, but provides an account for the fact that in possessives like John's dog the possessor behaves like a restrictive modifier.[9]

Crosslinguistic data provide additional evidence for the necessity of separating the syntactic licensing of the possessor from the lexical item that introduces the semantics of the definite determiner. For example, in Italian the conclusion that the determiner combines with the phrase resulting from the combination of possessor and possessum is almost inescapable. The interpretive properties of il cane di Gianni are parallel to those of its English counterpart John's dog: the possessor is interpreted as a restrictive modifier of the possessum. But, differently from English, the Italian DP contains an overt definite determiner and lends itself to performing simple constituency tests providing evidence that the string cani di Gianni—which contains both the possessor and the possessum—forms a syntactic constituent to the exclusion of the definite determiner. The Italian data, then, provide explicit evidence that the possessor is licensed below the syntactic level at which the semantics of the definite determiner is introduced.

---

[9]In possessives like the city's destruction the possessor is a semantic argument of the possessum, which amounts to the possessor obtaining a similar effect of restricting the interpretation of the possessum.

(51) il cane di Gianni
     the dog of Gianni

```
                    DP
                 ／    ＼
             Spec        D′
                      ／    ＼
                    D         NP
                    |      ／    ＼
                    il   NP        PossP
                        ⌒        ／    ＼
                      cane    Poss       DP
                              |        ⌒
                              di     Gianni
```

In (51) it is proposed that the preposition **di** 'of' lexicalizes the Poss head, which is phonologically null in English. Apart from this, (51) differs from the English case only in the direction of adjunction of PossP: PossP is left-adjoined to the possessum NP in English, but it is right-adjoined in Italian. This could be interpreted as a parametric difference between the two languages.[10] And the different word order in English vs. Italian possessives (52) can be treated as an additional parametric difference: only in English is movement of the possessor to Spec,DP required.

(52) a. John's dog
      b. il cane di Gianni
          the dog of Gianni

But if we can count on movement to Spec,DP to take care of the prenominal position of the possessor in English possessives, there is no need to assume the first parametric difference between Italian and English: even in English the possessor can be generated in a PossP that is right-adjoined to the possessum NP.

The hypothesis, then, is that the basic structure encoding possession within DPs is visible in the overt syntax of Italian possessive DPs. On the other hand, the

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[10]This is essentially the conclusion proposed by Giorgi and Longobardi (1991), who—however—treat licensing of the possessor in **il cane di Gianni** along the lines of Chomsky (1986): the possessor is the outermost argument of the possessum noun, and is assigned the structural POSSESSOR θ-role in the structural configuration $[_{NP} \text{Det N}' \underline{\quad}]$.

overt structure of English possessive DPs is the product of syntactic movement operations that displace the possessor from its base position. This has some conceptual advantages with respect to the structure in (50): if the possessor is generated in a right-adjoined PossP the Poss head can be taken—as in the Italian case—to be a null preposition rather than a postposition, the former being much more common in English,[11] and in principle movement of the possessor DP out of PossP would be easier to account for.[12]

The base structure for possessive DPs like John's dog we arrived at is very similar to the one suggested in (den Dikken, 1998). Den Dikken proposes that the basic encoding of the possessive relation in a possessive DP like John's dog is a small clause within which the possessor is part of a PP predicate—headed by a phonologically null dative preposition[13]—that is predicated of the possessum NP:[14,15]
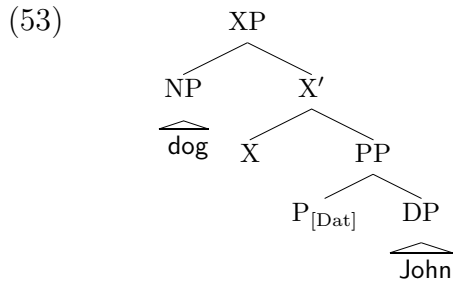
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[11]Of course, the null Poss in (50) could be taken to be a preposition too, but then the question arises why the PossP modifier does not appear in postnominal position, which is the normal position for PPs in English.

[12]At various places in the literature the generalization has been proposed that extraction out of a constituent on a left branch is not possible. See e.g. Ross's (1967) *Left Branch Condition*, or Huang's (1982) *Condition on Extraction Domains*. Of course, if it is assumed that it is the whole PossP in (50) that moves to Spec,DP these considerations would not apply, PossP being the whole constituent in Spec,NP.

[13]Other authors have argued that this is a *locative* preposition (Ouhalla, 1998), on analogy to the locative preposition postulated to be at the basis of the be/have-alternation by e.g. Freeze (1992).

[14]Den Dikken (1998) defends the idea that small clauses are maximal categories headed by a functional projection, designated as X in (53). This differs from the analysis originally proposed in Stowell (1978, 1983), according to which small clauses are adjunction structures where the subject of predication is left-adjoined to the predicate.

[15]As far as I can understand—Den Dikken does not deal explicitly with languages like Italian, where the possessor appears after the possessum—the structure in (53) is supposed to be crosslinguistically uniform, differences among the surface forms of possessives in different languages arising as a consequence of movement operations.

(53)

```
                    XP
                 ╱     ╲
               NP       X′
               │      ╱    ╲
              dog    X      PP
                          ╱    ╲
                      P[Dat]    DP
                                │
                               John
```

The possessive construction is thus analyzed as an instance of predication. Possession within DP amounts to predicating a property of the possessum NP: the restriction that only entities that satisfy the descriptive content of the NP *and* stand in the possessive relation to the possessor are to be considered. In a way, den Dikken's (1998) proposal can be seen as a return to the intuitions behind the proposal in (Chomsky, 1970) that possessives like John's dog are transformationally derived from a basic structure in which the possessum is modified by a relative clause—e.g. the dog that is to John/the dog that John has—within which the possessive relation is introduced by the verb that relates the possessor to the relative pronoun corresponding to the possessum.

Den Dikken's main argument in favor of the hypothesis that possession is an instance of DP-internal predication is a conceptual one. The occurrence of predication in DP, he argues, constitutes a further instance of the close structural parallels that have been shown to hold between clauses and nominal phrases (Abney, 1987; Szabolcsi, 1983, 1994, a.o.). In particular, den Dikken argues that a close parallel holds between possessive DPs and possessive have-sentences: in both cases the basic semantic relation between a predicate—a category containing the possessor—and a subject of predication—the possessum—is established within a small clause configuration, and in both kinds of constructions the occurrence of the movement operation known as *Predicate Inversion* (Moro, 1997) obtains the result that a lexical head incorporates into a higher functional syntactic head.

Yet, den Dikken's attempt to argue for a parallel between possession within DP and possession at the clausal level goes too far, in my opinion. The PP within which the possessor is projected in possessive DPs denotes a predicate— an entity of type $\langle e, t \rangle$—and, as argued in the next section, this PP can be taken to constitute the predicate in the small-clause configuration from which possessive be and have sentences are derived. But the parallelism between possession within DP and at the sentential level ends there. It does not make much sense—in semantic terms—to argue that a predication relation holds between the possessum NP and the PP containing the possessor in the DP-internal case.[16,17] The semantic relation that is at stake in possessive DPs is predicate modification: the predicate denoted by the PP is combined as an intersective modifier with the predicate denoted by the possessum NP.
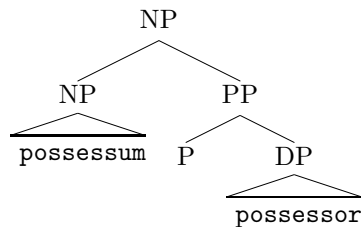
I thus propose to maintain the simpler hypothesis that the basic encoding of the possessive relation in possessive DPs whose possessum noun is not a syntactic argument-taking category is an adjunction structure, where the possessor is projected within a PP adjunct denoting a predicate that modifies the predicate denoted by the possessum NP:

---

[16]If the term 'predication' is used to refer to the functional application between a predicate of type $\langle e, t \rangle$ and a subject denoting an entity of type e or a quantifier of type $\langle \langle e, t \rangle, t \rangle$, the reasons for the above statement are obvious. If 'predication' is used to indicate semantic composition via functional application, then den Dikken seems to presuppose an analysis according to which the PP in the DP-internal case denotes an entity of type $\langle \langle e, t \rangle, \langle e, t \rangle \rangle$ that takes the predicate denoted by the possessum NP as an argument. But then the parallelism with the sentential case breaks down in that the PP in the sentential case should be taken to denote an entity of type $\langle e, t \rangle$. The only way in which I can make sense of den Dikken's hypothesis is by taking 'predication' to cover any instance in which a predicate of type $\langle e, t \rangle$ is composed with some other semantic entity—whatever the mode of semantic composition—which does not seem to render justice to the intuitive meaning of the term.
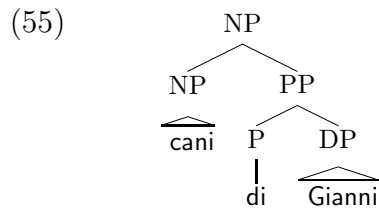
[17]An additional problem is that small clauses are usually taken to represent situations/eventualities—the semantic "core" of clauses—which does not seem to be a property of nominals in general, and possessive DPs in particular.

(54)   *Possession within DP*

```
              NP
           /      \
        NP          PP
       /  \        /  \
  possessum   P       DP
                       /\
                   possessor
```

3.1.3   The syntax of Italian possessive DPs

In particular, I take the basic syntactic structure encoding the possessive relation in e.g. i cani di Gianni to be as in (55):[18]

(55)

```
              NP
           /      \
        NP          PP
        /\         /  \
      cani    P       DP
              |       /\
             di     Gianni
```

The possessor DP Gianni is taken as a complement by the preposition di, forming a PP predicate that modifies the NP projected by the possessum noun cani.

The NP in (55) is selected as a complement by a determiner to form a possessive DP.[19] Of course, for the case of English Saxon genitives, where the possessor precedes the possessum (52a), some further syntactic derivation is

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[18]In (55) I take the category to which the possessive PP is adjoined to be a NP. This is not to be taken too literally: arguments can be made that this can be a category bigger than NP, containing restrictive modifiers of the possessum noun and a certain amount of DP-internal functional structure. Still, the label NP that I use is meaningful in that I intend to exclude the possibility that a full DP constitutes the place of adjunction of the PP containing the possessor in possessive DPs.

[19]The NP in (55) can be itself the target of further adjunction, creating a more complex NP constituent with which the determiner eventually combines. The second adjunct could be e.g. a locative PP, as in i cani di Gianni alla mostra canina 'the dogs of John's that were competing at the dog show', but it could be a second "possessive" PP as well. It is thus not excluded that possessive DP contain more than one possessor. This prediction is correct for Italian, witness the well-formedness of i cani di Gianni di Maria, which can be easily interpreted as referring to the subset of dogs owned by Gianni that were entrusted to Maria. But the same prediction is problematic for English, which seems to resist realization of multiple "possessor-like" DPs within the same possessive DP (Barker, 1998) (see §6.3).

required to obtain the attested word order. But for the case of Italian it can be assumed that the surface structure of possessive DPs is isomorphic to their base structure. I propose to make this assumption, taking the syntax of possessive DPs in Italian to be as in (56):

(56) i/alcuni   cani di Gianni
      the/some dogs of Gianni
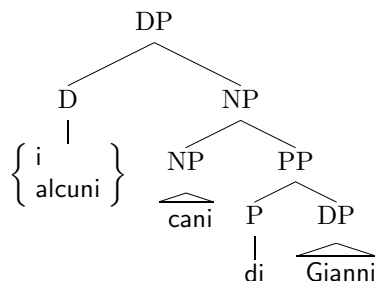
According to (56) the only difference between e.g. i cani di Gianni and alcuni cani di Gianni is in the nature of the determiner that selects the NP in (55) as a complement. The relevance of this feature of the syntax of Italian possessives becomes clear in the next chapter.

3.1.4   Supporting arguments

Assuming a syntax along the lines of (56) for Italian possessive DPs whose possessum is not a syntactic argument-taking category offers—as argued already for the case of English—some conceptual advantages. This syntax accounts for the licensing of the possessor DP in a very straightforward way: the possessor is not licensed by the possessum noun, but by the preposition that selects it as a complement in the PP predicate adjoined to the possessum NP. And a syntax like (56) immediately accounts for the fact that the possessor behaves like a restrictive modifier of the possessum: modification by the PP containing the possessor takes place inside the syntactic category which combines with the determiner, whose meaning thus applies to the property denoted by the possessum *as modified by*

the possessor.

In addition to these considerations, other arguments have been proposed in the literature in favor of the proposal that possession within DPs is structurally encoded by some structure along the lines of (54). Below I briefly review two of these arguments.

Larson and Cho (1999)

Larson and Cho (1999) argue that the assumption of a structure like (54) is necessary in order to account for the behavior of temporal modifiers within possessive DPs. They point out the interpretive ambiguity of DPs like those in (57), which license two distinct readings that Larson and Cho call *N-Modifying Reading* and *POSS-Modifying Reading*.
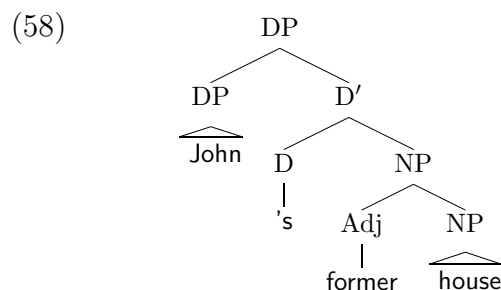
(57)   a.   John's former house
       b.   John's old car

The DP John's former house can be understood to denote an object that (i) is possessed by John at the present time and (ii) was a house at some point in the past. This is the N-Modifying Reading. But the same nominal can alternatively be understood to denote an object that at some point in the past (i) was possessed by John and (ii) was a house. This is the POSS-Modifying Reading. That these constitute two genuinely distinct readings can be appreciated by noticing that: (a) only under the N-Modifying Reading can (57a) denote an object that at no point in the past was *both* a house and possessed by John, and (b) only under the POSS-Modifying Reading can (57a) denote an object that is not possessed by John at the present time.

Essentially, the difference between the two readings is that in the first case the adjective former seems to modify the property expressed by the possessum, while in the second case it seems to modify the possessive relation holding

between possessor and possessum. A similar ambiguity holds in John's old car: the adjective old can be alternatively taken to impose the condition that the object denoted is not new (N-Modifying Reading) or that the object was formerly possessed by John (POSS-Modifying Reading).[20]

The ambiguity of temporal adjectives in possessive DPs constitutes a problem for analyses that propose that possessors are base-generated in Spec,DP:

(58)

```
              DP
           ／    ＼
         DP        D′
         ／\      ／  ＼
       John   D       NP
              |      ／  ＼
              's   Adj    NP
                    |    ／\
                  former  house
```

If the possessive relation in John's former house is contributed by the possessor DP in Spec,DP or by the affix 's in D it is not obvious that the adjective former can ever modify this relation. Under the traditional assumption that adjectives are left-adjoined to NP, former has only the possessum in its scope in (58). How is the POSS-Modifying Reading derived, then?

Larson and Cho propose to adopt a syntactic analysis of possessive DPs that is essentially equivalent to the one I propose in §3.1.3: in DPs like John's house the possessor is generated as a complement of a preposition, forming a predicate that is combined with the possessum NP. The only difference is that where I assume that the relevant predicate is a full PP that is adjoined to the possessum NP, Larson and Cho (1999) propose that the possessum NP is in the specifier of the

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[20]Larson and Cho note that this kind of ambiguity arises not just with temporal adjectives, but with intensional ones like alleged, purported and putative as well—consider DPs like John's alleged child and my putative forgeries—an observation attributed to Chris Barker. The ambiguous interpretation of temporal adjectives exemplified in (57) is not peculiar to English. Similar facts hold in e.g. Korean (63), Halkomelem (Burton, 1997), and Italian.

PP projected by the preposition that selects the possessor DP as a complement (59a).

(59)   a.

     b.
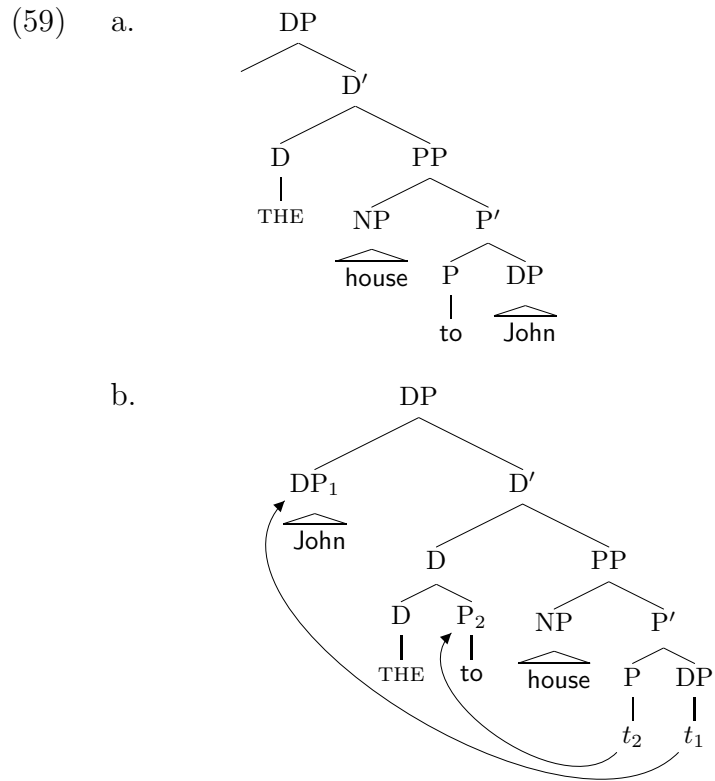
The attested surface form of John's house is derived by movement of the DP John to Spec,DP, followed by incorporation of the preposition—which they assume to be equivalent to the overt preposition to—into the phonologically empty determiner THE that heads the DP (59b). The THE+to aggregate is spelled out as the affix 's.

Accounting for the ambiguity of adjectives like former on the basis of (59a)—Larson and Cho argue—is unproblematic: former can adjoin to either NP or PP, deriving the N-Modifying Reading in the first case and the POSS-Modifying

Reading in the second case.[21]

(60) a.

DP
D′
D PP
THE
NP P′
Adj NP P DP
former house to John

b.

DP
D′
D PP
THE
Adj PP
former NP P′
house P DP
to John

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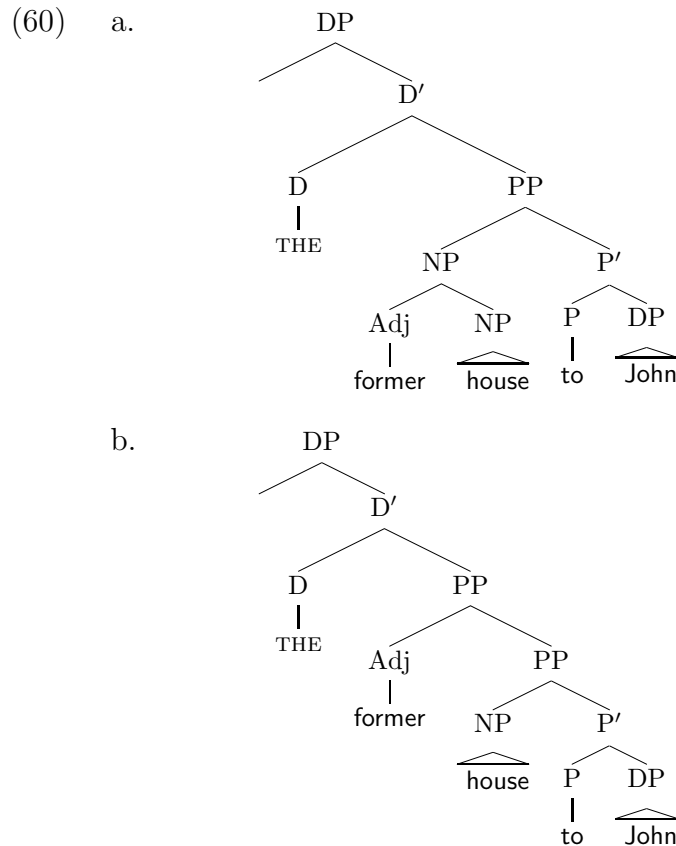
[21]Carson Schütze points out that it might be wrong to argue that the POSS-Modifying Reading is determined by (60b). In this structure former modifies the predicate determined by intersecting the denotation of house and the predicate denoted by the P′, i.e. the predicate that is true of all entities that stand in the possessive relation to John. Thus, it is expected that John's former house can denote something that at the present time is neither a house nor owned by John, a reading that he finds hard—if not impossible—to get. This objection rests on a misunderstanding that is—alas!—due to the terminology adopted by Larson and Cho, which incorrectly suggests that the under the POSS-Modifying Reading an adjective modifies the possessive relation only. But it seems clear to me that we do *not* want adjectives like former to be able to modify only the constituent denoting the "possessive" predicate. First, if that were a possibility, we would expect to be able to use John's former laundromat to describe a store that was owned in the past by John, but was never a laundromat when he owned it. And, second, it seems possible to obtain the reading that Schütze has in mind in sentences where it is explicitly stated that at the present time the object described neither stands in the ownership relation to the possessor nor satisfies the property denoted by the possessum noun—cf. Look! That's John's former laundromat. The new owners turned it into a deli!. This points towards the conclusion that (60b) is the correct structure for the POSS-Modifying Reading, and that some additional (pragmatic?) explanation should be given for the interpretive preference that at least part of the descriptive content of the possessive DP be taken to hold at the present time when an adjective like former combines with the whole PP.

The ambiguity of temporal adjectives in possessive DPs is reduced to a syntactic attachment ambiguity.[22] And the ambiguous interpretation of adjectives like former in possessive DPs is not more surprising than the distinct interpretations that the adjective former and the adverb formerly receive in have-sentences like (61): the adverb, which applies to the VP encoding the possessive relation between the possessor and the possessum, is read as POSS-Modifying; the

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[22]An alternative account has been proposed for the data discussed by Larson and Cho. Partee and Borschev (1998, 2000) take the compositional semantic problem raised by the ambiguity of temporal adjectives in possessive DPs as evidence in favor of the hypothesis that in DPs like e.g. John's house the possessive relation enters the semantic composition via *type coercion* (Pustejovsky, 1993, 1995) of the denotation of house into a relational entity (a hypothesis first suggested by Jensen and Vikner (1994)). The type-coerced denotation of the possessum incorporates the semantics of the possessive relation; and the ambiguity of John's former house arises as a consequence of the possibility of combining the adjective with the possessum before or after type coercion applies and introduces the semantics of the possessive relation. I have reasons to be sceptical about Partee and Borschev's proposal. As pointed out already by Larson and Cho, non-possessive DPs like a former house are not ambiguous: they do not license the POSS-Modifying Reading according to which the object described is a house that was formerly owned by somebody. The lack of ambiguity in a former house is not problematic by itself for Partee and Borschev, since they seem to take type coercion as a sort of repair strategy which guarantees that the semantic composition can proceed in those cases in which the semantics of the possessor and possessum cannot be combined directly by functional application—as happens instead in inherent possessives, where the possessum denotes a relation that takes the possessor as an argument. The problem is that—under these assumptions—it is not clear why the POSS-Modifying Reading should *ever* arise: in a structure like (58)—which is basically the one proposed by Partee and Borschev—the need for type coercion arises only after the adjective has already applied to the possessum NP, when the possessor in Spec,DP combines with the remainder of the DP. Partee and Borschev derive the POSS-Modifying Reading by coercing the denotation of house into a relational type *before* the adjective former combines with it. But this is compatible with the hypothesis that type coercion is a repair mechanism only if constraints on strict compositionality are relaxed or if the semantic derivation necessarily proceeds in a top-down fashion: if semantic composition does not "look ahead" there is no reason why type coercion should ever apply in the bottom-up derivation of the semantics of a syntactic structure like (58) before the meaning of former house is computed. And while the semantic interpretation mechanism could be "primed" to the presence of a possessor in English Saxon genitive DPs by the fact that the possessor appears before the possessum, the assumption that this is what licenses the POSS-Modifying Reading cannot be maintained for the case of Italian possessive DPs, where the possessor follows the possessum but the same interpretive ambiguity for temporal adjectives is observed.

adjective, which applies to the possessum only, is read as N-Modifying.[23]

(61)   a.   John has a **former** [_Nhouse].

(61)   a.   John has a **former** [$_N$house].
       b.   John **formerly** [$_{VP}$had a house].

Another interesting fact pointed out by Larson and Cho is that the interpretation of temporal adjectives in possessive DPs seems to correlate with their structural position: if two temporal adjectives like new and old are stacked the innermost adjective is read as N-Modifying, while the outermost is read as POSS-Modifying, as shown in (62).

(62)   a.   John's new old car
       b.   John's old new car

John's new old car is the old car that John just acquired, whereas John's old new car is the new car formerly possessed by John. The empirical generalization is that only the adjective that is closer to the possessum can be read as N-Modifying.[24]

Furthermore, in languages where temporal adjectives like new can permute with color adjectives like blue it is observed that the ambiguity of the temporal

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[23]Carson Schütze observes that the correlation with the case of possessive DPs does not seem to be perfect. The sentence in (61b) is consistent with a continuation like . . . but now it is just a pile of rubble, which seems to indicate that a N-Modifying Reading of the adverb is possible as well, the possibility that the pile of rubble still belongs to John not being excluded. I do not think that this conclusion is necessary. The adverb modifies the VP, a constituent that contains both the possessive relation and the possessum. As in the case of POSS-Modifying Readings within DP—see footnote 21—what has to be accounted for are the (likely pragmatic) conditions that seem to require "part" of this complex predicate—i.e. the denotation of some subconstituent of the VP—to still hold at the present time. The choice of the particular constituent, however, might be left underdetermined by the syntax of the construction.

[24]In (62) the adjectives new and old cannot both be read as N-Modifying because the properties they denote are not compatible with each other: if something counts as new, it cannot count as old at the same time. This explains why of the two adjectives only one—the innermost adjective—can be read as N-Modifying. Still, it seems to me that in both DPs in (62) the innermost adjective can be read as POSS-Modifying, in which case the outermost adjective is interpreted as a restrictive adjective on cars that John just acquired (62b)—cf. John's previous new car—or formerly owned (62a)—cf. ?John's latest old car. This intuition was confirmed by native speakers of English; and the same facts, in my opinion, hold in Italian.

adjective is maintained only when the color adjective is the innermost one: in the Korean examples in (63) when the adjective **palan** 'blue' is in outermost position (63a) the temporal adjective **say** 'new' can only be read as N-Modifying.

(63)   a.   John-uy   palan say cha
                John-GEN blue   new car
                (the car must be brand new)

        b.   John-uy   say palan cha
                John-GEN new blue car
                (the car can be simply newly acquired)

This further highlights the correlation between the structural position of temporal adjectives and their interpretation: the color adjective **palan** must be interpreted as modifying the possessum noun, and when this is in outermost position the temporal adjective **say**—which is closer to the possessum—must be read as N-Modifying as well.

Linking the interpretive ambiguity of temporal adjectives to differences in their structural attachment provides a straightforward way of accounting for the data in (62)–(63) too. For structural reasons, it is not possible in (62) for the outermost adjective to be attached to NP when the innermost adjective is attached to PP. This, given the choice of adjectives in (62) (see footnote 24), derives the tendency to read the innermost adjective as N-Modifying and the outermost one as POSS-Modifying. And, for similar structural reasons, the temporal adjective **say** in the Korean DP in (63b) can be read only as N-Modifying: the color adjective **palan** is interpreted as N-Modifying and must be adjoined to NP, but if **palan** adjoins to NP then the temporal adjective which appears on its right must adjoin to NP as well. Ergo, **say** in (63) must be interpreted as N-Modifying.[25]

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[25]In related work, Cho (2002) argues that the syntactic analysis for possessive DPs sketched in (59) provides the basis for accounting for asymmetries in the possibility of extracting the possessor vs. possessum out of the possessive DP in Korean and other languages.

Storto (2001a,b)

In past work (Storto, 2001a,b) I argued that Maasai—a Nilotic language spoken in Kenya and Tanzania[26]—provides morphological evidence in favor of the hypothesis that possessive DPs are derived from a basic structure like (54).

Before getting to the relevant data, some notes on the general features of Maasai DP morphosyntax are in order. In general modifiers follow the noun in the surface word order in Maasai DPs (64) and determiners[27] cannot be separated from the noun by intervening material.

(64) a. **ɛ̀mɛ́sà sìdài**   b. **ɛ̀mɛ́sà nàdɔ́**

         ɛ̀n-   mɛ́sà sìdài   ɛ̀n-   mɛ́sà nàdɔ́

         $\text{DET}_{sg.f}$- table nice_{sg} $\text{DET}_{sg.f}$- table red_f

         'the/a nice table'   'the/a red table'

Maasai nouns are morphologically inflected for gender and number and for Case. The two Case forms—the form of subjects of transitive verbs (NOMINATIVE) and the form of direct objects of transitive verbs (ACCUSATIVE)—are marked through tonal morphology.[28] In general DPs display a rich array of agreement phenomena among their constituents. For example, determiners agree with their complement noun in both gender and number (65), and modifiers agree

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[26]The data discussed below in the text are from the Kisongo dialect, which is spoken in Tanzania. These data were collected during the 1999/2000 Field Methods class at UCLA led by Hilda Koopman. I would like to thank our Maasai consultant Saning'o Milliary Ngidongi for his assistance and patience in teaching us about his language. All the data collected during the class are available online at `http://www.linguistics.ucla.edu/people/koopman/maasai/`.

[27]I call morphemes like en, in, ol and il (the vowel in these morphemes undergoes changes due to a general process of ATR harmony) 'determiners' because they appear in complementary distribution with demonstratives. But these morphemes appear on predicate nominals too, which seems to indicate that their presence does not entail a full DP structure. Furthermore, these morphemes do not specify the definiteness value of the DP on which they appear (see the glosses in (64)–(65); in other examples I consider only the definite interpretation of the DP).

[28] Unless otherwise specified, when discussing DPs in isolation I give them inflected for ACCUSATIVE, which is used as the citation form by native speakers.

with the noun they modify (64).[29]

(65) a. **ɛ̀mɛ́sà**   b. **m̀mɛ́sàí**

          ɛ̀n-   mɛ́sà   ìn-   mɛ́sà- í
          DET$_{sg.f}$- table   DET$_{pl.f}$- table- pl
          'the/a table'   'the/some tables'

    c. **òldíà**   d. **ìldíaín**

          òl-   díà   ìl-   díà- ín
          DET$_{sg.m}$- dog   DET$_{pl.m}$- dog- pl
          'the/a dog'   'the/some dogs'

Let's turn to possessive DPs now. Non-pronominal possessors in Maasai follow the possessum and are preceded by a complex morpheme which marks agreement in gender with the possessum and agreement in number with the possessor:[30]

(66) a. *Feminine possessum and singular possessor*

        ɛ̀mɛ́sà ɛ̀ŋgìtók

        ɛ̀n-   mɛ́sà <u>ɛ̀-</u>   ɛ̀n-   kìtók
        DET$_{sg.f}$- table POSS$_{sg.f}$- DET$_{sg.f}$- woman$_{ACC}$
        'the woman's table'

        ɛ̀mɛ́sà ɔ̀lɛ́ɛ̀

        ɛ̀n-   mɛ́sà <u>ɛ̀-</u>   ɔ̀l-   lɛ́ɛ̀
        DET$_{sg.f}$- table POSS$_{sg.f}$- DET$_{sg.m}$- man$_{ACC}$
        'the man's table'

        m̀mɛ́sàí ɛ̀ŋgìtók

        ìn-   mɛ́sà- í <u>ɛ̀-</u>   ɛ̀n-   kìtók
        DET$_{pl.f}$- table- pl POSS$_{sg.f}$- DET$_{sg.f}$- woman$_{ACC}$
        'the woman's tables'

---

[29] "True" adjectives in Maasai display only Case and number agreement. Modifiers which display gender agreement—e.g. nàdɔ́ in (64b)—are arguably derived from relative clauses (Tucker and Mpaayei, 1955).

[30] The data in (66) show that the form of the possessive agreement morpheme does not distinguish between a singular vs. plural possessum or between a masculine vs. feminine possessor (dog and man are masculine nouns and table and woman are feminine nouns). A synopsis of the data is given in Table 3.1.

m̀mɛ́sàí ɔ̀lɛ́ɛ̀

ìn-   mɛ́sà- í   <u>ɛ̀-</u>   ɔ̀l-   lɛ́ɛ̀

DET_{pl.f}- table- pl POSS_{sg.f}- DET_{sg.m}- man_{ACC}

'the man's tables'

b.   *Masculine possessum and singular possessor*

òldíâ lɛ̀ŋgìtók

òl-   díâ   <u>lɛ̀-</u>   èn-   kìtók

DET_{sg.m}- dog POSS_{sg.m}- DET_{sg.f}- woman_{ACC}

'the woman's dog'

òldíâ lɔ̀lɛ́ɛ̀

òl-   díâ   <u>lɛ̀-</u>   ɔ̀l-   lɛ́ɛ̀

DET_{sg.m}- dog POSS_{sg.m}- DET_{sg.m}- man_{ACC}

'the man's dog'

ìldíáín lɛ̀ŋgìtók

ìl-   díâ- ín   <u>lɛ̀-</u>   èn-   kìtók

DET_{pl.m}- dog- pl POSS_{sg.m}- DET_{sg.f}- woman_{ACC}

'the woman's dogs'

ìldíáín lɔ̀lɛ́ɛ̀

ìl-   díâ- ín   <u>lɛ̀-</u>   ɔ̀l-   lɛ́ɛ̀

DET_{pl.m}- dog- pl POSS_{sg.m}- DET_{sg.m}- man_{ACC}

'the man's dogs'

c.   *Feminine possessum and plural possessor*

ɛ̀mɛ́sà ɔ̀ɔ́ŋgítúàk

ɛ̀n-   mɛ́sà <u>ɔ̀ɔ́-</u>   ìn-   kìtúàk

DET_{sg.f}- table POSS_{pl.f}- DET_{pl.f}- women_{ACC}

'the women's table'

ɛ̀mɛ́sà ɔ̀ɔ́lɛ́wà

ɛ̀n-   mɛ́sà <u>ɔ̀ɔ́-</u>   ìl-   lɛ́wà

DET_{sg.f}- table POSS_{pl.f}- DET_{pl.m}- men_{ACC}

'the men's table'

m̀mɛ́sàí ɔ́ɔ́ŋgítúàk

ìn-	mɛ́sà-	í	ɔ́ɔ́-	ìn-	kìtúàk
DET~pl.f~-	table-	pl	POSS~pl.f~-	DET~pl.f~-	women~ACC~

'the women's tables'

m̀mɛ́sàí ɔ́ɔ́lɛ́wà

ìn-	mɛ́sà-	í	ɔ́ɔ́-	ìl-	lɛ́wà
DET~pl.f~-	table-	pl	POSS~pl.f~-	DET~pl.m~-	men~ACC~

'the men's tables'

d. *Masculine possessum and plural possessor*

òldíà lɔ́ɔ́ŋgítúàk

òl-	díà	lɔ́ɔ́-	ìn-	kìtúàk
DET~sg.m~-	dog	POSS~pl.m~-	DET~pl.f~-	women~ACC~

'the women's dog'

òldíà lɔ́ɔ́lɛ́wà

òl-	díà	lɔ́ɔ́-	ìl-	lɛ́wà
DET~sg.m~-	dog	POSS~pl.m~-	DET~pl.m~-	men~ACC~

'the men's dog'

ìldíaín lɔ́ɔ́ŋgítúàk

ìl-	díà-	ín	lɔ́ɔ́-	ìn-	kìtúàk
DET~pl.m~-	dog-	pl	POSS~pl.m~-	DET~pl.f~-	women~ACC~

'the women's dogs'

ìldíaín lɔ́ɔ́lɛ́wà

ìl-	díà-	ín	lɔ́ɔ́-	ìl-	lɛ́wà
DET~pl.m~-	dog-	pl	POSS~pl.m~-	DET~pl.m~-	men~ACC~

'the men's dogs'

	feminine possessum	masculine possessum
singular possessor	ɛ̀-	lɛ̀-
plural possessor	ɔ́ɔ́-	lɔ́ɔ́-

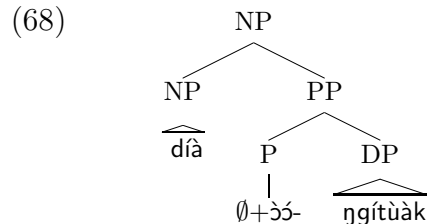Table 3.1: Shape of the possessive agreement morpheme in Maasai

Of the two components of the complex possessive agreement morpheme only the part which marks gender agreement with the possessum seems to be peculiar

to possessive DPs. That is, whereas (the presence vs. absence of) the morpheme l- as a marker of gender agreement occurs only in possessives, the alternation between the morphemes ɛ̀- and ɔ́ɔ́- to mark number agreement occurs in other Maasai syntactic constructions. The alternation between the morphemes ɛ̀- and ɔ́ɔ́- marks number agreement between the preposition t-[31] and its complement DP in Maasai PPs.[32]

(67)   a.   **tèŋgítòk**

      tɛ̀- èn- kítòk

      P_{sg}- $DET_{sg.f}$- woman$_{NOM}$

      'with/to/by/for/. . . the woman'

      b.   **tɔ́ɔ́ŋgítùàk**

      tɔ́ɔ́- ìn- kítùàk

      P_{pl}- $DET_{pl.f}$- women$_{NOM}$

      'with/to/by/for/. . . the women'

This state of affairs is easily accounted for under the proposal that possessors are licensed within a PP adjoined to the possessum. Number agreement with the possessor in Maasai possessive DPs is an instance of the more general phenomenon of number agreement between a preposition and its complement:

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[31]This is the only overt preposition in Maasai; obviously its semantics is quite bleached.

[32]One difference between possessors and the complements of the overt preposition t- in Maasai is that the former are always inflected for ACCUSATIVE, whereas the latter are always inflected for NOMINATIVE. This can be interpreted as a difference between the overt preposition t- and the phonologically empty preposition that I assume to occur in possessive DPs: the overt preposition licenses NOMINATIVE and the phonologically empty preposition licenses ACCUSATIVE. Another interpretation of the data is possible, however. If it is assumed for the case of English that the possessor DP moves to Spec,DP in order to be licensed for Case, then it must be concluded that the preposition that θ-marks the possessor in the PP adjunct is "defective": differently from other prepositions it does not license its complement DP for Case. But if this account is proposed for English, the question arises whether the preposition in the PP adjunct in possessive DPs is defective on a crosslinguistic basis. The difference between the Case inflection of possessors vs. complements of the overt preposition t- in Maasai could be taken to support the view that this is the case. Indeed, as mentioned in footnote 28 Accusative seems to be the unmarked default case form in Maasai, whereas Nominative seems to have the status of marked form. See (Storto, 2001a,b) for further discussion.

the agreement relation is established within the predicate PP in (54).[33] The possessive relation would then be encoded in Maasai DP roughly as in (68)—the example is a fragment of the structure of the DP òldíà lɔ́ɔ́ŋgítúàk 'the women's dog'—where the plural agreement morpheme ɔ́ɔ́ appears next to a phonologically empty preposition.

(68)

```
              NP
            /    \
          NP      PP
          /\     /  \
         díà   P    DP
               |    /\
           ∅+ɔ́ɔ́-  ŋgítùàk
```

To summarize, the occurrence in Maasai possessive DPs of the same number agreement morphology that in overt PPs marks agreement between the preposition and its complement DP provides empirical support for the proposal that possessors can be projected as complements of an empty preposition in a PP predicate which modifies the possessum NP.

3.2   The syntax of possessive sentences

3.2.1   Possessive **have** as a copular verb

It is not my intention to review in detail the substantial amount of literature that has been dedicated to the syntax of possessive **have** and **be** sentences in recent years. Here I just want to point out the main themes addressed in the literature

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[33]The gender agreement alternation ∅/l- is peculiar to possessive DPs, which suggests that gender agreement with the possessum should be determined within the constituent encoding the possessive relation as well. This is why in (Storto, 2001a,b) I suggested following den Dikken's (1998) proposal that a headed small-clause configuration encodes possession in (Maasai) DPs: within such a structure, the relevant agreement relation can be established on the head X of the small clause through the Spec-Head relation it bears to the possessum NP sitting in Spec,XP. A similar result could be obtained following Larson and Cho's (1999) proposal that the possessive relation is established within a PP (59a): a Spec-Head configuration holds between the preposition and the possessum in Spec,PP.

and how the current understanding of the syntactic encoding of possession at the sentential level relates to the hypothesis—suggested above—that possession is encoded in the syntax of possessive DPs within an adjunction structure where the possessor is part of a predicate PP.[34]

One first issue concerning the verb have is whether there is any syntactic relationship holding between the construction types in which the verb have seems to appear. Arguments have been proposed in favor of treating different instances of have as different constructions, but recent syntactic analyses have tried to unify the variety of constructions in which have occurs treating all instances of have—possibly excluding modal have to constructions—as occurrences of the same copular verb. I will not dwell on the issue of the unity vs. multiplicity of have constructions, since the main concern here is sentences that express possession.

A second issue is whether have is a lexical verb that assigns θ-roles to its subject and object, an issue that has been largely resolved in the negative.[35] Current theoretical wisdom is that the verb have appearing in possessive sentences is a copular verb, like the verb be—i.e. a semi-functional verb that does not assign semantic roles to its subject and/or complement—a proposal first raised in the generative literature in (Guéron, 1986) and subsequently defended in (Moro, 1988; Hoekstra, 1994). Of course, as soon as it is established that have itself is not a thematic head, the issue arises to determine what contributes the semantic role of possessor and possessum within possessive sentences. The most commonly held assumption in recent syntactic analyses of possessive sentences is that the possessive relation is established within the complement of the copular verb have.

---

[34]In this section I draw heavily from the discussion of the syntax of possession and of the verb have in (den Dikken, 1997).

[35]But see (Emonds, 1994) for the argument that there are agentive/volitional uses—e.g. in sentences like Have somebody help you!—where the subject is θ-marked by have.

This is hardly surprising: since the work of Stowell (1981) a parallel analysis has been proposed for the copular verb be, which is argued to take as complement a small clause within which the semantic relation of predication is established. If have is a copular verb as well, it is natural to suppose that the semantic relations between the terms that are apparently related by this verb in the surface syntax of possessive sentences are actually established within a phrase that is selected as a complement by this copular verb.
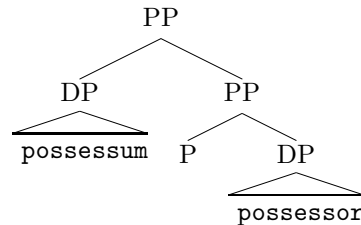
Still, two different views have been defended concerning the nature of the category selected by the copular verb. Some authors—e.g. Kayne (1993, 1994) and Ritter and Rosen (1997)—take the complement of the copular verb to be a possessive DP within which the possessive relation is established. Other authors—e.g. Freeze (1992) and Belvin and den Dikken (1997)—take the complement of the copular verb to be a small clause, where a PP containing the possessor is predicated of the possessum. (Den Dikken (1997) suggests that both views might be needed in order to account for the interpretation of possessive have sentences, in particular for the difference between the *permanent possession* interpretation of e.g. John has a dog vs. the *temporary/transitory possession* interpretation of John has the dog. The latter would be derived from a basic small clause predication, whereas the former would be derived from an underlying possessive DP.)

Under both types of analyses the surface syntax of possessive have sentences is derived by raising of the possessor to the sentential subject position. In addition, proponents of either view have tried to relate the copulas be and have by arguing that the latter is derived as a consequence of the incorporation of a lexical item—respectively, the determiner in the possessive DP or the preposition in

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the predicate of the small clause—into the former.[36]

Here I propose to adopt the latter view.[37] I thus propose that the structural encoding of possession within have sentences is a small clause like (69):

(69)   *Possession in sentences*

```
              PP
            /    \
          DP      PP
         /  \    /  \
    possessum  P    DP
                   /  \
               possessor
```

Notice the parallel with the structural encoding of possession within DP: in both cases the possessor is projected within a PP that is combined with the possessum. But pay attention to the small but very important difference between the small clause in (69) and the structure in (54). In the case of (69) the category with which the PP is combined is a full DP and the semantic relation holding between the two is predication proper (the predicate denoted by the PP is predicated of the entity denoted by the DP); in the case of (54) the category with which the PP is combined is an NP and the semantic relation holding between the two is predicate modification (the predicate denoted by the PP modifies

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[36]An early instantiation of this idea is suggested by Benveniste's (1966) famous quote: "*avoir* n'est rien autre qu'un *être-à* inversé" ('avoir is nothing other than an inverted être-à').

[37]This is for a couple of reasons. The first is that the proposal that the possessive relation in have sentences is established within a DP entails that all instances of possessive have sentences constitute an instance of *possessor ascension* in which a DP-internal possessor is displaced to a DP-external position in the sentence. While the possibility of extracting DP-internal possessors has been forcefully argued for by Szabolcsi (1983, 1994) for the case of Hungarian, it seems to me that the generalization from the Hungarian facts discussed by Szabolcsi to the conclusion that have sentences involve extraction of a DP-internal possessor on a crosslinguistic basis is still at this point more of an impressionistic suggestion than a convincingly argued-for conclusion. The second is that it is not clear how an account which—essentially—exports the possessive relation that is established within the possessive DP to the clausal domain can account for the intuition that in the case of have sentences the semantics of the determiner that appears on the possessum combines with the meaning of the possessum *before* this is combined with the meaning of the possessor. This is exactly the opposite of what happens in the case of possessive DPs.

the predicate denoted by the NP). This difference accounts for the fact that in a sentence like John has the dog the uniqueness requirement imposed by the definite determiner applies to the denotation of dog, and not as in the case of John's dog to the set of dogs that stand in the possessive relation to John.

Following the proposal in (Freeze, 1992), I assume that the small clause in (69) is selected as a complement by the copula be (70a), and that the surface form of possessive have sentences is derived as a consequence of movement of the possessor DP into Spec,IP and incorporation of the preposition to into the copula be ((70b), the be+to complex created by incorporation is spelled out as have).

(70)   a.

     b.
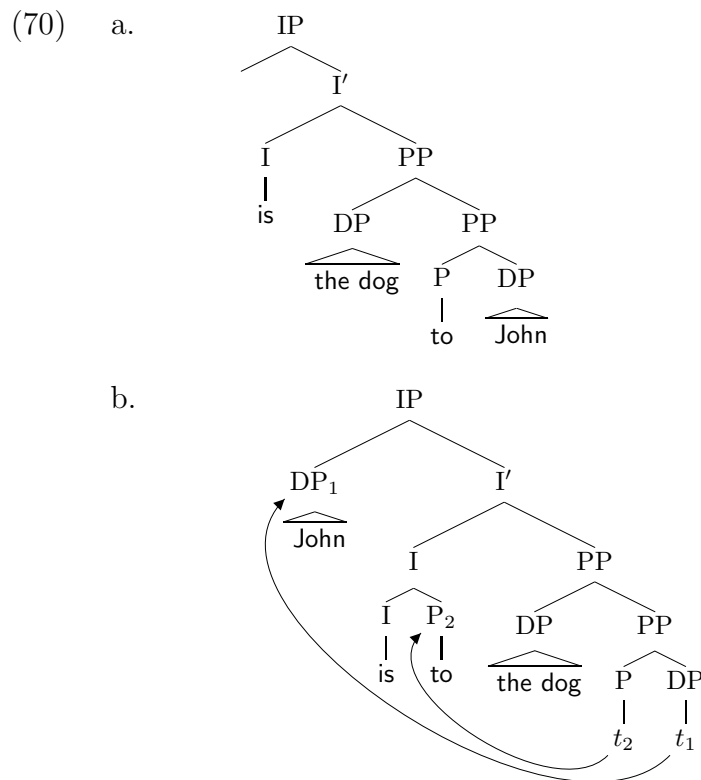

3.2.2   Italian predicate possessives

The small clause in (69) not only constitutes the basis for the syntactic derivation of possessive have sentences (a construction I will not deal with in this thesis), but also constitutes the basis for the derivation of sentences containing predicate

possessives like the Italian examples discussed in (26)–(27) in chapter 2. The PP predicate di Gianni in (71b) does not differ in any relevant respects from PP predicates like al canile in (71a), thus we can assume that Italian be sentences containing predicate possessives have the same syntactic derivation as be sentences whose predicate is some other kind of PP: following Stowell's (1981) analysis of the syntax of copular be sentences, the surface syntax of the sentences in (71) is derived by movement of the subject of the small clause to Spec,IP (72).[38]

(71)   a.   Questi cani sono al   canile.
              these   dogs are   at the pound

       b.   Questi cani sono di Gianni.
              these   dogs are   of Gianni

(72)   a.

---
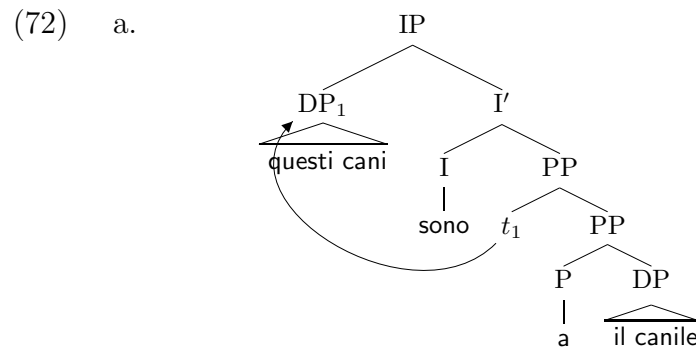
[38]As in the case of possessive DPs, I assume that di in di Gianni lexicalizes the preposition in the PP predicate. The fact that di Gianni can appear as a "bare possessor" predicate in be sentences like (71b) can be taken as an argument against den Dikken's (1998) hypothesis that of is a "nominal copula"—i.e. the phonological realization of a complex DP-internal syntactic head created by syntactic incorporation. If the predicate in sentences like (71b) is a bare PP there is no "space" for the movement operations that—according to den Dikken—trigger head incorporation.

b.

```
                    IP
             ┌──────┴──────┐
           DP₁             I'
        ┌───┴───┐      ┌────┴────┐
     questi cani       I         PP
                       │      ┌───┴───┐
                      sono   t₁      PP
                                  ┌───┴───┐
                                  P       DP
                                  │     ┌──┴──┐
                                  di    Gianni
```
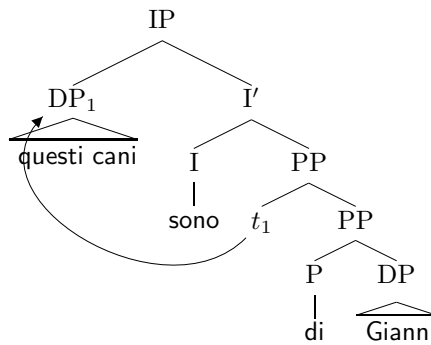
In the case of copular sentences where the post-copular material is a full DP—as in **Questi cani sono quelli di Gianni**—I assume that the post-copular material itself constitutes the predicate in a small clause configuration whose subject is the pre-copular material: **questi cani** is the subject of a small clause whose predicate is the possessive DP **quelli di Gianni**. The syntactic derivation—as in the previous case—involves raising of the subject of predication to Spec,IP. The semantic composition, however, requires that the denotation of the post-copular material be shifted into a predicative entity via the *ident* type-shifter proposed by Partee (1987).[39]

(73) Questi cani sono quelli di Gianni
      these   dogs are   those of Gianni

```
                    IP
             ┌──────┴──────┐
           DP₁             I'
        ┌───┴───┐      ┌────┴────┐
     questi cani       I         DP
                       │      ┌───┴───┐
                      sono   t₁      DP
                                  ┌───┴───┐
                                quelli di Gianni
```
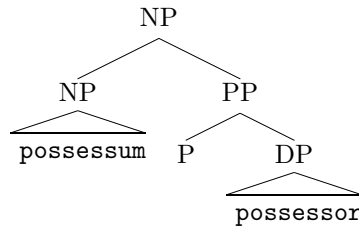
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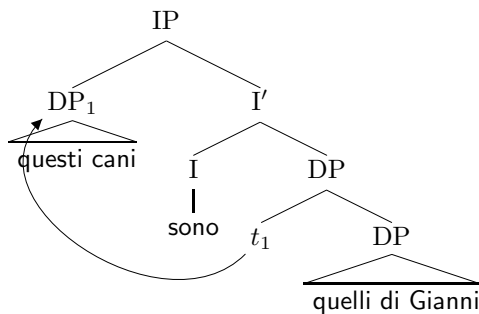
[39]I thus follow the proposal by Partee (1986) according to which the syntax of identity be sentences does not differ in crucial respects from the syntax of predicational be sentences. The only difference between the two constructions is that in the case of identity statements both elements related by the copula—or by the underlying small clause—denote entities. Semantic compositionality requires one of them to be shifted into a predicate by the application of the *ident* type-shifter—defined as $\lambda x \lambda y [y = x]$—which introduces the semantics of identity in an otherwise predicational construction. This is discussed in more detail in chapter 4 (see the "Some extensions" section of the appendix).
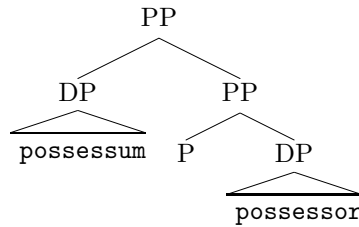
3.3 Conclusion

In this chapter I presented a simple syntax for possessive DPs and constructions involving predicate possessives in Italian. I proposed that possession is encoded in an adjunction configuration both in the case of possessive DPs in which the possessum noun is not a syntactic argument-taking category and in the case of possession expressed at the sentential level.

(54) *Possession within DP*

```
                   NP
             /            \
           NP              PP
          /  \            /   \
    possessum          P       DP
                               /  \
                            possessor
```

(69) *Possession in sentences*

```
                   PP
             /            \
           DP              PP
          /  \            /   \
    possessum          P       DP
                               /  \
                            possessor
```

In both cases a category projected by the possessum is combined with a PP containing the possessor. A crucial difference between the two cases is constituted by the nature of the category projected by the possessum that is combined with the "possessive" PP: in the case of possessive DPs the possessum is a category smaller than DP—the PP behaves like a restrictive modifier of the predicate denoted by the possessum and the semantics of the determiner in the possessive DP applies to the resulting modified predicate—in the case of possessive have and be sentences the possessum is a full DP—the PP behaves like a predicate in

a small clause whose subject is the DP projected by the possessum.[40]

This simple syntax constitutes the basis for the compositional semantic analysis of the interpretation of extrinsic possessives that I develop in the next chapters.

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[40]It is thus suggested that the behavior of the "possessive" PP within which the possessor is projected is not different from the behavior of overt PPs, which can appear both as DP-internal predicate modifiers and as predicates in be sentences both in English and in Italian; witness the behavior of the English PP on the table in The books on the table are old vs. The books are on the table. However—as Carson Schütze correctly remarks—the strict parallelism between the case of possessive DPs and possessive be sentences proposed in the text (and thus the suggested parallelism between the behavior of the possessive PP and the behavior of overt PPs) does not seem to hold in English. He points to contrasts like the pets of the President vs. *Those pets are of the President as an example. Bad example for a good conclusion, though: this minimal pair does not make the point it would like to. Indeed, it can be argued that of the President in the DP is a semantic argument of the relational noun pets: the preposition of is likely semantically empty, the possessor DP is syntactically licensed by the possessum noun, and the whole PP denotes an entity of type e, rather than a predicate of type $\langle e, t \rangle$. Thus we do not expect that the same PP of the President can be used as a predicate in a possessive small-clause configuration, which explains the ill-formedness of the corresponding sentence. Still, the conclusion that English does not seem to have "bare PP possessors" corresponding to the Italian examples discussed in the text seems to be correct (and was already hinted at in chapter 2). See chapter 6 (§6.2) for a more extensive discussion of these issues.

CHAPTER 4

Control vs. Free Interpretations

4.1   Empirical requirements on the theory

In chapter 2 I argued that a semantic analysis of possessives should distinguish
between two types of extrinsic interpretations: control vs. free interpretations.
Both types of interpretations are extrinsic: the context of use seems to play a
role in determining the nature of the relation expressed by the possessive relation.
But these two types of interpretations differ in two respects: their semantics and
their distribution.

As for the first, the generalization is that the semantics of control interpre-
tations is more restrictive than the semantics of free interpretations. Control
interpretations impose the restriction that the possessive relation express relations
that can be construed as instances of CONTROL. Free interpretations do
not impose a similar restriction; as mentioned in chapter 2 (§2.4.2), I take
the semantics of free interpretations not to impose any restrictions on the
interpretation of the possessive relation. As for the second, the empirical
generalization is that the distribution of free interpretations is more restricted
than that of control interpretations. All types of possessive DPs and possessive
predicates license control interpretations in Italian, but only definite and partitive
possessive DPs license free interpretations.

In order to account for the role that contextual information plays in specifying
the nature of the relation expressed by the possessive construction, it must be

that the meaning of the possessive relation is not completely determined in the semantic composition of possessives in either type of interpretation. Even the more restrictive semantics of control interpretations must leave the meaning of the possessive relation somewhat underspecified, so as to account for the interpretive flexibility displayed e.g. by indefinite possessives.

And in order to account for the different distribution of the two types of interpretations it seems necessary to assume—minimally—that the semantics of the determiner plays a role in making free interpretations available in possessive DPs. Indeed, leaving the cases of partitive possessives aside for a moment, the only difference between definite possessives—e.g. i cani di Gianni—and indefinite possessives—e.g. alcuni cani di Gianni—is in the nature of the determiner that combines with the NP adjunction structure that encodes the possessive relation (see again the syntactic analysis of Italian possessive DPs proposed in chapter 3). The theory must allow for the choice of determiner to play a role in licensing the availability of free interpretations.

4.1.1 A problem of compositionality

In order to appreciate the extent of the compositional problem raised by the case of possessive DPs, let's first consider the case of Italian predicate possessives, a construction in which a similar compositional problem does *not* arise.
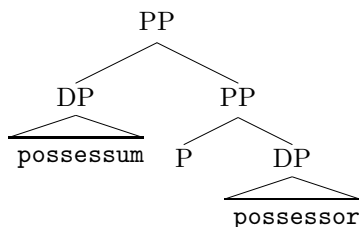
Italian predicate possessives do not license free interpretations. This observation could be accounted for in very "structural" terms under the assumption that control vs. free interpretations constitute distinct meanings for the possessive construction, which are encoded differently in the syntax/semantics of possessives.[1]

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[1] I must point out to the reader that such a structural analysis will *not* be maintained in the system developed in this and the next chapters. The unavailability of free interpretations with both Italian indefinite/quantificational possessives and predicate possessives receives the same formal—semantic, rather than structural—explanation.

For example, it could be assumed that control vs. free interpretations correspond to a choice between two lexical entries for the preposition that introduces the possessive relation in (69). And the unavailability of free interpretations could be tied to the structural representation in (69), by arguing that only one of the two meanings for the preposition, the one encoding control interpretations, can be used in this small clause.

(69)   *Possession in sentences*

```
                    PP
           ┌────────┴────────┐
          DP                 PP
         ╱──╲            ┌────┴────┐
     possessum           P        DP
                                 ╱──╲
                              possessor
```
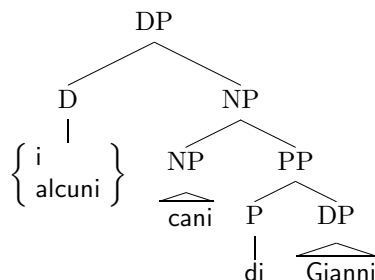
Indeed, for the case of predicate possessives it could be assumed that selectional restrictions obtain the result that the syntactic category of the possessum (DP) can only combine with a PP headed by the preposition that encodes control interpretations. The unavailability of free interpretations with predicate possessives could be given an explanation in terms of syntactic selection. An analysis of this type could be maintained for the case of predicate possessives because their syntax is different from the syntax of possessive DPs—constructions that license free interpretations—in one relevant respect: the nature of the category projected by the possessum in the structure that encodes the possessive relation. This constituent is a DP in the case of predicate possessives, whereas it is an NP in the case of possessive DPs.

But compare the case of definite vs. indefinite possessives. Following the syntactic assumptions made in chapter 3, these DPs differ only in the choice of the determiner that combines with the adjunction structure encoding the possessive relation. The syntactic nature of this constituent is not different in the two cases, and compositionality requirements dictate that the semantics of the determiner
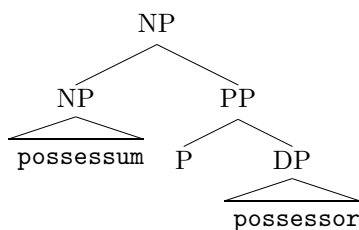
not be visible at levels lower than the outermost NP in (56).

(56)   i/alcuni   cani di Gianni
         the/some dogs of Gianni

```
                          DP
                      ╱        ╲
                    D            NP
                    │         ╱      ╲
               ⎧  i    ⎫    NP        PP
               ⎨       ⎬    ╱‾╲     ╱     ╲
               ⎩ alcuni ⎭  cani   P        DP
                                  │      ╱‾‾╲
                                  di    Gianni
```

The conclusion follows that the differences in licensing free interpretations holding between definite and indefinite possessives cannot be reduced to syntactic selection. Within the adjunction structure in (54) semantic composition—of both control and free interpretations—should always proceed in the same way, irrespective of whether this structure is ultimately part of a definite or an indefinite possessive DP; and differences in the derivation of the two types of interpretations should be determined at the level where the meaning of the determiner combines with the meaning of this constituent.[2]

(54)   *Possession within DP*

```
                       NP
                   ╱        ╲
                 NP           PP
               ╱‾‾‾╲        ╱      ╲
          possessum      P          DP
                         │       ╱‾‾‾‾╲
                              possessor
```

In principle, this result can be achieved in two distinct ways. A first option would be that of maintaining that the syntactic/semantic encoding of

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[2]Of course, this conclusion does not follow if: (i) definite and indefinite possessives have completely different syntactic structures, or (ii) the choice of P "projects" a syntactic feature that is inherited by the whole small clause and only one of these features is subcategorized for by the indefinite determiner. It seems to me that the latter would amount to nothing more than solving the problem by stipulation. A version of the first alternative is discussed (and rejected) in chapter 6.

control and free interpretations is the same within (54), tying both the semantic restrictiveness of control interpretations and the restricted distribution of free interpretations to the semantics of the determiner. If such an account can be defended, control vs. free interpretations do not constitute distinct meanings for possessive constructions: the different interpretive and distributional properties of the two types of interpretations do not correspond to a difference in the structural encoding of the possessive relation. An alternative option would be to claim that control and free interpretations have distinct syntactic/semantic encodings within (54) and let the meaning of the determiner play a role in licensing the further semantic derivation of free interpretations. Within this alternative account control vs. free interpretations constitute distinct meanings for possessive constructions, and their different properties are a consequence of the different structural encoding of the possessive relation in the two cases.

4.1.2   A preview

In order to have a better idea of what these two alternatives amount to, I flesh them out in some detail in §4.2 and §4.3 within a formal system of semantic interpretation. The main components of this formal system are summarized in §4.1.3 below.

Let me "prime" the reader about the structure of the argument presented in the remainder of this chapter. I spell out in a certain amount of detail for both alternatives in order to highlight their properties and consequences. This is necessary to give a fair assessment of their empirical and theoretical adequacy. A version of the first alternative—the hypothesis that no basic difference in meaning for the possessive construction underlies the distinction between control and free interpretations—is presented in §4.2. The first alternative—not just the particular implementation presented—is rejected right away on the basis of both

empirical and theoretical considerations. The reader who is already convinced that this alternative is a non-starter might want to skip this section.

The positive result of the discussion in §4.2 is that the second alternative must be correct: the difference between control and free interpretations corresponds to a basic difference between two meanings for possessive constructions. A version of this second alternative is presented in §4.3, where it is proposed that the basic difference in the meaning of a possessive construction is determined by the interpretation of the preposition in the PP containing the possessor. In particular, the Italian preposition di is argued to have two lexical entries: one contributes a constant relation as meaning, which constitutes the basis for the derivation of control interpretations; the other contributes a relational variable as meaning, which constitutes the basis for the derivation of free interpretations.

The derivation of control interpretations is discussed in §4.3.2. It is argued that the constant nature of the meaning contributed by the preposition explains both the availability of control interpretations with all types of possessive constructions and the greater semantic restrictiveness of control interpretations. The (limited) interpretive flexibility of control interpretations is argued to be a pragmatic phenomenon: the speaker can use the semantics of control interpretations to convey more specific meanings, a linguistic phenomenon that is not peculiar to possessive constructions.

The derivation of free interpretations is addressed in §4.3.3. It is argued that the unbounded interpretive flexibility of free interpretations follows from the fact that the meaning of the possessive relation is a free variable, i.e. an object whose meaning is not determined within the syntactic constituent in which possessor and possessum are combined. It is argued that the distributional restrictions that characterize free interpretations must follow from the way in which the semantics of the determiner that combines with this syntactic constituent affects

the assignment of a value to the relational variable denoted by the preposition.

A first try at accounting for the distribution of free interpretations is attempted in §4.3.3. The result—albeit adequate in terms of empirical coverage of the distributional data discussed in chapter 2—is rather unsatisfactory in conceptual terms, and can be shown to derive counterintuitive empirical predictions. This is argued in §4.4.2, where the following conclusions are proposed: (i) the hypothesis that the distinction between control and free interpretations correspond to the distinction between two meanings for possessive constructions—i.e. the basic distinction between a constant and a variable meaning for the preposition heading the PP within which the possessor is projected—should be maintained; (ii) the analysis proposed in §4.3.2 for the derivation of control interpretations should be maintained; but (iii) the specific account for the restricted distribution of free interpretations proposed in §4.3.3 must be abandoned.

Still, the lesson learned in §4.3.3 that relational variables in possessive constructions differ from referential pronouns—which are usually taken to constitute the paradigm for free variables—and that the restricted distribution of free interpretations should be accounted for in terms of the (im)possibility for the context of use to provide a value for these variables constitutes the leading hypothesis behind the revisions to the analysis that are proposed in chapter 5.

4.1.3 Formal tools

The formal system adopted in this thesis is a version of the so-called "Fregean program"—i.e. the hypothesis that the meaning of a complex expression of natural language should be determined solely on the basis of the meaning of its component expressions and the way in which the latter are composed—along the lines defended in (Heim and Kratzer, 1998). Two general properties of

the system are that (i) the system assigns an interpretation directly to natural language expressions (or better to "decorated" Logical Form structures), and (ii) the system provides a *truth-conditional* (extensional) semantics for natural language.

In the interest of keeping the focus of the discussion on the issues concerning the compositional derivation of free vs. control interpretations in Italian possessives, a detailed exposition of the formal system adopted in this thesis is presented in the appendix to this chapter. Essentially, the formal system is a trivial extension of the system presented in (Heim and Kratzer, 1998): provisions are made to deal with plurals, one instance of type shifting, and higher-order variables. I invite readers who are not familiar with (1998)'s formal system to consult the appendix before proceeding further.

In particular, the discussion in the next sections presupposes an understanding of the difference between *variable* and *constant* meanings—i.e. the difference between semantic objects whose interpretation is dependent on the choice of a *variable assignment* and semantic objects whose interpretation is not dependent on such a choice—and of the difference between *free* and *bound* variables. For ease of reference in the upcoming discussion, the main components of the formal system are summarized below.[3]

Ontology   We assume a set of individuals $\mathcal{D}$ that is closed under the $\oplus$ operation (the *individual sum* operation introduced by Link (1983)), and the set of truth values $\{0, 1\}$. The set of possible denotations is defined recursively on the basis of these two sets as in (103).

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[3]Apart from the lexicon—which is introduced here—the numbering reflects the one used in the appendix.

(103) *Semantic types and their denotation domains*

    a. e is a semantic type, $D_e := \mathcal{D}$

    b. t is a semantic type, $D_t := \{0, 1\}$

    c.   for all semantic types σ and τ, $\langle \sigma, \tau \rangle$ is a semantic type,
        $D_{\langle \sigma, \tau \rangle} := [D_\sigma \rightarrow D_\tau]$

Lexicon   A basic lexicon that is used in this chapter is given in (74).[4] Additions will be made as needed.

(74)   *Basic lexicon*

$[\![\text{Gianni}]\!]$	$= \text{Gianni}$
$[\![\text{Paolo}]\!]$	$= \text{Paolo}$
$[\![\text{cane}]\!]$	$= \lambda u_{e'} \,.\, u$ is a dog
$[\![\text{cani}]\!]$	$= \lambda u_{e''} \,.\, u$ is a group of dogs
$[\![\text{aveva(no) la rabbia}]\!]$	$= \lambda u_e \,.\, \forall v \in \text{ATOM}$ such that $v \leq_i u$, v had rabies

Rules of semantic interpretation   We have one rule that operates on the metalanguage (112), and seven rules that operate on the object language.

(112)   *Beta Conversion* (βC)
    For any type τ, $[\lambda \alpha_\tau \,.\, \gamma](\beta_\tau) = [\beta/\alpha]\gamma$, where $[\beta/\alpha]\gamma$ is the result of substituting β for α in γ.

(124)   *Lexical Terminals* (LT)
    If α is a terminal node occupied by a lexical item different from a pronoun, $[\![\alpha]\!]$ is specified in the lexicon.

(125)   *Non-branching Nodes* (NN)
    If α is a non-branching node and β is its daughter node, then, for any assignment g, α is in the domain of $[\![\;]\!]^g$ if β is. In this case, $[\![\alpha]\!]^g = [\![\beta]\!]^g$.

(126)   *Functional Application* (FA)
    If α is a branching node and $\{\beta, \gamma\}$ the set of its daughter nodes, then, for any assignment g, α is in the domain of $[\![\;]\!]^g$ if both β and γ are and $[\![\beta]\!]^g$ is a function whose domain contains $[\![\gamma]\!]^g$. In this case, $[\![\alpha]\!]^g = [\![\beta]\!]^g([\![\gamma]\!]^g)$.

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[4]In (74) I adopt the simplification that aveva(no) la rabbia is treated as an unanalyzed intransitive verb that denotes a distributive predicate. See the appendix for the definition of the *lambda notation* used for the denotation of expressions of functional types $\langle \sigma, \tau \rangle$.

(127) *Predicate Modification* (PM)

If α is a branching node and $\{\beta, \gamma\}$ the set of its daughter nodes, then, for any assignment g, α is in the domain of $[\![\ ]\!]^g$ if both β and γ are and $[\![\beta]\!]^g$ and $[\![\gamma]\!]^g$ are of type $\langle e, t \rangle$. In this case, $[\![\alpha]\!]^g = \lambda u_e \ . \ [\![\beta]\!]^g(u) = 1 \ \& \ [\![\gamma]\!]^g(u) = 1$.

(137) *Ident Shift* (IS)

If α is a branching node and $\{\beta, \gamma\}$ the set of its daughter nodes, then, for any assignment g, α is in the domain of $[\![\ ]\!]^g$ if both β and γ are and $[\![\beta]\!]^g$ and $[\![\gamma]\!]^g$ are of type e. In this case, $[\![\alpha]\!]^g = [\lambda u_e \ . \ u = [\![\gamma]\!]^g]([\![\beta]\!]^g)$.

(139) *Traces and Pronouns* (TP)

If α is a pronoun or a trace, g is a variable assignment, and $\langle i, \tau \rangle \in \mathrm{dom}(g)$, then $[\![\alpha_{\langle i, \tau \rangle}]\!]^g = g(\langle i, \tau \rangle)$.

(141) *Predicate Abstraction* (PA)

Let α be a branching node with daughters β and γ, where β dominates either $\lambda_{\langle i, \tau \rangle}$ or $\mathsf{LexItem}_{\langle i, \tau \rangle}$ such that $\mathsf{LexItem} \in \textsc{LexBind}$. Then, for any assignment g, $[\![\alpha]\!]^g = \lambda u_\tau \ . \ [\![\gamma]\!]^{g^{u/\langle i, \tau \rangle}}$.

4.2 The first alternative

Let's return to the issues at hand. We want to account for the different behavior of definite vs. indefinite possessives in the two contexts in (11) and (18) repeated below:

(11) Ieri   Gianni e   Paolo sono stati attaccati da due gruppi
      yesterday Gianni and Paolo were   attacked by two groups
      (distinti)   di cani;
      (different) of dogs

   a.   … sfortunatamente **i   cani di Gianni** avevano la   rabbia.
         unfortunately   the dogs of Gianni had   the rabies

   b. [#]… sfortunatamente **alcuni cani di Gianni** avevano la   rabbia.
         unfortunately   some   dogs of Gianni had   the rabies

Indefinite possessives do not seem able to express the non-control relation ATTACK made salient in (11), but can express the control relation TAKE.TO.SHELTER made salient in (18). Definite possessives, on the other hand, can express both relations.

(18) Ieri   a Gianni e   Paolo sono stati affidati   due gruppi
     yesterday to Gianni and Paolo were   entrusted two groups
     (distinti)   di cani;
     (different) of dogs

    a.   ... sfortunatamente **alcuni cani di Gianni** avevano la   rabbia.
           unfortunately   the   dogs of Gianni had   the rabies

    b.   ... sfortunatamente **i   cani di Gianni** avevano la   rabbia.
           unfortunately   the dogs of Gianni had   the rabies

Following the first option mentioned in §4.1.1 we can try to argue that, their apparent differences notwithstanding, control and free interpretations do not constitute distinct meanings for possessive constructions (as noted already, this attempt will fail). We can assume that the interpretation of the structure in (54) is the same in both control and free interpretations:

(54)   *Possession within DP*
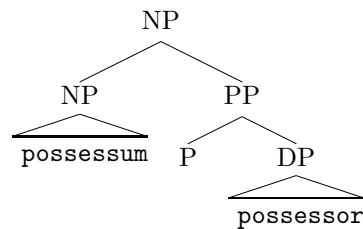
and then argue that it is the semantics of the determiner that combines with it in (56) that is responsible for the interpretive differences between the two types of interpretations.

(56)   i/alcuni   cani di Gianni
       the/some dogs of Gianni
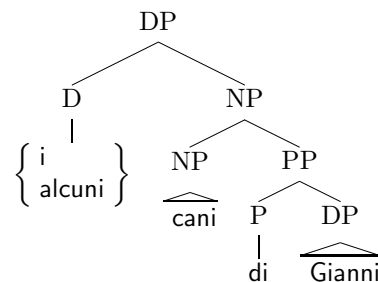
4.2.1 Essentials of the system

Concretely, it can be proposed that the preposition di in the PP in (56)—which, as argued in chapter 3, introduces the semantics of the possessive relation—is a variable, a "pro-relation" whose interpretation is dependent on the choice of an assignment.[5]

(75) *Hypothesis 1*
The head of the "possessive" PP predicate denotes a variable of type $\langle e, et \rangle$.

Given this hypothesis, the interpretation for the outermost NP node in (56) can be derived as follows:

(76) $[\![\text{cani di}_{1,\langle e, et \rangle} \text{ Gianni}]\!]^g =$

$\quad$ 1. $= \lambda v_e$. $[\![\text{cani}]\!]^g(v) = 1$ & $[\![\text{di}_{1,\langle e, et \rangle} \text{ Gianni}]\!]^g(v) = 1$ $\hfill$ PM

$\quad$ 2. $= \lambda v_e$. $[\![\text{cani}]\!]^g(v) = 1$ & $[[\![\text{di}_{1,\langle e, et \rangle}]\!]^g ([\![\text{Gianni}]\!]^g)](v) = 1$ $\hfill$ FA

$\quad$ 3. $= \lambda v_e$. $[\![\text{cani}]\!]^g(v) = 1$ & $[[g(1, \langle e, et \rangle)] ([\![\text{Gianni}]\!]^g)](v) = 1$ $\hfill$ TP

$\quad$ 4. $= \lambda v_e$. $[\lambda u_{e''}$. u is a group of dogs$](v) = 1$ & $[[g(1, \langle e, et \rangle)]$ (Gianni)$](v) = 1$ $\hfill$ LT (twice)

$\quad$ 5. $=$ the function from plural individuals in $\mathcal{D}$ to $\{0, 1\}$ that assigns the value 1 to those individuals that are groups of dogs and stand in the $g(1, \langle e, et \rangle)$ relation to Gianni $\hfill$ βC

The interpretation derived in (76) is dependent on the choice of an assignment, which specifies the relation holding between possessor and possessum. This looks like an adequate formalization of the intuition that the interpretation of the possessive relation is left un(der)specified in the semantic composition of the possessive construction.

Still, for the determiner to impose restrictions on the interpretation of the possessive relation it is necessary that the meaning of this relation be

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[5]To keep the visual complexity of the metalanguage under control, I simplify the notation for complex semantic types by omitting some angle brackets and some commas.

"accessible" at the level at which the semantics of the determiner combines with the interpretation of the outermost NP in (56). Let's then amend the syntax of possessive DPs and assume that the determiner can be coindexed with the head of the PP predicate as in (77):

(77)   i/alcuni   cani di Gianni
       the/some dogs of Gianni
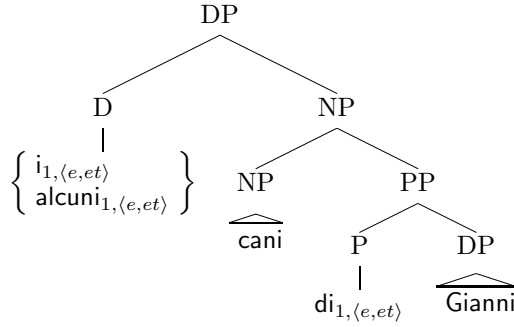
On the basis of an LF like (77), the semantics of specific determiners can be defined in such a way that it imposes restrictions on the interpretation of the possessive relation. But let's first look at the case of definite possessives, where no restriction on the possessive relation seems to be needed: definite possessives can express all types of contextually salient relations.

(78)   *Determiners* (standard)

$$[\![\text{i}]\!] \quad = \lambda f_{\langle et \rangle} : \exists! x f(x) = 1 \ . \ \iota x f(x) = 1$$
$$[\![\text{alcuni}]\!] = \lambda f_{\langle e,t \rangle} \ . \ [\lambda h_{\langle et \rangle} \ . \ \exists x \text{ such that } f(x) = 1 \ \& \ h(x) = 1]$$

Let's assume that for all $\langle i, \tau \rangle$ the interpretation of $\text{the}_{i,\tau}$ is the standard semantics given in (78a).[6] The semantic derivation of $\text{i}_{1,\langle e,et \rangle}$ cani $\text{di}_{1,\langle e,et \rangle}$ Gianni avevano la rabbia proceeds as follows:[7]

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[6]Traditionally, $\exists! x f(x)$ is used as a shorthand for $\exists x [f(x) \wedge \forall y [f(y) \to y = x]]$. Here—see the discussion of plurals in the "Some extensions" section of the appendix—I take it to be a shorthand for $\exists x [f(x) \wedge \forall y [f(y) \to y \leq_i x]]$.

[7]I refer the reader to the appendix for an explanation of the notational convention adopted in order to keep track of presuppositional content in the course of a semantic derivation.

(79) $[\![i_{1,\langle e,et\rangle}$ cani di$_{1,\langle e,et\rangle}$ Gianni avevano la rabbia$]\!]^g =$

1. $= [\![$avevano la rabbia$]\!]^g$ ($[\![i_{1,\langle e,et\rangle}$ cani di$_{1,\langle e,et\rangle}$ Gianni$]\!]^g$)   FA

2. $= [\![$avevano la rabbia$]\!]^g$ ($[\![i_{1,\langle e,et\rangle}]\!]^g$ ($[\![$cani di$_{1,\langle e,et\rangle}$ Gianni$]\!]^g$))   FA

3. $= [\lambda u_e$. $\forall v \in$ ATOM such that $v \leq_i u$, v had rabies] ($[\lambda f_{\langle et\rangle} : \exists! x f(x) = 1$. $\iota x f(x) = 1]$ ($[\![$cani di$_{1,\langle e,et\rangle}$ Gianni$]\!]^g$))   LT (twice)

4. $= [\lambda u_e$. $\forall v \in$ ATOM such that $v \leq_i u$, v had rabies] ($[\lambda f_{\langle et\rangle} : \exists! x f(x) = 1$. $\iota x f(x) = 1]$ ($\lambda v_{e''}$. v is a group of dogs & $[[g(1, \langle e, et\rangle)]$ (Gianni)]$(v) = 1$))   (76)

5. $= \{\exists! x [\lambda v_{e''}$. v is a group of dogs & $[[g(1, \langle e, et\rangle)]$ (Gianni)]$(v) = 1](x) = 1\}$; $[\lambda u_e$. $\forall v \in$ ATOM such that $v \leq_i u$, v had rabies] ($\iota x [\lambda v_{e''}$. v is a group of dogs & $[[g(1, \langle e, et\rangle)]$ (Gianni)]$(v) = 1](x) = 1$) βC

6. $= \{\exists! x \, x$ is a group of dogs & $[[g(1, \langle e, et\rangle)]$ (Gianni)]$(x) = 1\}$; $[\lambda u_e$. $\forall v \in$ ATOM such that $v \leq_i u$, v had rabies] ($\iota x \, x$ is a group of dogs & $[[g(1, \langle e, et\rangle)]$ (Gianni)]$(x) = 1$) βC (twice)

7. $=$ undefined if there is not a maximal individual in $\mathcal{D}$ that is a group of dogs and stands in the $g(1, \langle e, et\rangle)$ relation to Gianni, if defined: 1 if each atomic individual in this maximal group of dogs had rabies, 0 otherwise βC

The interpretation derived in (79) is dependent on the choice of an assignment: the sentence i$_{1,\langle e,et\rangle}$ cani di$_{1,\langle e,et\rangle}$ Gianni avevano la rabbia denotes a truth value only if its context of utterance provides a value for the free occurrence of the variable $1, \langle e, et\rangle$, i.e. only if the context of use determines an interpretation for the relation holding between Gianni and the dogs. This requirement can be formulated as an appropriateness condition on the use of logical forms containing free (occurrences of) variables:

(80)   *Appropriateness condition*
A context $\mathcal{C}$ is appropriate for an LF ϕ only if $\mathcal{C}$ determines a variable assignment $g_{\mathcal{C}}$ whose domain includes every index which has a free occurrence in ϕ.

(81)   *Truth and falsity conditions for utterances*
If ϕ is uttered in $\mathcal{C}$ and $\mathcal{C}$ is appropriate for ϕ, then the utterance of ϕ in $\mathcal{C}$ is true if $[\![\phi]\!]^{g_{\mathcal{C}}} = 1$ and false if $[\![\phi]\!]^{g_{\mathcal{C}}} = 0$.

Now, both contexts in (11) and (18) are appropriate for an utterance of i$_{1,\langle e,et\rangle}$ cani di$_{1,\langle e,et\rangle}$ Gianni avevano la rabbia under the hypothesis that they determine respectively the two assignments $[1, \langle e, et\rangle \rightarrow$ ATTACK$]$ and $[1, \langle e, et\rangle \rightarrow$ TAKE.TO.SHELTER$]$. That is, I propose to assume that the contextual salience of a relation allows for the possibility of taking the context as determining the assignment such that an appropriately chosen index is assigned the contextually salient relation as a value.[8] This is why both in (11a) and (18a) the definite possessive can be used felicitously to refer to the set of dogs introduced in the context-setting sentence.

Let's consider the case of indefinite possessives now. The result that we want to achieve is that the sentence alcuni$_{1,\langle e,et\rangle}$ cani di$_{1,\langle e,et\rangle}$ Gianni avevano la rabbia cannot be used appropriately when the context in (11) determines the assignment $[1, \langle e, et\rangle \rightarrow$ ATTACK$]$, but still can be used appropriately when the context in (18) determines the $[1, \langle e, et\rangle \rightarrow$ TAKE.TO.SHELTER$]$. This result can be obtained by revising the standard semantics of the indefinite determiner alcuni so that the revised semantics imposes the restriction that the relation that must be provided by the context is a control relation only.

(82)   *Indefinite determiners* (alternative)

$$\llbracket \text{alcuni}_{i,\langle e,et\rangle} \rrbracket^g = \lambda f_{\langle et\rangle} : g(i, \langle e, et\rangle) \subseteq \text{CONTROL} \ . \ [\lambda h_{\langle et\rangle} \ . \ \exists x \text{ such that } f(x) = 1 \ \& \ h(x) = 1]$$

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[8]A formal problem arises in this connection. The semantic derivation of the the structure in (54) is such that the possessor constitutes the first argument that combines with the possessive relation. This raises the problem of accounting for cases like (18) where the the contextually salient relation is such that the possessor is the last argument to combine with it in the syntax—Gianni is the subject of the verb. Strictly speaking, if the relation TAKE.TO.SHELTER is assigned as a value for the index $1, \langle e, et\rangle$ i cani di Gianni would denote the dogs who took Gianni to the shelter. For present purposes, I will circumvent this problem by assuming that if a relation is made salient in a context, it is possible to take the context to determine the assignment according to which the *converse* of that relation is assigned as a value to an appropriately chosen index. For each relation $\mathcal{R}_{\langle e,et\rangle}$, the converse of $\mathcal{R}$ is the function $[\lambda u_e \ . \ [\lambda v_e \ . \ \mathcal{R}(v)(u)]]$. It should be pointed out, however, that this proposal quite likely causes the system to overgenerate. A better solution will have to await further research.

In (82) I model this requirement as a presupposition: the use of the determiner $\mathsf{alcuni}_{i,\langle e,et\rangle}$ presupposes that the value assigned to the index $i, \langle e, et\rangle$ is a subset of CONTROL.

(83) $\quad$ $[\![\mathsf{alcuni}_{1,\langle e,et\rangle}\ \mathsf{cani}\ \mathsf{di}_{1,\langle e,et\rangle}\ \mathsf{Gianni}\ \mathsf{avevano}\ \mathsf{la}\ \mathsf{rabbia}]\!]^g =$

$\quad$ 1. $= [\![\mathsf{alcuni}_{1,\langle e,et\rangle}\ \mathsf{cani}\ \mathsf{di}_{1,\langle e,et\rangle}\ \mathsf{Gianni}]\!]^g$ $([\![\mathsf{avevano}\ \mathsf{la}\ \mathsf{rabbia}]\!]^g)$ $\qquad$ FA

$\quad$ 2. $= [\![\mathsf{alcuni}_{1,\langle e,et\rangle}]\!]^g$ $([\![\mathsf{cani}\ \mathsf{di}_{1,\langle e,et\rangle}\ \mathsf{Gianni}]\!]^g)$ $([\![\mathsf{avevano}\ \mathsf{la}\ \mathsf{rabbia}]\!]^g)$ $\qquad$ FA

$\quad$ 3. $= [\lambda f_{\langle et\rangle} : g(i, \langle e, et\rangle) \subseteq \text{CONTROL}\ .\ [\lambda h_{\langle et\rangle}\ .\ \exists x$ such that $f(x) = 1$ & $h(x) = 1]]$ $([\![\mathsf{cani}\ \mathsf{di}_{1,\langle e,et\rangle}\ \mathsf{Gianni}]\!]^g)$ $(\lambda u_e\ .\ \forall v \in \text{ATOM}$ such that $v \leq_i u$, v had rabies) $\qquad$ LT (twice)

$\quad$ 4. $= [\lambda f_{\langle et\rangle} : g(i, \langle e, et\rangle) \subseteq \text{CONTROL}\ .\ [\lambda h_{\langle et\rangle}\ .\ \exists x$ such that $f(x) = 1$ & $h(x) = 1]$ $(\lambda v_{e''}\ .\ v$ is a group of dogs & $[[g(1, \langle e, et\rangle)]\,(\mathsf{Gianni})](v) = 1)$ $(\lambda u_e\ .\ \forall v \in \text{ATOM}$ such that $v \leq_i u$, v had rabies) $\qquad$ (76)

$\quad$ 5. $= [\lambda h_{\langle et\rangle}\ :\ g(i, \langle e, et\rangle) \subseteq \text{CONTROL}\ .\ \exists x$ such that $[\lambda v_{e''}\ .\ v$ is a group of dogs & $[[g(1, \langle e, et\rangle)]\,(\mathsf{Gianni})](v) = 1](x) = 1$ & $h(x) = 1]$ $(\lambda u_e\ .\ \forall v \in \text{ATOM}$ such that $v \leq_i u$, v had rabies) $\qquad$ βC

$\quad$ 6. $= [\lambda h_{\langle et\rangle} : g(i, \langle e, et\rangle) \subseteq \text{CONTROL}\ .\ \exists x$ such that x is a group of dogs & $[[g(1, \langle e, et\rangle)]\,(\mathsf{Gianni})](x) = 1$ & $h(x) = 1]$ $(\lambda u_e\ .\ \forall v \in \text{ATOM}$ such that $v \leq_i u$, v had rabies) $\qquad$ βC

$\quad$ 7. $=$ undefined if $g(i, \langle e, et\rangle)$ is not a control relation, if defined: 1 if there is a group of dogs in $\mathcal{D}$ that stands in the $g(1, \langle e, et\rangle)$ relation to Gianni and each atomic individual in this group of dogs had rabies, 0 otherwise $\qquad$ βC

The interpretation derived in (83) is, as in the case of (79), dependent on the choice of assignment. And it follows from the conditions in (80)–(81) that the sentence $\mathsf{alcuni}_{1,\langle e,et\rangle}\ \mathsf{cani}\ \mathsf{di}_{1,\langle e,et\rangle}$ Gianni avevano la rabbia can be used in a context only if the context determines an appropriate assignment of value for the index $1, \langle e, et\rangle$. This is the case in (18): the assignment $[1, \langle e, et\rangle \to \text{TAKE.TO.SHELTER}]$ assigns a control relation as a value to $1, \langle e, et\rangle$. But this is the case in (11) only if the assignment determined by the context is $[1, \langle e, et\rangle \to \text{OWN}]$:[9] if the assignment

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[9]For the time being, we can follow Barker (1995) in assuming that the relation of ownership is salient in all contexts of utterance.

determined by the context is $[1, \langle e, et \rangle \to \textsc{attack}]$, the interpretation in (83) is not defined because the presupposition that the value assigned to $1, \langle e, et \rangle$ is a control relation is not satisfied. The observed restriction that alcuni cani di Gianni in (11) is taken to denote the dogs owned by Gianni and not the contextually salient dogs follows straightforwardly.

4.2.2   Problems

In the system sketched above control and free interpretations do not constitute distinct meanings for possessive constructions. They are both instances of radical underdetermination of the meaning of the possessive relation in the structure in (54): the possessive relation is encoded by a variable, which remains free in the semantic composition of the possessive construction, and whose value is directly provided by the context of utterance. The distributional and interpretive differences between control and free interpretations arise as a consequence of the presupposition imposed by the indefinite determiner that the contextually provided value for the possessive relation is a control relation.

Of course, this system accounts for the basic interpretive contrast between definite and indefinite possessives in (11)–(18). But it presents some obvious shortcomings as well, three of which are quite serious.

The first is that the different role played by determiners in the derivation of the two types of interpretations is stipulated directly in the lexical entry for each determiner: to cover the data discussed in chapter 2 (§2.4.2), it should be stipulated that all indefinite and quantificational determiners impose the restriction that the value assigned to $1, \langle e, et \rangle$ is a control relation. Ultimately one would want to reduce these stipulations to known semantic properties of these determiners. But the problem is that these determiners do not seem to constitute a natural class: if anything, indefinite and quantificational determiners are the

complement of the natural class of definite determiners. Since definite determiners are a natural class of determiners, and they are the only class of determiners that uncontroversially license free interpretations, it seems natural to think that it is something special about definite determiners to be responsible for the availability of free interpretations, and not something special about non-definite determiners that causes the lack of those interpretations. The system seems to miss a relevant semantic generalization.[10]

Furthermore, it is not clear how the present system would account for the lack of free interpretations in the case of predicate possessives:

(27) [in the dog-pound scenario described in chapter 2]

    a. Questi cani sono quelli **di Gianni**.
        these   dogs are   those of Gianni

    b. #Questi cani sono **di Gianni**.
        these   dogs are   of Gianni

When the predicate in a possessive **be** sentence is not a full DP, as in (27b), the sentence cannot be used felicitously to state that the possessum in subject position stands in a contextually salient relation like ATTACK to the possessor in the predicate. It seems that—barring the assumption that the interpretation of the PP predicate in the small clause underlying possessive **be** sentences is different from the interpretation of the PP in possessive DPs—the presence of a null indefinite determiner should be postulated in the post-copular material in (27b).[11]

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[10]See (Farkas, 2002) for arguments that the indefinite determiner is in general the unmarked option in natural languages.

[11]Possibly, this is not a problem per se, but it becomes one as soon as an account is attempted for the greater complexity of the data in (28)+(32) discussed in the appendix to chapter 2. The marginal possibility of licensing free interpretations with indefinite possessives could be accounted for if the indefinite determiner is ambiguous between the lexical entry proposed in (82) and the standard lexical entry in (78b). Of course, it should be explained why the former seems to be preferred to the latter, but then the more serious problem arises that it is not clear why the null indefinite determiner postulated to account for the interpretive properties of predicate possessives does not have a corresponding "standard" lexical entry: differently from indefinite possessives, predicate possessives consistently disallow free interpretations.

The second problem is that the indexing mechanism used to access the meaning of the head of the PP predicate at the level at which the structure in (54) combines with the determiner is too unconstrained. Indeed, it is not clear why the indefinite determiner alcuni in (77) should be coindexed with the head of the PP predicate in the first place. If the index on alcuni is not the same as the index on P, the semantics of the determiner will not impose any restrictions on the interpretation of the possessive relation. An account for the contrast between (11b) and (18b) *requires* that the determiner that selects the possessive structure in (54) be coindexed with the head of the PP predicate.

Notice that the weaker requirement that P be coindexed with some determiner that selects as a complement a node that dominates P is not sufficient. Under this assumption, the head of the PP predicate di Gianni in (84) could be coindexed either with the indefinite determiner alcuni or with the definite determiner il that heads the DP of which alcuni cani di Gianni is a constituent.

(84) #Ieri   Gianni e   Paolo sono stati attaccati da due gruppi (distinti)
      yesterday Gianni and Paolo were   attacked by two groups (different)
      di cani. Purtroppo   **il   padrone di alcuni cani di Gianni** era Piero.
      of dogs unfortunately the master   of some   dogs of Gianni was Piero

Under the plausible assumption that—if two interpretations for a sentence are available—the interpretation that makes more sense given its context of use is selected, we would not expect the ill-formedness of (84): even embedded under a definite determiner, alcuni cani di Gianni does not behave like i cani di Gianni.

Sentences like (84) seem to indicate the existence of locality constraints on the licensing of free interpretations in possessives. But such locality constraints do not follow unless some part of the analysis restricts the indexing possibilities for the determiner that selects the possessive construction as a complement. At best, this component is implicitly stipulated in the system sketched above.

Finally, the third problem is in my opinion the most serious. The most unap-

pealing feature of the analysis proposed above is that the restriction to control relations that characterizes control interpretations is, so to speak, introduced in the wrong place in the semantic derivation. Essentially, the system sketched above reduces a property that intuitively characterizes possessive constructions— the restriction to control interpretations—to a property of determiners.

This is most obvious in the case of predicate possessives: in order to account for their interpretive properties the presence of a null indefinite determiner must be postulated. But, if anything, the interpretive properties of predicate possessives seem to suggest that the restriction to control interpretations is a property of the possessive construction, and that somehow certain types of possessive DPs are able to license interpretations that go beyond the semantic restrictions that characterize control interpretations. This is another generalization that the system seems to miss.

The latter problem, of course, does not arise if the restrictions that characterize control interpretations are determined *within* the structure in (54). But if this is the case the hypothesis that control and free interpretations have the same structural encoding in the semantics of the possessive construction must be rejected. Which is exactly the conclusion that I want to draw: the interpretation of (54) is *not* the same in control and free interpretations, which constitute two distinct meanings for the possessive construction.

4.3   The second alternative

4.3.1   Two structural encodings

Let's then consider the second option, which I propose to adopt. I mentioned already in §4.1.1 the gist of this alternative analysis: (i) assume that control vs. free interpretation correspond to distinct interpretations for the adjunction

structure in (54), and (ii) take the presence of a particular determiner to play a role in licensing the further derivation of free interpretations.

(56)　i/alcuni　cani di Gianni
　　　the/some dogs of Gianni
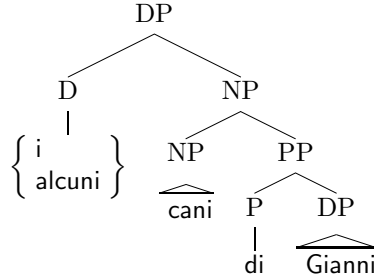
In particular, we can take the head of the possessive PP predicate in (56) to be ambiguous between two lexical entries: one entry determines the semantic restrictions that characterize control interpretations, the other does not impose any restrictions on the nature of the relation holding between possessor and possessum. It seems natural to model the difference between the two interpretations for the head of the PP predicate in terms of the distinction between a variable and a constant:

(85)　*Hypothesis 2*
　　　The head of the "possessive" PP predicate is lexically ambiguous:
　　　a.　it can denote a variable of type $\langle e, et \rangle$, or
　　　b.　it can denote a constant of type $\langle e, et \rangle$, the relation CONTROL.

Free interpretations arise from a possessive construction in which the preposition P denotes a variable, control interpretations arise from a possessive construction in which the preposition P denotes a constant, the relation CONTROL.[12] The

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[12]The reader might wonder why the possibility that the meaning of the preposition in control interpretations is a variable restricted to range over control relations is not considered. Below in the text it should become clear that the formal distinction between variable and constant meanings is crucial in order to account for the distributional differences between free and control interpretations.

different interpretive properties of the two types of interpretations follow immediately from the assumption of this basic difference. What the theory has to account for, then, is how the different distributional properties of the two types of interpretations can be related to the choice of determiner in possessive DPs.

4.3.2 Control interpretations

The case of control interpretations is pretty straightforward: control interpretations are available for all types of possessive DPs, and this follows immediately from the assumption that the semantics of the possessive relation is determined within the possessive structure in (54) in this case. Concretely, let's assume that the preposition di in Italian possessives has (86) as one of its lexical entries:

(86) $[\![\text{di}]\!] = \lambda u_e \ . \ [\lambda v_e \ . \ u \text{ and } v \text{ stand in the CONTROL relation}]$

On the basis of the denotation for di in (86) and the standard denotation of the determiner i given in (78a), the interpretation for the sentence i cani di Gianni avevano la rabbia is derived as follows:

(87) $[\![\text{i cani di Gianni avevano la rabbia}]\!]^g =$

1. $= [\![\text{avevano la rabbia}]\!]^g \ ([\![\text{i cani di Gianni}]\!]^g)$ FA

2. $= [\![\text{avevano la rabbia}]\!]^g \ ([\![\text{i}]\!]^g \ ([\![\text{cani di Gianni}]\!]^g))$ FA

3. $= [\![\text{avevano la rabbia}]\!]^g \ ([\![\text{i}]\!]^g \ (\lambda z_e \ . \ [\![\text{cani}]\!]^g(z) = 1 \ \& \ [\![\text{di Gianni}]\!]^g(z) = 1))$
   PM

4. $= [\![\text{avevano la rabbia}]\!]^g \ ([\![\text{i}]\!]^g \ (\lambda z_e \ . \ [\![\text{cani}]\!]^g(z) = 1 \ \& \ [[\![\text{di}]\!]^g \ ([\![\text{Gianni}]\!]^g)](z) = 1))$ FA

5. $= [\lambda u_e \ . \ \forall v \in \text{ATOM such that } v \leq_i u, v \text{ had rabies}] \ ([\lambda f_{\langle et \rangle} : \exists! x f(x) = 1 \ . \ \iota x f(x) = 1] \ (\lambda z_e \ . \ [\lambda u_{e''} \ . \ u \text{ is a group of dogs}](z) = 1 \ \& \ [[\lambda u_e \ . \ [\lambda v_e \ . \ u \text{ and } v \text{ stand in the CONTROL relation}]] \ (\text{Gianni})](z) = 1))$ LT (five times)

6. $= [\lambda u_e \ . \ \forall v \in \text{ATOM such that } v \leq_i u, v \text{ had rabies}] \ ([\lambda f_{\langle et \rangle} : \exists! x f(x) = 1 \ . \ \iota x f(x) = 1] \ (\lambda z_e \ . \ [\lambda u_{e''} \ . \ u \text{ is a group of dogs}](z) = 1 \ \& \ [\lambda v_e \ . \ \text{Gianni and } v \text{ stand in the CONTROL relation}](z) = 1))$ βC

7. $= [\lambda u_e \ . \ \forall v \in \text{ATOM such that } v \leq_i u, \ v \text{ had rabies}] \ ([\lambda f_{\langle et \rangle} : \exists! x f(x) = 1 \ . \ \iota x f(x) = 1] \ (\lambda z_{e''} \ . \ z \text{ is a group of dogs \& Gianni and } z \text{ stand in the CONTROL relation}))$ βC (twice)

8. $= \{\exists! x \ [\lambda z_{e''} \ . \ z \text{ is a group of dogs \& Gianni and } z \text{ stand in the CONTROL relation}](x) = 1\} \ ; \ [\lambda u_e \ . \ \forall v \in \text{ATOM such that } v \leq_i u, \ v \text{ had rabies}] \ (\iota x \ [\lambda z_{e''} \ . \ z \text{ is a group of dogs \& Gianni and } z \text{ stand in the CONTROL relation}](x) = 1)$ βC

9. $= \{\exists! x \ x \text{ is a group of dogs \& Gianni and } x \text{ stand in the CONTROL relation}\} \ [\lambda u_e \ . \ \forall v \in \text{ATOM such that } v \leq_i u, \ v \text{ had rabies}] \ (\iota x \ x \text{ is a group of dogs \& Gianni and } x \text{ stand in the CONTROL relation})$ βC (twice)

10. $=$ undefined if there is not a maximal individual in $\mathcal{D}$ that is a group of dogs and stands in the CONTROL relation to Gianni, if defined: 1 if each atomic individual in this maximal group of dogs had rabies, 0 otherwise βC

The interpretation derived in (87) is *not* dependent on assignments: the truth conditions of i cani di Gianni avevano la rabbia are always the same, irrespective of its context of utterance. And the same holds of the interpretation derived in (88)—again on the basis of (86) and the denotation for alcuni in (78b)—for the sentence alcuni cani di Gianni avevano la rabbia.

(88) $[\![\text{alcuni cani di Gianni avevano la rabbia}]\!]^g =$

  1. $= [\![\text{alcuni cani di Gianni}]\!]^g \ ([\![\text{avevano la rabbia}]\!]^g)$ FA

  2. $= [\![\text{alcuni}]\!]^g \ ([\![\text{cani di Gianni}]\!]^g) \ ([\![\text{avevano la rabbia}]\!]^g)$ FA

  3. $= [\![\text{alcuni}]\!]^g \ (\lambda z_e \ . \ [\![\text{cani}]\!]^g(z) = 1 \ \& \ [\![\text{di Gianni}]\!]^g(z) = 1) \ ([\![\text{avevano la rabbia}]\!]^g)$ PM

  4. $= [\![\text{alcuni}]\!]^g \ (\lambda z_e \ . \ [\![\text{cani}]\!]^g(z) = 1 \ \& \ [[\![\text{di}]\!]^g \ ([\![\text{Gianni}]\!]^g)](z) = 1) \ ([\![\text{avevano la rabbia}]\!]^g)$ FA

  5. $= [\lambda f_{\langle et \rangle} \ . \ [\lambda h_{\langle et \rangle} \ . \ \exists x \text{ such that } f(x) = 1 \ h(x) = 1]] \ (\lambda z_e \ . \ [\lambda u_{e''} \ . \ u \text{ is a group of dogs}](z) = 1 \ \& \ [[\lambda u_e \ . \ [\lambda v_e \ . \ u \text{ and } v \text{ stand in the CONTROL relation}]] \ (\text{Gianni})](z) = 1) \ (\lambda u_e \ . \ \forall v \in \text{ATOM such that } v \leq_i u, \ v \text{ had rabies})$ LT (five times)

  6. $= [\lambda f_{\langle et \rangle} \ . \ [\lambda h_{\langle et \rangle} \ . \ \exists x \text{ such that } f(x) = 1 \ \& \ h(x) = 1]] \ (\lambda z_e \ . \ [\lambda u_{e''} \ . \ u \text{ is a group of dogs}](z) = 1 \ \& \ [\lambda v_e \ . \ \text{Gianni and } v \text{ stand in the CONTROL relation}](z) = 1) \ (\lambda u_e \ . \ \forall v \in \text{ATOM such that } v \leq_i u, \ v \text{ had rabies})$ βC

7. $= [\lambda f_{\langle et \rangle} \ . \ [\lambda h_{\langle et \rangle} \ . \ \exists x$ such that $f(x) = 1$ & $h(x) = 1]]$ $(\lambda z_{e''} \ . \ z$ is a group of dogs & Gianni and z stand in the CONTROL relation$)$ $(\lambda u_e \ . \ \forall v \in$ ATOM such that $v \leq_i u$, v had rabies$)$ $\qquad$ βC (twice)

8. $= [\lambda h_{\langle et \rangle} \ . \ \exists x$ such that $[\lambda z_{e''} \ . \ z$ is a group of dogs & Gianni and z stand in the CONTROL relation$](x) = 1$ & $h(x) = 1]$ $(\lambda u_e \ . \ \forall v \in$ ATOM such that $v \leq_i u$, v had rabies$)$ $\qquad$ βC

9. $= [\lambda h_{\langle et \rangle} \ . \ \exists x$ such that x is a group of dogs & Gianni and x stand in the CONTROL relation & $h(x) = 1]]$ $(\lambda u_e \ . \ \forall v \in$ ATOM such that $v \leq_i u$, v had rabies$)$ $\qquad$ βC

10. $= 1$ if there is a group of dogs in $\mathcal{D}$ that stands in the CONTROL relation to Gianni and each atomic individual in this group of dogs had rabies, 0 otherwise $\qquad$ βC

Thus, the contribution of contextual information to the specification of the nature of the possessive relation must be modeled in terms of *pragmatic inferences* drawn by the speaker/hearer. If a constant is used to encode their interpretive restrictions in the semantics of the head of the PP predicate in the possessive construction, control interpretations have a meaning that is not formally dependent on information provided by the context. The semantics of the possessive relation in control interpretations is always the semantics of CONTROL. But as is generally the case in natural language, a speaker has the possibility of using the semantics of CONTROL to convey a stronger meaning, in particular when discourse information and discourse cohesion requirements make it easy for the hearer to determine which stronger meaning is being conveyed.[13]

Control interpretations—albeit extrinsic, i.e. not determined by the semantics of the possessum noun—are *lexical* (and not "pragmatic" or "contextual") in

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[13]As a matter of fact, it can be argued that the weak meaning of CONTROL is always strengthened in practical uses of possessive constructions. Witness the fact that—in the empty context—possessives are normally taken to express the stronger relation OWN, rather than CONTROL. Possibly, this follows from the fact that possessives are normally used to refer to one entity—the possessum—in terms of another more cognitively salient (or accessible) entity—the possessor. The necessity of narrowing as much as possible the semantics of the relation holding between the two entities might follow from the observation that—the more restrictive the semantics of the relation—the "stronger" the connection between the two entities.

that their semantics is determined entirely within the syntactic constituent within which possessor and possessum are combined. All instances of control interpretations have the same semantics, and the different interpretations that arise in different contexts are in effect different pragmatic uses of the same weak meaning of CONTROL. These uses, of course, have to be sanctioned by the hearer, who not only has to decide whether there is enough contextual support for a certain interpretation to be derived, but even whether the "target" relation that the possessive would be taken to express satisfies the weak—but not empty— semantics of CONTROL.

Control interpretations can be derived straightforwardly in the case of possessive predicates as well. Differently from the system developed in the previous section, the restriction to control interpretations is determined in the possessive PP predicate. At least for what concerns the derivation of control interpretations, the hypothesis can be maintained that the same PP predicate appears both in the case of possessive DPs and predicate possessives, and no syntactic/semantic differences hold between the DP-internal possessive adjunction structure (54) and the possessive small clause (69) in the case of be sentences.[14] A sample derivation for a sentence like questi cani sono di Gianni is given in (90). This derivation is based on the syntactic analysis in (72b) and the lexical entries for demonstratives in (89).[15]

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[14]That is, no differences in addition to the different syntactic category corresponding to the possessum.

[15]I translate demonstratives as definite determiners whose maximality presupposition applies to the predicate denoted by the NP as restricted in terms of proximal (ρ) or distal (ω) features w.r.t. the speaker/hearer and/or as a consequence of overt deictic gestures. In the derivation of (90) I simplify things by assuming that sono is semantically empty, and that the interpretation of the sentence is determined entirely within the PP complement of sono—essentially, I do as if the subject reconstructs to its base position at LF.

(89)   *Demonstratives*

$[\![\text{questi}]\!] = \lambda f_{\langle et \rangle} : \exists! x f(x) = 1 \ \& \ \rho(x) = 1 \ . \ \iota x f(x) = 1 \ \& \ \rho(x) = 1$
$[\![\text{quei}]\!] \ = \lambda f_{\langle et \rangle} : \exists! x f(x) = 1 \ \& \ \omega(x) = 1 \ . \ \iota x f(x) = 1 \ \& \ \omega(x) = 1$

(72)   b.
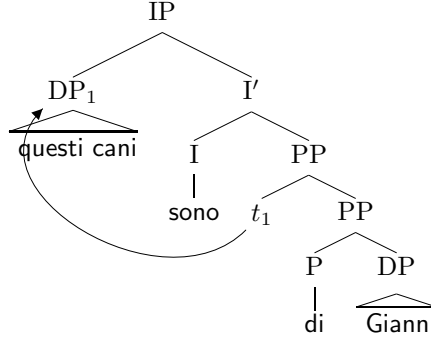
(90) $[\![\text{questi cani sono di Gianni}]\!]^g =$

1. $= [\![\text{questi cani di Gianni}]\!]^g =$ vacuity of sono

2. $= [\![\text{di Gianni}]\!]^g \ ([\![\text{questi cani}]\!]^g)$ FA

3. $= [\![\text{di}]\!]^g \ ([\![\text{Gianni}]\!]^g) \ ([\![\text{questi}]\!]^g \ ([\![\text{cani}]\!]^g))$ FA (twice)

4. $= [\lambda u_e \ . \ [\lambda v_e \ . \ u \text{ and } v \text{ stand in the } \textsc{control} \text{ relation}]] \text{ (Gianni)}$
   $([\lambda f_{\langle et \rangle} : \exists! x f(x) = 1 \ \& \ \rho(x) = 1 \ . \ \iota x f(x) = 1 \ \& \ \rho(x) = 1] \ (\lambda u_{e''} \ . \ u$
   is a group of dogs))   LT (four times)

5. $= \{\exists! x \, [\lambda u_{e''} \ . \ u \text{ is a group of dogs}](x) = 1 \ \& \ \rho(x) = 1\} \ ; \ [\lambda v_e \ . \ \text{Gianni}$
   and v stand in the $\textsc{control}$ relation$] \ (\iota x \, [\lambda u_{e''} \ . \ u \text{ is a group of}$
   dogs$](x) = 1 \ \& \ \rho(x) = 1])$ βC (twice)

6. $= \{\exists! x \, x \text{ is a group of dogs } \& \ \rho(x) = 1\} \ ; \ [\lambda v_e \ . \ \text{Gianni and } v \text{ stand in}$
   the $\textsc{control}$ relation$] \ (\iota x \, x \text{ is a group of dogs } \& \ \rho(x) = 1)$
         βC (twice)

7. $=$ undefined if there is not a maximal entity in $\mathcal{D}$ that is a group of
   dogs and is close to and pointed to by the speaker, if defined: 1 if this
   group of dogs stands in the $\textsc{control}$ relation to Gianni, 0 otherwise
         βC

4.3.3   Free interpretations

Getting to the case of free interpretations, the result that we want to obtain is the

following: the semantic derivation in which the head of the PP predicate in the

possessive construction is interpreted as a variable determines an interpretation

for the sentence that can be appropriately used in the ATTACK context (11) only when the definite determiner selects this construction as a complement.

Remember how this result was achieved in the system sketched in the previous section: (i) the variable corresponding to the head of the PP predicate was treated like a "pro-relation" for which, similarly to the case of referential pronouns, the context of utterance of a sentence containing the possessive construction had to determine a value, and (ii) the degraded status of sentences containing an indefinite possessive in a context of utterance that e.g. makes the relation ATTACK salient was a consequence of the restriction imposed by the semantics of the indefinite determiner that the value for the variable denoted by the preposition be a control relation. In the case of indefinite possessives the relational variable corresponding to the possessive relation was treated as an unbound anaphor restricted to range over control relations.

A similar strategy can be employed in the current system to account for the unavailability of free interpretations in the case of indefinite possessives: the indefinite determiner imposes some restriction on the possible values for the relational anaphor. Concretely, in the present system it can be proposed that the restriction is of a very different nature than the restriction to subsets of CONTROL stipulated in the previous system: a restriction that prevents the value for the relational variable from being any contextually salient relation, irrespective of its semantic properties. Indeed, there is no need to assume that the relational anaphor links to the context when control relations are made salient, since control interpretations now are taken care of by the alternative constant meaning for the head of the PP predicate in the possessive construction.

Clearly, the postulated restriction that the indefinite determiner requires the value of a coindexed relational variable not to be already introduced in the context of utterance looks less arbitrary than the restriction to subsets of CONTROL

proposed in the previous system. This restriction is strongly reminiscent of the *Novelty Condition* associated with indefinite DPs (Heim, 1982, 1983a).

But there still remain some serious problems to be addressed. Two of these are inherited from the system discussed in the previous section: (i) the necessity of postulating some kind of empty indefinite determiner in the case of Italian predicate possessives, with the unwelcome consequences that this might have as soon as the system is adjusted to account for the more complex data in (28)+(32) discussed in the appendix to chapter 2, and (ii) the necessity for the indefinite determiner to be coindexed with the head of the PP predicate, with the related problem of accounting for why this should be the case in the first place. A third problem is new: once it is assumed that the indefinite determiner imposes some sort of Novelty Condition on the relational variable that it is coindexed with, the question immediately arises why the indefinite determiner does not impose a similar restriction on variables of some other semantic type, in particular on the interpretation of referential pronouns.

(91)   Bill liked the people who John brought along to the party a lot. Indeed some weeks later he started dating **a woman who came with him**.

The example in (91) shows that a referential pronoun embedded in an indefinite DP behaves rather differently from the relational variable that underlies free interpretations for possessives: the pronoun him in the second sentence in (91) can be and—given the meaning of the sentence—is most obviously interpreted as referring to John, which means that the second sentence can be interpreted in a context that determines the assignment according to which the value of the variable translating him is a familiar referent.[16] The gist of the example is that

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[16]Which, of course, is the gist of Heim's (1982; 1983a) *Familiarity Condition*, which applies to definite DPs and pronouns. The question, then, is why the relational variable in an indefinite possessive not only is not subject to the Familiarity Condition, but seems to be subject to the opposite Novelty Condition.

the relational variable in possessives does not behave like a referential pronoun, but this, in the kind of system informally suggested in the previous paragraphs, amounts to the arbitrary stipulation that the indefinite determiner can only be coindexed with relational variables embedded in the noun phrase it combines with (and not with an embedded pronoun) and/or that its semantics imposes a Novelty Condition only on variables of type $\langle e, et \rangle$, and not on variables of type e.

Accounting for the distribution of free interpretations, thus, requires addressing the interpretive differences holding between relational variables and referential pronouns. What has to be explained is why free relational variables can—it seems—express a contextually salient relation only when embedded by a definite determiner, while referential pronouns—free variables of type e—can do so irrespective of whether they are embedded by a definite determiner.

Two alternatives come to mind. The first is to take the interpretive differences between free relational variables and referential pronouns to show that the two are formally different and that—contrary to common assumptions—the interpretive properties of referential pronouns are not indicative of the "normal" behavior of free variables: referential pronouns are "special" variables that can always receive a contextually provided value. The alternative is to take the difference to be due to the context of use against which a sentence is interpreted: relational variables in possessives and referential pronouns could be taken to be formally alike, and their different behavior could be "blamed" on the context of use, which can provide a value only for referential pronouns and not for relational variables.

The observation that referential pronouns are—in the system proposed by Heim (1982, 1983a)—subject to the Familiarity Condition (see footnote 16), suggests that the first alternative is worth pursuing. If the intuitive parallelism between the interpretive restrictions on relational variables in indefinite possessives and the interpretive properties of indefinite DPs modeled by Novelty

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Condition can be developed, it can be argued that the formal difference between referential pronouns and the relational variables underlying free interpretations in possessives reduces to the following: pronouns are always subject to the Familiarity Condition; relational variables are often (but not always) subject to some version of the Novelty Condition.

Developing this line of thought into a satisfactory account for the distribution of free interpretations in Italian is not completely straightforward. Thus I postpone this task to the following chapter. In the remainder of this chapter I briefly outline a version of the second alternative, with the purpose of showing that this second alternative—albeit viable—results in an analysis that is conceptually not completely satisfactory, and of providing a term of comparison for the analysis developed in the next chapter, which constitutes my proposal for the derivation of free interpretations in possessive constructions.

A failed attempt

In previous work (Storto, 2003b) I suggested taking the different behavior of referential pronouns and relational variables to be a by-product of a limitation on the way in which information is stored in the progression of a discourse. In a nutshell, the idea is that—the arguments made with respect to (91) notwithstanding—relational variables are formally like referential pronouns, but differently from the latter they cannot be left free in the semantic derivation of a sentence because discourse contexts *cannot* determine an interpretation for these variables. That is, I proposed to assume the following restriction on discourse context:

(92)   *No free relational variables*
        No context $\mathcal{C}$ determines a variable assignment $g_{\mathcal{C}}$ whose domain contains indices of the form $\langle i, \langle e, et \rangle \rangle$.

which, coupled with the appropriateness condition in (80) and the truth conditions for utterances in (81), renders logical forms containing free relational variables uninterpretable in all contexts.

In §4.4.2 I say something more about the restriction postulated in (92). But let's see first how such a system might work. The idea is that the assignment-dependent interpretation derived for the possessive construction in (76), repeated below, must be turned into an assignment-independent interpretation somewhere in the semantic composition of a sentence containing the possessive construction, for an utterance of the sentence to be felicitous in a context.

(76) $[\![$cani di$_{1,\langle e,et\rangle}$ Gianni$]\!]^g =$

     1. $= \lambda v_e$. $[\![$cani$]\!]^g(v) = 1$ & $[\![$di$_{1,\langle e,et\rangle}$ Gianni$]\!]^g(v) = 1$ PM

     2. $= \lambda v_e$. $[\![$cani$]\!]^g(v) = 1$ & $[[\![$di$_{1,\langle e,et\rangle}]\!]^g$ $([\![$Gianni$]\!]^g)](v) = 1$ FA

     3. $= \lambda v_e$. $[\![$cani$]\!]^g(v) = 1$ & $[[g(1, \langle e,et\rangle)]$ $([\![$Gianni$]\!]^g)](v) = 1$ TP

     4. $= \lambda v_e$. $[\lambda u_{e''}$. u is a group of dogs$](v) = 1$ & $[[g(1, \langle e,et\rangle)]$ (Gianni)$](v) = 1$ LT (twice)

     5. $=$ the function from plural individuals in $\mathcal{D}$ to $\{0,1\}$ that assigns the value 1 to those individuals that are groups of dogs and stand in the $g(1, \langle e,et\rangle)$ relation to Gianni βC

Given these assumptions, the distributional restrictions that characterize free interpretations follow immediately if only definite determiners can bind the relational variable in the interpretation of the possessive construction. Concretely, this suggestion can be modeled as follows. We introduce a new rule of semantic interpretation (93) that obtains at the same time the results of the PA rule—abstraction on a syntactic index—and the FA rule—application of the meaning of the determiner to the predicate obtained by abstracting on the position occupied by the variable in the NP adjunction structure; and we define an alternative lexical entry for the definite determiner i (94) which obtains the result that the position abstracted on by the new rule is existentially quantified.

(93)　*Ad-hoc Rule* (AR)

$$\left[\begin{array}{c} \begin{array}{cc} \text{D} & \text{NP} \\ | & \\ \alpha_{i,\langle e,et\rangle} & \begin{array}{cc} & \text{PP} \\ & \text{P} \\ & | \\ & \alpha_{i,\langle e,et\rangle} \end{array} \end{array} \end{array} \right]^{g} = [\![\text{D}]\!]^{g}(\lambda \mathcal{Z}_{\langle e,et\rangle} . [\![\text{NP}]\!]^{g^{\mathcal{Z}/i,\langle e,et\rangle}})$$

One unappealing feature of the AR rule is that its formulation violates the principle of strict compositionality of semantic interpretation: the rule "looks down" in the syntactic structure to make sure that the index that abstraction is performed on is the index of the head of the PP predicate in the NP adjunction structure that combines with the determiner. This is stipulated in order to account for the locality effects discussed in connection with example (84). However, it should be pointed out that, strictly speaking, the introduction of this rule is not needed. The effects of this rule could be encoded in the semantic type of the head of the predicate PP, which would denote an entity of type $\langle e, \langle et, \langle\langle e, et\rangle, et\rangle\rangle\rangle$ and derive an interpretation according to which the denotation of the complement of the determiner is by itself a function from relations to properties.[17] Under this alternative, the AR rule and coindexing of the determiner and the head of the PP predicate can be dispensed with, and locality effects follow without any additional stipulations. The reader might want to consider the AR rule as a shorthand for this more appealing alternative.[18]

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[17]Notice that if this alternative interpretation for the head of the PP predicate is adopted, the result follows that this interpretation will not be available in predicate possessives because of a type mismatch: the PP predicate would denote a function of type $\langle et, \langle\langle e, et\rangle, et\rangle\rangle$, which cannot combine with the denotation of the subject DP of the small clause in (72b). This restriction is empirically correct, of course.

[18]One apparent difference is that under this alternative the meaning of the head of the PP predicate is a function from relations to relations and not a free relational variable. But, as Polly Jacobson has taught us (Jacobson, 1999, 2000, a.o.), the two are not very different: a free relational variable is itself a function from assignments to relations, and variable assignments can be altogether dispensed with by treating all variables of type τ as identity functions of type $\langle \tau, \tau \rangle$.

An appropriately reformulated lexical entry for the definite determiner is given in (134), and the semantic derivation of the sentence $i_{1,\langle e,et\rangle}$ cani di$_{1,\langle e,et\rangle}$ Gianni avevano la rabbia is shown in (95):

(94)   *Definite determiner* (alternative)
$\llbracket i_{i,\langle e,et\rangle} \rrbracket = \lambda\chi_{\langle\langle e,et\rangle,\langle et\rangle\rangle} : \exists!x\exists\mathcal{R}[\chi(\mathcal{R})](x) = 1 \ . \ \iota x\exists\mathcal{R}[\chi(\mathcal{R})](x) = 1$

(95) $\llbracket i_{1,\langle e,et\rangle}$ cani di$_{1,\langle e,et\rangle}$ Gianni avevano la rabbia$\rrbracket^g =$

1. $= \llbracket$avevano la rabbia$\rrbracket^g$ ($\llbracket i_{1,\langle e,et\rangle}$ cani di$_{1,\langle e,et\rangle}$ Gianni$\rrbracket^g$)   FA

2. $= \llbracket$avevano la rabbia$\rrbracket^g$ ($\llbracket i_{1,\langle e,et\rangle} \rrbracket^g$ ($\lambda\mathcal{Z}_{\langle e,et\rangle}$. $\llbracket$cani di$_{1,\langle e,et\rangle}$ Gianni$\rrbracket^{g^{\mathcal{Z}/1,\langle e,et\rangle}}$))
                                                                                                              AR

3. $= [\lambda u_e$. $\forall v \in$ ATOM such that $v \leq_i u$, v had rabies] ($[\lambda\chi_{\langle\langle e,et\rangle,\langle et\rangle\rangle} :$ $\exists!x\exists\mathcal{R}[\chi(\mathcal{R})](x) = 1$. $\iota x\exists\mathcal{R}[\chi(\mathcal{R})](x) = 1]$ ($\lambda\mathcal{Z}_{\langle e,et\rangle}$. $\llbracket$cani di$_{1,\langle e,et\rangle}$ Gianni$\rrbracket^{g^{\mathcal{Z}/1,\langle e,et\rangle}}$))   LT (twice)

4. $= [\lambda u_e$. $\forall v \in$ ATOM such that $v \leq_i u$, v had rabies] ($[\lambda\chi_{\langle\langle e,et\rangle,\langle et\rangle\rangle} :$ $\exists!x\exists\mathcal{R}[\chi(\mathcal{R})](x) = 1$. $\iota x\exists\mathcal{R}[\chi(\mathcal{R})](x) = 1]$ ($\lambda\mathcal{Z}_{\langle e,et\rangle}$. $[\lambda v_{e''}$. v is a group of dogs & $[[g^{\mathcal{Z}/1,\langle e,et\rangle}(1, \langle e, et\rangle)]$ (Gianni)$](v) = 1]$))   (76)

5. $= [\lambda u_e$. $\forall v \in$ ATOM such that $v \leq_i u$, v had rabies] ($[\lambda\chi_{\langle\langle e,et\rangle,\langle et\rangle\rangle} :$ $\exists!x\exists\mathcal{R}[\chi(\mathcal{R})](x) = 1$. $\iota x\exists\mathcal{R}[\chi(\mathcal{R})](x) = 1]$ ($\lambda\mathcal{Z}_{\langle e,et\rangle}$. $[\lambda v_{e''}$. v is a group of dogs & $\mathcal{Z}$(Gianni)$(v) = 1]$))   (140)

6. $= \{\exists!x\exists\mathcal{R}[[\lambda\mathcal{Z}_{\langle e,et\rangle}$. $[\lambda v_{e''}$. v is a group of dogs & $\mathcal{Z}$(Gianni)$(v) =$ $1]](\mathcal{R})](x) = 1\}$; $[\lambda u_e$. $\forall v \in$ ATOM such that $v \leq_i u$, v had rabies] ($\iota x\exists\mathcal{R}[[\lambda\mathcal{Z}_{\langle e,et\rangle}$. $[\lambda v_{e''}$. v is a group of dogs & $\mathcal{Z}$(Gianni)$(v) =$ $1]](\mathcal{R})](x) = 1$) βC

7. $= \{\exists!x\exists\mathcal{R}[\lambda v_{e''}$. v is a group of dogs & $\mathcal{R}$(Gianni)$(v) = 1](x) = 1\}$; $[\lambda u_e$. $\forall v \in$ ATOM such that $v \leq_i u$, v had rabies] ($\iota x\exists\mathcal{R}[\lambda v_{e''}$. v is a group of dogs & $\mathcal{R}$(Gianni)$(v) = 1](x) = 1$) βC (twice)

8. $= \{\exists!x\exists\mathcal{R} \ x$ is a group of dogs & $\mathcal{R}$(Gianni)$(x) = 1\}$; $[\lambda u_e$. $\forall v \in$ ATOM such that $v \leq_i u$, v had rabies] ($\iota x\exists\mathcal{R} \ x$ is a group of dogs & $\mathcal{R}$(Gianni)$(x) = 1$) βC (twice)

9. $=$ undefined if there is not a maximal individual in $\mathcal{D}$ that is a group of dogs and stands in some relation to Gianni, if defined: 1 if each atomic individual in this maximal group of dogs had rabies, 0 otherwise βC

The interpretation derived in (95) is not dependent on the choice of an assignment. The free variable $1, \langle e, et\rangle$ in the interpretation of (76) becomes

bound as a consequence of the application of the AR rule in step 2: the variable $1, \langle e, et \rangle$ is first abstracted on to derive a function from relations to properties (semantic type $\langle \langle e, et \rangle, et \rangle$) and then this function is taken as an argument by the denotation of the definite determiner, which applies this function to an existentially quantified relation $\mathcal{R}$ and imposes its standard semantics on the result of this functional application, the property denoting groups of dogs that stand in some relation to Gianni.

Given the lexical entry in (94) and the AR rule, the definite determiner is a variable binder in the system: the meaning of the NP adjunction structure is not in the domain of e.g. $[\![\ ]\!]^{[2, e \rightarrow \text{Luca}]}$, but the DP node immediately dominating the determiner and this NP is in the domain of $[\![\ ]\!]^g$ for all assignments g. The attentive reader might already see the problem that is intrinsic to this move: the meaning of a possessive under a free interpretation is reduced to the mere statement that *some* relation holds between possessor and possessum. And this hypothesis was already criticized extensively in chapter 2. I return to this problem in §4.4.2. For the sake of completeness, let's see how the unavailability of free interpretations can be accounted for under the current assumptions.

The unavailability of free interpretations in the case of indefinite possessives is accounted for immediately if only definite determiners have "binding" lexical entries like (94). Not only does the standard denotation for the indefinite determiner alcuni in (78b) not introduce an existential quantification on relations, but the standard denotation for the indefinite determiner would not trigger the application of the AR rule in the first place either. As in the FA rule, a precondition for the application of the AR rule is that the entity determined by abstracting on the relational variable in the denotation of the NP node be in the domain of the function denoted by the D node, but this is not the case if alcuni denotes a standard quantifier of type $\langle et, \langle et, t \rangle \rangle$. The unavailability of free

interpretations is accounted for in terms of a lexical gap: only definite determiners have lexical entries of the appropriate semantic type to trigger the RA rule.[19] Taking the denotation of the head of the PP predicate to be a variable leads to an interpretation for a sentence like alcuni$_{1,\langle e,et\rangle}$ cani di$_{1,\langle e,et\rangle}$ Gianni avevano la rabbia that cannot be used appropriately in any context.

The same reasoning accounts for the unavailability of free interpretations with predicate possessives: in a structure like (72b) no determiner takes the possessive small clause as a complement, which means that the RA rule will never apply and the relational variable translating the preposition di will remain unbound.[20] Not only need no null determiner be postulated to occur in the post-copular material, as was instead needed in the system sketched in §4.2, but the current system presents the advantage that if the system is weakened to allow for free interpretations with indefinite possessives and other types of possessive DPs in order to account for the more complex array of data in (28)+(32), still the prediction that predicate possessives do not license free interpretations is maintained.

And, of course, the contrast in (27) in a context that makes the ATTACK relation salient follows from the fact that in (27a) the possessive relation is established within the post-copular definite DP quelli di Gianni.

(27)   [in the dog-pound scenario described in chapter 2]
    a.   Questi cani sono quelli **di Gianni**.
       these   dogs are   those of Gianni

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[19]But notice that not just any denotation of type $\langle\langle\langle e, et\rangle, \langle et\rangle\rangle, \tau\rangle$ would do: it is the presence of the existential quantifier on $\mathcal{R}$ in (94) that makes the interpretation in (95) assignment-independent.

[20]This conclusion is independent of the difference between the possessive construction in the sentential case—called a 'small clause' and labeled as a PP—and the one in the DP-internal case—called an 'adjunction structure' and labeled as an NP. Even if this difference were argued to be simply terminological, and the two constructions to be actually of the same syntactic nature, the AR rule would still not apply in the case of Italian predicate possessives.

    b. [#]Questi cani sono **di Gianni**.
        these dogs are of Gianni

The interpretation derived in (96) is not assignment-dependent, and thus the sentence in (27a) can be appropriately used in all contexts.[21]

(96) $[\![$questi cani sono quelli$_{i,\langle e,et\rangle}$ di$_{i,\langle e,et\rangle}$ Gianni$]\!]^g =$

    1. $= [\![$questi cani quelli$_{i,\langle e,et\rangle}$ di$_{i,\langle e,et\rangle}$ Gianni$]\!]^g = $ vacuity of **sono**

    2. $= [\lambda u_e \;.\; u = [\![$quelli$_{i,\langle e,et\rangle}$ di$_{i,\langle e,et\rangle}$ Gianni$]\!]^g]\,([\![$questi cani$]\!]^g)$ IS

    3. $= [\lambda u_e \;.\; u = [\![$quelli$_{i,\langle e,et\rangle}$ di$_{i,\langle e,et\rangle}$ Gianni$]\!]^g]\,([\![$questi$]\!]^g\,([\![$cani$]\!]^g))$ FA

    4. $= [\lambda u_e \;.\; u = [\![$quelli$_{i,\langle e,et\rangle}$ di$_{i,\langle e,et\rangle}$ Gianni$]\!]^g]\,([\lambda f_{\langle et\rangle} : \exists! x f(x) = 1 \;\&\; \rho(x) = 1 \;.\; \iota x f(x) = 1 \;\&\; \rho(x) = 1]\,(\lambda u_{e''} \;.\; u$ is a group of dogs$))$
                                                  LT (two times)

    5. $= \{\exists! x \exists \mathcal{R}\, x$ is a group of dogs $\&\; \mathcal{R}(\text{Gianni})(x) = 1\} \,;\, [\lambda u_e \;.\; u = \iota x \exists \mathcal{R}\, x$ is a group of dogs $\&\; \mathcal{R}(\text{Gianni})(x) = 1]\,([\lambda f_{\langle et\rangle} : \exists! x f(x) = 1 \;\&\; \rho(x) = 1 \;.\; \iota x f(x) = 1 \;\&\; \rho(x) = 1]\,(\lambda u_{e''} \;.\; u$ is a group of dogs$))$ †

    6. $= \{\exists! x \exists \mathcal{R}\, x$ is a group of dogs $\&\; \mathcal{R}(\text{Gianni})(x) = 1 \;\&\; \exists! x\,[\lambda u_{e''} \;.\; u$ is a group of dogs$](x) = 1 \;\&\; \rho(x) = 1\} \,;\, [\lambda u_e \;.\; u = \iota x \exists \mathcal{R}\, x$ is a group of dogs $\&\; \mathcal{R}(\text{Gianni})(x) = 1]\,(\iota x\,[\lambda u_{e''} \;.\; u$ is a group of dogs$](x) = 1 \;\&\; \rho(x) = 1)$ βC (twice)

    7. $= \{\exists! x \exists \mathcal{R}\, x$ is a group of dogs $\&\; \mathcal{R}(\text{Gianni})(x) = 1 \;\&\; \exists! x\, x$ is a group of dogs $\&\; \rho(x) = 1\} \,;\, [\lambda u_e \;.\; u = \iota x \exists \mathcal{R}\, x$ is a group of dogs $\&\; \mathcal{R}(\text{Gianni})(x) = 1]\,(\iota x\, x$ is a group of dogs $\&\; \rho(x) = 1)$ βC (twice)

    8. $=$ undefined if there are not both a maximal entity in $\mathcal{D}$ that is a group of dogs and is close to and pointed to by the speaker and a maximal entity in $\mathcal{D}$ that is a group of dogs that stands in some relation to Gianni, if defined: 1 if these two groups of dogs are the same, 0 otherwise βC

The system immediately accounts for the availability of free interpretations with partitive possessives as well.[22] The basic assumption shared by most existing

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[21]In (96) I assume that quelli$_{i,\langle e,et\rangle}$ di$_{i,\langle e,et\rangle}$ Gianni is an elliptical form for i$_{i,\langle e,et\rangle}$ cani di$_{i,\langle e,et\rangle}$ Gianni—this justifies step 5 in the derivation, which I annotated with the diacritic †—and as in the case of (90) I assume that sono is semantically empty, and that the subject reconstructs to its base position at LF.

[22]In fairness, partitives did not present particular problems for the system sketched in the previous section either.

analyses of the syntax/semantics of partitive DPs (Ladusaw, 1982; Hoeksema, 1996; Barker, 1998; Chierchia, 1998, a.o.) is that partitive DPs amount to "recursive" DP structures, where a definite DP is embedded within a bigger DP (97a):[23]

(97) a. $[_{DP_1}$ some $\emptyset_N$ of$_{part}$ $[_{DP_2}$ the dogs]]

     b. alcuni dei   cani di Gianni
        some of the dogs of Gianni

     c. $[_{DP_1}$ alcuni $\emptyset_N$ de-$_{part}$ $[_{DP_2}$ i cani di Gianni]]

The relevant observation for our purposes is that in partitive possessives the possessive relation is established within the embedded DP_2, where a definite determiner combines with the NP containing the relational variable, and thus binding of this variable can take place. The data in (24) are thus unsurprising: partitive possessives are expected to pattern with definite possessives.

(24) Ieri   Gianni e   Paolo sono stati attaccati da due gruppi
      yesterday Gianni and Paolo were   attacked by two groups
      (distinti)   di cani;
      (different) of dogs

     b. … sfortunatamente **alcuni**/**pochi**/**molti**/**due dei**   **cani di Gianni**
           unfortunately some/few/many/two   of the dogs of Gianni
           non sono stati catturati.
           not have been captured

     c. … fortunatamente **ognuno dei**   **cani di Gianni** è   stato
           fortunately   each one of the dogs of Gianni has been
           catturato.
           captured

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[23]Some analyses (Abbott, 1996, e.g.) question the conclusion that the embedded DP is necessarily definite, but maintain the hypothesis that partitives have a recursive DP structure. A dissenting opinion is the proposal in (Matthewson, 2001), where it is argued that partitives are quantificational structures and not an instance of a DP embedded within a bigger DP. I think that, even under the analysis of partitives suggested by Matthewson, the essentially homologous behavior of definite and partitive possessives in licensing free interpretations could be explained along the lines proposed here and in the next chapter. Discussing the issues raised by Matthewson's article would lead us too far afield, though.

A final observation is that, as mentioned already, the differences between definite possessives and cases in which an indefinite possessive is embedded within a definite DP are accounted for in the current system: the complex DP in the second sentence in (84) is not expected to license free interpretations because of the locality built into the definition of the RA rule (or, alternatively, in the semantic type for the head of the PP predicate in the possessive construction).

(84) #Ieri   Gianni e   Paolo sono stati attaccati da due gruppi (distinti)
      yesterday Gianni and Paolo were   attacked by two groups (different)
      di cani. Purtroppo   **il   padrone di alcuni cani di Gianni** è Piero.
      of dogs unfortunately the master   of some   dogs of Gianni is Piero

4.4 The state of the theory

4.4.1 A summary of the proposal

Let me summarize the current shape of the theory. The theory consists of essentially three pieces:

(98)   *The system under consideration*
   a.   the assumption that a basic lexical ambiguity underlies possessive constructions and that this lexical ambiguity determines the interpretive differences holding between control vs. free interpretations (85)
      i.   the head of the "possessive" PP predicate can denote a constant, the relation CONTROL, or
      ii. it can denote a variable, an object whose interpretation is dependent on the choice of an assignment
   b.   the assumption that contexts of utterance cannot determine assignments that range over entities of type $\langle e, et \rangle$ (92), from which the consequence follows that LFs containing free relational variables cannot be appropriately uttered in any context
   c.   the assumption that only definite determiners are (relational) variable binders, i.e. that only definite determiners have lexical entries like (94) that trigger the application of the AR rule

The lexical ambiguity of the head of the PP predicate determines two distinct interpretations for the possessive construction: of these only one is dependent on the choice of an assignment, the other being defined for all assignments. The restriction on the the type of assignments that can be determined by a context of use then plays a role in filtering out one of the two interpretations in cases other than those of definite and partitive possessives: the assignment-dependent interpretation for the possessive construction leads to an interpretation that cannot be used appropriately in any context. The case of definite and partitive possessives is different because the definite determiner binds the free relational variable, and the derivation of free interpretations converges onto an interpretation that is not dependent on the choice of an assignment, and thus can be used felicitously in all contexts.

The different distributional properties of control vs. free interpretations are thus reduced to the fact that of the two semantic derivations for the possessive construction only the one that specifies the meaning of the possessive relation as the CONTROL relation determines a "usable" interpretation in cases other than definite and partitive possessives. And this accounts for the fact that e.g. indefinite possessives cannot be used felicitously in contexts like (11) that make the ATTACK relation salient: this relation does not qualify as an instance of CONTROL, so the only pragmatic inference that the hearer will draw on the basis of the constant meaning for the possessive construction is that the speaker used the possessive to refer to dogs owned by Gianni, which makes the sentence in (11b) a non-sequitur with respect to the context-setting sentence. In sentences like (11a) the alternative interpretation for the possessive construction—the one that does not determine that the possessive relation is CONTROL—can instead be used, and it derives an interpretation for the whole sentence that can be used as a follow-up to the context-setting sentence.

Finally, notice that the system predicts that sentences containing definite or partitive possessives in contexts that make control relations salient are genuinely ambiguous: the meaning conveyed by a sentence like (18a) could be determined by either of the two alternative interpretations for the possessive construction, no empirical differences being able to distinguish between the two.

4.4.2 A critical assessment

Control interpretations

I take the account proposed for control interpretations to be essentially correct. In the current system the semantic restriction to control interpretations is encoded directly in the semantics of the possessive construction: the interpretation of the head of the PP predicate is the relation CONTROL. This correctly addresses the more serious shortcoming that characterizes the system sketched in §4.2: the restriction to control interpretations is intuitively a property of possessive constructions, and not of determiners. This, as I mentioned already, leads to the conclusion that control and free interpretations constitute distinct meanings for possessive constructions: control and free interpretations are determined by different meanings for the head of the PP predicate in possessive constructions.

In addition, it should be obvious by now that the distinction between constants and variables is crucial within the system in order to derive the restricted distribution of free interpretations. Control interpretations cannot be modeled in terms of variables restricted to range on control relations even under the assumption that this restriction is determined within the possessive construction. The system would predict the absence of any extrinsic interpretation with possessives other than definite and partitive possessives: the restriction to control relations would not change the essentially assignment-

dependent nature of the interpretation of the possessive construction. It can be argued that the specific proposal made as for why free relational variables cannot be linked to relations that are made salient in the context needs some re-thinking, but it should be clear that, under any formulation, such a prohibition will affect all kinds of relational variables, independently of whether their interpretation is restricted to range over control relations.

More generally, it seems to me that characterizing the distinction between control and free interpretations in terms of a distinction between constants and variables provides a simple explanation for the two basic differences between the two types of interpretations: the semantic restrictiveness of control interpretations, and the restricted distribution of free interpretations. The greater semantic restrictiveness of control interpretations follows from the choice of a contentful, albeit quite general, relation—CONTROL—as constant meaning for the head of the PP predicate in the possessive construction. The restricted distribution of free interpretations follows because only the semantic derivation of control interpretations is expected to converge without the need of any special provisions, always deriving an interpretation for a sentence containing a possessive construction that can be appropriately used in any context of utterance. That is, it seems correct to assume that interpretations that are available across the board with all kinds of possessives constitute the normal case, the basic semantics of possessive constructions, and that interpretations whose semantics is less restrictive and whose distribution is more restricted are in need of something "special" to happen for their derivation to succeed.

Of course, once it is assumed that the semantics of the possessive relation in control interpretations is determined within the possessive construction, cases in which e.g. indefinite possessives are taken not to contrast with definite possessives with respect to the possibility of expressing a contextually determined relation

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like TAKE.TO.SHELTER in (18) must be accounted for in pragmatic terms. Strictly speaking, the semantics of the indefinite possessive DP alcuni cani di Gianni 'some dogs of Gianni' in (18b) is that of a generalized quantifier that for each property returns the truth value 1 iff this property holds of some group of dogs that stand in the CONTROL relation to Gianni, but this meaning can be successfully used by the speaker in the context set by a sentence like (18) to convey the stronger meaning according to which the possessive DP denotes a generalized quantifier that for each property returns the value 1 iff this property holds of some group of dogs that are related to Gianni by the the more contentful relation TAKE.TO.SHELTER.

Modeling the effects of context on the derivation of control interpretations as an indirect pragmatic process allows for the possibility of accounting for the attested variation among speakers in the acceptability of e.g. indefinite possessives in contexts that make rather "extreme" instances of CONTROL salient. The semantics of CONTROL is rather weak, and it is obvious that speakers tend to pragmatically strengthen the interpretation for the possessive relation even in the empty context;[24] contextual information can guide this process of pragmatic strengthening, but it is up to each speaker to decide whether contextual information justifies a certain use of the CONTROL semantics of possessives, and, especially, if a given contextually salient relation can be taken to be an instance of CONTROL in the first place.

In addition, the possibility is left open that different possessive constructions may be more or less felicitous when used to refer to less standard instances of CONTROL: for example, it is my opinion that Italian predicate possessives are less felicitous than indefinite possessives in expressing control relations like TAKE.TO.SHELTER. This could be accounted for in terms of the fact that an

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[24]How this fact should be accounted for exactly is not entirely clear to me; possibly, an analysis in terms of defaults might be appropriate.

indefinite possessive can be interpreted as linked to entities already introduced in the discourse, which probably constitutes an additional trigger—absent in the case of predicate possessives—for the pragmatic inferences that determine the well-formedness of examples like (18b).

Free interpretations

The treatment proposed for free interpretations is much less satisfactory. The system gets the basic facts right, but overall it seems rather stipulative and presents a fundamental shortcoming that suggests that this particular account for the distribution of free interpretations must be abandoned.

A first criticism that can be applied to the analysis proposed is that, essentially, the peculiar interpretive properties of definite and partitive possessives are stipulated directly in the lexical entry for the definite determiner i in (94). The situation is better than in the case of the system sketched in §4.2: at least in the current case the stipulation is relative to a natural class of determiners. The problem is that it is not at all clear how anything like the existential quantification on relational variables in (94) can be made to follow from independently known properties of the class of definite determiners.

A second, related problem is that for the current system to account for the complex array of facts in (28)+(32) the additional assumptions must be made that (i) a binding semantics along the lines of (94) is available for all types of determiners and that (ii) at least in the case of indefinite determiners the latter semantics is somehow dispreferred with respect to their standard semantics exemplified in (78b). It seems to me that the prospects of reducing the latter assumption to known properties of indefinite determiners are quite grim.

And then, last but not least, if the assumption in (92) is not thoroughly justified and argued for, the plausibility of the whole analysis is in serious

jeopardy. In my opinion the assumption that contexts cannot determine assignments that range over entities of type $\langle e, et \rangle$ is not completely implausible. Context-determined assignments are used in the system to model information that is accumulated in the progression of discourse and that can be used to determine the interpretation of subsequent sentences. What this assumption means concretely is that there are limitations on the nature of the information that is kept track of in discourse: the hypothesis modeled in (92) is that— if variable assignments provide the "hooks" to information introduced in the discourse—such information is not stored in a way that makes it possible for these hooks to link directly to relational entities. Adopting Heim's (1982; 1983a) metaphor of a file as the structure encoding information accumulated in the progression of discourse, it seems natural to suggest—as Heim does—that the label on each card constitutes the hook through which subsequent sentences can access the information stored on that card. Within this setting, the assumption in (92) amounts to the hypothesis that entities of type $\langle e, et \rangle$ do not constitute legitimate labels: information is catalogued in terms of individuals of type e and not in terms of entities of type $\langle e, et \rangle$. This explains why variables of type e—i.e. referential pronouns—behave so differently from variables of type $\langle e, et \rangle$.

Of course, for the assumption in (92) to be fully defensible, its ramifications in other domains of semantic analysis should be addressed as well. Specifically, it is necessary to address linguistic phenomena for which semantic analyses based on logical forms containing free variables of type $\langle e, et \rangle$ have been proposed, and suggest an alternative account that does not require free relational variables. This is a project that I do not intend to pursue here.[25] Indeed, I think that the

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[25]As an aside, it is interesting to notice that one of the best-known domains in which free relational variables have been postulated in the literature—the interpretation of e-type pronouns—has been successfully handled in recent work (Elbourne, 2002) without the need of such variables.

analysis for the derivation of free interpretations proposed in the current system must be abandoned anyway because it presents a fundamental shortcoming, which I presently turn to.

The problem is that within the present system the price to pay for the possibility of deriving a "usable" meaning for a sentence containing a possessive under a free interpretation is to introduce an existential quantification on the variable that corresponds to the possessive relation. This is how the dependency on the choice of an assignment that characterizes the meaning of the possessive construction in (76) is not inherited by the interpretation of the possessive DP and of the sentence of which this is part. Thus, even in the case of free interpretations the semantics of the possessive construction is one and the same, and the variety of free interpretations that arise in specific contexts of use must be accounted for in pragmatic terms, the effects of contextual information being actually indirect.

But what is the common semantics of possessives under free interpretations? The answer is: the simple statement that some relation holds between possessor and possessum. That this conclusion is unsatisfactory has already been argued in the appendix to chapter 2. To repeat the argument: for each two individuals a and b in $\mathcal{D}$ a suitable relation that relates the two can be easily defined extensionally as the singleton set $\{\langle a, b \rangle\}$, thus it is expected that the denotation of e.g. the property cani di Gianni in the possessive DP i cani di Gianni is the same as the denotation of the property cani in the DP i cani. This semantics seems too weak to account for the intuition that the possessive construction—even in the case of free interpretations—*restricts* the denotation of the possessum. In addition, there is an intuition that not just any relation holding between possessor and possessum would do when the free interpretation of a possessive is used in a context: e.g. in the case of (11a) the definite possessive i cani di Gianni cannot be used to refer to a subset of the dogs that attacked Gianni even if both speaker and hearer know

that this group of dogs is the maximal group of dogs that stands in some *other* relation to Gianni.[26] That is, it seems that the dependency of free interpretations on their context of use is more *direct* than the current system predicts.

This leads me to reject the account of the derivation of free interpretations proposed in §4.3.3, and in particular to reject the assumption in (98b): an analysis of free interpretations according to which the contribution of contextual information is direct requires an interpretation for sentences containing possessive DPs that is dependent on the choice of an assignment. This immediately entails the rejection of (98c) too: once (98b) is eliminated from the theory, the peculiarity of definite determiners cannot be that they are relational variable binders. This is not an unwelcome result: this stipulation did not seem to follow from known properties of the class of definite determiners anyway. A different account for the restricted distribution of free interpretations—and, I would like to maintain, a more satisfactory one at that—is proposed in the next chapter.

4.5   Conclusion

Two conclusions can be drawn from the attempts at a formalization of the differences between control and free interpretations presented in this chapter. The first is that these differences should be accounted for in terms of (i) a semantic distinction encoded within the adjunction structure within which possessor and possessum are combined corresponding to (ii) the choice of a constant vs. a

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[26]A word of caution is needed here. It is generally the case with plural definites that the property predicated of a plural individual need not hold of all the atomic individuals that are part of this plural individual. This phenomenon has been modeled in terms of *ill-fitting covers* in (Schwarzschild, 1996). Thus the judgments mentioned in the text might not be as clear for simple plural definite possessives. However, when the definite possessive i cani di Gianni is replaced by a possessive DP like tutti i cani di Gianni 'all the dogs of Gianni', in which the presence of tutti prohibits the selection of an ill-fitting cover (Brisson, 1998), the judgments mentioned in the text are robust.

variable as the interpretation of the head of the PP predicate within which the possessor is projected. Control vs. free interpretations correspond to two distinct meanings for possessive constructions.

The distinction between control and free interpretations provides a formal vocabulary to reformulate the empirical observation that all possessive constructions seem to license a "core" meaning that allows for a certain interpretive flexibility within a bounded range of interpretations. An observation spelled out very explicitly by Partee and Borschev (2000): "'possession' must be understood in a broadly extended sense to apply to a diverse range of relations...but the possibility of expanding the sense of 'possession' is evidently not unlimited" (Partee and Borschev, 2000, p. 188).[27]

The second conclusion is that the free relational variable that underlies the derivation of free interpretations does not display the same interpretive behavior as free variables of type e. As shown in (91), the relational variable encoding the possessive relation seems happy to link to entities already introduced in the discourse only when it is embedded within a definite DP, with locality requirements limiting the "depth" of this embedding. Neither property seems to characterize referential pronouns, which in all cases can—and arguably must—link to entities already introduced in the discourse.

In the current system this difference between referential pronouns and relational variables in possessives was in part discounted. It was proposed that

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[27]The 'possession' that Partee and Borschev are concerned with in the above quote is what I call control interpretations. Due to the generality of the meaning of CONTROL and to the possibility for contextual information to contribute (indirectly) to the specification of what more contentful control relation the possessive construction is used to express, a certain interpretive flexibility is expected. But this flexibility is not unlimited: it is constrained by the meaning of CONTROL. The interpretive flexibility of control interpretations ranges entirely within the boundaries set by the semantics of the relation CONTROL. Other interpretations— i.e. interpretations that lie outside the boundaries of CONTROL—arise from a different *meaning* associated with possessive constructions: a meaning under which the interpretation of the possessive relation is directly contributed by contextual information.

there is no formal difference between the way in which referential pronouns vs. other types of variables link to the context, and that the different behavior of the two types of variables follows from the fact that contexts of utterance do not provide the right "hooks" for relational variables to link to. This required the assumption that sentences containing definite and partitive possessives can be felicitously used in contexts like (11) because the relational variable gets bound in the semantic derivation of a definite DP. On the basis of which the generalization can be maintained that even in those cases the relational variable does not link directly to information in the context of utterance.

But, as argued in §4.4.2, this seems to lead to an inappropriate semantics for the free interpretation of possessives. This is why I reject the account of free interpretations outlined in §4.3.3. Ideally, we would like to replace it with an analysis according to which felicitous uses of possessive DPs in contexts like (11) involve the direct specification of the contextually salient ATTACK relation as the interpretation of the possessive relation. The different behavior of the relational variables in possessives vs. referential pronouns indicates that these two types of variables differ in the way in which they link to information in the context of utterance. The question that must be answered is what these differences amount to and, in particular, (i) why relational variables in possessive constructions apparently can link to contextually salient relations only under certain conditions, and (ii) what exactly these conditions are.

Appendix: More on the formal system

Heim and Kratzer (1998)

The Fregean program

The basic idea behind the Fregean program is a particular way of addressing the problem of accounting for the derivation of the meaning of a complex expression in natural language from the meanings of its parts. Frege suggested that "the logical combination of parts into a whole is always a matter of saturating something unsaturated" (Frege, 1923–1926).[28]

In particular, Frege proposed to construe unsaturated meanings as functions, and to characterize the process of semantic saturation mentioned above as the application of a function to its argument(s). The final result of the process of semantic composition in natural language is a saturated entity: the meaning of sentences of natural language is a truth value. If a sentence correctly describes a true state of affairs, the sentence *denotes* the truth value 1, and if the sentence does not describe a true state of affairs, the sentence denotes the truth value 0.

So, for example, assuming that the sentence Luca writes correctly describes a true state of affair, the meaning of this sentence is the truth value 1, and a compositional analysis of the meaning of this sentence is derived by applying the function denoted by one of its parts to the denotation of its other part. Assuming that Luca denotes an individual—a saturated entity—the conclusion follows that the meaning of writes must be a function whose domain is the set $\mathcal{D}$ of individuals in the world and whose range is the set $\{0, 1\}$ of truth values. In particular, writes is the function from individuals to truth values such that for each argument this function outputs the truth value 1 if the individual taken as an argument writes

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[28]As quoted and translated in (Heim and Kratzer, 1998).

in the real world, and the truth value 0 otherwise.

Thus, for a formal system to provide a compositional derivation of the meaning of Luca writes we need to specify: (i) the meaning of Luca, (ii) the meaning of writes, and (iii) how the meanings of Luca and writes are combined to derive the meaning of the sentence Luca writes. More generally, for a formal system to account for the semantic derivation of simple sentences containing a subject and an intransitive verb the following components are needed:

(99)   a.   an *inventory of possible denotations* for the expressions of the language, e.g.:

           i.   elements of $\mathcal{D}$, the set of actual individuals

           ii.   elements of $\{0, 1\}$, the set of truth values

           iii.   elements of $[\mathcal{D} \to \{0, 1\}]$, the set of functions whose domain is $\mathcal{D}$ and whose range is $\{0, 1\}$

    b.   a *lexicon*, providing the denotation of each simple expression of the language, e.g.:

           i.   calling $\vec{\mathcal{D}}$ a given ordering of the elements of $\mathcal{D}$, the denotation of Luca is the n-th individual in $\vec{\mathcal{D}}$, an individual called Luca[29]

           ii.   the denotation of writes is the function from individuals to truth values such that for each argument this function outputs the truth value 1 if the individual taken as an argument writes in the real world, and the truth value 0 otherwise

    c.   *rules of semantic interpretation* that specify how the denotation of a complex expression is derived from the denotations of its parts, e.g.:

           i.   the denotation of a sentence of the form ⟨subject verb⟩ is the result of applying the denotation of verb to the denotation of subject

Of course, since we do not only want to derive the meaning of simple sentences containing intransitive verbs, the system must be generalized somewhat. But two important features of the approach proposed by Heim and Kratzer (1998)

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[29]To avoid such roundabout definitions, in the following I assume that proper names are unambiguous, so that we can state that the denotation of Luca is the individual Luca.

are already evident in the restricted system formulated in (99). The first is that, differently from e.g. the analysis proposed in Montague's so-called PTQ system (Montague, 1974), the system assigns interpretations directly to natural language expressions, without the mediation of an interpreted formal language. E.g. the lexicon in (99b) assigns a denotation to each of the expressions Luca and writes of the object language, and the rule of semantic interpretation in (99c) tells how the denotation of Luca writes is determined as a function of the denotations of its parts.

The second feature is that the system provides a *truth-conditional* semantics for natural language. Even if the meaning of a sentence of natural language is taken to be—following Frege—a truth value, the lexicon defines the denotation of intransitive verbs like writes by specifying the *conditions* that must hold for the result of applying the function denoted by the verb to the entity denoted by the subject to be the truth value 1. The system, thus, models the intuition that knowing the meaning of sentences like Luca writes does not amount to knowing whether the sentence is true or false, but to knowing the conditions under which the sentence would be judged true or false. A competent speaker of English might not know which individual Luca denotes and/or whether this individual actually writes, but she definitely knows what Luca writes means: for this sentence to be true, the individual denoted by Luca must write in the real world.[30]
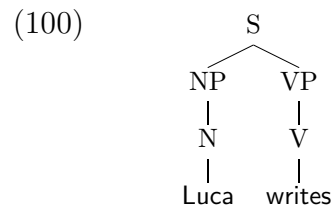
Object language

Heim and Kratzer (1998) propose that semantic interpretation is not performed on strings of natural language expressions, but on phrase structure trees encoding the syntactic structure of the expressions considered. This means that the object

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[30]Taking the denotation of sentences to be truth values, the system provides an *extensional* semantics for natural language. This will suffice for the phenomena discussed in this thesis.

language of the formal system is not constituted by strings like Luca writes, but by trees like (100). Furthermore, following the Chomskian tradition, it is assumed that the input to semantic interpretation need not be isomorphic to the overt structure of sentences in natural language: the input to semantic interpretation are "decorated" Logical Form structures, in which syntactic indices indicate interpretive dependencies between different syntactic constituents.

(100)

```
         S
       /   \
     NP     VP
      |      |
      N      V
      |      |
    Luca   writes
```
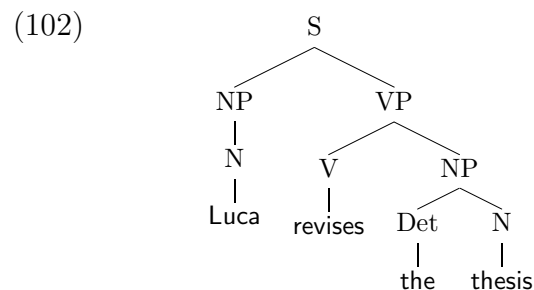
Heim and Kratzer adopt two principles that, taken together, restrict the shape of possible rules of semantic interpretation. They assume that phrase structure trees in the object language are at most binary branching, and that rules of semantic interpretation are strictly local, as defined in (101).

(101)   *Strict compositionality*
         The denotation of each non-terminal node is computed from the denotations of its daughter nodes only.

From these two principles it follows that the semantic composition of a sentence containing a transitive verb like Luca revises the thesis is determined on a phrase structure tree like (102).

(102)

```
              S
           /     \
         NP       VP
          |      /   \
          N     V     NP
          |     |     /  \
        Luca  revises Det  N
                      |    |
                     the  thesis
```

The meaning of the sentence Luca revises the thesis is not determined in one fell swoop as a function of the meanings of Luca, revises, the and thesis, but in a series

of steps. The meaning of the is composed with the meaning of thesis first, the result is composed with the meaning of revises, and in its turn the result of the latter step is composed with the meaning of Luca.

Now, knowing that for the whole sentence to denote a truth value revises the thesis must denote a function from individuals to truth values, and assuming that the thesis denotes an element of $\mathcal{D}$, it follows that revises must be an element of $[\mathcal{D} \to [\mathcal{D} \to \{0, 1\}]]$, i.e. a function from elements of $\mathcal{D}$ to functions from individuals to truth values. Elements of $[\mathcal{D} \to [\mathcal{D} \to \{0, 1\}]]$ must be in the inventory of possible denotations for expressions of the language, then. And of course, more complex semantic objects might be needed as translations of other expressions of the object language.

Semantic types and denotation domains

The inventory of possible denotations can be organized in a more systematic fashion following the Montagovian tradition of categorizing expressions in terms of their *semantic type*, and recursively defining the inventory of semantic types and their *denotation domains* on the basis of the two basic types associated with individuals and truth values. A standard recursive definition for the inventory of semantic types and their denotations is given in (103).[31]

(103) *Semantic types and their denotation domains*

    a. e is a semantic type, $D_e := \mathcal{D}$

    b. t is a semantic type, $D_t := \{0, 1\}$

    c.   for all semantic types σ and τ, $\langle \sigma, \tau \rangle$ is a semantic type,
        $D_{\langle \sigma, \tau \rangle} := [D_\sigma \to D_\tau]$

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[31]In (103) I introduce some conventions intended to simplify the metalanguage of the theory: 'D_τ' is a shorthand for 'the denotation domain of the type τ' and ':=' is a shorthand for 'is defined as'.

For any type τ the denotation of an expression of type τ is an element of D_τ. Of course, what specific element of D_τ is denoted by a given node of type τ in a phrase structure tree is either determined by the lexicon or by the rules of semantic interpretation. The lexicon specifies the denotation of the *terminal nodes*—i.e. nodes that have no daughters—and the rules of semantic interpretation specify the denotation of non-terminal nodes in terms of the denotation of their daughter nodes.

Interpretation function and basic rules

Let's adopt the standard convention of using $[\![\alpha]\!]$ to indicate the denotation of the node α; $[\![\ ]\!]$ can be seen as a function—the *interpretation* (or *evaluation*) *function*—that for each node of type τ determines an element of D_τ.[32] The lexicon and the rules of semantic interpretation taken together provide a recursive definition of the function $[\![\ ]\!]$. Three basic rules are given in (104)–(106).

(104) *Terminal Nodes* (TN)
 If α is a terminal node, $[\![\alpha]\!]$ is specified in the lexicon.

(105) *Non-branching Nodes* (NN)
 If α is a non-branching node and β is its daughter node, then $[\![\alpha]\!] = [\![\beta]\!]$.

(106) *Functional Application* (FA)
 If α is a branching node, $\{\beta, \gamma\}$ the set of its daughter nodes and $[\![\beta]\!]$ is a function whose domain contains $[\![\gamma]\!]$, then $[\![\alpha]\!] = [\![\beta]\!]([\![\gamma]\!])$.

The rule in (104) states that the denotation of terminal nodes is listed in the lexicon. The rule in (105) takes care of non-branching nodes, i.e. non-terminal

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[32]This is not completely correct: as argued below, $[\![\ ]\!]$ is a partial function from entities of type τ to D_τ. Furthermore, $[\![\ ]\!]$ must be relativized to the choice of a certain set of actual individuals $\mathcal{D}$: the set of actual individuals at a certain point in time might be completely disjoint with respect to the set of actual individuals at a different point in time, and given two disjoint sets $\mathcal{D}_1$ and $\mathcal{D}_2$ for any expression α $[\![\alpha]\!]^{\mathcal{D}_1} \neq [\![\alpha]\!]^{\mathcal{D}_2}$. In the text I implicitly assume that the interpretation function is relativized to a given set $\mathcal{D}$ of individuals.

nodes that have only one daughter. In this case, the denotation of the mother node is the same as the denotation of its daughter node. Finally, the rule in (106) states in formal terms the basic Fregean intuition that composition of meaning is the application of a function to an argument: the denotation of a branching node is defined as the result of applying the function denoted by one of its daughters to the argument denoted by its other daughter. Notice that in the definition in (106) the linear order of the node β denoting the functor and the node γ denoting the argument is not specified: both ordered pairs $\langle \beta, \gamma \rangle$ and $\langle \gamma, \beta \rangle$ satisfy the structural description of (106).

Lambda notation

Before looking at some sample semantic derivations, let me adopt a notational convention proposed by Heim and Kratzer to represent functions in a more compact form in the metalanguage. This notational convention is spelled out in (107):

(107) *Lambda notation*
       Read '$[\lambda \alpha : \phi . \gamma]$' as either (i) or (ii), whichever makes sense:
       i.   'the smallest function that maps each α such that ϕ to γ'
       ii.   'the smallest function that maps each α such that ϕ to 1, if γ, and to 0 otherwise'

Using the lambda notation, the denotation of the verb writes in (99b.ii) can be stated as follows:

(108) a. $[\![\text{writes}]\!] = [\lambda u : u \in D_e . u \text{ writes}]$
       b. $[\![\text{writes}]\!] = [\lambda u_e . u \text{ writes}]$

(108a) shows how the material in ϕ in the general format for a function in lambda notation encodes restrictions on the domain of the function. In the case of (108a) the only restriction is on the semantic type of the arguments of this function,

whose domain thus coincides with D_e, but in other cases further restrictions can be imposed. As a further convention, let's annotate the restriction on the type of the arguments of a function as in (108b) and include in ϕ only additional restrictions on the domain of a function, if any are imposed.

Partial functions

The denotation of natural language expressions of type $\langle \sigma, \tau \rangle$ can be a *partial* function, defined only for a subset of entities in D_σ. And this, given the definition of Functional Application in (106), has the consequence that the interpretation function $[\![\ ]\!]$ itself is partial: if $[\![\gamma]\!]$ is not in the domain of $[\![\beta]\!]$, the denotation of their mother node α cannot be determined.

Partiality of $[\![\ ]\!]$ spreads "upward" in a tree: if the denotation of a daughter node is not defined the denotation of its mother node will not be either. This means that the rules in (105)–(106) should be (slightly) revised as follows in order to make sure that the denotation of the daughter nodes is defined:

(109)   *Non-branching Nodes* (NN)
        If α is a non-branching node and β is its daughter node, then α is in the domain of $[\![\ ]\!]$ if β is. In this case, $[\![\alpha]\!] = [\![\beta]\!]$.

(110)   *Functional Application* (FA)
        If α is a branching node and $\{\beta, \gamma\}$ the set of its daughter nodes, then α is in the domain of $[\![\ ]\!]$ if both β and γ are and $[\![\beta]\!]$ is a function whose domain contains $[\![\gamma]\!]$. In this case, $[\![\alpha]\!] = [\![\beta]\!]([\![\gamma]\!])$.

Some derivations

Below is a list of sample lexical entries of different semantic types: the denotation of the name Luca is in D_e, the denotations of the intransitive verb writes, the noun thesis and the adjective neverending are in $D_{\langle e,t \rangle}$, the denotation of the transitive verb revises is in $D_{\langle e,\langle e,t \rangle \rangle}$, and the denotation of the definite determiner the is in

$D_{\langle\langle e,t\rangle,e\rangle}$.

(111) *Sample lexical entries (I)*

$[\![\mathsf{Luca}]\!]$	$= \mathrm{Luca}$
$[\![\mathsf{writes}]\!]$	$= \lambda u_e \,.\, u \text{ writes}$
$[\![\mathsf{thesis}]\!]$	$= \lambda u_e \,.\, u \text{ is a thesis}$
$[\![\mathsf{neverending}]\!]$	$= \lambda u_e \,.\, u \text{ is neverending}$
$[\![\mathsf{revises}]\!]$	$= \lambda u_e \,.\, \lambda v_e \,.\, v \text{ revises } u$
$[\![\mathsf{the}]\!]$	$= \lambda f_{\langle e,t\rangle} : \exists! x\, f(x) = 1 \,.\, \iota x\, f(x) = 1$

A note about the lexical entry for the. Heim and Kratzer (1998) follow the Fregean tradition that takes definite descriptions to (i) denote individuals, and (ii) be presuppositional in nature. Both hypotheses are encoded in the lexical entry for the definite determiner the: the definite determiner denotes a function from $D_{\langle e,t\rangle}$ to D_e, and applies only to elements f of $D_{\langle e,t\rangle}$ which are true of a unique individual ($\exists! x\, f(x) = 1$, or: there is a unique x such that $f(x)$ is true), producing as output that unique individual ($\iota x\, f(x) = 1$, or: the individual x such that $f(x)$ is true).[33]

The rules given in (104), (109) and (110) operate on the object language. In the semantic derivations below the following additional rule that operates on the metalanguage is used:[34]

---

[33] As is well-known, the uniqueness presupposition of definite descriptions must be relativized in many cases to a subset of $\mathcal{D}$. I will not consider this complication here, but defer the issue to the next chapter, where the semantics of (in)definiteness is discussed in detail.

[34] This is the formulation adopted in (Elbourne, 2002), who calls the rule *Lambda Conversion*. One important technical point. The application of Beta Conversion must be restricted to prevent a problem that might arise when dealing with expressions of the metalanguage that contain free variables (see below in the text for an introduction to variables). Basically, we want to avoid the outcome that some variable that is free in β becomes bound when β is substituted for α in γ. It can be shown that when this occurs the result of applying Beta Conversion does *not* represent the correct result of applying the function $\lambda\alpha_\tau \,.\, \gamma$ to β. To avoid this problem, the provision is made that—in order to prevent this "variable collision" issue—renaming of the free occurrences of the "offending" variable(s) in β takes place. For an in-depth discussion of variable renaming see e.g. (Barendregt, 1984, ch.2).

(112) *Beta Conversion* (βC)

For any type τ, $[\lambda\alpha_\tau \, . \, \gamma](\beta_\tau) = [\beta/\alpha]\gamma$, where $[\beta/\alpha]\gamma$ is the result of substituting β for α in γ.

Beta Conversion is needed, for example, in the last step of the derivation of Luca writes in (113) to calculate the result of applying the function denoted by writes to the denotation of Luca.

As I mentioned above, the object language on which interpretation is performed is a language of phrase structure trees like (100).

(100)

```
              S
            /   \
         NP       VP
          |        |
          N        V
          |        |
        Luca     writes
```
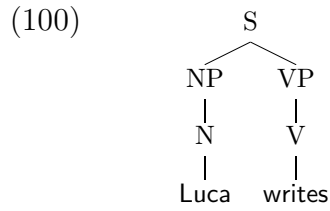
A pedantic derivation would thus have as arguments of the ⟦ ⟧ function phrase structure trees, as in (113):

(113) $\llbracket [_\text{S}\text{Luca writes}] \rrbracket =$

1. $= \llbracket [_\text{VP}\text{writes}] \rrbracket \, (\llbracket [_\text{NP}\text{Luca}] \rrbracket)$ FA

2. $= \llbracket [_\text{V}\text{writes}] \rrbracket \, (\llbracket [_\text{N}\text{Luca}] \rrbracket)$ NN (twice)

3. $= [\lambda u_e \, . \, u \text{ writes}](\text{Luca})$ TN (twice)

4. $= 1$ if Luca writes, 0 otherwise βC

The semantic derivation starts at the top of the phrase structure tree and proceeds in a top-down fashion through the application of the NN and FA rules until the terminal nodes are reached.[35]   The TN rule introduces the meanings defined in the lexicon for the terminal nodes, and then the βC rule operates on the metalanguage, deriving the truth conditions associated with the topmost node.[36]

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[35] A bottom-up semantic derivation of the same interpretation would be possible as well.

[36] I will adopt the convention that in the last step of the derivation I always apply βC and "undo" the lambda notation, writing down the denotation—or the truth conditions—of the whole expression in plain English.

Each step in the derivation is annotated with the name of the rule that licenses its derivation from the previous step.

(102)
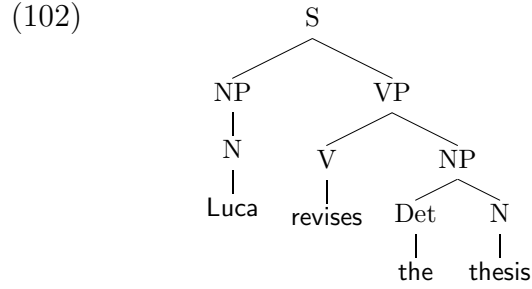
In general, I will take for granted that the reader is aware that the object language is constituted by phrase structure trees and I will omit the syntactic bracketing of the expression taken as argument by $[\![\ ]\!]$. If needed, I will show separately the phrase structure tree for the expression whose meaning is being determined, as I do for the sentence Luca revises the thesis in (102). Furthermore, as shown in (114), I will normally omit (i) those steps in the semantic derivation that involve the application of the NN rule, and (ii) a pair of brackets in expressions of the form $(\alpha(\beta))(\gamma)$, which will be written as $\alpha\ (\beta)\ (\gamma)$.

(114) $[\![$Luca revises the thesis$]\!] =$

1. $= [\![$revises the thesis$]\!]\ ([\![$Luca$]\!])$ FA

2. $= [\![$revises$]\!]\ ([\![$the thesis$]\!])\ ([\![$Luca$]\!])$ FA

3. $= [\![$revises$]\!]\ ([\![$the$]\!]\ ([\![$thesis$]\!]))\ ([\![$Luca$]\!])$ FA

4. $= [\lambda u_e\ .\ \lambda v_e\ .\ v$ revises $u]\ ([\lambda f_{\langle e,t\rangle} : \exists!x f(x) = 1\ .\ \iota x f(x) = 1]\ (\lambda u_e\ .\ u$ is a thesis)) (Luca)   TN (four times)

5. $= \{\exists!x\,[\lambda u_e\ .\ u$ is a thesis$](x) = 1\}\ ;\ [\lambda u_e\ .\ \lambda v_e\ .\ v$ revises $u]\ (\iota\,\lambda u_e\ .\ u$ is a thesis$]f(x) = 1)$ (Luca) βC

6. $= \{\exists!x\,x$ is a thesis$\}\ ;\ [\lambda u_e\ .\ \lambda v_e\ .\ v$ revises $u]\ (\iota x\,x$ is a thesis) (Luca) βC (twice)

7. $= \{\exists!x\,x$ is a thesis$\}\ ;\ [\lambda v_e\ .\ v$ revises $\iota x\,x$ is a thesis$]$ (Luca) βC

8. $=$ undefined if there is not a unique entity in $\mathcal{D}$ that is a thesis, if defined: 1 if Luca revises that unique thesis, 0 otherwise βC

Step 5 in the above derivation shows the convention that I adopt in order to keep track of presupposed information when the rule of Beta Conversion is applied in order to calculate the result of applying a partial function (in this case the denotation of the definite determiner the) to its argument (in this case the denotation of the N thesis). The presupposed content of an expression is stored between braces and precedes the asserted content, from which it is separated by a semi-colon.

The derivation of a sentence like Luca revises the neverending thesis requires the introduction of a new rule of semantic interpretation. Indeed, given the lexical entries for neverending and thesis in (111) and the syntactic analysis which is commonly assumed for this sentence (115), the problem arises that no semantic rule can derive the meaning of the higher N node as a function of its two daughters Adj and N:

(115)
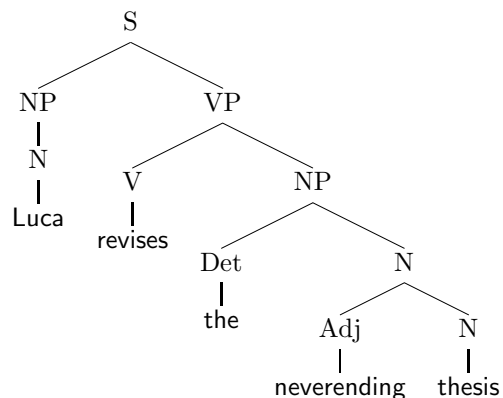
The only rule that applies to branching nodes is FA, but $[_{\mathrm{N}}$ neverending thesis$]$ does not satisfy the structural description for this rule to apply: both the denotation of neverending and the denotation of thesis are elements $D_{\langle e,t\rangle}$, and thus neither of the daughter nodes of $[_{\mathrm{N}}$ neverending thesis$]$ denotes a function that takes entities of the type of the denotation of the other as arguments.[37]

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[37]This problem does not arise if it can be argued that the denotation of intersective adjectives is not of type $\langle e, t\rangle$, but of type $\langle\langle e, t\rangle, \langle e, t\rangle\rangle$. See (Heim and Kratzer, 1998, §4.3.3) for some arguments in favor of the analysis adopted in the text.

(116) *Predicate Modification* (PM)

 If α is a branching node and $\{\beta, \gamma\}$ the set of its daughter nodes, then α is in the domain of $[\![\ ]\!]$ if both β and γ are and $[\![\beta]\!]$ and $[\![\gamma]\!]$ are of type $\langle e, t \rangle$. In this case, $[\![\alpha]\!] = \lambda u_e \ . \ [\![\beta]\!](u) = 1 \ \& \ [\![\gamma]\!](u) = 1$.

The new rule of semantic interpretation defined in (116) applies to nodes whose two daughters denote predicates—entities of type $\langle e, t \rangle$—and defines the meaning of the mother node as a function which imposes on its arguments the conjunction of the conditions imposed on their arguments by the functions denoted by its two daughters. Once the PM rule is added to the system, the semantic derivation of **Luca revises the neverending thesis** proceeds as in (117).

(117) $[\![$Luca revises the neverending thesis$]\!] =$

 1. $= [\![$revises the neverending thesis$]\!] \ ([\![$Luca$]\!])$ FA

 2. $= [\![$revises$]\!] \ ([\![$the neverending thesis$]\!]) \ ([\![$Luca$]\!])$ FA

 3. $= [\![$revises$]\!] \ ([\![$the$]\!] \ ([\![$neverending thesis$]\!])) \ ([\![$Luca$]\!])$ FA

 4. $= [\![$revises$]\!] \ ([\![$the$]\!] \ (\lambda v_e \ . \ [\![$neverending$]\!](v) = 1 \ \& \ [\![$thesis$]\!](v) = 1))$ $([\![$Luca$]\!])$ PM

 5. $= [\lambda u_e \ . \ \lambda v_e \ . \ v \text{ revises } u] \ ([\lambda f_{\langle e,t \rangle} : \exists! x f(x) = 1 \ . \ \iota x f(x) = 1]$ $(\lambda v_e \ . \ [\lambda u_e \ . \ u \text{ is neverending}](v) = 1 \ \& \ [\lambda u_e \ . \ u \text{ is a thesis}](v) = 1))$ (Luca) TN (five times)

 6. $= [\lambda u_e \ . \ \lambda v_e \ . \ v \text{ revises } u] \ ([\lambda f_{\langle e,t \rangle} : \exists! x f(x) = 1 \ . \ \iota x f(x) = 1] \ (\lambda v_e \ . \ v$ $\text{ is neverending } \& \ v \text{ is a thesis})) \ (\text{Luca})$ βC

 7. $= \{ \exists! x \ [\lambda v_e \ . \ v \text{ is neverending } \& \ v \text{ is a thesis}](x) = 1 \} \ ; \ [\lambda u_e \ . \ \lambda v_e \ . \ v$ $\text{ revises } u] \ (\iota x \ [\lambda v_e \ . \ v \text{ is neverending } \& \ v \text{ is a thesis}](x) = 1) \ (\text{Luca})$ βC

 8. $= \{ \exists! x \ x \text{ is neverending } \& \ x \text{ is a thesis} \} \ ; \ [\lambda u_e \ . \ \lambda v_e \ . \ v \text{ revises } u] \ (\iota x \ x$ $\text{ is neverending } \& \ x \text{ is a thesis}) \ (\text{Luca})$ βC (twice)

 9. $= \{ \exists! x \ x \text{ is neverending } \& \ x \text{ is a thesis} \} \ ; \ [\lambda v_e \ . \ v \text{ revises } \iota x \ x \text{ is}$ $\text{neverending } \& \ x \text{ is a thesis}] \ (\text{Luca})$ βC

 10. $=$ undefined if there is not an unique entity in $\mathcal{D}$ that is neverending and is a thesis, if defined: 1 if Luca revises that unique neverending thesis, 0 otherwise βC
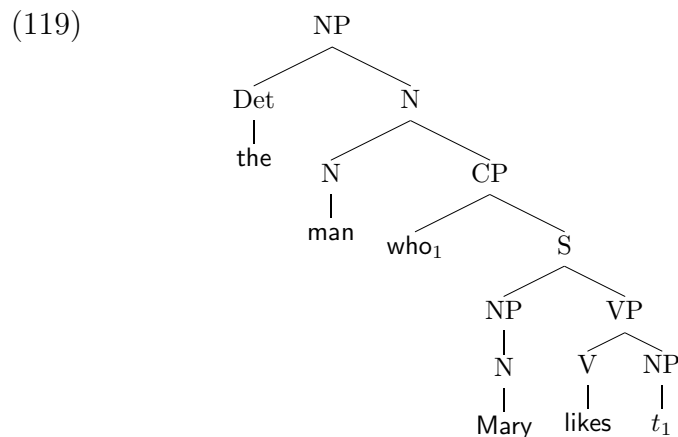
Variables and assignments

Variables and assignment functions are introduced in the system to handle non-local interpretive dependencies. A clear example of non-local dependency is given by restrictive relative clauses: intuitively, a restrictive relative clause like who likes Mary in (118a) behaves like a predicate modifier—an entity of type $\langle e, t \rangle$—and the interpretation of the relative clause is the same predicate that would be denoted by the VP likes Mary.

(118)   a.   the man who likes Mary
        b.   the man who Mary likes

Now, the problem is that whereas in (118a) a syntactic constituent can be identified that has the intended interpretation for the relative clause, this is not the case in e.g. (118b): intuitively the relative clause in this NP denotes the function $[\lambda u_e$. Mary likes $u]$, but no syntactic constituent in the relative clause denotes such a function.

This is because Heim and Kratzer (1998) follow the Chomskian tradition according to which: (i) syntactic structures are built using only concatenation rules, and (ii) there is rigid mapping between the syntactic subcategorization structure and the semantic structure of predicates. From these assumptions it follows that a transitive verb must combine first with its object, and only then can the constituent resulting from this operation combine with the subject. In the case of Mary likes, then, the existence of a phonologically null object is postulated: the verb likes combines first with this null object, to form a VP that combines with the subject Mary. The non-local semantic dependency is thus the need for the interpretation of the relative clause in (118b) to access the structural position of the direct object of the verb likes after the subject has already combined with it: for the subject to combine with the verb, the position of the object must have

been saturated already.

(119)

```
                    NP
                  /    \
               Det      N
                |      /  \
               the    N    CP
                |     |    /  \
               man  who₁   S
                         /    \
                        NP     VP
                        |     /  \
                        N    V    NP
                        |    |    |
                      Mary likes  t₁
```

Within the Chomskian framework an expression like the man who Mary likes is assigned a phrase structure tree like the one sketched in (119). In this tree the object position of the verb likes is occupied by a *trace*, left behind by the relative pronoun who that has moved to Spec,CP.[38] The phrase structure tree in (119) encodes the information that the relative pronoun and the trace in the object position of likes are related using natural numbers as *syntactic indices*.[39]

A syntactic structure like (119) provides a way to get around the problem of non-local dependencies. Essentially, the trick consists in "flagging" the position of the object of likes before it combines with the verb and then recovering this stored information once the semantic composition reaches the relative pronoun. The first step consists in interpreting the trace t_1 as a *variable*, an entity that denotes a individual only *relative to a choice of an assignment of a value*. Formally, a *variable assignment* is a function defined as in (120):

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[38]Since in the semantic derivations below in the text the head of CP is assumed to be semantically vacuous I omit it in (119).

[39]Strictly speaking, there would be no need for syntactic indexing in (119) because there is only one possible *binder* for the trace in the object position of likes. But in general this bookkeeping device is needed to keep track of "crossing" or "nested" dependencies involving multiple variables and binders.

(120)   *Variable assignment*

A variable assignment is a partial function from the set of natural numbers $\mathbb{N}$ into $\mathcal{D}$.

For example, the functions $[1 \rightarrow \text{Luca}]$ and $[1 \rightarrow \text{Mary}]$ are two different assignments. The interpretation of syntactic traces is relativized to assignments through a new rule:[40]

(121)   *Traces and Pronouns* (TP)

If α is a pronoun or a trace, g is a variable assignment, and $i \in \text{dom}(g)$, then $[\![\alpha_i]\!]^g = g(i)$.

so that the result is obtained that traces like t_1 in (121) can denote different individuals depending on the choice of assignment.[41]

Now, the information that the interpretation of the trace t_1 is dependent on the choice of an assignment must be carried upwards in the tree to the level where the relative pronoun combines with the meaning of the embedded clause. In order to obtain this result, the interpretation of the whole S in (119) must be relativized to the choice of an assignment. This means that the rules of semantic interpretation must be revised in order to allow for the possibility that the interpretation of a daughter node might be dependent on the choice of an assignment: if this is the case, the interpretation of the mother node must be dependent on the same choice of an assignment.

For practical purposes, rather than formulating two subcases for the NN rule and three subcases for the FA and PM rules (depending on which daughter node,

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[40]The interpretation of pronouns must be relativized to assignments as well, in order to account for the non-local dependency in such that relative clauses as in the expression the man such that Mary likes him.

[41]For example, $[\![t_1]\!]^{[1 \rightarrow \text{Luca}]} \neq [\![t_1]\!]^{[1 \rightarrow \text{Mary}]}$, because $[1 \rightarrow \text{Luca}](1) = \text{Luca}$ and $[1 \rightarrow \text{Mary}](1) = \text{Mary}$. Notice that introduction of variable assignments adds another reason why the interpretation function is partial: if i is not in $\text{dom}(g)$ (the domain of the assignment function g) the denotation of a trace or pronoun α_i will not be defined.

if any, has an interpretation that is dependent on the choice of an assignment), the convention is adopted that the interpretation function $[\![\ ]\!]$ is relativized to the choice of an assignment for all expressions in the object language: for any semantic type τ, the interpretation of expressions of type τ is a function from assignments to entities in D_τ. And interpretations that are not assignment-dependent are introduced via definition as those interpretations that are *constant* functions from assignments to denotations:

(122) a. For any tree α, α is in the domain of $[\![\ ]\!]$ iff for all assignments g and g', $[\![\alpha]\!]^g = [\![\alpha]\!]^{g'}$.

   b. If α is in the domain of $[\![\ ]\!]$, then for all assignments g, $[\![\alpha]\!] = [\![\alpha]\!]^g$.

In particular, terminal symbols in a tree can be divided into the classes of *variables* and *constants* depending on whether their interpretation is a constant function from assignments to entities in the denotation domain for their type:[42]

(123) a. A terminal symbol α is a variable iff there are assignments g and g' such that $[\![\alpha]\!]^g \neq [\![\alpha]\!]^{g'}$.

   b. A terminal symbol α is a constant iff for any two assignments g and g', $[\![\alpha]\!]^g = [\![\alpha]\!]^{g'}$.

The rules of semantic interpretation are reformulated as follows:[43,44]

(124) *Lexical Terminals* (LT)
   If α is a terminal node occupied by a lexical item different from a pronoun, $[\![\alpha]\!]$ is specified in the lexicon.

(125) *Non-branching Nodes* (NN)
   If α is a non-branching node and β is its daughter node, then, for any assignment g, α is in the domain of $[\![\ ]\!]^g$ if β is. In this case, $[\![\alpha]\!]^g = [\![\beta]\!]^g$.

---

[42]That traces and pronouns are variables follows from the TP rule as soon as $\mathcal{D}$ is bigger than a singleton set.

[43]The βC rule does not need to be reformulated because it is a rule that operates on the metalanguage only.

[44]The LT rule is what is left of the old TN rule, once pronouns are taken care of by the TP rule.

(126) *Functional Application* (FA)

If α is a branching node and $\{\beta, \gamma\}$ the set of its daughter nodes, then, for any assignment g, α is in the domain of $[\![\ ]\!]^g$ if both β and γ are and $[\![\beta]\!]^g$ is a function whose domain contains $[\![\gamma]\!]^g$. In this case, $[\![\alpha]\!]^g = [\![\beta]\!]^g([\![\gamma]\!]^g)$.

(127) *Predicate Modification* (PM)

If α is a branching node and $\{\beta, \gamma\}$ the set of its daughter nodes, then, for any assignment g, α is in the domain of $[\![\ ]\!]^g$ if both β and γ are and $[\![\beta]\!]^g$ and $[\![\gamma]\!]^g$ are of type $\langle e, t\rangle$. In this case, $[\![\alpha]\!]^g = \lambda u_e\ .\ [\![\beta]\!]^g(u) = 1$ & $[\![\gamma]\!]^g(u) = 1$.

With the help of the rules in (121) and (124)–(127), the interpretation of the node S in (119) can be calculated as in (129), on the basis of the lexical entries in (128).

(128) *Sample lexical entries (II)*

$[\![\text{Mary}]\!] = \text{Mary}$
$[\![\text{man}]\!]\ = \lambda u_e\ .\ u \text{ is a man}$
$[\![\text{likes}]\!]\ = \lambda u_e\ .\ \lambda v_e\ .\ v \text{ likes } u$

(129) $\quad [\![\text{Mary likes } t_1]\!]^g =$

1.	$= [\![\text{likes } t_1]\!]^g\ ([\![\text{Mary}]\!]^g)$	FA
2.	$= [\![\text{likes}]\!]^g\ ([\![t_1]\!]^g)\ ([\![\text{Mary}]\!]^g)$	FA
3.	$= [\lambda u_e\ .\ \lambda v_e\ .\ v \text{ likes } u]\ ([\![t_1]\!]^g)\ (\text{Mary})$	LT (twice)
4.	$= [\lambda u_e\ .\ \lambda v_e\ .\ v \text{ likes } u]\ (g(1))\ (\text{Mary})$	TP
5.	$= [\lambda v_e.\ v \text{ likes } g(1)]\ (\text{Mary})$	βC
6.	$= 1$ if Mary likes the individual $g(1)$, 0 otherwise	βC

Variable binding

The interpretation derived in (129) for the material following the relative pronoun in the man who Mary likes is a function from assignments to truth values: in particular, it is the function that determines the truth value 1 for all those assignments that assign an individual that Mary likes to the number 1. This is not

exactly the target meaning for the relative clause that we would like to achieve, but it is intuitively quite close: given the relativization of all interpretations to assignments, the target meaning for the relative clause is the constant function from assignments to the function $[\lambda u_e$. Mary likes $u]$, which is the function that determines the value 1 for all those individuals that Mary likes.

The composition of the relative pronoun who and the meaning derived in (129) determines exactly the desired function. Expressions like the relative pronoun who do not have a meaning per se, but trigger the application of a new rule of semantic composition, defined in (132).

(130)   In any given language, LEXBIND is the set of lexical binders in that language. E.g. in English, LEXBIND := {who, which, $\emptyset_{[+wh]}$, such,... }.

(131)   Let g be an assignment, $i \in \mathbb{N}$, and $u \in \mathcal{D}$. Then $g^{u/i}$ is the unique assignment which fulfills the following conditions:

   i. $\text{dom}(g^{u/i}) = \text{dom}(g) \cup \{i\}$,

   ii. $g^{u/i}(i) = u$, and

   iii. for every $j \in \text{dom}(g^{u/i})$ such that $j \neq i$: $g^{u/i}(j) = g(j)$.

(132)   *Predicate Abstraction* (PA)
   Let α be a branching node with daughters β and γ, where β dominates either λ_i or LexItem$_i$ such that LexItem $\in$ LEXBIND. Then, for any assignment g, $[\![\alpha]\!]^g = \lambda u_e$. $[\![\gamma]\!]^{g^{u/i}}$.

With the help of the PA rule, the derivation of the interpretation for the noun phrase in (119) proceeds as follows:

(133) $[\![$the man who$_1$ Mary likes $t_1]\!]^g =$

   1. $= [\![$the$]\!]^g$ ($[\![$man who$_1$ Mary likes $t_1]\!]^g$)   FA

   2. $= [\![$the$]\!]^g$ (λv_e . $[\![$man$]\!]^g(v) = 1$ & $[\![$who$_1$ Mary likes $t_1]\!]^g(v) = 1$)   PM

   3. $= [\![$the$]\!]^g$ (λv_e . $[\![$man$]\!]^g(v) = 1$ & $[\lambda u_e$. $[\![$Mary likes $t_1]\!]^{g^{u/1}}](v) = 1$)   PA

   4. $= [\![$the$]\!]^g$ (λv_e . $[\![$man$]\!]^g(v) = 1$ & $[\lambda u_e$. Mary likes $g^{u/1}(1)](v) = 1$) (129)

   5. $= [\![$the$]\!]^g$ (λv_e . $[\![$man$]\!]^g(v) = 1$ & $[\lambda u_e$. Mary likes $u](v) = 1$)   (131)

$6. = [\![\text{the}]\!]^g \ (\lambda v_e \ . \ [\![\text{man}]\!]^g(v) = 1 \ \& \ \text{Mary likes } v)$ βC

$7. = [\lambda f_{\langle e,t\rangle} : \exists! x f(x) = 1 \ . \ \iota x f(x) = 1] \ (\lambda v_e \ . \ [\lambda u \ . \ u \text{ is a man}](v) = 1 \ \&$
    $\text{Mary likes } v)$ LT (twice)

$8. = [\lambda f_{\langle e,t\rangle} : \exists! x f(x) = 1 \ . \ \iota x f(x) = 1] \ (\lambda v_e \ . \ v \text{ is a man } \& \text{ Mary likes } v)$
                                                       βC

$9. = $ the unique individual in $\mathcal{D}$ that is a man and that Mary likes, if such
    an individual exists, undefined otherwise βC

The last line in this derivation is the intuitively correct interpretation for the man who Mary likes. This result is achieved by taking advantage of the fact that the interpretation of the trace t_1 is dependent on the choice of assignment: the PA rule modifies the assignment with respect to which the interpretation of the embedded S—and in particular of the trace—is calculated in order to abstract on the position occupied by the trace itself. Abstraction on the position occupied by the trace obtains the result that the interpretation derived for the relative clause is a constant function from assignments to the function $[\lambda u_e \ . \ \text{Mary likes } u]$.

It should then be clear how variable assignments allow for getting around the problem posed by non-local dependencies: (i) in a syntactic tree the interpretation of an embedded node is made dependent on the choice of an assignment, and (ii) at a higher node in the tree the position and the interpretation of the embedded node are again made available for local semantic interpretation via the application of Predicate Abstraction.

Application of the PA rule removes the dependency on the choice of an assignment that characterizes the meaning derived in (129).[45] More generally, we can conclude that the PA rule is a *variable-binding operation* that reduces the dependency on assignments of a given interpretation. As I mentioned above, the relative pronoun does not contribute an independent meaning of its own, but its

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[45]The reader can verify this in the 5th step of (133): the semantic contribution of the relative clause as a whole is not dependent on the choice of an assignment, while the interpretation of the embedded S calculated in (129) is.

presence is crucial in the derivation of **the man who Mary likes** because it triggers the application of the PA rule. Because of this, we say that the relative pronoun is a *variable binder*, a notion formally defined below:

(134) An expression α is a variable binder iff there are trees β and assignments g such that

    i. β is not in the domain of $[\![\ ]\!]^g$, but

    ii.   some tree whose immediate constituents are α and β is in the domain of $[\![\ ]\!]^g$.

The definition in (134) exploits the observation that if a tree is in the domain of $[\![\ ]\!]^g$, it is also in the domain of $[\![\ ]\!]^{g'}$ for all $g' \supseteq g$. Which means that the domain of the assignment mentioned in (134) is big enough for the interpretation of the mother node to be derived, but it is not for the interpretation of its daughter β: the interpretation of β is dependent on the choice of an assignment to a higher degree than the interpretation of its mother node.

On the basis of the same observation, the notions of a *free* vs. *bound* occurrence of a variable can be defined as follows:

(135) Let α^n be an occurrence of a variable α in a tree β.

    a.   Then α^n is free in β if no subtree γ of β meets the following two conditions:

        i. γ contains α^n, and

        ii.   there are assignments g such that α is not in the domain of $[\![\ ]\!]^g$ but γ is.

    b. α^n is bound in β iff α^n is not free in β.

A last point: in the definition of the PA rule in (132) I included not only the class of lexical variable binders LEXBIND but entities of the form λ_i as triggers for the application of Predicate Abstraction. These items are introduced as a result of the syntactic operation of *Quantifier Raising* that moves quantificational noun phrases from their surface position and adjoins them to IP (or S) at the level of Logical Form (May, 1985).

(136)

```
                    S
           ┌────────┴────────┐
          NP                 .
        ┌──┴──┐        ┌──────┴──────┐
     every man        λ₁            S
                              ┌──────┴──────┐
                             NP            VP
                              │       ┌─────┴─────┐
                             t₁       V          NP
                                      │           │
                                    likes     himself₁
```
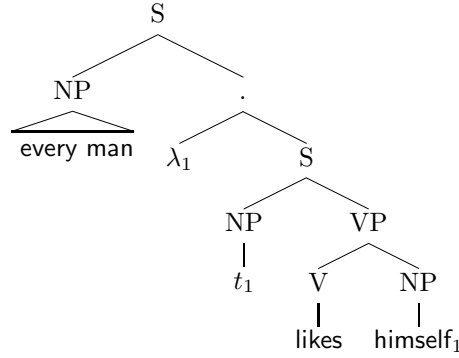
These triggers for PA are used in (Heim and Kratzer, 1998) to dissociate binding from the semantics of quantificational noun phrases: in sentences like Every man likes himself, the bound-variable interpretation of the pronoun himself is due to the fact that the variable binder λ_1 binds both the base position of the QR-ed noun phrase every man and the pronoun himself.[46] Since QR phenomena are not dealt with in this thesis, I will not discuss in further detail this aspect of Heim and Kratzer's formal system.

Some extensions

Heim and Kratzer's system must be extended in three simple respects to handle the data discussed in the previous chapters: (i) a basic treatment of plurality must be added, (ii) type-shifting rules (at least one of them) must be allowed for, and (iii) the variable-binding machinery must be extended to variables of types higher than e.

Plurals

For plurals, I adopt the lattice-theoretic analysis proposed in (Link, 1983). Its essentials are (i) that plural individuals can be construed as the *individual sum*

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[46]Heim and Kratzer propose that binders introduced by QR are just numerical indices. I follow (Elbourne, 2002) in assuming that binders introduced by QR are entities of the form λ_i.

$a \oplus b$ of individuals in $\mathcal{D}$ and are themselves members of $\mathcal{D}$,[47] and (ii) that individuals are related by the *individual part* relation $\leq_i$ such that $a \leq_i b$ iff $a \oplus b = b$.

A subset ATOM of $\mathcal{D}$ can be defined as the subset of $\mathcal{D}$ containing only *atomic* individuals, i.e. all those individuals a such that for all b, $b \leq_i a$ iff $b = a$. When needed I will differentiate in the metalanguage between individuals in ATOM and individuals in $\mathcal{D}\backslash$ATOM (the complement of ATOM in $\mathcal{D}$) by subscripting the former with e' and the latter with e''.

The relation $\leq_i$ imposes a semi-lattice structure onto $\mathcal{D}$: this means that for any two individuals a and b the *supremum* of the set $\{a, b\}$—i.e. the smallest individual c such that $a \leq_i c$ and $b \leq_i c$—is defined.[48] Singular predicates like man denote on the atomic elements of the lattice (the set ATOM), whereas plural predicates like men denote on the non-atomic elements of the lattice.[49] Thus predicates select part of the semi-lattice structure of $\mathcal{D}$: in the case of predicates like men this will in general be a semi-lattice as well; in the case of predicates like man this will be a semi-lattice only if the denotation of man is a singleton.

This allows for a uniform definition of the semantics of the definite determiner that applies to both singular and plural individuals. In the definition of the semantics of the given in (111), the presupposition $\exists! x f(x)$ and the assertion $\iota x f(x)$ are normally taken to stand for 'there is a unique individual x such that $f(x) = 1$' and 'the unique individual x such that $f(x) = 1$', respectively. In the remainder of this thesis the convention is adopted that the presupposition and the

---

[47]Which entails that the individual sum operation is defined on plural individuals as well, and that the set $\mathcal{D}$ is closed under the operation $\oplus$.

[48]This follows from the observation that $\langle \mathcal{D}, \oplus \rangle$ is an algebra with one binary operation that is *idempotent* ($\forall x \in \mathcal{D}, x \oplus x = x$), *commutative* ($\forall x, y \in \mathcal{D}, x \oplus y = y \oplus x$), and *associative* ($\forall x, y, z \in \mathcal{D}, x \oplus (y \oplus z) = (x \oplus y) \oplus z$). See (Partee et al., 1987).

[49]I will informally say that a predicate like men denotes 'a group of men'.

asserion of the definite determiner are to be read as 'there is a *maximal* individual x such that $f(x) = 1$' and 'the *maximal* individual x such that $f(x) = 1$', where the maximal individual in a lattice is the individual a such that for any individual b, a is the supremum of $\{a, b\}$.[50]

Type shifting

In order to account for the interpretation of equative be sentences, I follow (Partee, 1986) and assume that type-shifting principles operate in the grammar. Partee (1987) introduces a series of type-shifting principles that allow for the possibility of having a noun phrase denote in any of the three semantic types e, $\langle e, t \rangle$ and $\langle \langle e, t \rangle, t \rangle$.

For the purpose of this thesis I will only need the *ident* shifter, the function from D_e into $D_{\langle e, t \rangle}$ defined as $[\lambda x_e \, . \, \lambda y_e \, . \, y = x]$. Concretely, I propose to model the *ident* shifter as a new rule of semantic interpretation:

(137) *Ident Shift* (IS)
    If α is a branching node and $\{\beta, \gamma\}$ the set of its daughter nodes, then, for any assignment g, α is in the domain of $[\![\ ]\!]^g$ if both β and γ are and $[\![\beta]\!]^g$ and $[\![\gamma]\!]^g$ are of type e. In this case, $[\![\alpha]\!]^g = [\lambda u_e \, . \, u = [\![\gamma]\!]^g]([\![\beta]\!]^g)$.

The IS rule applies to derive the interpretation of nodes whose two daughters both denote in $\mathcal{D}$, and in particular it will apply to derive the meaning of the DP small clause in sentences like (73).[51]

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[50]Traditionally, $\exists! x f(x)$ is used as a shorthand for $\exists x [f(x) \wedge \forall y [f(y) \rightarrow y = x]]$. Here I take it to be a shorthand for $\exists x [f(x) \wedge \forall y [f(y) \rightarrow y \leq_i x]]$.

[51]Possibly, the application of this rule should be restricted to only certain syntactic configurations. I will not be concerned with this issue here.

(73)
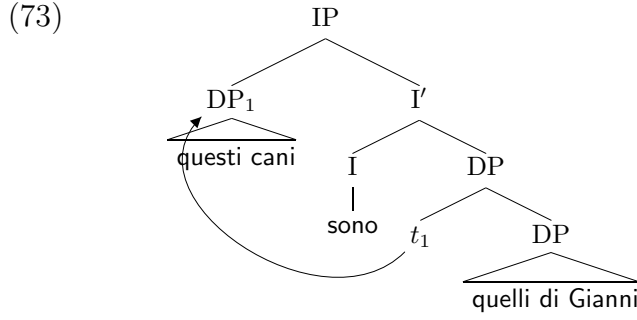
Higher-order variables

Most of the discussion in the next chapter is concerned with the interpretation of terminal symbols that behave like variables vs. constants, but do not denote in $\mathcal{D}$. This requires us to generalize the notions of syntactic index and variable assignment, and the rules of semantic interpretation that make non-trivial use of variables and assignments. This is done below.

We assume that syntactic indices are not just natural numbers, but pairs of a natural number and a semantic type of the form $\langle i, \tau \rangle$ and we revise the definition of a variable assignment as follows:[52]

(138) *Variable assignment*
A variable assignment is a partial function g from the set of indices to the set of all denotations, such that, for every $\langle i, \tau \rangle \in \mathrm{dom}(g)$, $g(\langle i, \tau \rangle) \in D_\tau$.

On the basis of this new definition of variable assignments, the TP rule and the PA rule are stated as follows:

(139) *Traces and Pronouns* (TP)
If α is a pronoun or a trace, g is a variable assignment, and $\langle i, \tau \rangle \in \mathrm{dom}(g)$, then $[\![\alpha_{\langle i,\tau \rangle}]\!]^g = g(\langle i, \tau \rangle)$.

---

[52]In the remainder of the thesis I will normally omit the angle brackets in a syntactic index $\langle i, \tau \rangle$, which will thus be represented simply as i, τ.

(140) Let g be an assignment, $\langle i, \tau \rangle$ an index, and $u \in D_\tau$. Then $g^{u/\langle i,\tau \rangle}$ is the unique assignment which fulfills the following conditions:

    i. $\mathrm{dom}(g^{u/\langle i,\tau \rangle}) = \mathrm{dom}(g) \cup \{\langle i, \tau \rangle\}$,

    ii. $g^{u/\langle i,\tau \rangle}(\langle i, \tau \rangle) = u$, and

    iii. for every $\langle j, \sigma \rangle \in \mathrm{dom}(g^{u/\langle i,\tau \rangle})$ such that $\langle j, \sigma \rangle \neq \langle i, \tau \rangle$: $g^{u/\langle i,\tau \rangle}(\langle j, \sigma \rangle) = g(\langle j, \sigma \rangle)$.

(141) *Predicate Abstraction* (PA)

Let α be a branching node with daughters β and γ, where β dominates either $\lambda_{\langle i,\tau \rangle}$ or $\mathsf{LexItem}_{\langle i,\tau \rangle}$ such that $\mathsf{LexItem} \in \mathrm{LexBind}$. Then, for any assignment g, $[\![\alpha]\!]^g = \lambda u_\tau \, . \, [\![\gamma]\!]^{g^{u/\langle i,\tau \rangle}}$.

CHAPTER 5

The Role of (In)definiteness

The lesson learned in the previous chapter is twofold. A proper account for the derivation of free interpretations should be given in terms of a *direct* contribution of contextual information to the determination of the relation expressed by a possessive construction: e.g. in (11) the context directly provides the relation ATTACK as value for the relational variable denoted by the head of the PP predicate in the possessive construction. And the restricted distribution of free interpretations argues that this free variable differs from known variables of type e—referential pronouns—in that it can be assigned a contextually salient relation as a value only under special circumstances. Providing a precise characterization of the respects in which relational variables in possessive constructions differ from the case of referential pronouns is of course the main component of the analysis for the derivation of free interpretations that I am after in this chapter. The unavailability of free interpretations follows from the impossibility for the relational variable to link to a contextually salient entity. And the pattern of data in (28)+(32) reduces to the difference between cases in which the relational variable in the possessive construction can be linked to the context and cases in which such a link is not possible.

In this chapter I move towards the account that I consider most appropriate in a step-wise fashion. I first concentrate in §5.1 on the contrast between definite and indefinite possessives and follow the suggestion made at the beginning of §4.3.3

that the interpretive properties of the relational variable in possessives could be linked to some (appropriately extended) version of the *Familiarity/Novelty Condition* proposed for definite vs. indefinite DPs in (Heim, 1982, 1983a). Developing the intuitive parallelism between the issues discussed by Heim—the interpretation of free variables of type e, essentially—and the case of free interpretations in possessive constructions allows for a simple formulation of the difference between referential pronouns and the relational variable in possessive constructions that is essentially maintained unchanged throughout the chapter: the individual variable corresponding to referential pronouns is always "definite", but this is not the case for the relational variable in possessive constructions, which can be both "definite" and "indefinite".

At the same time, stating explicitly how Heim's proposal could be extended to the case of free interpretations in possessives highlights the places where the parallelism breaks down. As mentioned already in §4.3.3, a complete parallelism to Heim's proposal cannot be maintained because of empirical considerations: if the unavailability of free interpretations in predicate possessives is to be accounted for in the same terms proposed for indefinite possessives, the Novelty Condition must be generalized further so that it holds not only of free variables "within" an indefinite DP, but of free variables in general. And, even leaving the case of predicate possessives aside, it is not clear how an analysis in terms of a strict parallelism to Heim's proposal could account for the complex pattern of data in (28)+(32). In addition, it can be argued that the parallelism to the case discussed by Heim breaks down even in theoretical terms: extending Heim's proposal to the relational variable in possessive constructions derives a system which does not seem compatible with the requirement of strict compositionality of semantic interpretation.

In §5.2 I discuss the respects in which the analysis in terms of Heim's

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Familiarity and Novelty should be amended in order to account for the case of predicate possessives and in order to correct its most blatant theoretical shortcomings. While this requires moving further away from Heim's well-known analysis of definite vs. indefinite DPs, the initial intuition that the difference between referential pronouns and other free variables is due to the intrinsic definiteness of the former is maintained, and the general picture sketched for the derivation of control vs. free interpretations does not differ from the one determined by the analysis proposed in §5.1. I keep the discussion at a somewhat informal level throughout the first two sections, and spell out explicitly in §5.3 only the formal implementation of the revised analysis. Finally, in §5.4 I present some—admittedly speculative—remarks on the directions that in my opinion should be pursued in order to eliminate a crucial stipulation that remains in the system formalized in §5.3, and on how these revisions potentially pave the way for an account for the complex pattern of data in (28)+(32).

5.1 An account in terms of Familiarity and Novelty

The basic intuition behind the analysis outlined in this section is the observation that, focussing only on the contrast concerning the availability of free interpretations with definite vs. indefinite possessives, the interpretive properties of the relational variable in the PP predicate of possessive constructions are exactly parallel to the interpretive properties displayed by the free variable corresponding to the *referential index* of a definite vs. indefinite DP in the system proposed by Heim (1982, 1983a). According to Heim, the main difference between definite and indefinite DPs is that the former are restricted to denote *familiar* entities—i.e. entities previously introduced in the store of information against which the sentence containing the DP is interpreted—whereas the latter are restricted to

introduce *novel* entities—i.e. cannot denote previously introduced entities. These properties are modeled by Heim in terms of the Familiarity/Novelty Condition, an interpretive requirement that imposes restrictions on the value(s) that can be assigned to the variable corresponding to the referential index of a definite (Familiarity) vs. indefinite DP (Novelty).

The parallelism between the interpretive behavior of the referential index of a DP and that of the relational variable involved in free interpretations for possessives becomes compelling as soon as it is suggested—as we did at the end of chapter 4—that the successful derivation of free interpretations must be accounted for in terms of the contextual determination of a value for the relational variable in possessive constructions. The distribution of free interpretations leads to the conclusion that the variable embedded within a definite DP can denote a contextually salient entity—e.g. the relation ATTACK in (11)—but the variable embedded within an indefinite DP cannot.

(11) Ieri   Gianni e   Paolo sono stati attaccati da due gruppi
      yesterday Gianni and Paolo were   attacked by two groups
      (distinti) di cani;
      (different) of dogs

  a. … sfortunatamente **i   cani di Gianni** avevano la   rabbia.
    unfortunately   the dogs of Gianni had   the rabies

  b. #… sfortunatamente **alcuni cani di Gianni** avevano la   rabbia.
    unfortunately   some dogs of Gianni had   the rabies

The intuition, then, is to take contrasts like (11) to arise from some version of Heim's Familiarity/Novelty Condition that applies to the relational variable in possessives: in particular, the relational variable in indefinite DPs like alcuni cani di Gianni in (11b) is subject to the Novelty Condition—from which the impossibility of taking the contextually salient relation ATTACK to be the value of the variable follows—whereas the relational variable in the definite DP i cani di Gianni in (11a) is not subject to the Novelty Condition, but to the opposite

Familiarity Condition—which explains why it is assigned the contextually salient relation ATTACK as a value.

5.1.1 Familiarity and Novelty in (Heim, 1982, 1983a)

The Familiarity/Novelty Condition is part of an analysis aimed at providing a general account of the semantics of definite and indefinite noun phrases and how this interacts with anaphoric phenomena in discourse.[1] Heim rejects the traditional Russellian analysis—see (Russell, 1905)—according to which definite and indefinite DPs are quantificational noun phrases, and suggests that both definite and indefinite DPs denote open formulae, in which the descriptive content of the DP is predicated of a free variable of type e. Heim suggests that the free variables of which the descriptive content of a definite/indefinite DP is predicated can be seen as a formalization of Karttunen's (1976) *discourse referents*: entities that can serve as antecedents for anaphora, but that do not necessarily correspond to a particular referent in the world. Discourse anaphora can then be treated as reference to these discourse referents: pronouns in general are treated as variables, and a pronoun that constitutes an occurrence of the variable corresponding to a certain discourse referent is interpreted as referring to that discourse referent. The result is that discourse anaphora is treated—similarly to the case of anaphora within a sentence—as an instance of variable binding: both the antecedent and the pronoun correspond to occurrences of the same variable bound by a single quantifier.

---

[1]I do not intend to provide here an exhaustive introduction to Heim's proposal, but simply to highlight some features that are relevant in order to understand the nature of the Familiarity/Novelty Condition that she proposes for the analysis of definite and indefinite DPs. A system that is essentially equivalent to the one proposed by Heim—*Discourse Representation Theory*—has been independently developed by Hans Kamp. I do not discuss it explicitly here, but see (Kamp, 1984; Kamp and Reyle, 1993) for the formulation of the DRT approach and (Kadmon, 2001, ch.2) for a synthetic comparison of DRT and Heim's system.

Following the proposal in (Christophersen, 1939, a.o.), Heim maintains that the essential difference between definite and indefinite DPs is the way in which they are used in discourse: definite DPs are used to denote *familiar* entities—i.e. entities that have already been introduced in the preceding discourse—indefinite DPs are used to introduce *novel* entities. Heim formalizes this intuition in terms of restrictions on the discourse referents associated with definite vs. indefinite DPs. The discourse referents of definite DPs, like those of pronouns, must already be introduced in the context of use: definites are anaphoric DPs that need an antecedent in their context of use. Indefinite DPs, on the other hand, add new discourse referents that can then constitute an antecedent for discourse anaphora by a subsequent pronoun or definite DP.

Heim models the above assumptions within a *dynamic* theory of meaning, according to which the meaning of a sentence is not given by truth conditions, but by the way in which the utterance of a sentence updates an existing body of information. The existing body of information is given by a *file*. Informally, this can be seen as an archive of the information shared by the participants in a conversation: information is catalogued in terms of file cards in which a variable constitutes the index of the card, and the card contains the properties that are predicated of that variable. Formally, a file F can be defined in terms of the set of variables that it contains—what Heim calls the *domain* of the file, $Dom(F)$—and a set of assignment functions—the *satisfaction set* of the file, $Sat(F)$—that verify all the conditions imposed on the variables in the file.[2] The contribution of the utterance of a sentence to a given file F can be seen as an update: the information in the file is updated with the information conveyed by the sentence.

An important component of Heim's proposal is a series of *LF construction*

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[2]Actually, as Heim points out, this does not suffice to determine a unique file, since there are always many distinct files that happen to have the same domain and the same satisfaction set.

rules that determine the way in which sentences of natural language are mapped to logical forms. I do not intend to discuss the details of the construction rules proposed by Heim, but a few remarks are in order here. Heim assumes that all noun phrases are indexed with a *referential index*, corresponding to the variable of which the descriptive content of the noun phrase is predicated. Sentences containing only pronouns like (142a) are mapped to a LF representation that mentions the referential indices of the pronouns explicitly. Sentences containing noun phrases that impose descriptive conditions on the variable corresponding to their referential indices are mapped to logical forms in which the noun phrase is moved and adjoined to the sentence containing its base position: the sentences in (142b,c) are decomposed at LF into two constituents denoting *atomic propositions*—propositions containing a single predicate with variables as its arguments—that are then interpreted as being conjoined.

(142) a. She hit it.

$$
\begin{array}{c}
\text{S} \\
\overline{\text{she}_1 \ \text{hit} \ \text{it}_2}
\end{array}
$$

b. A dog came in.

$$
\begin{array}{c}
\text{S} \\
\diagup \quad \diagdown \\
\text{NP}_2 \qquad \text{S} \\
\overline{\text{a dog}} \quad \overline{t_2 \ \text{came in}}
\end{array}
$$

c. The dog came in.

$$
\begin{array}{c}
\text{S} \\
\diagup \quad \diagdown \\
\text{NP}_1 \qquad \text{S} \\
\overline{\text{the dog}} \quad \overline{t_1 \ \text{came in}}
\end{array}
$$

The update of a file F with an atomic proposition ϕ—represented as $F + \phi$—determines a new file whose domain is an extension of the domain of the original file—the new variables used in ϕ are added to $Dom(F)$—and whose satisfaction set is a restriction of the satisfaction set of the original file—assignments that

do not satisfy ϕ are eliminated from $Sat(F)$.[3] Of course, this constitutes only the basic case of a full recursive definition of the notion of update with sentences corresponding to more complex *molecular propositions.* For example, the update determined by a conjunctive molecular proposition like the one corresponding to the LFs in (142b,c) is calculated as the consecutive update with the two atomic propositions in it.

Getting back to the difference between definite and indefinite DPs, it should be obvious that whether an entity is familiar or novel depends on the information already contributed by the preceding discourse, which in Heim's system means that familiarity and novelty constitute conditions on the appropriateness of sentences containing a definite or indefinite DP with respect to a certain file. Formally, the two conditions can be defined as follows:

(143)   *The Familiarity/Novelty Condition*
Let F be a file, ϕ an atomic proposition. Then ϕ is appropriate with respect to F only if, for every noun phrase DP_i with index i that ϕ contains:

a.   *The Familiarity Condition*
if DP_i is definite, then $i \in Dom(F)$, and

b.   *The Novelty Condition*
if DP_i is indefinite, then $i \notin Dom(F)$.

---

[3]Taking assignments to be partial functions and defining a file simply in terms of its satisfaction set (the domain of the file being recoverable as the set of variables for which the assignment functions in its satisfaction set are defined), the update of a file F with an atomic proposition ϕ is the set of assignment functions such that: (i) their domain is the union of the domain for which the assignment functions in F are defined with the set of variables in ϕ, (ii) they extend some function in F—i.e. they are identical to some function in F for what concerns variables in the domain of F—and (iii) they satisfy ϕ. A formal definition of this latter formulation of update is given below:

i.   Let F be a file, and let ϕ be an atomic proposition that consists of an n-place predicate R and a n-tuple of variables whose indices are $i_1, \ldots, i_n$ respectively. Then:
$F + \phi = \{a_N \cup b_M \in A^{N \cup M} : a_n \in F, M = \{i_1, \ldots, i_n\}, \text{and } \langle b_{i_1}, \ldots, b_{i_n} \rangle \in [\![R]\!]\}$.

In the text I implicitly assume a characterization of a file in terms of partial functions and this formal definition of update.

The definition in (143) exploits the intuition that for an entity to be familiar a discourse referent corresponding to this entity must have been introduced by some noun phrase in the preceding discourse. Thus the condition that definites denote familiar entities can be modeled by constraining the referential index of a definite DP to already be in the domain of the file to be updated, and the condition that indefinites denote novel entities can be modeled by constraining the referential index of an indefinite DP not to already be in the domain of the file. These conditions can be seen as pre-conditions on the update of a file with a sentence: the update $F + \phi$ is defined only if the conditions in (143) are met.

As an example, consider the different results obtained by updating the same file F_* with the sentences in (142b,c). Assume, for concreteness, that F_* is such that $1 \in Dom(F_*)$, $2 \notin Dom(F_*)$ and that each assignment in F_* satisfies the condition that 1 is a dog: given the conditions in (143) both updates $F_* + (142b)$ and $F_* + (142c)$ are defined. The result of updating F_* with (142c) is the file obtained by updating F_* first with the atomic proposition that can be paraphrased as "1 is a dog" and then with the proposition "1 came in": the result of the first update is non-distinct from F_* because 1 is already in $Dom(F_*)$ and all assignments in F_* satisfy the condition that 1 is a dog, and the result of updating F_* with the second atomic proposition is the file F_1 containing all assignments in F_* that satisfy the condition that 1 came in. The result of updating F_* with (142b) is the file obtained by updating F_* first with the atomic proposition that can be paraphrased as "2 is a dog" and then with the proposition "2 came in": the result of the first update is the file F_2 containing all those assignments that extend some assignment in F_* and assign an individual in $\mathcal{D}$ to 2 such that this individual is a dog, and the result of updating this file with the second atomic proposition is the file F_3 containing all assignments in F_2 that satisfy the condition

that 2 came in.[4,5]

In general, the semantic contribution of a sentence containing a definite DP amounts to adding some condition(s) on a variable that is already in the domain of the file corresponding to the context of use of the sentence and for which the descriptive content of the definite DP already holds in the file.[6] The semantic contribution of a sentence containing an indefinite DP amounts to extending the domain of the initial file, and adding some conditions on the newly introduced discourse referent, conditions determined both by the descriptive content of the indefinite DP and by the predicate that the indefinite DP constitutes an argument of in the surface structure of the sentence.

Thus, the Familiarity/Novelty Condition obtains the result that a definite DP is identified with a discourse referent that is already in the initial file, whereas an indefinite DP is kept distinct from discourse referents in the initial file. This, for example, accounts for the different interpretation of (142b,c) in the context set up

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[4]The variables corresponding to the base position of DPs that are moved at LF are treated as definite in Heim's system. That the discourse referent corresponding to these variables is already introduced is guaranteed by the fact that the atomic proposition corresponding to the moved DP updates the file corresponding to the context of utterance before the atomic proposition corresponding to the LF fragment containing its base position is interpreted.

[5]In Heim's system truth is not defined with respect to sentences, but with respect to files: a file F is true if its satisfaction set is not empty. The latter amounts to saying that a file F is true if there is an assignment of values for the variables used in the file such that the conditions imposed on these variables are satisfied. The existential quantification that is intrinsic to the definition of truth for a file is the source of the existential force that is intuitively associated with most uses of indefinite DPs. For example, the file F_3 will be true iff there is an assignment g such that (i) the individual assigned as a value to 1 is a dog, and (ii) the individual assigned as a value to 2 is a dog and came in. The conditions in (ii) are contributed to F_3 by the utterance of (142b), thus can be taken to correspond to the truth-conditional meaning of the sentence A dog came in: this is exactly the meaning that would be assigned to this sentence under the Russellian analysis according to which indefinites denote existential quantifiers.

[6]This is obviously the case in the initial file F_* defined above. Heim argues that this is in general the case with definite DPs, and she accounts for this generalization in terms of an additional appropriateness condition on the use of definite DPs: the *Descriptive Content Condition* requires that the update with the atomic proposition ϕ corresponding to a definite DP constitutes a *trivial* update, so that $F + \phi = F$ for all files F.

in (144): the dog in (144a) must be assigned the referential index corresponding to the discourse referent introduced by the proper name Fido and is interpreted as denoting the individual Fido; a dog in (144b) cannot be coindexed with Fido and is interpreted as denoting an individual distinct from Fido.

(144) Fido$_1$ (the dog) and Fluffy$_3$ (the cat) were outside playing in the garden. The cat stayed out till the following morning, on the other hand...

    a.   ...**the dog**$_{1/*2}$ came in (around dinner time).

    b.   ...**a dog**$_{2/*1}$ came in (around dinner time).

5.1.2 Extending Familiarity and Novelty

Extending Heim's account of the interpretive contrast in e.g. (144) to the interpretive contrast between definite and indefinite possessives in contexts that make non-control relations salient is pretty straightforward. We need to assume that files contain not only discourse referents of type e but also discourse referents of type $\langle e, et \rangle$. More generally, we can assume that files contain discourse referents of all semantic types τ. As in Heim's system a file can be defined as a set of partial assignment functions, where the definition of assignment functions is the one already adopted in chapter 4 to take care of higher-order variables:

(138) *Variable assignment*
A variable assignment is a partial function g from the set of indices to the set of all denotations, such that, for every $\langle i, \tau \rangle \in \mathrm{dom}(g)$, $g(\langle i, \tau \rangle) \in D_\tau$.

In addition, similarly to the case of proper names—constants of type e—in Heim, it must be assumed that the use of a constant of type τ introduces a discourse referent of type τ that is equated with the denotation of the constant, with the outcome that all assignments in the resulting file assign the denotation of the constant as a value to this discourse referent.

The interpretive contrast in (145), then, can be accounted for in parallel with the contrast in (144) if the Familiarity/Novelty Condition applies not only to the

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referential index of a DP, but to all the free variables within this DP as well.

(145) Ieri Gianni e Paolo sono stati attaccati$_{1,\langle e,et\rangle}$ da due gruppi
yesterday Gianni and Paolo were attacked by two groups
(distinti) di cani;
(different) of dogs

 a. ... sfortunatamente **i** **cani di**$_{1,\langle e,et\rangle/*2,\langle e,et\rangle}$ **Gianni** avevano la
   unfortunately the dogs of   Gianni had the
  rabbia.
  rabies

 b. #... sfortunatamente **alcuni cani di**$_{2,\langle e,et\rangle/*1,\langle e,et\rangle}$ **Gianni** avevano la
   unfortunately some dogs of   Gianni had the
  rabbia.
  rabies

The preposition di within the definite possessive i cani di Gianni must be coindexed
with the verb sono stati attaccati in the context-setting sentence, and is interpreted
as denoting the relation ATTACK introduced by this constant.[7] The preposition
di within the indefinite possessive alcuni cani di Gianni introduces a new discourse
referent and is interpreted as denoting a relation different from the contextually
salient relation ATTACK. The *Extended Familiarity/Novelty Condition* from
which the restrictions on coindexing in (145) follow is defined below:

(146) *The Extended Familiarity/Novelty Condition*
  Let F be a file, ϕ an atomic proposition. Then ϕ is appropriate with
  respect to F only if, for every index $\langle i,\tau\rangle$ that ϕ contains:

  a. *The Familiarity Condition*
   if $\langle i,\tau\rangle$ is the referential index of a definite DP, or if $\langle i,\tau\rangle$ is within
   a definite DP, then $\langle i,\tau\rangle \in Dom(F)$, and

  b. *The Novelty Condition*
   if $\langle i,\tau\rangle$ is the referential index of an indefinite DP, or if $\langle i,\tau\rangle$ is within
   an indefinite DP, then $\langle i,\tau\rangle \notin Dom(F)$.

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[7]Arguably, sono stati attaccati denotes (and thus introduces) the converse of ATTACK but,
following the assumption already suggested in footnote 8 in chapter 4, I take the use of a
constant of type $\langle e,et\rangle$ to introduce both the relation that it denotes and its converse.

Thus, the proposal is that the different availability of free interpretations with definite vs. indefinite possessives is determined by the requirements imposed by the Extended Familiarity/Novelty Condition on the relational variable denoted by the head of the PP predicate in the possessive construction: in definite possessives this relational variable is subject to the Extended Familiarity Condition and must denote a familiar—i.e. contextually salient—relation, in indefinite possessives the relational variable is subject to the Extended Novelty Condition and must denote a novel relation—i.e. it cannot denote a contextually salient relation.

5.1.3 An assessment

The analysis sketched in the previous section accounts for the derivation of free interpretations in terms of a *direct* contribution of contextual information in determining the value of the variable corresponding to the head of the PP predicate in the possessive construction: the successful derivation of free interpretations involves the assignment of a contextually determined value to this variable. In this, the analysis addresses the major shortcoming of the account for the derivation of free interpretations proposed in chapter 4 (§4.3.3).

Differently from both accounts proposed in chapter 4, the distribution of free interpretations follows from the Extended Familiarity/Novelty Condition—a condition imposed on variables "within" a definite or indefinite DP—rather than from the lexical semantics of the indefinite or definite determiner. A relational variable embedded within a definite DP is restricted to denote a familiar entity: if a suitable entity—like the relation ATTACK—is made salient in the context, a definite possessive can be taken to express this relation. A relational variable embedded within an indefinite DP is restricted to denote a novel entity: this accounts for the observation that an indefinite possessive cannot be taken to express a contextually salient relation like ATTACK.

At a first look, the empirical predictions that follow from this analysis are not much different from those derived within either of the accounts in chapter 4: the basic contrast in (11) is predicted in all three accounts. But one important difference holds between the current analysis and the two previous accounts. In both accounts proposed in chapter 4 indefinite possessives were predicted to exclude free interpretations, this either because of the restriction to CONTROL imposed by the semantics of the indefinite determiner in (82), or because of the restriction against free relational variables stipulated in (92). However, within the current analysis the derivation of free interpretations with indefinite possessives is not excluded: what is ruled out is just the possibility that a free relational variable embedded within an indefinite possessive is identified with a *familiar* relation. The possibility that an indefinite possessive might express a *novel* non-control relation is not (yet) ruled out: a LF containing a variable that is subject to the Novelty Condition is well-formed, the variable being interpreted as if it were existentially quantified.[8]

Now, is this result desirable? As I mentioned above, contrasts like (11) are expected: the relational variable in an indefinite possessive is required not to be identified with a contextually salient entity, which in the case of (11b) means that the relational variable is not assigned the contextually salient relation ATTACK as a value. And the observation that these sentences constitute a non-sequitur with respect to the context-setting sentence follows straightforwardly. The sentence in (11b) is interpreted as dealing with dogs that stand in some relation other than ATTACK to Gianni, and it is not clear why dealing with dogs other than those that attacked Gianni should be relevant in the context set up in (11).

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[8]Heim's treatment of the existential force that is normally associated with the variable of type e corresponding to indefinite DPs (see footnote 5) extends in a straightforward way to the interpretation of novel free variables of other semantic types.

But what about the interpretation that the relational variable in the indefinite possessive in (11b) apparently receives? The possessive construction in sentences like (11b) is normally taken to express the relation of ownership. As in the case of the second system presented in chapter 4, the current analysis can account for this interpretation as a control interpretation derived in terms of the constant meaning for the head of the PP predicate in the indefinite possessive DP. That this interpretive option must be left open is shown by the observation that the interpretation according to which an indefinite possessive is taken to express the relation of ownership is available even in contexts in which this relation is salient, either because it has been made salient by a context-setting sentence, or because a distinct possessive DP expressing the same relation has been used in the preceding context.[9,10]

Still, the current analysis predicts that indefinite possessives can express *non-control* relations other than contextually salient ones. It is not clear to me

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[9]Notice that—unless additional provisions are added—the present analysis leaves the option open that the attested interpretation of (11b) can be derived as a free interpretation as well; but this is the case *only if* the ownership relation is not contextually salient in (11). If the relation OWN is salient in all contexts of use—as proposed by Barker (1995)—the attested interpretation of sentences like (11b) cannot be derived as a free interpretation: the relational variable in the possessive construction is subject to the Novelty Condition and cannot denote the familiar relation OWN. In general, I think that Barker's hypothesis that the relation of ownership is contextually salient—where contextually salient means being already introduced in the domain of a file—can be dispensed with in the theory pursued in this thesis: ownership is at most a *cognitively* salient relation, be it as the prototypical instance of CONTROL or as the most easily accessible value for the "existentially closed" relational variable.

[10]Let me emphasize one important point. In the previous footnote the possibility is raised that the relation of ownership is—cognitively speaking—the most easily accessible value for a relational variable that is subject to the Extended Novelty Condition. Even if—following this suggestion and contrary to what is assumed in the remainder of this thesis (see below in the text)—the possibility is left open that the attested interpretation of sentences like (11b) is derived as a "novel" free interpretation, the conclusion that the distinction between control and free interpretations can be eliminated from the theory does not follow. The observation that indefinite possessives can express the relation OWN even in contexts where this relation is salient is sufficient to argue for the necessity of maintaining the formal distinction between the two types of interpretations.

whether this prediction is substantiated. Part of the problem is that it is hard to see how—given the undeniable general preference for taking possessives to express control relations, and in particular the relation of ownership—it could be tested whether a speaker allows for "novel" free interpretations. All the examples considered in this thesis took it for granted that for free interpretations to be derived the relation expressed by a possessive construction must be made salient in its context of use: this is required to offset the preference for the "ownership" interpretation. Possibly, examples should be considered in which an indefinite possessive is used in "empty" contexts—or at least contexts that do not make any relation salient—and the non-control nature of the relation expressed by the possessive DP is specified after this DP is uttered. But the judgments elicited by such sentences do not seem conclusive to me.[11]

Since empirical tests for the prediction that indefinite possessives license "novel" free interpretations cannot be constructed easily, I prefer to leave a thorough analysis of whether such interpretations are available as a topic for future research. As a temporary placeholder, I stipulate in the current system that these interpretations are *not* available: a logical form in which the head of the PP predicate is interpreted as denoting a novel relational variable is either not well-formed, or is not accessible because this logical form derives a meaning—

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[11]For example, consider a sentence like (i) below:

i. # **Alcuni uragani   di Gianni**, cioè   alcuni uragani   che hanno colpito Gianni, hanno
       some   hurricanes of Gianni that is some hurricanes that hit   Gianni, have
       quasi   affondato la sua barca.
       almost sunk   his   boat

I do not think that much can be concluded from the oddness of (i). The oddness of this sentence might simply depend on the fact that the relational variable in the possessive DP is interpreted as expressing a control relation (notice that the relation of ownership proper is incompatible with the meaning of **uragani** 'hurricanes') as soon as the DP is processed—thus deriving an interpretation that is contradicted by the following appositive clause—or on the fact that it is just strange in the first place to use a possessive DP followed by a qualification in the appositive clause rather than directly using the DP in the appositive clause.

the mere statement of the existence of a relation holding between possessor and possessum—that is too vague and is blocked by the concurrently available more specific meaning according to which the head of the PP predicate is taken to denote the relation CONTROL.[12]

The analysis proposed here for the derivation of free interpretations in definite possessives extends straightforwardly to the case of partitive possessives. The fact that in the surface structure of a partitive possessive like alcuni dei cani di Gianni the relational variable denoted by the preposition di is at the same time within a definite DP (DP_2) and within an indefinite DP (DP_1) does not constitute a problem: the Extended Familiarity/Novelty Condition in (146) applies at LF, where not only has the whole partitive DP been moved from its base position and adjoined to the sentential node, but the embedded definite DP_2 has been extracted from the containing DP_1 and adjoined to the sentential node by itself, as shown in (147).[13]

(97)   b.   alcuni dei   cani di Gianni
            some of the dogs of Gianni

       c. $[_{DP_1}$alcuni $\emptyset_N$ de-$_{part}$ $[_{DP_2}$i cani di Gianni$]]$

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[12]The attentive reader might have already noticed that—modulo the way in which the existential force associated with the relational variable is introduced—the "novel" free interpretations that the current analysis predicts to be available for indefinite possessives receive the same formal treatment that was suggested in chapter 4 (§4.3.3) for the derivation of "familiar" free interpretations in definite possessives—an existentially closed relational variable, essentially—that was subsequently criticized in the conclusions to chapter 4. Thus, the same criticism that the semantics proposed for the possessive construction does not account for its *restrictive* nature could be raised against the conclusion that "novel" free interpretations are available for indefinite possessives.

[13]The assumption that the embedded definite DP_2 in a partitive is extracted from the containing indefinite DP_1 is independent of the Extended Familiarity/Novelty Condition defined in (146) or the issues concerning the interpretation of possessive constructions investigated in this thesis. A partitive DP does not correspond to an atomic proposition, and thus already within Heim's original system the embedded DP_2 must be assumed to extract at LF.

(147) Alcuni dei   cani di Gianni avevano la   rabbia.
       some of the dogs of Gianni had   the rabies

```
                                S
                 _____/ _____
                /                               \
            DP_{2,e}                             S
           /    \                     _____/ _____
   i cani di_{2,⟨e,et⟩} Gianni       /                     \
                                  DP_{1,e}                  S
                                 /    \              _____/ _____
                          alcuni ∅ de- t_{2,e}      /               \
                                               t_{1,e} avevano la rabbia
```
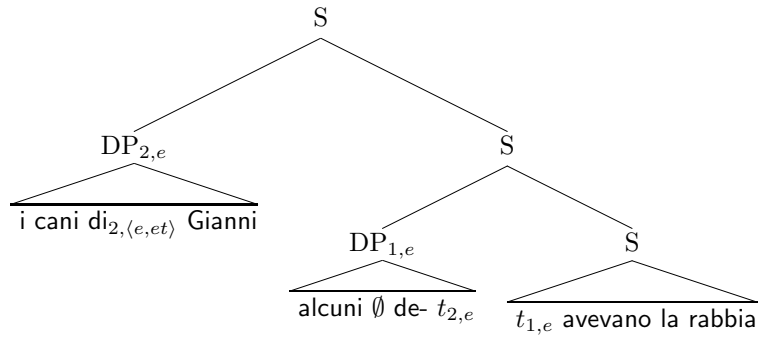
At LF the relational variable in partitive possessives is (only) within a definite
DP, and thus is subject to the Familiarity Condition. The availability of free
interpretations follows as in the case of definite possessives.

Furthermore, the requirement that each DP in a recursive DP structure be
adjoined independently to the sentential node at LF immediately explains the
locality restrictions that seem to hold of the licensing of free interpretations in
possessive DPs. The relational variable embedded within a definite DP like il
padrone di alcuni cani di Gianni 'the owner of some dogs of Gianni' is not subject
to the Familiarity Condition because at LF the indefinite possessive alcuni cani
di Gianni is extracted from the embedding definite DP, and is adjoined to the
sentential node by itself. The interpretive restrictions imposed by the Extended
Novelty Condition then require that the relational variable not be identified with
a familiar relation, which explains the oddness of discourses like (84).

(84) #Ieri   Gianni e   Paolo sono stati attaccati da due gruppi (distinti)
       yesterday Gianni and Paolo were   attacked by two groups (different)
       di cani. Purtroppo   **il   padrone di alcuni cani di Gianni** è Piero.
       of dogs unfortunately the master   of some   dogs of Gianni is Piero

Differently from the system proposed in §4.3.3, the locality restriction on the
licensing of free interpretations is not stipulated (see the formulation of the Ad-
Hoc rule in (93)), but follows from independent properties of the system.

Finally, the analysis explored in this chapter suggests an alternative characterization of the interpretive differences holding between free variables in general—relational free variables in possessives in particular—and the free variables of type e corresponding to referential pronouns. The different interpretive behavior of pronouns vs. other variables follows from the fact that pronouns are definite DPs: the variables of type e corresponding to the referential indices of pronouns are always subject to the Familiarity Condition. Other variables, instead, are subject to the Familiarity or the Novelty Condition depending on whether they are embedded within a definite or an indefinite DP. This feature—albeit in a somewhat different implementation—is preserved intact through the revisions proposed in the next sections.

5.2   Beyond Heim's Familiarity and Novelty

Despite the positive features pointed out immediately above, the analysis based on the Extended Familiarity/Novelty Condition presents some empirical shortcomings. Indeed, it is not clear that the account proposed for the different availability of free interpretations with definite vs. indefinite possessives can be generalized to cover the entire pattern of data outlined in chapter 2. The apparent unavailability of free interpretations with quantificational possessives (24e) could be accounted for by sticking closely to the analysis of quantificational DPs proposed in (Heim, 1982, 1983a), where the sentence-adjoined remnant of a quantificational DP from which the quantifier has been extracted by the rule of *Quantifier Construal* is treated as an indefinite DP.[14]

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[14]See (Heim, 1982, 1983a) for details.

(24) Ieri   Gianni e   Paolo sono stati attaccati da due gruppi
      yesterday Gianni and Paolo were   attacked by two groups
      (distinti)   di cani;
      (different) of dogs

     e. [#]... fortunatamente **ogni cane di Gianni** è   stato catturato.
          fortunately   each dog   of Gianni has been captured

But at the same time, if the Novelty Condition to which the relational variable in indefinite possessives is subject depends on the indefiniteness of a possessive DP, the analysis can deal with the case of Italian predicate possessives—constructions that do not license free interpretations (27b)—only by assuming that these are not just bare predicates, but [−definite] DPs.[15] That is, the current analysis can be extended to the case of Italian predicate possessives only by postulating that these have a full DP structure, an assumption that does not seem to be warranted.

(27)   [in the dog-pound scenario described in chapter 2]
     b. [#]Questi cani sono **di Gianni**.
         these dogs are of Gianni

A second empirical shortcoming is that the current analysis cannot account for the more complex pattern of data summarized in (28)+(32). True, as was the case for the accounts proposed in chapter 4 the theory could be weakened so that the ban on the licensing of free interpretations in e.g. indefinite possessives is not absolute, but the problem within the current analysis is that—if the Extended Familiarity/Novelty Condition is to be maintained—the (marginal) availability of free interpretations with indefinite possessives must be accounted for by assuming that indefinite possessives—and indefinite DPs in general—can be (marginally)

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[15]Otherwise, the Extended Novelty Condition would not be expected to hold of relational variables that enter the semantic derivation of predicate possessives, which would thus be expected to license free interpretations.

treated as [+definite] DPs. And this seems to flout the original intuition that motivated the formulation of Heim's Familiarity/Novelty Condition.

In addition, the analysis proposed in §5.1 presents a serious theoretical shortcoming. Both Novelty and Familiarity, as they are formulated in the Extended Familiarity/Novelty Condition in (146), violate the principle of strict compositionality of semantic interpretation: the [±definite] specification of a DP imposes constraints not only on the denotation of the DP, but on the denotation of free variables that are embedded within this DP. Strict compositionality requires that semantic restrictions be very local to their trigger: the [±definite] specification of a DP should have an effect only on the denotation of that DP or—at most—on the denotation of the nominal complement of the determiner, if the determiner is taken to contribute the [±definite] specification.

In the remainder of this chapter I show that addressing this two-pronged theoretical shortcoming leads to an analysis of the derivation of free interpretations that maintains the desirable features of the analysis in terms of the Extended Familiarity/Novelty Condition proposed above, and at the same time amends most of its empirical shortcomings. In §5.2.1 I address the problem with the Novelty Condition: I propose to generalize it further so that the *Generalized Novelty Condition* is an interpretive condition that applies to free variables in general, and does not depend on the [−definite] specification of a DP. In §5.2.2 I argue that Familiarity must be abandoned in favor of a characterization of definiteness in terms of a presupposition of maximality imposed by the definite determiner on the denotation of its complement nominal. Ideally, the effects of definiteness—i.e. all the interpretive phenomena that were accounted for in terms of the Extended Familiarity Condition—should follow from these local presuppositional requirements imposed by the definite determiner. This is certainly the case for the interpretive facts discussed by Heim: the anaphoric

interpretation of definite DPs can be shown to follow from the uniqueness requirement. Unfortunately, however, it is less obvious that the interpretive properties of the relational variable embedded in definite possessives follow from the presuppositional semantics of the definite determiner. For the purpose of this section I settle for a hybrid system, in which some of the provisions of the Extended Familiarity Condition are stipulated.[16] The revised system is summarized in informal terms in §5.2.3 and formalized in §5.3.

5.2.1 Generalized Novelty

Both the empirical and theoretical problems with the definition of the Novelty Condition proposed in (146b) can be addressed by arguing that Novelty is not imposed on variables associated with a [−definite] DP but is an interpretive property that characterizes free variables in general. If the Novelty Condition applies to free variables in general it is not surprising that this condition holds of the free relational variable in predicate possessives even if these are not full DPs. And no violation of the principle of strict compositionality of semantic interpretation arises for the case of indefinite possessives either: the Novelty Condition is a requirement imposed on the semantics of free variables that is completely independent of whether these variables appear within a [−definite] DP.

The proposed generalization of the Novelty Condition is stated in (148):

(148)   *The Generalized Novelty Condition*
Let F be a file, ϕ an atomic proposition. Then ϕ is appropriate with respect to F iff for every free variable $\langle i, \tau \rangle$ that ϕ contains, $\langle i, \tau \rangle \notin Dom(F)$.

According to the provisions of the Generalized Novelty Condition in general

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[16]See §5.4 for some discussion of how this stipulation might be reduced to the interpretive restrictions imposed by the semantics of the definite determiner on the denotation of its nominal complement.

free variables are not identified with entities—actually, discourse referents—that are already introduced in the preceding discourse. Notice that—by recasting Heim's Novelty Condition as a general property of free variables—we introduce a sharp asymmetry in the theory proposed by Heim, where Familiarity and Novelty have the status of "symmetrical" interpretive principles, which depend on the [±definite] status of a DP. Even if Familiarity were retained as part of the theory (which is not the case, see below), the two conditions would diverge in that Familiarity remains a condition that accounts for the interpretation of free variables associated with a definite DP, whereas Generalized Novelty is a condition that—essentially—applies to all free variables to which Familiarity does not apply. In effect, Novelty becomes the "default" interpretive property that characterizes free variables.[17]

It should be quite clear that this proposal constitutes exactly the opposite of what was assumed to be the case in chapter 4 when discussing the appropriateness of a sentence containing free variables with respect to a context: in (80) it was required that a context should determine an assignment of value for all the free variables in an LF for this context to be appropriate.

(80) *Appropriateness condition*
      A context $\mathcal{C}$ is appropriate for an LF ϕ only if $\mathcal{C}$ determines a variable assignment $g_{\mathcal{C}}$ whose domain includes every index which has a free occurrence in ϕ.

This difference is due to fact that the definition of appropriateness in (80) was formulated keeping in mind referential pronouns. But we saw that not

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[17]For present purposes, Generalized Novelty can be assumed to be a categorical requirement that has the same formal status as Familiarity (or whatever principle derives the empirical facts that Familiarity was meant to account for), and its effects as a "default" can be accounted for by assuming that variables associated with a definite DP are not in the domain of application of Generalized Novelty. A further step is suggested in §5.4.1, where Generalized Novelty is reformulated as a "real" default interpretive procedure, which—so to speak—"gives way" if other principles impose different interpretive conditions on certain free variables.

all free variables seem to behave like referential pronouns: in particular, we saw that the free relational variable in possessive constructions seems to allow for the possibility of denoting a contextually salient entity only under special circumstances. The current system takes the behavior of the free variable in possessives to be the normal behavior of free variables in discourse and suggests that the behavior of referential pronouns that inspired the condition in (80) constitutes a special case: the case of variables for which the special circumstances under which variables of all types can denote contextually salient entities are always satisfied.

Of course, what exactly these special circumstances are under which free variables are exempt from or constitute exceptions to Generalized Novelty still remains to be characterized properly. The empirical observation is that free variables associated with a [+definite] DP apparently constitute exceptions to Generalized Novelty. In the analysis proposed in §5.1 this was modeled in terms of the assumption that these variables are subject to the Familiarity Condition in (146a). This assumption could be maintained here, by stipulating that the Familiarity Condition applies as specified in (146a), and that the Generalized Novelty Condition in (148) represent the "else" case, holding of all free variables to which the Familiarity Condition does not apply. But I have already argued above that the Familiarity Condition formulated in (146a) is rather unappealing in theoretical terms because it violates the requirement that semantic interpretation be strictly compositional.

Furthermore, arguments have been presented in the literature to the effect that Heim's original Familiarity Condition (which does not present the same theoretical shortcoming) is empirically inadequate as a characterization of the semantics of definite DPs. Within the current system this means that Familiarity cannot account for the exceptions to Generalized Novelty that characterize the

interpretation of the variable corresponding to the referential index of definite DPs and referential pronouns in the first place, let alone for the case of the free relational variable in definite possessives. A different characterization of the peculiar interpretive properties of variables associated with definite DPs seems to require a different characterization of the semantics of definite DPs.

5.2.2 Amending Extended Familiarity (I)

Let me give an outline of the upcoming section, for the convenience of the reader. I propose to replace Heim's characterization of the semantics of definiteness in terms of Familiarity with the Fregean analysis of definite description that was already adopted in chapter 4. That is, I endorse in this thesis an analysis of definiteness in terms of uniqueness/maximality rather than the analysis in terms of Familiarity defended by Heim (1982, 1983a).

The adoption of the Fregean semantics has the immediate advantage that definite descriptions are *not* expected to be subject to the Generalized Novelty Condition in (148). According to Frege, definite DPs denote *constants* of type e, thus their denotation is not subject to a condition that applies to free variables. The interpretive properties of referential pronouns—discussed at the end of the section—are accounted for essentially along the same lines. Pronouns are *not* free variables of type e—which would make their denotation subject to Generalized Novelty—but must be treated as definite descriptions with a very weak descriptive content.

The Fregean semantics for definite descriptions not only explains why definite DPs are not subject to Generalized Novelty, it also provides a straightforward account for the anaphoric interpretation of definite DPs that was the empirical basis for Heim's original Familiarity Condition, too. The part of the Extended Familiarity Condition that corresponds to Heim's Familiarity Condition can thus

be eliminated from the theory. Still, part of the Extended Familiarity Condition must be maintained as a stipulation that exempts free variables embedded within a definite DP from the requirements of Generalized Novelty.

The semantics of definiteness

Various authors (Birner and Ward, 1994; Abbott, 1999, 2001, a.o.) have argued that Heim's original analysis of the semantics of definite descriptions in terms of Familiarity cannot be maintained. Indeed, it is not obvious that all uses of definite descriptions require the entity denoted by the DP to be familiar in the context of use: in many cases the validity of Heim's Familiarity Condition can be maintained only at the cost of straying considerably from the gist of the intuitive notion of familiarity that was originally proposed by Christophersen (1939). A second problem is that, if all uses of definite descriptions must comply with the requirements of the Familiarity Condition, it is necessary to assume that familiarity of the denotation of a definite DP can be *accommodated*—in the sense of Lewis (1979). But the range of empirical data—i.e. the range of cases in which definite descriptions can be used—seems to require resorting to a very powerful mechanism of accommodation, which renders the Familiarity Theory of definiteness almost vacuous: in principle, accommodation can be resorted to in order to account for any potential counterexample to the theory.[18]

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[18]Even under the assumption of some version of the Familiarity Condition, it can be argued that the semantics of the definite determiner is not exhausted by this condition and seems to impose a requirement of uniqueness on the predicate denoted by its nominal complement. Barker (2002) notices the contrast between the use of the hood vs. the hubcap in (i):

  i. I bought a truck. **The hood**/#**The hubcap** was scratched.

The felicitous use of the first DP is accounted for by Heim as a case of accommodation via bridging (Clark, 1977), but the same mechanism of accommodation via bridging is not sufficient to guarantee that the use of the second DP is felicitous because trucks typically have four hubcaps. Still, see (Szabó, 2000) for some arguments against the conclusion that uniqueness is part of the semantics of definite descriptions.

I thus propose to abandon Heim's original characterization of the semantics of definiteness in terms of Familiarity, and pursue the hypothesis that the Fregean semantics for the definite determiner that was adopted in the formal system presented in chapter 4 constitutes the appropriate characterization of the semantics of definiteness. According to the analysis of definite descriptions originally proposed by Frege (1893) the essence of definiteness is constituted by the presupposition imposed by the definite determiner that the predicate denoted by its nominal complement holds of one individual only.[19]

Some care must be taken in the formulation of the uniqueness requirement imposed by the semantics of the definite determiner. It is well-known that an absolute definition of uniqueness cannot be maintained for all the cases in which definite descriptions are used in discourse: most often definite DPs are used even when the predicate denoted by the nominal complement of the definite

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[19]The Fregean lexical entry for the definite determiner differs from the well-known alternative proposed by Russell (1905) in that for the latter the uniqueness requirement imposed by the definite determiner is part of the asserted—rather than the presupposed—content of a definite DP. See the difference between the two lexical entries in (i) and (ii) below. Since the publication of Strawson (1950) a long controversy has centered around the issue whether sentences containing DPs like the current king of France are false, as the Russellian analysis of the definite determiner would have it, or truth-valueless, as it is predicted by the Fregean analysis. Unfortunately, judgments about sentences of this sort are a little unwieldy: it seems quite clear that when this DP is used in subject/topic position the Fregean expectation that the sentence lacks a truth value is met, but at the same time it seems equally clear that the opposite Russellian prediction of falsity is substantiated in sentences where the DP is used in object position. Still quite a convincing argument can be made that the uniqueness requirement should be presuppositional and not assertional in nature. The argument originates with (Heim, 1991), and is presented in a very clear form in (Elbourne, 2002, pp. 122–126), to which I refer the reader.

i. $[\![\text{the}]\!] = \lambda f_{\langle et \rangle} : \exists! x\, f(x) = 1 \, . \, \iota x\, f(x) = 1$ (Frege)

ii. $[\![\text{the}]\!] = \lambda f_{\langle et \rangle} \, . \, [\lambda g_{\langle et \rangle} \, . \, \exists x (f(x) = 1 \,\&\, \forall y (f(y) = 1 \rightarrow y = x) \,\&\, g(x) = 1)]$ (Russell)

The two lexical entries for the definite determiner proposed by Frege and Russell are furthermore different in that under the Russellian analysis a definite DP denotes a quantifier—type $\langle et, t \rangle$—whereas under the Fregean analysis a definite DP denotes an individual. This difference is less substantial: an entry for the definite determiner could be defined so that the uniqueness requirement is treated as a presupposition as in Frege and definite DPs are treated as quantifiers as in Russell.

determiner does not hold only of a unique individual in the world, but of more than one individual.[20] It is not my intention to contribute anything substantial to the huge literature on the semantics of definite descriptions here. For present purposes, I adopt the "working approximation" proposed in (Barker, 2002), where definiteness is characterized in terms of a uniqueness requirement that is relativized to the discourse model, i.e. to the subset of the domain of entities that is relevant to the interpretation of the current (stretch of) discourse.[21]

(149)   *Discourse uniqueness*
        For productive[22] uses of the definite determiner, there must be at most one entity in the discourse model that satisfies the descriptive content of its nominal complement.

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[20]The problem of so-called *incomplete descriptions* has been tackled in two distinct ways in the literature. Some authors (Barwise and Perry, 1983; Westersthal, 1985; Neale, 1990; Stanley and Szabó, 2000, a.o.) have argued that in the case of incomplete descriptions the requirement of uniqueness is relativized to a domain smaller than the whole domain of individuals $\mathcal{D}$. Other authors—in particular Kadmon (1987, 1990, 2001)—have maintained the position that even in the case of incomplete descriptions uniqueness is absolute: incomplete descriptions are such only at the level of surface syntax, and accommodation of silent material at LF renders them uniquely denoting in an absolute sense.

[21]The discourse model that is relevant for the satisfaction of the uniqueness requirement must be allowed to be very "fluid" in order to account for examples like (i)—due to McCawley (1979)—where the plural DP the dogs in the second sentence clearly requires the existence of more than one dog in the discourse model, but still the use of the singular DP the dog in the third sentence seems to be perfectly felicitous.

i.   Yesterday the dog got into a fight with another dog. **The dogs** were snarling and snapping at each other for half an hour. I'll have to see it that **the dog** doesn't get near that dog again.

Examples of this sort indicate that some structure should be imposed on the discourse domain, such that only a subset of the entities introduced is—so to speak—in focus. Egli and von Heusinger (1995) propose on the basis of examples like (i) to do without uniqueness and account for the semantics of definites in terms of salience orderings on familiar entities. The first conclusion is probably on the right track—it reformulates the intuition of uniqueness of denotation in terms of the highest ranked object on a scale of salience—but the second conclusion—that the entities on which the salience ordering is imposed must be familiar—seems unwarranted in the light of examples discussed, among others, by Birner and Ward (1994).

[22]Barker allows for the possibility that discourse uniqueness does not hold of certain frozen expressions like the hospital or the light, where the use of the definite determiner could be accounted for in historical terms (tracing it back to when there was only one hospital in any given town, or only one light in each room)—see (Abbott, 1999, 2001) for discussion.

Definiteness vs. Generalized Novelty

Summarizing, I take the main semantic property that characterizes definite DPs to be the presupposition triggered by the definite determiner that the predicate denoted by the nominal complement of the determiner holds of a unique individual, where uniqueness must be understood in the relativized sense of the definition in (149). Now, can the interpretive facts that are accounted for in §5.1 by the Extended Familiarity Condition be accounted for in terms of uniqueness? Two classes of facts must be distinguished: the first is constituted by the interpretive properties of definite DPs that were the empirical basis for the formulation of the Familiarity Theory of definiteness; the second class of facts is constituted by the interpretive differences between definite and indefinite possessives that motivated the formulation of the Extended Familiarity/Novelty Condition in (146).

Let's consider the interpretation of non-possessive definite DPs first. In the system presented in §5.1 definite DPs—as in Heim's original system—are not subject to the requirements of the (Extended) Novelty Condition because this condition applies only to [−definite] DPs, the opposite (Extended) Familiarity Condition being imposed on [+definite] DPs. In the current system, however, the application of the Generalized Novelty Condition is not restricted to free variables related to [−definite] DPs, but applies to all free variables. Still, the adoption of the Fregean semantics for definite descriptions provides a straightforward explanation for their interpretive properties: definite descriptions are not expected to be subject to Generalized Novelty *and* are expected to be interpreted anaphorically in discourse, as I explain immediately below.

Definite DPs are not expected to be subject to Generalized Novelty: under the Fregean analysis definite DPs denote *constants* of type e and in general do not

contain free variables to which the requirements of Generalized Novelty apply. Thus definite DPs in general are not subject to Generalized Novelty and can denote familiar individuals. At the same time, the adoption of the Fregean semantics provides the basis for explaining the observation that a definite must be taken to denote a familiar individual that satisfies the descriptive content of the DP, when such an individual is salient in the context of use of the definite DP. This is argued below.

The uniqueness requirement imposed by the definite determiner is presuppositional in nature. Following the tradition originating with Karttunen (1974) and Stalnaker (1974, 1978) I take presuppositions to be pre-conditions on the felicitous utterance of a sentence. As already mentioned in chapter 4, presupposition triggers can be taken to denote partial functions, i.e. functions of type $\langle \tau, \sigma \rangle$ defined only for objects of type τ that satisfy the relevant presuppositions. Presuppositions triggered by expressions used in a sentence are normally inherited by the sentence as a whole, with the result that the sentence denotes a truth value only when used in contexts that entail that the conditions stated by the presupposed material hold.[23] This is stipulated in the following appropriateness condition:

(150) *Appropriateness condition for presuppositional LFs*
Let F be a file, ϕ an LF that triggers presupposition ψ. Then ϕ is appropriate with respect to F iff all assignments g in F are such that ψ is true relative to g.

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[23]Within a dynamic approach to meaning, presuppositions can be interpreted as restricting the domain for which the update function corresponding to a proposition is defined: $F + \phi$ is defined only if the material presupposed by ϕ is entailed by the information contained in F. For discussion of how this approach can account for the so-called problem of *presupposition projection* see (Heim, 1983b, a.o.). Kadmon (2001, part 2) provides an extensive comparison of this approach with the alternative approach to presupposition projection proposed by Gazdar (1979). A rather different conception of presupposition is defended by Abbott (2000), who claims that the Karttunen-Stalnaker view adopted here is not empirically correct.

A moment's reflection is sufficient to realize that the theory will have to allow for the possibility that the uniqueness presupposition triggered by the definite determiner be accommodated in some cases.[24] However, it is clear that most often the uniqueness presupposition triggered by a definite determiner is taken to be satisfied by a contextually salient entity that the definite DP is interpreted as anaphoric to. This is in effect the basic observation that underlies the formulation of the Familiarity Theory of definiteness. Let's thus consider briefly how the anaphoric use of definite DPs in discourse follows from the uniqueness presupposition triggered by the definite determiner.

In (151a) the uniqueness presupposition triggered by the dog in the second sentence is taken to be satisfied by the entity introduced by a dog in the first sentence. Why this should be the case when the uniqueness presupposition triggered by a singular definite description is involved is quite obvious: satisfaction of the presupposition that the description dog holds of a unique entity requires that the dog be taken to denote the entity introduced in the first sentence because it is already known that this entity satisfies the description.

(151)   a.   A dog came in the room. [. . .] **The dog** sat down in a corner.

  b.   Two dogs came in the room. [. . .] **The dogs** sat down in a corner.

  c.   Two dogs came in the room. Later another two dogs came in the room. [. . .] At a certain point **(all) the dogs** started barking.

The case of plural definite descriptions is a little less straightforward. If only examples like (151b) are considered it seems possible to maintain the same analysis proposed for the case of singular definite descriptions: the indefinite DP two dogs in the first sentence introduces a plural entity that satisfies the

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[24]E.g. for a sentence like If you're going into the bedroom, would you mind bringing back **the big bag of potato chips that I left on the bed**? to be uttered felicitously it is not necessary that the hearer is already aware of the fact that there is a unique big bag of potato chips on the bed.

description dogs, and the uniqueness presupposition triggered by the definite determiner in the dogs requires that the latter DP be taken to denote the plural individual introduced in the first sentence. But for the case of plurals it does not seem correct to take the presupposition triggered by the definite determiner to impose *uniqueness* of a plural entity that satisfies the descriptive content of the definite DP. Indeed, the use of the dogs is felicitous in examples like (151c), where two distinct groups of dogs are introduced in the discourse that precedes the sentence containing the definite DP. In this case the definite DP is taken to denote the plural individual corresponding to the sum of the two groups of dogs introduced in the preceding discourse, which constitutes the *maximal* individual available in the context that satisfies the description dogs.[25]

Of course, this should not come as a surprise: it was already argued in chapter 4 (see the "Some extensions" section in the Appendix) that a uniform semantics for the definite determiner should not be given in terms of uniqueness but in terms of a presupposition of maximality. Which means that rather than adopting the definition of discourse uniqueness in (149), it should be maintained that the presupposition triggered by the definite determiner consists of the requirement that the predicate denoted by the nominal it combines with holds of a maximal individual, where maximality is understood in the following relativized sense:

(152)   *Discourse maximality*
        For productive uses of the definite determiner, there must be a maximal entity in the discourse model that satisfies the descriptive content of its nominal complement.

Interestingly, however, when uniqueness is replaced by maximality the conclusion that this presupposition determines the anaphoric interpretation of

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[25]That the sum of two individuals is salient if the two individuals are salient in a context is a standard assumption.

definite DPs does not necessarily follow. Under the assumption of a uniqueness requirement the conclusion cannot be escaped that the presupposition triggered by the definite determiner must be satisfied by an entity that satisfies the descriptive content of its nominal complement, if such an entity is salient in the context. But the same cannot be said once uniqueness is traded for maximality: the maximality presupposition could be satisfied by accommodating the existence of a plural entity of which the contextually salient entity is just a proper part.[26] That the latter is not the case in natural language most likely follows from the assumption on the part of speakers that, if entities that satisfy a description are mentioned in the discourse, only those entities are relevant for the maximality presupposition triggered by a definite determiner to be satisfied: for the purpose of the ongoing discourse speakers treat entities that satisfy the description but are not mentioned as non-existent.

Given the latter assumption concerning the way in which speakers construct discourse models, the (revised) Fregean analysis according to which the definite determiner imposes a presupposition of maximality on the denotation of its complement nominal not only explains why definite descriptions in general are not subject to Generalized Novelty, but even predicts the anaphoric behavior that was modeled by Heim's original Familiarity Condition. Thus, as far as the interpretive properties of non-possessive definite DPs are concerned, (Extended) Familiarity

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[26]Let me emphasize one point. Accommodation is normally taken to be a last-resort procedure, but in my opinion this is *not* sufficient *by itself* to derive the prediction that a plural definite description is taken to be anaphoric to a plural individual introduced in the discourse that satisfies the descriptive content of the description. If speakers did not allow for the domain of quantification to be restricted to the set of entities already introduced in the discourse—see immediately below in the text—it would follow that plural definite descriptions would not be interpreted as anaphoric: accommodation would normally take place, even if the latter is conceived of as a last-resort procedure.

can be dispensed with in the theory.[27] But we still need to account for the different interpretation of the free relational variable in definite vs. indefinite possessives, which constitutes the empirical basis for the initial proposal of extending Heim's Familiarity/Novelty Condition to variables other than referential indices of DPs.

Within the system discussed in §5.1 free variables that are within a [+definite] DP would not be subject to Extended Novelty even if Extended Familiarity was dispensed with because the first condition applies only to variables within [−definite] DPs. But in a system in which—as proposed in this section— Extended Novelty is traded for Generalized Novelty, if Extended Familiarity is dispensed with and no additional provisions are made, free relational variables within definite possessives are expected to be subject to the requirements of Generalized Novelty as well, and the explanation for the interpretive contrast between definite and indefinite possessives is lost.

Ideally, that free variables in the nominal complement of a definite determiner are exempt from Generalized Novelty should follow from the Fregean semantics adopted for the definite determiner. In particular, if the interpretive properties of free variables embedded in the nominal complement of a definite determiner can be reduced to the maximality presupposition imposed by the definite determiner on the denotation of its nominal complement—a very local semantic relation holding between (the denotations of) two syntactic sister nodes—the theory becomes rather appealing in that it achieves the same empirical coverage as the analysis discussed in §5.1[28] without violating the requirement of strict

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[27]As the reader might have already noticed, something more must be said about the interpretation of referential pronouns. See below in the text for discussion of this issue.

[28]Actually, the empirical coverage of the revised proposal is—as already mentioned at the beginning—better than the one achieved by the analysis in terms of Extended Familiarity/Novelty in that the unavailability of free interpretations for Italian predicate possessives follows without the need of additional stipulations.

compositionality of semantic interpretation. But, as I mentioned already at the beginning of this section, deriving the interpretive properties of free variables embedded in the nominal complement of a definite determiner from the Fregean semantics for the definite determiner is not completely straightforward. I thus postpone a (rather speculative) discussion of these issues to §5.4.1, and for the time being I stipulate in (153) that the requirements of Generalized Novelty do not hold of free variables in the nominal complement of a definite determiner.[29]

(153) *The Stipulative Remnant*
       Free variables in the nominal complement of a definite determiner are not subject to Generalized Novelty.

Before providing a formal implementation of the revised analysis sketched in informal terms in this section, let me address briefly the issue of how the interpretive properties of referential pronouns can be accounted for within this analysis.

Why are referential pronouns "special"?

The basic assumption that underlies the analysis of the derivation of free interpretations pursued in this chapter is that the interpretive properties of the relational variable in possessive constructions are an instance of the general behavior of free variables: free variables are normally interpreted as denoting novel entities, and it is only under special circumstances that this interpretive restriction is offset. This is different from traditional analyses, which more or less explicitly assume that referential pronouns constitute the paradigm for free variables.

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[29]In effect, the need for the stipulation in (153) underscores the fact that the analysis proposed in this section does not really dispense with the theoretical problems due to the formulation of the Extended Familiarity Condition. The stipulation in (153) does constitute a violation of the principle of strict compositionality of semantic interpretation.

Within the current setting the question arises why the interpretive properties of referential pronouns never conform to the requirements of the Generalized Novelty Condition: arguably, referential pronouns not only can but must denote a contextually salient entity. As in the account sketched in §5.1, we would like to maintain the conclusion that pronouns are exempt from Generalized Novelty because they are definite DPs. However, implementing this intuition in the current system requires departing from the classic assumption that referential pronouns are free variables of type e: if referential pronouns denote free variables of type e it is not immediately obvious why these variables are not subject to the Generalized Novelty Condition.[30]

In a way parallel to the interpretation of definite descriptions, we must abandon the hypothesis that pronouns denote free variables, and suggest that referential pronouns, like definite descriptions in general, denote constants of type e. Referential pronouns are lexically specified as definite DPs with a very weak descriptive content corresponding to their gender and number specification. The latter can be taken to provide the predicate to which the maximality presupposition contributed by the definite specification of the pronoun applies: the lexical entry[31] for a pronoun like **she** would be something like

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[30]At least, that is, if the Generalized Novelty Condition is taken to be a categorical requirement imposed on free variables. If Generalized Novelty constitutes a *default* interpretive strategy, the analysis of referential pronouns as free variables can be maintained. See the discussion in §5.4.1.

[31]The semantics of pronouns should then be specified in the lexicon, and not via the Traces and Pronouns rule that is formulated—following Heim and Kratzer (1998)—in chapter 4.

'the unique atomic entity in the discourse domain that is female'.[32] Like all other definite descriptions, referential pronouns are not subject to Generalized Novelty, and their anaphoric interpretation in discourse follows from their maximality presupposition.

A somewhat different take on the interpretation of pronouns is proposed by Elbourne (2002), who—following a tradition dating back to the work of Postal (1966) in syntax and the work of Geach (1962) and Evans (1980) in semantics—maintains that (at least for the case of English) the lexical items that are normally called 'pronouns' are actually definite determiners, whose complement is a phonologically null NP. In the case of e-type pronouns the NP complement of the determiner is a noun phrase that has undergone NP deletion (154a), in the case of bound and referential pronouns the null NP complement of the determiner is an index $\langle i, \langle et \rangle \rangle$ (154b,c):

(154)   a.   Every man who owns a donkey beats [$_{\text{DP}}$it ~~donkey~~]

        b.   Every man thinks that [$_{\text{DP}}$he $\langle 2, \langle et \rangle \rangle$] is smart.

        c.   John arrived late. [$_{\text{DP}}$He $\langle 2, \langle et \rangle \rangle$] seemed quite tired.

Within Elbourne's analysis the maximality presupposition that characterizes pronouns can be treated on a par with the presupposition imposed by the

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[32]One problem for a complete assimilation of referential pronouns and definite descriptions is that—as pointed out by Barker (2002)—pronouns do not seem to satisfy maximality in the sense of the definition in (152): for example, the feminine pronoun she can be felicitously used in a room full of women, all of whom satisfy the descriptive content of the pronoun. I do not want to draw from this observation Barker's conclusion that discourse maximality does not apply to pronouns: I think that the apparent problem with uniqueness in this case points towards the need of imposing some sort of structure on the discourse model that was already pointed out in footnote 21. I will assume that an appropriate definition of the structure of the discourse model can solve the problem pointed out by Barker. A further difference between referential pronouns and definite descriptions is that referential pronouns seem to *require* an antecedent in the discourse, whereas this does not seem to be the case for definite descriptions. Quite likely this can be accounted for in terms of the weakness of the descriptive content of referential pronouns, which makes it hard(er) for the uniqueness presupposition imposed by their definite specification to be accommodated.

definite determiner: pronouns are essentially definite determiners with added presuppositional restrictions due to their gender and number specification. Even within this alternative analysis of pronouns their interpretive properties are not surprising. Within Elbourne's proposal referential pronouns are not free variables of type e, but still contain a free variable of type $\langle et \rangle$. This variable, however, like other variables in the nominal complement of a definite determiner, is exempt from the Generalized Novelty condition by the stipulation in (153).

Either reformulation of the semantics of referential pronouns provides a way to model the basic intuition—already contained in the analysis developed in §5.1—that the interpretive properties of referential pronouns are *not* paradigmatic of the interpretation of free variables in natural language. Free variables are normally subject to the (Generalized) Novelty Condition, and only under special circumstances are they exempt from it. At best, if the meaning of pronouns is to be defined in terms of free variables, these are variables for which these special circumstances are always satisfied. For concreteness, let me adopt the first suggestion within the "official" theory: pronouns are to be treated as definite DPs with a very weak descriptive content, which denote constants of type e.

5.2.3 Local summary: What the revised account looks like

Let me then summarize the gist of the revisions proposed in this section. To obviate one violation of the requirement that semantic interpretation be strictly compositional, I proposed in §5.2.1 that the (Extended) Novelty Condition in (146b) should be generalized and formulated as an interpretive condition that holds of free variables in general. The Generalized Novelty Condition—stated in (148)—requires that free variables of all semantic types be interpreted as novel. In §5.2.2 I argued that the (Extended) Familiarity Condition in (146a) should be abandoned not only because of the problems it raises with respect to strict

compositionality, but even because its precursor—Heim's Familiarity Condition—does not seem to correctly characterize the semantics of definite DPs in the first place. I proposed to follow the traditional Fregean view according to which definiteness should be characterized in terms of a maximality presupposition imposed by the definite determiner on its complement nominal.

The adoption of the Fregean semantics for definite descriptions allows for a very straightforward account for both their being exempt from Generalized Novelty and their anaphoric interpretation in discourse. The Fregean semantics for definite descriptions, however, does not immediately appear to be sufficient to derive all the effects that the Extended Familiarity Condition determines in the system proposed in §5.1; some of the provisions of the Extended Familiarity Condition—in particular the provisions concerning the interpretation of free variables in the nominal complement of a definite determiner—are still introduced by stipulation in the current system. An unwelcome feature of this stipulation is that—like the (Extended) Familiarity Condition in (146a) that it is meant to replace—it still constitutes a violation of the requirement of strict compositionality of semantic interpretation.

The account for the derivation of free interpretations for possessive constructions that is under consideration in this section is quite different from the analysis proposed in §5.1 in one important (conceptual) respect. The analysis in §5.1 treats the interpretive difference between definite and indefinite possessives as essentially "symmetrical": the interpretive contrast between the two types of DP is as much due to the semantics of definiteness as it is due to the semantics of indefiniteness. This, of course, is a consequence of the adoption of Heim's theory of (in)definiteness, where Familiarity and Novelty are two sides of the same coin. In the current analysis the contrast between definite and indefinite possessives is treated as a more "asymmetrical" phenomenon: Heim's Novelty is taken not to

depend on indefiniteness, but to be a general property of free variables; on the other hand, the effects of Heim's Familiarity are taken to depend on the semantics of definiteness.[33]

In other respects the account proposed in this section for the derivation of free interpretations does not really differ from the account proposed in §5.1: free interpretations are still taken to involve a direct contribution of contextual information to the semantics of the possessive construction, and the interpretive contrasts holding between definite (or partitive) possessives and indefinite possessives in Italian are due to the fact that the relational variable embedded within a definite DP can denote a contextually salient relation like ATTACK in (11), whereas the relational variable embedded within an indefinite DP cannot denote contextually salient relations because of the requirements of Generalized Novelty. And, as before, the interpretive peculiarities of referential pronouns vs. free variables in general are due to the intrinsic definiteness of the former.

On the empirical side, it should already be obvious that the revised account proposed in this section extends the empirical coverage of the analysis to the case of Italian predicate possessives: this class of possessive constructions was problematic for the account proposed in §5.1 in that predicate possessives seem to be constructions in which the Novelty Condition holds of a relational variable that is not embedded within a [−definite] DP. This state of affairs is not problematic once it is assumed that Generalized Novelty holds of free variables independently of whether they are embedded within a [−definite] DP.

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[33]If the stipulative remnant in the current analysis can be reduced in some way to the semantics of definiteness, we can carry the intuition that lies behind the revisions proposed in this section to its logical consequences: Heim's Novelty is a *default* interpretive strategy that applies to free variables, and other interpretive considerations—the requirements imposed by the semantics of definiteness—can essentially override this default interpretive strategy, and thus exempt free variables from Generalized Novelty. See the discussion in §5.4.1.

Of course, the sceptical reader might have qualms concerning the "hybrid" status of the current system, in which the effects of the Extended Familiarity Condition are in part—the part corresponding to Heim's original Familiarity Condition for definite descriptions—reduced to the Fregean semantics for definiteness in terms of a maximality presupposition, but in part are still obtained by a stipulation that does not abide to the requirements of strict compositionality of semantic interpretation. The reader might wonder whether the attempt at amending one outstanding problem with the analysis proposed in chapter 4 (§4.3.3) has led us to an overall less satisfactory theory. I return to these issues at the end of §5.3.

5.3 The derivation of free interpretations

5.3.1 The formal system

A proper formal implementation of the ideas suggested in the previous sections would require a rather extensive revision of the system of formal interpretation adopted in chapter 4. In particular, the formal system should be reformulated within a dynamic setting, where the meaning of a sentence is defined in terms of update conditions, rather than truth conditions. For the purpose of this thesis, however, we can settle for a compromise, dropping most of the dynamics from the system.

Concretely, I want to maintain the conception of context proposed by Heim, where a context of utterance is a file, essentially a set of partial assignment functions. But I depart from the dynamic setting within which this notion was formulated in one respect: rather than providing a recursive definition of how the utterance of an LF updates the context of utterance, I propose to consider only whether an LF is true or false with respect to a given context. That is, I restrict

my attention to what the truth-conditional interpretation of an utterance in a context is, leaving aside the effects that the interpretation of the utterance has in setting up a new context for subsequent utterances.[34]

Truth of an LF ϕ with respect to a file F is defined as follows:

(155)   *Truth of an LF with respect to a file*
   Let F be a file, ϕ an LF. Then if ϕ is appropriate with respect to F, ϕ is true with respect to F if at least one assignment g in F can be extended to $g_{+\phi}$ such that $[\![\phi]\!]^{g+\phi} = 1$, ϕ is false with respect to F otherwise.

For an LF ϕ to be appropriate with respect to a file F, the presuppositions triggered by the LF must be satisfied in the file, a condition that was already stated in (150):

(150)   *Appropriateness condition for presuppositional LFs*
   Let F be a file, ϕ an LF that triggers presupposition ψ. Then ϕ is appropriate with respect to F iff all assignments g in F are such that ψ is true relative to F.

Free variables are subject to the provisions of the Generalized Novelty Condition (148), with the exception of variables in the nominal complement of a definite determiner (153):

(148)   *The Generalized Novelty Condition*
   Let F be a file, ϕ an atomic proposition. Then ϕ is appropriate with respect to F iff for every free variable $\langle i, \tau \rangle$ that ϕ contains, $\langle i, \tau \rangle \notin Dom(F)$.

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[34]Of course, the system proposed in this section does not even attempt to model the inter-sentential dynamics of interpretation that are resorted to in File Change Semantics to account for the interpretation of donkey sentences. The treatment of quantification is completely static, as in classic Montague Grammar, and all sentences are treated as if they denote an atomic proposition (the LFs used in the derivations to follow in the text do not involve any of the construction rules that are used in Heim's system). This, by the way, means that the formal system proposed in this section does not really derive the locality restrictions on the licensing of free interpretations—i.e. exempting a variable from the Generalized Novelty Condition—discussed at the end of §5.1, which depend on interpreting an indefinite DP embedded within a definite DP before the embedding DP is interpreted. I will nevertheless assume that this result can be obtained in a proper dynamic implementation of the ideas discussed in this section.

(153) *The Stipulative Remnant*
Free variables in the nominal complement of a definite determiner are not subject to Generalized Novelty.

Remember that the Generalized Novelty Condition (like Heim's Novelty Condition) essentially imposes restrictions on indexing: except for those cases covered by the special provisions made in (153), free variables are assigned a novel index, from which their being interpreted as distinct from contextually salient entities follows. Of course, such a restriction does not apply to variables in the nominal complement of a definite determiner: this—in particular—obtains the result that the free relational variable in definite possessives can be coindexed with a familiar discourse referent, which derives its being identified with the contextually salient entity denoted by that discourse referent.

A welcome feature of the analysis proposed in this chapter is that—differently from both accounts proposed in chapter 4—it does not require formulating some ad-hoc semantics for definite or indefinite determiners. The definite determiner is analyzed in terms of the Fregean lexical entry which was used in the first account proposed in chapter 4 (§4.2) and in the derivation of control interpretations in the second account proposed in chapter 4 (§4.3.2). And the Russellian quantificational analysis already adopted in chapter 4 is maintained for indefinite determiners like alcuni 'some'.[35] The Fregean lexical entry for the Italian determiner i, and the Russellian entry for the Italian determiner alcuni are repeated in (78) below:

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[35]Thus, an asymmetry is postulated between definite DPs—which denote entities of type e— and indefinite DPs—which denote entities of type $\langle et, t \rangle$. This asymmetry could be eliminated by analyzing indefinite DPs in terms of *choice functions* (Egli and von Heusinger, 1995; Reinhart, 1997; Winter, 1997; Kratzer, 1998; Matthewson, 1999; von Stechow, 2000; Peregrin and von Heusinger, 2002, a.o.). In order not to introduce unnecessary additional complexities, I choose to maintain the Russellian analysis that treats indefinites as (non-presuppositional) quantifiers.

(78)   *Determiners* (standard)

$$[\![\text{i}]\!] \quad = \lambda f_{\langle et \rangle} : \exists! x f(x) = 1 \ . \ \iota x f(x) = 1$$
$$[\![\text{alcuni}]\!] = \lambda f_{\langle et \rangle} \ . \ [\lambda h_{\langle et \rangle} \ . \ \exists x \text{ such that } f(x) = 1 \ \& \ h(x) = 1]$$

Finally, I import wholesale the account proposed in chapter 4 (§4.3.2) for the derivation of control interpretations. That is, I maintain the hypothesis in (85) that the head of the PP within which the possessor is licensed is lexically ambiguous, its denotation being either a constant—the relation CONTROL—or a variable:

(85)   *Hypothesis 2*
The head of the "possessive" PP predicate is lexically ambiguous:

  a.   it can denote a variable of type $\langle e, et \rangle$, or

  b.   it can denote a constant of type $\langle e, et \rangle$, the relation CONTROL.

The lexical entry for the constant meaning of di is repeated below. The variable meaning of di is introduced by the Traces and Pronouns rule, as was the case already in chapter 4 (§4.3.3).

(86) $[\![\text{di}]\!] = \lambda u_e \ . \ [\lambda v_e \ . \ u \text{ and } v \text{ stand in the CONTROL relation}]$

5.3.2   Some derivations

To provide an example of how the current formal system accounts for the basic pattern of data discussed in chapter 2—i.e. the idealized picture in (28)—let's consider the derivation of the Italian sentences in (156).[36] Throughout I assume that the context-setting sentence makes the ATTACK relation salient, i.e. that the file $F_{(156)}$ with respect to which the follow-up sentences are interpreted contains a discourse referent $i, \langle e, et \rangle$ corresponding to the ATTACK relation.

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[36]Of course, the data in (156) exemplify only one half of the pattern of data summarized in (28), the other half being the availability of control interpretations with all types of possessives. I do not explicitly discuss control interpretations here: the relevant semantic derivations are already spelled out in §4.3.2, which I refer the reader to for a refresher.

(156) Ieri   Gianni e   Paolo sono stati attaccati da due gruppi
yesterday Gianni and Paolo were   attacked by two groups
(distinti)   di cani;
(different) of dogs

    a.   ... sfortunatamente **i**   **cani di Gianni** avevano la   rabbia.
             unfortunately   the dogs of Gianni had   the rabies

    b.   ... sfortunatamente **alcuni dei**   **cani di Gianni** avevano la
             unfortunately   some of the dogs of Gianni had   the
    rabbia.
    rabies

    c. #... sfortunatamente **alcuni cani di Gianni** avevano la   rabbia.
            unfortunately   some dogs of Gianni had   the rabies

    d. #... questi cani sono **di Gianni**.
            these dogs are   of Gianni

    e.   ... questi cani sono quelli **di Gianni**.
            these dogs are   those of Gianni

I address first the cases of possessive DPs in (156a–c). To save some space, let's retrieve the interpretation for the possessive construction cani di$_{j,\langle e,et\rangle}$ Gianni derived in (76).

(76)   ⟦cani di$_{j,\langle e,et\rangle}$ Gianni⟧^{g} =

  1. $= \lambda v_e$. ⟦cani⟧$^g(v) = 1$ & ⟦di$_{j,\langle e,et\rangle}$ Gianni⟧$^g(v) = 1$ PM

  2. $= \lambda v_e$. ⟦cani⟧$^g(v) = 1$ & [[⟦di$_{j,\langle e,et\rangle}$⟧^{g} (⟦Gianni⟧^{g})]$(v) = 1$ FA

  3. $= \lambda v_e$. ⟦cani⟧$^g(v) = 1$ & [[$g(j, \langle e, et\rangle)$] (⟦Gianni⟧^{g})]$(v) = 1$ TP

  4. $= \lambda v_e$. [$\lambda u_{e''}$. u is a group of dogs]$(v) = 1$ & [[$g(j, \langle e, et\rangle)$] (Gianni)]$(v) = 1$ LT (twice)

  5. $=$ the function from plural individuals in $\mathcal{D}$ to $\{0,1\}$ that assigns the value 1 to those individuals that are groups of dogs and stand in the $g(j, \langle e, et\rangle)$ relation to Gianni βC

Now, the interpretation of the sentence in (156a) is calculated as shown in (158) on the basis of the LF in (157):[37]

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[37]As in chapter 4, I omit the adverb sfortunatamente in the semantic derivations. And please remember that I take $\exists! x\, f(x)$ to be a shorthand for $\exists x[f(x) \land \forall y[f(y) \to y \leq_i x]]$.

(157) i   cani di Gianni avevano la   rabbia
       the dogs of Gianni had   the rabies
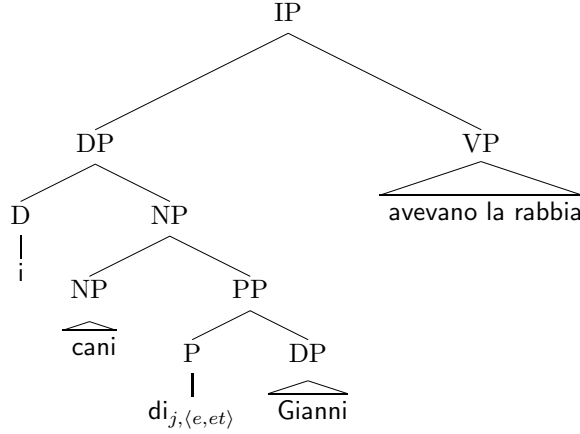
(158)   ⟦i cani di$_{j,\langle e,et\rangle}$ Gianni avevano la rabbia⟧^{g} =

1. = ⟦avevano la rabbia⟧^{g} (⟦i cani di$_{j,\langle e,et\rangle}$ Gianni⟧^{g})   FA

2. = ⟦avevano la rabbia⟧^{g} (⟦i⟧^{g} (⟦cani di$_{j,\langle e,et\rangle}$ Gianni⟧^{g}))   FA

3. = $[\lambda u_e \ . \ \forall v \in \text{ATOM}$ such that $v \leq_i u$, v had rabies$]$ $([\lambda f_{\langle et\rangle} : \exists!x f(x) = 1 \ . \ \iota x f(x) = 1]$ (⟦cani di$_{j,\langle e,et\rangle}$ Gianni⟧^{g}))   LT (twice)

4. = $[\lambda u_e \ . \ \forall v \in \text{ATOM}$ such that $v \leq_i u$, v had rabies$]$ $([\lambda f_{\langle et\rangle} : \exists!x f(x) = 1 \ . \ \iota x f(x) = 1]$ $(\lambda v_{e''} \ . \ v$ is a group of dogs & $[[g(j,\langle e,et\rangle)]$ (Gianni)$](v) = 1))$ (76)

5. = $\{\exists!x\, [\lambda v_{e''} \ . \ v$ is a group of dogs & $[[g(j,\langle e,et\rangle)]$ (Gianni)$](v) = 1](x) = 1\}$; $[\lambda u_e \ . \ \forall v \in \text{ATOM}$ such that $v \leq_i u$, v had rabies$]$ $(\iota x\, [\lambda v_{e''} \ . \ v$ is a group of dogs & $[[g(j,\langle e,et\rangle)]$ (Gianni)$](v) = 1](x) = 1)$ βC

6. = $\{\exists!x\, x$ is a group of dogs & $[[g(j,\langle e,et\rangle)]$ (Gianni)$](x) = 1\}$; $[\lambda u_e \ . \ \forall v \in \text{ATOM}$ such that $v \leq_i u$, v had rabies$]$ $(\iota x\, x$ is a group of dogs & $[[g(j,\langle e,et\rangle)]$ (Gianni)$](x) = 1)$ βC (twice)

7. = undefined if there is not a maximal individual in the discourse model that is a group of dogs and stands in the $g(j,\langle e,et\rangle)$ relation to Gianni, if defined: 1 if each atomic individual in this maximal group of dogs had rabies, 0 otherwise βC

The interpretation derived for (156a) is dependent on the choice of an assignment: the truth conditions determined by (156a) depend on the value that is assigned to the variable $j, \langle et, e\rangle$. Given the stipulation in (153) the

variable $j, \langle et, e \rangle$ is not subject to Generalized Novelty, so in principle it can be taken to be either novel or familiar—i.e. either $j, \langle e, et \rangle \notin Dom(F_{(156)})$ or $j, \langle e, et \rangle \in Dom(F_{(156)})$. The definition of truth with respect to a file requires that the LF (157) be appropriate with respect to the file $F_{(156)}$, which means that its presuppositions must be satisfied in the file $F_{(156)}$ (150). Now, the value assigned to $j, \langle et, e \rangle$ is relevant to determining the predicate of which the maximality presupposition triggered by the definite determiner holds. In particular, if the variable $j, \langle et, e \rangle$ is taken to denote the contextually salient relation ATTACK— i.e. if $j, \langle et, t \rangle = i, \langle et, t \rangle$—the maximality presupposition triggered by the definite determiner is satisfied in $F_{(156)}$: in the discourse model there is a maximal group of dogs that attacked Gianni. In the context set up in (156), then, the definite possessive i cani di Gianni can express the relation ATTACK.[38]

The same kind of reasoning can account for the interpretation of the sentence in (156b) that contains a partitive possessive DP. Even without detailing the derivation of this sentence, it should be clear that—under the assumption of a recursive DP structure for partitives along the lines of (97)—the possessive relation is established in the embedded definite DP. Thus the stipulation in (153) applies to the relational variable denoted by the head of the PP predicate in the possessive construction. And, as in the case of definite possessives, the definite determiner in the embedded DP triggers a maximality presupposition on the predicate denoted by the possessive construction in (76)—i.e. the same predicate on which maximality is imposed in the case of definite possessives—and this presupposition is inherited by the whole sentence in (156b). It is thus expected

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[38]Notice that we seem to derive not only the prediction that the free relational variable in a definite possessive *can* be coindexed with a discourse referent that was already introduced in the file, but probably even the stronger prediction that it *should* be coindexed with such a discourse referent. For present purposes the former weaker prediction is sufficient to derive the interpretive contrast between definite (and partitive) possessives and other types of possessive constructions. I discuss the stronger prediction again in §5.4.1.

that the interpretive properties of sentences containing partitive possessives are the same—for what concerns the interpretation of the relational variable in the possessive construction—as those of sentences containing definite possessives.

(97) b. alcuni dei   cani di Gianni
          some of the dogs of Gianni

     c. $[_{\text{DP}_1}$ alcuni $\emptyset_\text{N}$ de-$_{\text{part}}$ $[_{\text{DP}_2}$ i cani di Gianni]]

Let's consider now the crucial case of indefinite possessives. The interpretation of the sentence in (156c) is derived in (160) on the basis of the LF in (159):

(159) alcuni cani di Gianni avevano la rabbia
       some dogs of Gianni had   the rabies

(160)   ⟦alcuni cani di$_{j,\langle e,et\rangle}$ Gianni avevano la rabbia⟧^{g} =

   1. = ⟦alcuni cani di$_{j,\langle e,et\rangle}$ Gianni⟧^{g} (⟦avevano la rabbia⟧^{g})   FA

   2. = ⟦alcuni⟧^{g} (⟦cani di$_{j,\langle e,et\rangle}$ Gianni⟧^{g}) (⟦avevano la rabbia⟧^{g})   FA

   3. = $[\lambda f_{\langle et\rangle}$. $[\lambda h_{\langle et\rangle}$. $\exists x$ such that $f(x) = 1$ & $h(x) = 1]]$ (⟦cani di$_{j,\langle e,et\rangle}$ Gianni⟧^{g}) (λu_e . $\forall v \in$ ATOM such that $v \leq_i u$, v had rabies)
                                                              LT (twice)

   4. = $[\lambda f_{\langle et\rangle}$. $[\lambda h_{\langle et\rangle}$. $\exists x$ such that $f(x) = 1$ & $h(x) = 1]]$ ($\lambda v_{e''}$. v is a group of dogs & $[[g(j, \langle e, et\rangle)]$ (Gianni)]$(v) = 1$) (λu_e . $\forall v \in$ ATOM such that $v \leq_i u$, v had rabies)   (76)

   5. = $[\lambda h_{\langle et\rangle}$. $\exists x$ such that $[\lambda v_{e''}$. v is a group of dogs & $[[g(j, \langle e, et\rangle)]$ (Gianni)]$(v) = 1](x) = 1$ & $h(x) = 1]$ (λu_e . $\forall v \in$ ATOM such that $v \leq_i u$, v had rabies) βC

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6. $= [\lambda h_{\langle et\rangle}\ .\ \exists x$ such that x is a group of dogs & $[[g(j, \langle e, et\rangle)]\ (\text{Gianni})](x) =$
1 & $h(x) = 1]\ (\lambda u_e\ .\ \forall v \in \textsc{Atom}$ such that $v \leq_i u,\ v$ had rabies) βC

7. $= 1$ if there is a group of dogs in $\mathcal{D}$ that stands in the $g(j, \langle e, et\rangle)$
relation to Gianni and each atomic individual in this group of dogs
had rabies, 0 otherwise $\hspace{8cm} \beta C$

The interpretation derived for (156c) is again dependent on the choice of an assignment: the truth conditions for the LF in (159) depend on the value that is assigned to the free variable $j, \langle et, t\rangle$. The Generalized Novelty Condition in (148) requires that this variable be novel, i.e. that $j, \langle e, et\rangle \notin Dom(F_{(156)})$. This means that $j, \langle e, et\rangle \neq i, \langle e, et\rangle$, i.e. that the denotation of the relational variable in the possessive construction be distinct from the contextually salient relation ATTACK, which accounts for the awkwardness of (156c) in the context set up by the first sentence.

According to the definition of truth with respect to a file in (155), variables to which the Generalized Novelty Condition applies are interpreted as if they were existentially quantified. In (159) both $i, \langle et, e\rangle$ and $j, \langle e, et\rangle$ are subject to Generalized Novelty, which means that the interpretation derived in (160) can be paraphrased as "1 if there is a group of dogs of at least two/three atomic individuals that stands in some (novel) relation to Gianni and each atomic individual in this group had rabies, 0 otherwise". The interpretation of the indefinite DP is equivalent to the interpretation it receives under the classic (non-presuppositional) Russellian analysis, and the interpretation of the relational variable is exactly the same as the interpretation derived in the analysis in terms of the Extended Familiarity/Novelty Condition discussed in §5.1. As mentioned already in assessing that account, I take this interpretation to be either not well-formed or not accessible because of the concurrent availability of a more specific meaning for the sentence in (156c), the meaning derived on the basis of a LF where the head of the PP predicate denotes the constant relation CONTROL.

Getting to the cases of (156d,e) now, it should already be evident what the interpretive differences between these two examples reduce to. In (156d) the post-copular material is a predicate possessive: in this case the constituent encoding the possessive predication is *not* embedded by a determiner, let alone by a definite determiner. The relational variable denoted by the head of the PP predicate will thus be subject to the Generalized Novelty Condition, as in the case of indefinite possessives.

(161) Questi cani sono di Gianni.
these dogs are of Gianni
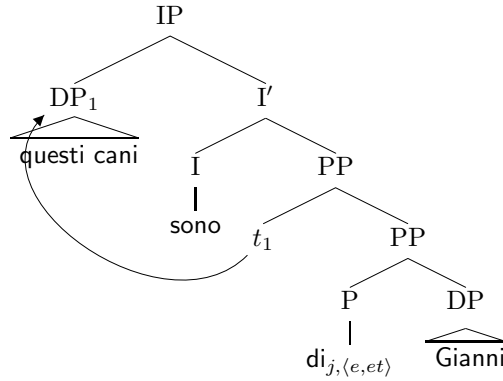
The interpretation of (156d) is derived as in (162). Below I repeat the lexical entry for the demonstrative questi from chapter 4 that is used in the derivation.[39]

(89) *Demonstratives*

$[\![\text{questi}]\!] = \lambda f_{\langle et \rangle} : \exists! x f(x) = 1 \ \& \ \rho(x) = 1 \ . \ \iota x f(x) = 1 \ \& \ \rho(x) = 1$

$[\![\text{quei}]\!] \ \ = \lambda f_{\langle et \rangle} : \exists! x f(x) = 1 \ \& \ \omega(x) = 1 \ . \ \iota x f(x) = 1 \ \& \ \omega(x) = 1$

(162) $[\![\text{questi cani sono di}_{j,\langle e,et \rangle} \ \text{Gianni}]\!]^g =$

$1. = [\![\text{questi cani di}_{j,\langle e,et \rangle} \ \text{Gianni}]\!]^g =$	vacuity of sono
$2. = [\![\text{di}_{j,\langle e,et \rangle} \ \text{Gianni}]\!]^g \ ([\![\text{questi cani}]\!]^g)$	FA
$3. = [\![\text{di}_{j,\langle e,et \rangle}]\!]^g \ ([\![\text{Gianni}]\!]^g) \ ([\![\text{questi}]\!]^g \ ([\![\text{cani}]\!]^g))$	FA (twice)

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[39]As in chapter 4, remember that I take the copula sono to be semantically vacuous, and I derive the interpretation of the whole sentence as if the subject has reconstructed to its post-copular base position.

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4. $= g(j, \langle e, et \rangle)$ ($[\![\mathsf{Gianni}]\!]^g$) ($[\![\mathsf{questi}]\!]^g$ ($[\![\mathsf{cani}]\!]^g$))   TP

5. $= g(j, \langle e, et \rangle)$ (Gianni) ($[\lambda f_{\langle et \rangle} : \exists! x f(x) = 1 \; \& \; \rho(x) = 1 \; . \; \iota x f(x) = 1$ $\& \; \rho(x) = 1]$ ($\lambda u_{e''} \, . \, u$ is a group of dogs))   LT (three times)

6. $= \{\exists! x \, [\lambda u_{e''} \, . \, u$ is a group of dogs$](x) = 1 \; \& \; \rho(x) = 1\}$; $g(j, \langle e, et \rangle)$ (Gianni) ($\iota x \, [\lambda u_{e''} \, . \, u$ is a group of dogs$](x) = 1 \; \& \; \rho(x) = 1]$) βC

7. $= \{\exists! x \; x$ is a group of dogs $\& \; \rho(x) = 1\}$; $g(j, \langle e, et \rangle)$ (Gianni) ($\iota x \; x$ is a group of dogs $\& \; \rho(x) = 1$) βC (twice)

8. $=$ undefined if there is not a maximal entity in the discourse model that is a group of dogs and is close to and pointed to by the speaker, if defined: 1 if this group of dogs stands in the $g(j, \langle e, et \rangle)$ relation to Gianni, 0 otherwise βC

In the interpretation derived for (156d) the variable $j, \langle e, et \rangle$ is—as in the case of indefinite possessives—subject to the Generalized Novelty Condition, which requires that $j, \langle e, et \rangle \notin Dom(F_{(156)})$. This accounts for the observation that (156d) cannot be used to express the contextually salient relation ATTACK.

The sentence in (156e) differs from the case of (156d) with respect to the nature of the post-copular material. The post-copular material in (156e) is a full definite DP, and it is within this definite DP that the possessive relation is established. As in the case of definite and partitive possessives, then, in sentences like (156e) the possessive construction is the complement of a definite determiner. And this obtains the result that the free relational variable is not subject to the Generalized Novelty Condition. The interpretation of (156e) is derived as in (164).[40]

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[40] Remember that I take quelli di Gianni to be an elliptical form for i cani di Gianni. This justifies the fifth step in the derivation, marked with the diacritic †.

(163)   Questi cani sono quelli di Gianni
        these   dogs are   those of Gianni
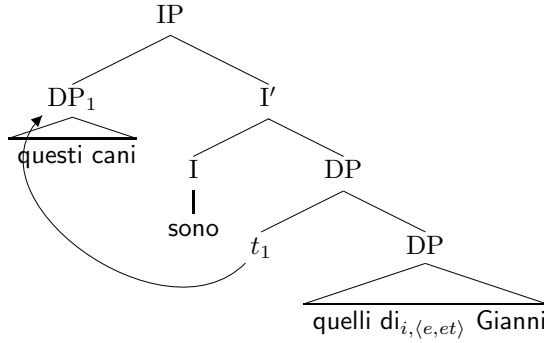
(164) $\llbracket$questi cani sono quelli di$_{i,\langle e,et\rangle}$ Gianni$\rrbracket^g =$

1. $=\llbracket$questi cani quelli di$_{i,\langle e,et\rangle}$ Gianni$\rrbracket^g =$ vacuity of **sono**

2. $=[\lambda u_e \,.\, u = \llbracket$quelli di$_{i,\langle e,et\rangle}$ Gianni$\rrbracket^g]$ ($\llbracket$questi cani$\rrbracket^g$)   IS

3. $=[\lambda u_e \,.\, u = \llbracket$quelli di$_{i,\langle e,et\rangle}$ Gianni$\rrbracket^g]$ ($\llbracket$questi$\rrbracket^g$ ($\llbracket$cani$\rrbracket^g$))   FA

4. $=[\lambda u_e \,.\, u = \llbracket$quelli di$_{i,\langle e,et\rangle}$ Gianni$\rrbracket^g]$ ($[\lambda f_{\langle et\rangle} : \exists!x f(x) = 1 \,\&\, \rho(x) = 1 \,.\, \iota x f(x) = 1 \,\&\, \rho(x) = 1]$ ($\lambda u_{e''} \,.\, u$ is a group of dogs))
   LT (two times)

5. $=\{\exists!x\, x$ is a group of dogs $\&$ $[[g(j,\langle e,et\rangle)]$ (Gianni)]$(x) = 1\}$; $[\lambda u_e \,.\, u = \iota x\, x$ is a group of dogs $\&$ $[[g(j,\langle e,et\rangle)]$ (Gianni)]$(x) = 1]$ $([\lambda f_{\langle et\rangle} : \exists!x f(x) = 1 \,\&\, \rho(x) = 1 \,.\, \iota x f(x) = 1 \,\&\, \rho(x) = 1]$ ($\lambda u_{e''} \,.\, u$ is a group of dogs))   †

6. $=\{\exists!x\, x$ is a group of dogs $\&$ $[[g(j,\langle e,et\rangle)]$ (Gianni)]$(x) = 1$ $\&$ $\exists!x\,[\lambda u_{e''} \,.\, u$ is a group of dogs]$(x) = 1 \,\&\, \rho(x) = 1\}$; $[\lambda u_e \,.\, u = \iota x\, x$ is a group of dogs $\&$ $[[g(j,\langle e,et\rangle)]$ (Gianni)]$(x) = 1]$ $(\iota x\,[\lambda u_{e''} \,.\, u$ is a group of dogs]$(x) = 1 \,\&\, \rho(x) = 1])$ βC (twice)

7. $=\{\exists!x\, x$ is a group of dogs $\&$ $[[g(j,\langle e,et\rangle)]$ (Gianni)]$(x) = 1$ $\&$ $\exists!x\, x$ is a group of dogs $\&$ $\rho(x) = 1\}$; $[\lambda u_e \,.\, u = \iota x\, x$ is a group of dogs $\&$ $[[g(j,\langle e,et\rangle)]$ (Gianni)]$(x) = 1]$ $(\iota x\, x$ is a group of dogs $\&$ $\rho(x) = 1)$ βC (twice)

8. $=$undefined if there are not both a maximal entity in the discourse domain that is a group of dogs and is close to and pointed to by the speaker and a maximal entity in the discourse domain that is a group of dogs that stands in the $g(j,\langle e,et\rangle)$ relation to Gianni, if defined: 1 if these two groups of dogs are the same, 0 otherwise βC

As in the case of (156a), in the interpretation derived for (156e) the variable $j, \langle e, et\rangle$ is exempt from Generalized Novelty as per (153), and as such can in

principle be interpreted either as novel or as familiar. And, as in (156a), the presupposition triggered by the definite determiner in the postcopular material is satisfied in $F_{(156)}$ if the variable $j, \langle et, t \rangle$ is identified with the relation ATTACK, i.e. if $j, \langle e, et \rangle = i, \langle e, et \rangle$, which accounts for the observation that the copular sentence in (156e) can express the ATTACK relation.

5.3.3 Assessing the revised account

At a first look, the analysis proposed in this chapter for the derivation of free interpretation of possessives does not differ much from the analysis proposed in chapter 4 (§4.3.3) in terms of its empirical coverage: both seem to get the basic facts right, accounting for the availability of free interpretations in definite and partitive possessives, and their unavailability in indefinite and predicate possessives.[41] Still, I would like to argue that the current analysis is more satisfactory than the one developed in chapter 4 in various respects.

The first conceptual advantage is the reason why the analysis proposed in this chapter was developed in the first place. Similarly to the analysis in terms of the Extended Familiarity/Novelty Condition (146) sketched in §5.1, the current analysis accounts for the derivation of free interpretations in terms of a direct contribution of the context of utterance to the determination of the relation expressed by a possessive construction. Free interpretations are determined through contextual specification of a value for the relational variable

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[41]The empirical coverage of the current proposal is more adequate than the one achieved by the analysis proposed in §5.1 in that the latter was only able to account for the different availability of free interpretation with definite vs. indefinite possessives. In addition, the current proposal does not present the theoretical shortcoming that characterized the analysis proposed in §5.1 due to the violation of the requirement of strict compositionality of semantic interpretation that is intrinsic to definition of the Extended Novelty Condition. (But the current analysis cannot claim to have entirely solved the problems with strict compositionality: the stipulation in (153) violates the requirement of strict compositionality of semantic interpretation as much as the Extended Familiarity Condition proposed in §5.1 does.)

denoted by the head of the PP predicate in the possessive possessive construction. The meaning of a sentence containing a possessive construction under a free interpretation is assignment-dependent: different instances of free interpretations involve the assignment of a different value to the relational variable, so that the meaning of the sentence in which the possessive construction appears is different in each case.

A second conceptual advantage of the analysis proposed in this chapter is that—in my opinion—the distribution of free interpretations is accounted for in a less stipulative way. In both accounts proposed in chapter 4 the different interpretive behavior of the relational variable in a possessive construction embedded by a definite vs. indefinite determiner was stipulated by defining an appropriate lexical entry for the indefinite determiner—in the analysis proposed in §4.2—or for the definite determiner—in the analysis proposed in §4.3.3. The current analysis, of course, does not do without some "new" assumptions—i.e. the Generalized Novelty Condition in (148) and the stipulation in (153)—but while it seems quite difficult to reduce the crude stipulations embedded in the semantics for determiners proposed in chapter 4 to known properties of either definite or indefinite DPs, the current assumptions seem to stand a better chance to be explained in terms of such properties.

So, what about the theoretical plausibility of the two assumptions that derive the distribution of free interpretations within the current analysis? Essentially, the current analysis can be seen as the convergence of the observation that the distribution of free interpretations in possessives seems to single out the class of definite DP as "special"—i.e. that only definite DPs allow for an embedded free variable to denote a contextually salient entity—and Heim's analysis of the interpretive constraints on the referential indices of DPs. If definites—and not indefinites—are special, it is plausible to assume that the interpretive properties

described by Heim for the referential index of indefinite DPs extend to all free variables, and that the special interpretive properties of variables associated with definite DPs depend on the semantics of definiteness. This is the gist of the Generalized Novelty Condition: free variables are in general interpreted as novel,[42] and exceptions to this requirement must be accounted for in terms of the semantics of definite DPs.

The current system tries to reduce the peculiarity of definite DPs to the semantic contribution of the definite determiner: the Fregean semantics for definite descriptions accounts both for why the denotation of definite DPs is not subject to Generalized Novelty—definites denote constants, not variables—and for the anaphoric interpretation of definites modeled by Heim's Familiarity Condition, which can be dispensed with. However, the stipulation in (153) must be added in order to account for the particular interpretive properties of variables embedded within the nominal complement of a definite determiner. Hopefully, this provision can be derived in terms of how the local presuppositional requirement imposed by the definite determiner on the denotation of its nominal complement is satisfied in discourse. Some speculations on how this result could follow are presented in §5.4.1, but—for the purpose of the "official" theory—I will leave it as a stipulation.[43]

Within the current analysis, the "special" status of variables associated with definite DPs provides an adequate characterization of the "special" interpretive properties of referential pronouns vs. other free variables. Pronouns are always

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[42]The hypothesis that Novelty characterizes all free variables that are not associated with a definite DP is already implicit in Heim's (1982) proposal that the referential index of the remnant of a quantificational DP is [−definite].

[43]As far as I can see, adding this stipulation does not lead to counterintuitive predictions for the well-studied case of the interpretation of variables associated with embedded indefinite DPs. See the discussion in footnote 44.

exempt from the provisions of the Generalized Novelty Condition because of their intrinsic definiteness. How does this compare to the assumption made in the analysis presented in chapter 4 (§4.3.3) that contexts of utterance do not determine assignments that range on entities of type $\langle e, et \rangle$? The assumption in chapter 4 accounted for the attested interpretive differences by treating referential pronouns and other free variables as formally alike, and locating the peculiar properties of relational variables in the structure imposed on the information stored in the progression of a discourse: this information was supposed to be structured in a way that can be accessed only through variables of type e, but not through variables of type $\langle e, et \rangle$. The hypothesis behind the current analysis, on the other hand, is that referential pronouns and variables in general are *not* formally alike: referential pronouns have exceptional semantic properties that distinguish them from other variables, properties either due to their not being variables at all, or to their being categories that are structurally more complex than simple variables of type e (see the discussion at the end of §5.2.2).

As in the case of the analysis presented in chapter 4, the plausibility of the current analysis would be undermined if the generality of the Generalized Novelty Condition cannot be maintained. A thorough justification of the Generalized Novelty Condition requires testing its predictions with respect to linguistic phenomena for which semantic analyses based on logical forms containing free variables have been proposed in the literature, which is a task that I can only lay out here for future research. Differently from the case of the analysis in chapter 4, however, the current analysis leaves the possibility open that pronoun-like expressions of type other than e exist that are exempt from the requirements of the Generalized Novelty Condition because they are lexically specified as [+definite]. For example, this could be the case in sentences like (165), where the expressions so and that could be taken to be pronoun-like categories of type $\langle et \rangle$

or $\langle e, et \rangle$, respectively.

(165) a.   John went running. Bill did **so** too.

   b.   John gave Mary a kiss. Bill did **that** to Sue.

Of course, these optimistic remarks do not guarantee that the enterprise is going to be by necessity successful. The current proposal for the derivation of free interpretations accounts for the observed differences between relational variables in possessives and referential pronouns in terms of a general hypothesis concerning the interpretation of free variables. This hypothesis makes testable predictions that go beyond the confines of the domain for which it was proposed, and suggests one interesting take on a topic—the interpretation of free variables—that has not been addressed explicitly in the literature beyond the well-studied case of referential pronouns. It is then an empirical issue whether these predictions are substantiated, an issue that (unfortunately) I have to leave for future research.

5.4   Some speculations

5.4.1   Amending Extended Familiarity (II)

Can the stipulation in (153) be reduced to the the Fregean semantics of the definite determiner? Differently from Heim's Familiarity—a requirement imposed on the denotation of the whole definite DP—the maximality presupposition constitutes a restriction imposed by the definite determiner on a constituent of the definite DP: the nominal constituent it combines with in the syntax. And the exceptions to the Generalized Novelty Condition that motivate the stipulation in (153) arise for variables that are within the nominal complement of a definite determiner. It thus seems appropriate to investigate the hypothesis that exceptions to Generalized Novelty can be accounted for in terms of the *local* presuppositional requirement imposed by the definite determiner on this

nominal constituent. This would not only allow for eliminating (153) from the theory, but even amend the violation of strict compositionality of semantic interpretation that is inherent to this stipulation: the definite determiner imposes semantic requirements only on its nominal complement, and the effects on the interpretation of free variables in this nominal constituent are indirect, due to the way in which these requirements are satisfied in discourse.

The line that I think could (and should) be pursued begins from one simple observation: the provisions of the Generalized Novelty Condition and the effects of the maximality presupposition imposed by the definite determiner are not compatible with each other. If a lexical item that denotes a variable of type e is at the same time specified as [+definite], this lexical item will be subject to contrasting requirements: like free variables in general it will be subject to Generalized Novelty, which requires its denotation to be novel, but being definite it is expected to display the opposite discourse anaphoric interpretation that was modeled by Heim in terms of the Familiarity Condition. Now, notice that this is exactly the situation that the traditional analysis of referential pronouns as definite free variables of type e would entail within a theory that adopts the Generalized Novelty Condition. This is why at the end of §5.2.2 it was argued that pronouns should *not* be treated as free variables of type e.

Still, referential pronouns could be treated as free variables of type e that are lexically specified as [+definite] if the contrasting requirements determined by the Generalized Novelty Condition and by the (Fregean) semantics of definiteness do not have the same formal status and one of the two can override the other. The empirical observation that referential pronouns display the discourse anaphoric interpretation required by the semantics of definiteness suggests that it is Generalized Novelty that gives way to the requirements imposed by the maximality presupposition triggered by the definite determiner. Generalized

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Novelty could be formulated as a *default* interpretive strategy that applies to free variables unless different interpretive requirements are imposed on those variables, as suggested in (166):

(166)   *The Generalized Novelty Condition* (as a default)
Let F be a file, ϕ an atomic proposition. Then ϕ is appropriate with respect to F iff for every free variable $\langle i, \tau \rangle$ that ϕ contains, $\langle i, \tau \rangle \notin Dom(F)$, if no other interpretive conditions demand otherwise.

This is entirely consistent with the basic intuition that lies behind the analysis proposed in the previous sections: the empirical properties that were modeled by Heim's Novelty Condition are not due to indefiniteness, but are the result of a default interpretive strategy that applies to free variables in general. And the special interpretive properties that characterize the variables of type e corresponding to referential pronouns are due to the semantics of definiteness.

Once Generalized Novelty is formulated as a default interpretive strategy, the semantics of definiteness could be "blamed" for the peculiar interpretive properties of free variables in the nominal complement of a definite determiner by reasoning along the following lines. We saw in the discussion of (158) that the value assigned to the relational variable in the definite possessive i cani di Gianni is relevant in determining the denotation of the predicate to which the maximality presupposition imposed by the definite determiner applies. And, in particular, that the presupposition triggered by the definite determiner in i cani di Gianni is satisfied in the file set up by the first sentence in (156) *if* the relational variable is taken to denote the contextually salient relation ATTACK. Now, if there is a preference for taking the maximality presupposition triggered by the definite determiner to be satisfied in the context of utterance rather than accommodated, this amounts to imposing a requirement on the relational variable in a definite possessive that is incompatible with Generalized Novelty, which—because of its default nature—gives way.

Of course, this constitutes a further step with respect to the case of referential pronouns discussed above. In the case of referential pronouns the predicate on which maximality is imposed is not defined in terms of free variables—the predicate denoted by the weak descriptive content of the pronoun is a constant—and satisfaction of the maximality presupposition requires the pronoun to denote a contextually salient entity of which this predicate holds. In the case of definite possessives the predicate on which the maximality requirement is imposed is defined in terms of a free relational variable—the predicate denoted by the nominal complement of the determiner is *not* a constant—but there is a contextually salient entity of which the predicate holds *for a given choice of indexing for the relational variable*, an indexing that identifies the relational variable with a contextually salient relation. Satisfaction of the maximality presupposition triggered by the definite determiner seems to require that the variable be assigned that contextually salient relation as a value.

Essentially, I am suggesting that the preference for interpreting definite DPs as anaphoric can require that free variables within the nominal complement of the definite determiner be identified with contextually salient entities. This violates the provisions of the Generalized Novelty Condition, but since the latter is defined as a default interpretive strategy it does not apply to these variables.[44] A proper justification of this suggestion requires a thorough analysis of the mechanics of presupposition satisfaction in discourse that I cannot attempt here, thus I refrain from adopting this suggestion in the "official" theory. But this suggestion potentially derives the non-local effects of definiteness stipulated in

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[44]Daniel Büring correctly points out that we do not want the above considerations to apply to variables corresponding to indefinite DPs embedded within a definite DP. For example, consider the utterance of (i) in a context where I already introduced the individuals John and Mary, and it is known that John is a student of mine and Mary is his wife:

i.   **The wife of a student of mine** might apply for a Ph.D. scholarship as well.

(153)—i.e. that free variables in the nominal complement of a definite determiner are exempt from Generalized Novelty—in terms of the local presuppositional requirement that constitutes the semantic contribution of the definite determiner under the Fregean analysis, thus amending the theoretical problems with the requirement of strict compositionality of semantic interpretation that still remain in the "official" analysis proposed in this chapter.

5.4.2 Is the proposal appropriately weak?

The analysis of the derivation of free interpretations proposed in this chapter— combined with the analysis for the derivation of control interpretation proposed in chapter 4 (§4.3.2)—seems to get the empirical generalizations summarized in

The DP the wife of a student of mine in (i) is not taken to denote the individual Mary in this case, which seems to be exactly the opposite of what one would expect if the provisions mentioned in the text applied to the free variable of type e corresponding to the indefinite DP a student of mine. But it was already pointed out in §5.1 above that within Heim's (1982; 1983a) system it must be assumed for recursive DP structures that the embedded DP is extracted and interpreted independently. The case of (i) then differs from the case of e.g. (156a): at LF the free relational variable in i cani di Gianni remains within the definite DP, but the individual variable corresponding to the index of the indefinite DP in the wife of a student of mine is not within the definite DP. (That the relational variable in i cani di Gianni cannot extract follows if QR is a syntactic operation that applies only to DPs.) Intuitively, the interpretation of (i) seems to require that the embedded indefinite DP be interpreted before the embedding definite DP is: Generalized Novelty applies to the referential index of the indefinite DP because no issue concerning the satisfaction of the maximality presupposition imposed by the definite determiner arises before the definite DP is interpreted, and when that issue arises the interpretation of the indefinite DP has already been determined. The details should be worked out, but—if what is proposed in the text is correct—the interpretation of examples like (i) constitutes a strong argument in favor of a dynamic approach to semantic interpretation along the lines originally proposed by Heim (1982, 1983a). The data in (i) lead to the conclusion that the interpretation of a recursive DP is not determined in one fell swoop, but requires determining the interpretation of the embedded DP first. This comes for free in Heim's dynamic semantics. A potential alternative—which I must admit I do not fully understand—is proposed in recent work in the Chomskian tradition (Chomsky, 2000, e.g.), where it is suggested that the mapping between the syntactic and the interpretive component is more "distributed" than it was previously assumed, various chunks of a syntactic structure (*phases*) being "shipped" (to the phonological and) to the interpretive component of the grammar independently of each other. Of course, it remains to be seen whether this work will lead to a coherent alternative to the straightforward explanation that Heim's dynamic semantics can give for the interpretive properties of sentences like (i).

the idealized picture in (28) right.[45]

(28)   *Empirical generalizations (the idealized picture)*
   a.   control interpretations are available across the board (with all types
         of possessive DPs and with predicate possessives)
   b.   free interpretations
         i.   are available with definite and partitive possessives
         ii.   are not available with indefinite possessives
         iii.   are not available with quantificational possessives
         iv.   are not available with predicate possessives

Still, for the analysis to be completely satisfactory it is important that it provide
a way to handle the more complex facts discussed in the appendix to chapter 2
and summarized in the revised empirical generalizations in (32):

(32)   *Revisions to the empirical generalizations*
   b.   free interpretations
         ii.   are marginally available with indefinite possessives, but
                —   indefinite possessives under free interpretations are (much)
                     worse than the corresponding partitive possessives
                —   some indefinite possessives seem to be worse than others
         iii.   are (marginally?) available with quantificational possessives,
                but
                —   quantificational possessives under free interpretations are
                     (possibly) still worse than the corresponding partitive
                     possessives

In particular, the analysis must be *appropriately* weak, allowing for the derivation
of free interpretations in the case of Italian indefinite possessives and quantifi-
cational possessives—possibly giving an explanation for the marginality of this

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[45]With the proviso that I have not explicitly addressed the case of quantificational possessives
in (28iii). Extending the formal system presented in the previous section—or better, a proper
reformulation of this system along the lines proposed by Heim (1982, 1983a)—to the case of
quantificational possessives is pretty straightforward, but I do not explicitly outline such an
extension in this thesis.

option—while still predicting the robust unavailability of free interpretations in the case of predicate possessives.

If the speculative suggestions made in the previous section can be maintained and the stipulation in (153) can be eliminated from the theory, it seems to me that the current analysis would *expect* that free interpretations are available with indefinite and quantificational possessives as well. Indeed—if those speculations are on the right track—the crucial feature that allows the relational variable in a possessive construction embedded by a definite determiner to be exempt from Generalized Novelty is the presupposition imposed by the definite determiner on the predicate denoted by the possessive construction itself, which translates into an interpretive requirement that overrides Generalized Novelty. And the case for a presuppositional analysis of other determiners has been made at various points in the literature: quantificational determiners like each, every, most, etc. have often been argued to impose a presupposition of existence on the predicate denoted by their complement nominal (McCawley, 1972; de Jong and Verkuyl, 1985, a.o.).[46]

This property could be resorted to in order to account for the availability of free interpretations in indefinite and quantificational possessives. In a way parallel to the case of the maximality presupposition triggered by the definite determiner, the existence presupposition triggered by determiners like ogni 'each' must be satisfied or accommodated for the truth conditions of a sentence containing a quantificational DP to be defined (150). If some individual satisfying the predicate is introduced in the previous discourse the presupposition can be satisfied in the context of utterance. And if satisfaction of the existence presupposition requires that a contextually salient entity must be assigned as a value for some variable in terms of which the predicate denoted by the nominal

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[46]But see the arguments made in (Lappin and Reinhart, 1988; Reinhart, 1995) against this hypothesis. A concise summary of the debate can be found in (Heim and Kratzer, 1998, ch.6).

complement of the quantificational determiner is defined, this variable will be exempt from the Generalized Novelty Condition.

In particular, if satisfaction of the existence presupposition imposed on the predicate denoted by a possessive construction embedded by ogni requires that the value of the relational variable be identified with a contextually salient entity, it is expected that free interpretations will be licensed by possessive DPs like ogni cane di Gianni 'each dog of Gianni'. And, if indefinite determiners can be interpreted as imposing an existence presupposition as well,[47] the availability of free interpretations with indefinite possessives is not a mystery anymore.

Still, I invite the reader not to take these speculations to be part of the "official" theory. Indeed, one issue that the above suggestions immediately raise is that the system is in danger of getting too weak and losing its predictive power: given a presuppositional analysis of quantificational determiners, the availability of free interpretations is *not* expected to be different in the case of quantificational vs. definite possessives. That is, at least for the case of possessive DPs like ogni cane di Gianni, it is expected that sentences containing these DPs should not be less felicitous than sentences containing definite or partitive possessives in contexts that make non-control relations salient. However it is not clear to me whether this prediction is substantiated: my personal judgment is that even in

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[47]The original suggestion that indefinites are ambiguous between two distinct interpretations is usually attributed to Milsark (1974). Within the framework of Generalized Quantifier Theory, indefinite determiners—*weak* determiners—have been distinguished from other *strong* quantificational determiners—see (Barwise and Cooper, 1981; Keenan and Stavi, 1986; Keenan, 1987, a.o.) for discussion of the formal properties that distinguish the classes of strong vs. weak determiners. Recently, authors like Diesing (1992) and Zamparelli (1995) have argued that the distinction between strong and weak determiners corresponds to structural differences in the LF of the clause containing DPs headed by the two types of determiners (Diesing) or within these DPs themselves (Zamparelli). These authors argue that the phenomena pointed out by Milsark should then be accounted for in terms of a *structural* ambiguity for indefinite DPs, whose surface form is compatible with the structure of both strong and weak DPs. A similar suggestion could be explored in the context of the current analysis in order to account for the marginal availability of free interpretations with indefinite possessives.

those contexts in which the strong distributivity of **ogni** is justified the use of **ogni cane di Gianni** to express a non-control relation is somewhat more marginal than the use of a plural definite DP in a less distributive context.

A second issue is that something more should be said to account for the marginality of free interpretations in examples containing indefinite possessives. If no further provisions are made, the assumption that indefinite DPs are ambiguous between a non-presuppositional interpretation and a presuppositional interpretation leads to the expectation that no real contrast should arise between definite and indefinite possessives: in both cases one of the interpretations available for the possessive DP licenses the derivation of free interpretations. The rather degraded status of indefinite possessives when used to express a contextually salient non-control relation like ATTACK seems to require the assumption that the non-presuppositional interpretation of indefinite DPs is generally preferred to the presuppositional interpretation: if this is the case the marginality of free interpretations with indefinite possessives would not be a mystery.[48]

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[48]Possibly, this is the place where pragmatic preferences play a role: partitive indefinite DPs are unambiguously presuppositional because of the maximality presupposition triggered by the embedded definite determiner, thus they are arguably ordered higher on a scale of "presuppositionality" with respect to non-partitive indefinite DPs. It can thus be suggested that the selection of the weaker element in the scale triggers the implicature that the properties that unambiguously characterize the stronger element—in particular the existence presupposition— are not taken to hold. This resorting to pragmatic preferences is similar to the suggestion made and rejected in the appendix to chapter 2 that the unavailability of free interpretations depends on the pragmatic preference for a non-discourse-linked reading of indefinites. But the current hypothesis differs from the one rejected in chapter 2 in that the dichotomy between discourse-linked and non-discourse-linked readings of indefinite DPs does not correspond to a difference in meaning for a definite DP—remember Condoravdi's (1997) argument—whereas in the current analysis two distinct meanings for an indefinite DP are being pragmatically ranked. In addition, developing an analysis based on a pragmatic preference for the non-quantificational interpretation of indefinite DPs could allow for the possibility that for different types of indefinite DPs the quantificational interpretation is more or less accessible. Remember the observation reported in (32b.ii) that speakers seem to allow for free interpretations to a different extent depending on the type of indefinite DP considered.

Some care thus must be taken in weakening the theory in order to account for the more complex pattern of data in (28)+(32), a task that I will leave for future research. Still, one positive aspect of the current analysis is that—as far as I can see—the theory remains strong enough to exclude free interpretations with predicate possessives even if it gets weakened in order to account for the marginal availability of these interpretations with indefinite and quantificational possessives. Differently from the first analysis entertained in chapter 4 (§4.2), the availability of free interpretations is in the current analysis a property of possessive DPs that depends on the semantics of the (definite) determiner that selects the possessive construction as a complement. Whatever provisions concerning the semantics of determiners are made in order to account for the availability of free interpretations with indefinite or quantificational possessives, the conclusion that free interpretations are not available for predicate possessives will not be affected: the relational variable in predicate possessives is necessarily subject to the Generalized Novelty Condition because it is not part of a predicate that is selected as a complement by a determiner.

5.5   Conclusion

In this chapter I proposed an account for the derivation of free interpretations that is meant to complement the account for the derivation of control interpretations proposed in chapter 4. The overall proposal is that the distinction between control and free interpretations corresponds to a basic semantic ambiguity: two distinct meanings are available for the possessive construction—and in particular for the head of the PP predicate within which the possessor is projected.

Under one meaning—the one underlying control interpretations—the semantics of the possessive relation is determined within the possessive construction:

the head of the PP predicate denotes the constant relation CONTROL. This accounts for the semantic restrictiveness of control interpretations: the variety of more specific control interpretations that are determined when this meaning is used in a given context are the consequence of pragmatic inferences on the part of the speaker. Speakers can *use* the possessive construction to express a stronger meaning, but only if this meaning is compatible with the actual semantics of the possessive construction, which is always the one determined by the CONTROL relation.

Under the alternative meaning—the one underlying free interpretations—the semantics of the possessive relation is *not* specified within the possessive construction: the head of the PP predicate denotes a free variable, whose value is provided directly by the context of use. The lack of actual restrictions on the semantics of the relation that can be expressed by possessives under free interpretations follows straightforwardly: given an appropriate context, a definite possessive DP can express all kinds of relations. This was argued in chapter 4.

The main concern of this chapter was accounting for the restricted distribution of free interpretations. It is suggested that the generalization that free interpretations are available only with definite possessives follows from the interaction of the semantics of definiteness and a general interpretive requirement—the Generalized Novelty Condition—that requires free variables to be interpreted as novel, i.e. not to be assigned contextually salient entities as values. The analysis builds on the parallelism between the interpretive properties of free variables embedded within definite vs. indefinite possessives and the more general interpretive properties of definite vs. indefinite DPs studied by Heim (1982, 1983a), but goes beyond Heim's original Familiarity/Novelty Condition in that it proposed that Novelty is not a property of variables associated with indefinite DPs, but a general property of free variables, and only variables associated with definite DPs are "special".

It is thus suggested that the interpretive peculiarity of definite possessives is just part of a more general asymmetry in language: the provisions modeled by Heim's original Novelty Condition are a general property of free variables, but the provisions of Heim's original Familiarity Condition and the special interpretive properties of variables embedded within a [+definite] DP follow from the semantics of definiteness. In a sense, then, it is argued that definiteness is the marked property in language, a conclusion that is consistent with studies that argue that in the realm of noun phrases a [−definite] specification is the unmarked option across languages (Farkas, 2002).

In addition, the adoption of the Generalized Novelty Condition implies a departure from the common assumption that the interpretive properties of referential pronouns are paradigmatic of the behavior of free variables in discourse. The interpretive behavior of referential pronouns is due to their intrinsic definiteness: even if an analysis of referential pronouns in terms of free variables is to be maintained, it can be argued that these variables are subject to the same special interpretive provisions that characterize free relational variables in definite possessives.

Still, the proposal is not completely satisfactory in that the link between the semantics of definiteness and the possibility for free variables to be exempt from the requirements of Generalized Novelty is achieved by stipulation. Some speculative remarks are presented to the effect that this stipulation should and possibly could be reduced to the maximality presupposition that constitutes the semantic core of definiteness. But a thorough investigation of the line of research proposed in those remarks is not provided in this thesis.

A related shortcoming is that the "official" proposal is only partially adequate in light of the complex paradigm of data from Italian discussed in the appendix to chapter 2 and summarized in the generalizations in (28)+(32). It is suggested that

the analysis proposed can probably be weakened in order to deal with those data, and in particular that the desirable conclusion is maintained that—even under some weakening of the analysis in order to account for the marginal availability of free interpretations with Italian indefinite and quantificational possessives— the robust unavailability of free interpretations with predicate possessives is still predicted.

In conclusion, let me point out one relevant property of the analysis. The account proposed for the derivation of free interpretations is purely *semantic* and does not rely on postulated structural differences between different types of possessives. Indeed, the basic structural encoding of possession proposed in chapter 3 is the same in all kinds of possessives: the possessive PP predicate is taken to be one and the same irrespective of whether it is part of a definite or non-definite possessive DP or of a predicate possessive construction. And the semantic ambiguity that correlates with the distinction between control and free interpretations is due to the basic ambiguity of the preposition that heads this predicate PP.

Thus the possessive construction is assumed to be ambiguous in *all* types of possessives, and it is only semantic considerations—the provisions of the Generalized Novelty Condition—that obtain the result that free interpretations are unavailable with most types of possessive constructions. In particular, the link proposed between the possibility for free variables to be exempt from Generalized Novelty and the semantics of the (definite) determiner that embeds the possessive construction amounts to suggesting that the availability of free interpretations is a property of (definite) possessive DPs only.

The purely semantic nature of the analysis makes it immediately extensible to the case of English possessives. This is shown in the next chapter, where the independence of the current analysis from the syntactic assumptions adopted in

chapter 3 is further emphasized, and where it is argued that—contrary to what the English data might suggest—a purely structural account of the differences between control and free interpretations cannot be maintained. The gist of the semantic analysis presented in this chapter must be maintained even under the reasonable assumption that structural differences between different types of possessive constructions can play a role in determining the (un)availability of certain types of interpretations.

Appendix: Two further types of possessive DPs

In this appendix I briefly discuss two constructions—bare partitive DPs and weak definite DPs—whose interpretive properties support the analysis presented in this chapter. In both types of DPs the apparent morphological presence of a definite determiner does not correspond to the presence of a maximality presupposition imposed on the predicate denoted by the nominal complement of this determiner. Interestingly, both *bare partitive possessives* and *weak definite possessives* do not seem to license free interpretations as would be expected if they were classified along with definite possessives because of their morphological properties. The two types of DPs, then, support the hypothesis suggested in this chapter that it is the *semantics* of the definite determiner—and in particular the maximality presuppositions that it imposes on its complement—that is relevant for the derivation of free interpretations in possessive DPs.

Bare partitives

Consider the object DPs in the sentences in (167):

(167) a. Ho   incontrato degli   studenti.
           have$_{1.sg}$ met   of the students

       b. Ho   bevuto della   birra.
           have$_{1.sg}$ drunk of the beer

Traditional grammars of Italian treat DPs of this type as more or less ordinary indefinite DPs: the noun is preceded by an indefinite determiner—the *partitive determiner*—and the whole DP receives an indefinite interpretation.

As shown by the glosses in (167), these DPs seem to be morphologically related to partitives. The only difference between the DPs in (167) and partitive DPs like those in the parallel examples in (168) seems to be that no quantifier or numeral appears before the complex morpheme that precedes the noun.

(168) a. Ho   incontrato due degli studenti.
         have$_{1.sg}$ met   two of the students

      b. Ho   bevuto metà della   birra.
         have$_{1.sg}$ drunk half of the beer

Chierchia (1998) explicitly argues that the object DPs in (167)—which he calls *bare partitives*—are partitive DPs in which the higher determiner position is initially empty and is subsequently filled by syntactic movement: the embedded definite determiner first incorporates into the partitive preposition, and then the resulting complex morpheme raises to the higher determiner position, as shown in (169a):

(169) a. dei   folletti
         of the elves

DP
├─ D
│ └─ dei
└─ NP
   ├─ N
   │ └─ t
   └─ PP
      ├─ P
      │ └─ t
      └─ DP
         ├─ D
         │ └─ t
         └─ NP
            └─ folletti
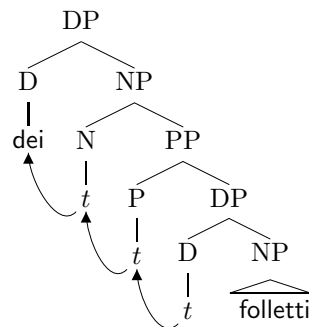
      b. alcuni dei   folletti
         some of the elves

DP
├─ D
│ └─ alcuni
└─ NP
   ├─ N
   │ └─ $\emptyset_{[+part]}$
   └─ PP
      ├─ P
      │ └─ di$_{[+part]}$
      └─ DP
         ├─ D
         │ └─ i
         └─ NP
            └─ folletti
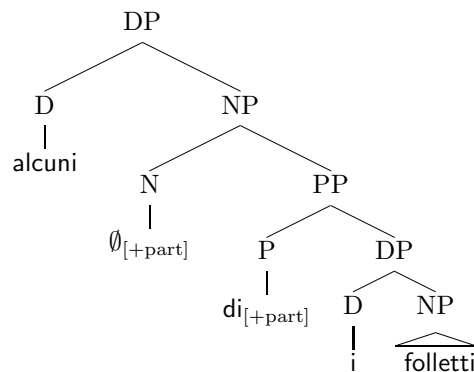
Furthermore, Chierchia claims that the semantics of the partitive determiner is derived by composing the semantics of the partitive preposition[49] and the embedded definite determiner, and then applying the $\exists$ type-shifting operator to the resulting entity of type $\langle et \rangle$ (170). See Chierchia (1998) for details. The net result is that bare partitives like dei folletti are assigned the same semantics as partitive DPs like alcuni dei folletti (169b) that are headed by an indefinite determiner.

(170) $\llbracket [_{\mathrm{D}} \, \mathsf{dei}] \rrbracket = \exists \circ \llbracket \emptyset_{[+\mathrm{part}]} \rrbracket \circ \llbracket \mathsf{di}_{[+\mathrm{part}]} \rrbracket \circ \llbracket \mathsf{i} \rrbracket$
$= [\lambda h_{\langle et \rangle} \, . \, [\lambda k_{\langle et \rangle} \, . \, \exists x \, h(x) \, \& \, k(x)]] \circ [\lambda v_e \, . \, [\lambda u_v \, . \, u \leq v]] \circ$
$\quad [\lambda f_{\langle et \rangle} : \exists! y \, f(y) \, . \, \iota y \, f(y)]$
$= \lambda h_{\langle et \rangle} : \exists! y \, h(y) \, . \, [\lambda k_{\langle et \rangle} \, . \, \exists x \, x \leq \iota y \, h(y) \, \& \, k(x)]$

In (Storto, 2003a), I argued that Chierchia's proposal cannot be maintained, because it predicts the interpretive behavior of Italian bare partitives to mirror the behavior of "full" partitives. But it can be easily shown that—contrary to partitive possessives—bare partitive possessive DPs do *not* license free interpretations in Italian. Consider the ill-formedness of the sentence in (171):

(171) [#] Ieri   Gianni e   Paolo sono stati attaccati da gruppi di cani;
      yesterday Gianni and Paolo were   attacked by groups of dogs;
      sfortunatamente dei   cani di Gianni non sono stati catturati.
      unfortunately   of the dogs of Gianni not have been captured

What is interesting for the purpose of this thesis is that it can be argued independently that Chierchia's assimilation of Italian partitives and bare partitives fails exactly in the respect that—according to the analysis proposed in this chapter—is crucial for free interpretations to be derived in possessive

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[49] Actually, Chierchia maintains that the semantics of partitivity is not contributed by the preposition $\mathsf{di}_{[+\mathrm{part}]}$—which is semantically empty—but by the phonologically-empty noun $\emptyset_{[+\mathrm{part}]}$ in the outermost DP in the partitive structure (169b). This difference is immaterial to the argument: in (170) one of $\mathsf{di}_{[+\mathrm{part}]}$ and $\emptyset_{[+\mathrm{part}]}$ must be taken to be semantically "transparent". In the text I assume that this is the noun in the outermost DP.

DPs. Indeed, it can be argued that Chierchia's proposal that the semantics of a definite determiner is part of the semantics of the so-called partitive determiner is incorrect. The apparent morphological presence of the definite determiner i in the partitive determiner dei notwithstanding, no maximality presupposition is imposed on the nominal complement of the partitive determiner. The unavailability of free interpretations with bare partitives, then, supports the conclusion that it is the *semantics* of definiteness that allows certain variables to be exempt from Generalized Novelty.

Actually, Chierchia presents an explicit argument in favor of the conclusion that the semantics of definiteness is part of the meaning of bare partitives. Following a proposal by Zucchi (1993), he argues that copular be sentences in Italian can be used as a test to determine whether an indefinite DP is necessarily presuppositional. Presuppositional indefinites, it is argued, are not compatible with an existential reading of copular be sentences, but only with a locative reading.

(172)   a.   Non ci   sono folletti.
             not there are   elves
             [*locative* or *existential*]

        b.   Non ci   sono alcuni dei   folletti.
             not there are   some of the elves
             [*locative* only]

        c.   Non ci   sono dei   folletti.
             not there are   of the elves
             [*locative* only]

And, Chierchia argues, it can be observed that Italian bare partitives force a locative reading of sentences like (172c), a behavior that mirrors the behavior of partitives (172b) and differs from the behavior of weak indefinite DPs like bare plurals (172a). This is expected if in both partitives and bare partitives a definite

determiner—which triggers a presupposition of maximality—combines with the noun that provides the descriptive content for the DP.

However, I argued in (Storto, 2003a) that Chierchia's argument is misguided *and* that it can be independently shown that the alleged presuppositions triggered by the definite determiner do not characterize the semantics of Italian bare partitives.

That Chierchia's argument is incorrect is proven by the observation that *positive* be sentences with a bare partitive in postcopular position allow for an existential reading (173). Granting the correctness of Zucchi's analysis of the effects of presuppositionality in Italian be sentences—on which Chierchia's argument rests—it is expected that bare partitives should not be compatible with an existential reading of such sentences, no matter whether they are positive or negative statements.[50]

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[50]In (Storto, 2003a) I suggest that the problem with Chierchia's original example should be accounted for in terms of the interaction of a general property of Italian negative be sentences—for an existential reading to be available the determiner of the postcopular DP must be accented/marked as focus (i)—and the observation that the partitive determiner seems to resist focussing—probably because it is hard to construct a contrast set that justifies focussing on the determiner.

i. a. Non c'   è $^{??}$(neanche) un folletto.
        not there is (even)   an elf

    b. Non ci   sono DUE/TRE/POCHI/MOLTI folletti.
        not there are   two/three/few/many   elves

That an explanation along these lines might be correct is argued by the fact that even negative be sentences seem to allow for an existential reading when the contrast set for the bare partitive DP is explicitly provided (ii):

ii. a. Non ci   sono dei   folletti, ce   n'   è soltanto uno.
        not there are   of the elves,   there of them is only   one

    b. $^?$ Non ci   sono dei   folletti, infatti non ce   n'   è neanche uno.
          not there are   of the elves,   indeed not there of them is even   one

(173) So   che ci   sono dei   folletti, e   prima o poi   ne
      know$_{1.sg}$ that there are   of the elves,   and sooner or later of them
      troveró   uno.
      will find$_{1.sg}$ one
      'I know that elves exist, and sooner or later I will manage to find one.'

In addition, it can be shown independently that bare partitives differ from partitive DPs in that only the latter presuppose existence. See the contrast between (174a)—which is contradictory because it negates the presupposition that Dodos exist—and (174b)—which is well-formed. The presupposition of maximality imposed by the semantics of definiteness entails a presupposition of existence, thus the absence of the weaker presupposition in bare partitives is sufficient to rule out that the semantics of definiteness is part of the meaning of bare partitives.

(174) a. #Mi   piacerebbe   trovare alcuni dei   Dodo, ma so   che
         to me would please find$_{inf}$ some of the Dodos, but know$_{1.sg}$ that
         oramai   sono estinti.
         nowadays are$_{3.pl}$ extinct

      b. Mi   piacerebbe   trovare dei   Dodo, ma so   che
         to me would please find$_{inf}$ of the Dodos, but know$_{1.sg}$ that
         oramai   sono estinti.
         nowadays are$_{3.pl}$ extinct
         'I would like to find some Dodos, but I know that they are extinct nowadays.'

For present purposes, the above remark should suffice (I refer the interested reader to (Storto, 2003a) and (Zamparelli, 2002) for further discussion of the semantics of Italian bare partitives). Contrary to Chierchia's claim, Italian bare partitives do not seem to display properties that correlate with the semantics of the embedded definite determiner in true partitive DPs. Thus the current proposal—a proposal that ties the availability of free interpretations to the semantics of the definite determiner—correctly predicts free interpretations to be unavailable with possessive bare partitives.

Weak definites

Poesio (1994) draws attention to a class of morphologically definite DPs in English that do not seem to be characterized either by the maximality presuppositions that are predicted by the Fregean semantics for the definite determiner, or by the Familiarity requirement expected under Heim's analysis. He calls DPs of this kind *weak definites*:[51]

(175)   a.   I hope the cafe is located on **the corner of a busy intersection**.

        b.   That's the one where Superman crashes spectacularly into **the side of a Marlboro-emblazoned truck**.

Consider (175). In addition to the interpretation according to which the speaker is talking of a given unique corner of a certain intersection, the sentence has a weaker interpretation, according to which no uniqueness or familiarity are presupposed. The sentence can be used felicitously in a context in which neither the speaker nor the hearer have a particular intersection or corner in mind, and the speaker's desire does not seem to entail the unreasonable expectation that there be a busy intersection with a unique corner somewhere in the world.

Poesio (1994) describes weak definites as DPs of the form $[_{\mathrm{DP}_1}$**the N of** $\mathrm{DP}_2]$ where N is a relational noun and DP_2 is indefinite. But it seems to me that the restriction that N be a relational noun pointed out by Poesio can be argued to follow from a *syntactic* property of English. English DPs with a postnominal *of* complement that is not marked for Saxon genitive—in my opinion—are not possessive constructions, but complementation structures. And the restriction pointed out by Poesio reduces to the more general observation that relational

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[51]Poesio was not the first to point out the existence of DPs of this sort in English, but was the first to explicitly address their productivity and the problems they raise for the semantic analysis of definiteness. Mention of DPs of this kind can be found already in (Christophersen, 1939; Woisetschlaeger, 1983; Löbner, 1985, a.o.).

nouns like brother can license syntactic complements, but monadic nouns like dog cannot (176).

(176) a. the brother of a student
       b. a student's brother
       c. *the dog of a student
       d. a student's dog

Crosslinguistic evidence supports the hypothesis that the restriction that the head noun in English weak definites be a relational noun is syntactic and not semantic in nature. Indeed, interpretive properties similar to those discussed by Poesio (1994) hold in Italian for definite possessive DPs whose possessum is a monadic noun like dog and whose possessor is an indefinite DP.[52]

(177) a. l'   angolo di un incrocio   trafficato
           the corner of a   intersection busy

       b. il   cane di uno studente
           the dog of a   student

For example, the DP in (177b) seems to allow for a weak reading similar to the one argued by Poesio to exist for DPs like (177a). Indeed, my judgment—which is supported by the judgments of other Italian speakers that I consulted—is that a sentence like (178) can be felicitously used even when both speaker and hearer

[52]Still, recent work by Barker (2002) shows that the weak reading pointed out by Poesio characterizes even English definite DPs where the complement DP_2 is definite. This is where a difference between DPs whose head noun is relational and those whose head noun is monadic arises in Italian. Such a weak reading does not seem to be available with Italian definite possessives whose possessum is a monadic noun and whose possessor is a definite description (e.g. il cane dello studente 'the dog of the student'). Judgments become very delicate, however.

know that all the students in the class own more than one dog each.[53]

(178) **Il cane di uno studente** lo   ha seguito fino in classe stamattina.
       the dog of a   student him followed to   class this morning

Now, I think it is fair to say that a complete explanation of the properties of weak definites has not yet been provided in the literature,[54] but for present purposes the observation that the semantics of definiteness—i.e. the presupposition of maximality—seems to be absent for DPs of this kind is sufficient to provide some hints as to why DPs like (177b) do not seem very prone to licensing free interpretations (179):

(179) [%]Ieri   alcuni professori e   alcuni studenti sono stati morsi da cani
        yesterday some professors and some students were   bitten by dogs
        randagi; purtroppo   **il cane di uno studente** aveva la   rabbia.
        stray   unfortunately the dog of a   student   had   the rabies

The analysis proposed in this chapter suggests that the availability of free interpretations should be accounted for in terms of the semantic requirements imposed by the definite determiner on its nominal complement. And—in this light—it is not surprising that morphologically definite DPs for which

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[53]DPs like (176c)—the word-by-word translation of the Italian (177b)—are ill-formed for syntactic reasons. But—as Poesio (1994) already points out—Saxon genitives whose possessor is an indefinite DP—e.g. (176d), the English translation of the Italian (177b)—behave like weak definites in not displaying the effects of maximality or familiarity. Indeed, English speakers seem to share the intuitions that I point out with respect to the Italian sentence in (178). For example, the sentence **A student's dog** followed him to class this morning—like its Italian counterpart (178)—can be uttered even if the fact that all the (male) students in the class own more than one dog each is known to both the speaker and the hearer. Interestingly, in parallel to the Italian DPs discussed in the text, possessive DPs like (176d) do not appear to easily license free interpretations either.

[54]Both the analysis proposed by Poesio (1994) and the recent proposal by Barker (2002) build on the assumption that the head noun in weak definites is a relational noun, and thus do not extend straightforwardly to the case of the Italian example in (177b). Zamparelli (1995) suggests in passing that the properties of weak definites might be due to the nature of the determiner—which is an *expletive determiner* along the lines originally suggested by Vergnaud and Zubizarreta (1992)—but in the literature it has often been argued that such expletive determiners characterize Romance languages only.

these semantic requirements do not seem to (necessarily) hold license free interpretations to a very reduced extent (if at all).

At least at this very "coarse" level of detail, then, the interpretive properties of weak definite possessives seem to support the basic tenets of the analysis proposed in this thesis. A proper formalization of the semantics of weak definites and further empirical research concerning the interpretive properties of possessives like (177b) are obvious prerequisites for any stronger predictions and conclusions to be drawn, which I thus refrain from doing here.

CHAPTER 6

The Case of English

In this chapter I return to the case of English possessives. In chapter 2 it was pointed out that the analysis of interpretive contrasts like (8) could—in principle, at least—be linked to differences in the syntactic structure of DPs like John's dogs (*Saxon genitives* henceforth) and DPs like some dogs of John's (*postnominal genitives* henceforth).

(8)   Yesterday John and Paul were attacked by (different) groups of dogs;
      a. ... unfortunately **John's dogs** were rabid.
      b. #... unfortunately **some dogs of John's** were rabid.

The issue then must be addressed whether the analysis proposed in the previous chapters for the interpretive differences between definite possessives and other possessive constructions in Italian—an analysis that accounts for these interpretive differences in terms of semantic properties of the constructions involved—applies to the case of English as well, or should rather be revised (or replaced) to account for the English data.

The conclusion that I reach is that such revisions are not needed: the analysis proposed in chapters 4 and 5 for the Italian data applies straightforwardly to the case of English. The availability of free interpretations with English Saxon genitives can be accounted for—as in the case of Italian definite possessives— in terms of their [+definite] specification. And the unavailability of free interpretations with English postnominal genitives can be accounted for—in

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parallel with the case of Italian indefinite/quantificational possessives—in terms of their [−definite] specification.

The differences holding between English Saxon genitives and postnominal genitives with respect to their [±definite] specification is sufficient within the current analysis to derive their interpretive properties, and this follows independently of whether their syntax is argued to be similar to or substantially different from the syntax of Italian possessives. Indeed, in §6.1 I argue that any syntactic analysis of English Saxon genitives must obtain the result that the possessive relation is embedded within the predicate that combines with the semantics of the definite determiner. This is sufficient within the current theory to result in the availability of free interpretations for this class of possessives. And in §6.3 I argue that the result that the possessive relation is *not* part of a predicate that combines with a definite determiner follows under any analysis of English postnominal genitives that I am familiar with. This accounts for the unavailability of free interpretations with this class of possessives.

Still, attention to the the syntax of English possessives is important in two respects. In §6.2 I discuss the case of English postcopular possessives, and argue that paying attention to their syntax not only allows for discounting their interpretive properties as a counterexample to the theory proposed in the previous chapters, but provides a rather striking argument for the *necessity* of maintaining the gist of the proposal made in chapter 5 in order to account for the derivation of free interpretations in English Saxon genitives. And throughout the chapter I raise the issue whether—the possibility granted that the semantic analysis proposed for Italian possessives can be applied to the case of English possessives—an alternative account of the English facts can be maintained that ties the interpretive differences between English Saxon genitives and postnominal genitives to their structural differences.

Considering such an alternative is the second main objective of this chapter. Indeed, if the interpretive contrasts in the English case can be accounted for in structural terms, the suggestion could be made that the same syntactic differences are at work in other languages too—and in Italian in particular—even if such structural differences are not immediately evident in the surface form of possessive DPs, and that the different distribution of control vs. free interpretations should be accounted for in structural terms on a crosslinguistic basis. This would constitute a serious challenge against a semantic analysis like the one proposed for the case of Italian in chapters 4 and 5.

In the interest of keeping the issue of whether and how the current analysis accounts for the English facts separate, the feasibility of such an alternative analysis is addressed in the appendix to this chapter. As a preview, I reach the conclusion that—even if the structural differences between Saxon and postnominal genitives are most likely relevant in order to provide a full account for the interpretive differences between English postnominal genitives and Italian indefinite/quantificational possessives—the different distribution of control and free interpretations cannot be accounted for entirely in structural terms, neither in English nor on a crosslinguistic basis.

A note on 'the/some N of DP' constructions

In this chapter I do *not* consider English DPs like those in (180):

(180) a.   the destruction of Rome
       b.   the arrival of the Queen
       c.   the brother of the President
       d.   some friends of the President

Indeed, even if DPs of this sort seem to mirror the structure of Italian possessive DPs discussed in the previous chapters and generally seem to receive an

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interpretation that corresponding Saxon genitive or postnominal genitives DPs can receive as well (181), I would like to maintain that these are *not* possessive constructions.

(181)   a.   Rome's destruction

          b.   the Queen's arrival

          c.   the President's brother

          d.   some friends of the President's

Barker (1995) treats DPs like those in (180) as possessives. But I prefer to separate them from the class of possessive DPs, and treat them as complementation structures. DPs of this sort are well-formed in English only when the head noun is a deverbal noun or a non-deverbal relational noun.[1] And the only interpretation that they license is the intrinsic interpretation that is available for the corresponding possessives in (181), where the nature of the possessive relation is specified by the semantics of the possessum noun. Both properties suggest that these are *not* constructions in which the "possessor" is projected as part of a PP modifier that is adjoined to the NP projected by the head noun, but constructions in which the "possessor" DP is actually a complement of the head noun, the preposition of being semantically empty.[2]

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[1]So-called *picture NPs* present additional complications that I do not intend to address here. A strong case can be made that the of PP in e.g. a picture of John is not a possessor *and* differs from the of PPs in DPs like (180) as well. But I must leave these arguments for another occasion.

[2]If the PPs were NP adjuncts, they would be expected to appear adjoined to NPs projected by non-deverbal monadic nouns, too. And if these DPs were actual possessive constructions in which the possessor is part of a PP modifier headed by a contentful preposition, we would expect them to license control interpretations like all other possessives, which they do not. An additional argument in favor of this conclusion was mentioned already in footnote 12 in chapter 2. The alleged possessor in DPs like (180)—where the head noun is a relational noun—must be combined with the possessum within the DP built upon the latter, and not "across" a copula, even in languages like Italian where bare possessors can be used as predicates in copular sentences. This restriction holds generally of PP complements within DP, thus supporting the conclusions that (so-called) inherent possessives are actually instances of syntactic complementation and not (possessive) adjunction structures.

6.1 English Saxon genitives

Let me warn the reader from the outset that she will not find here a full-fledged analysis of the syntax and semantics of English Saxon genitives. The purpose of this section is simply to argue that the semantic properties of English Saxon genitives that are relevant to the issues discussed in this thesis—namely their licensing free interpretations—follow from the theory proposed in chapter 5, irrespective of the syntactic structure that is eventually argued to characterize this class of possessive DPs. In addition, the present section lays out some groundwork for the argument—developed in the appendix to this chapter— that the interpretive contrast between English Saxon genitives and postnominal genitives cannot be reduced to the differences in syntactic structure that hold between these two types of possessive DPs.

6.1.1 Semantics

The interpretive properties of English Saxon genitives are entirely unsurprising in the context of the analysis proposed in the previous chapters. The analysis links the availability of free interpretations to the semantics of definiteness: free relational variables embedded within the nominal complement of a definite determiner are not subject to the provisions of the Generalized Novelty Condition, from which the possibility of taking these variables to denote a contextually salient relation follows. And it has long been acknowledged that English Saxon genitives are definite DPs: since (Abney, 1987), most authors assume either that the determiner position in a Saxon genitive DP is occupied by a phonologically null counterpart of the definite determiner, or at least that the constituent in determiner position contributes, among other things, the semantics that would

be contributed by an overt definite determiner.[3]

Indeed, data like those in (182) show that English Saxon genitives seem to trigger the same maximality presupposition that is triggered by definite descriptions with an overt definite determiner:

(182) a. [#]**John's dogs** are on the left, and **John's dogs** are on the right too.

   b. [#]**The dogs that belong to John** are on the left, and **the dogs that belong to John** are on the right too.

The oddness of (182a) can accounted for along with the oddness of (182b): the maximality presupposition triggered by the semantics of definiteness clashes with the meaning of the conjunctive statement, which—in effect—asserts in the second conjunct that the presupposition triggered by the definite DP in the first conjunct does not hold.

Now, once the conclusion that English Saxon genitives are definite DPs is established, the attested availability of free interpretations with these possessive DPs follows from the theory developed in chapter 5 for the case of Italian possessives. The theory predicts that if the free relational variable that encodes the possessive relation is embedded within a predicate on which the

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[3]Some data discovered by Elbourne (2002), however, point out an interesting interpretive difference between definite descriptions headed by an overt definite determiner and Saxon genitives in English. It is well-known that definite descriptions license a co-varying interpretation in sentences like (i), but surprisingly the same co-varying reading is not licensed by Saxon genitives (ii):

i.   John fed no cat before the cat was bathed.

ii. * John fed no cat of Mary's before Mary's cat was bathed.

iii.   John fed no cat of Mary's before the cat of Mary's was bathed.

The interpretive contrast between (i) and (ii) cannot be simply due to the presence of a possessor in the Saxon genitive DP in (ii): the possessive DP the cat of Mary's in (iii)—which, it must be said, for many speakers is not completely well-formed for independent reasons (see the discussion of English postnominal genitives in §6.3)—seems to license a co-varying interpretation, thus pointing out that the contrast in (i)–(ii) must be due to the presence vs. absence of an overt definite determiner.

semantics of definiteness is imposed, this variable is exempt from the requirements of Generalized Novelty—a consequence of the stipulation in (153)[4]—and the derivation of a free interpretation converges. A moment's reflection is sufficient to realize that the latter conclusion—i.e. that the variable encoding the possessive relation is embedded in the predicate on which the requirements of definiteness are imposed—would be necessary under any analysis of English Saxon genitives in order to account for the restrictive nature of the possessive modification, a general property of possessive DPs that was underscored multiple times in the preceding chapters.

The above remarks are probably sufficient for the purpose of arguing that the current proposal *can* account for the interpretation of English Saxon genitives, independent of the particular syntactic analysis that is adopted for these DPs. Still, in order to dispel doubts on the part of the sceptical reader, in the next section I briefly outline two alternative syntactic analyses of Saxon genitives: (i) a movement-based analysis, in which it is maintained that the basic syntax of possession within DP is not different between the cases of Italian and English, and (ii) a base-generation analysis, which proposes a rather different approach to the syntactic encoding of possession within the English Saxon genitive DP. Under either analysis the semantic proposal advanced in chapter 5 correctly predicts English Saxon genitives to license free interpretations.

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[4]The stipulation in (153) is stated in morpho-syntactic terms and thus does not cover the case of English Saxon genitives (it makes reference to the nominal complement of an overt definite determiner). It should be easy to see that this stipulation can be reformulated in purely semantic terms so that it applies to Saxon genitives as well: (153) becomes a provision about variables in the predicate on which a presupposition of maximality is imposed. This is—after all—the content of the generalization that I tried to derive in §5.4.1.

6.1.2 Syntax

A movement-based analysis

The syntax proposed in chapter 3 for Italian possessive DPs generates the possessor DP in a PP predicate that follows the possessum NP, but the surface form of English Saxon genitives is such that the possessor precedes the possessum. Thus, for the generality of the syntactic analysis proposed in chapter 3 to be maintained, it must be assumed that the prenominal position of the possessor in English Saxon genitives is derived by syntactic movement.

For concreteness, we can adopt Larson and Cho's (1999) proposal that the possessor DP raises to Spec,DP: this movement triggers incorporation of the (locative) preposition to into the determiner position, and the complex THE+to is spelled out as the Saxon genitive affix 's.[5] The syntactic derivation of a Saxon genitive like John's dog would then proceed as in (183):

(183)   a.

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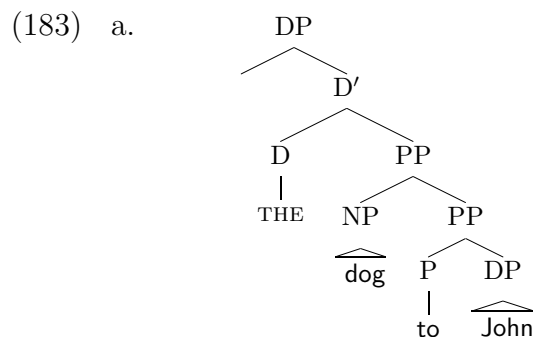
[5]The exact syntactic position where the affix 's is realized is a matter of debate in the literature. Authors like Abney (1987), Larson and Cho (1999) or den Dikken (1998) take the morpheme 's to be in D or in some other syntactic head that does not form a syntactic constituent with the possessor DP, but combines with the phrase containing the possessum noun thus forming a bigger syntactic constituent that then combines with the possessor DP. Other authors, for example Barker (1995) or Vikner and Jensen (2002), argue that the affix 's is a genitive or possessive affix that combines with the possessor DP to form a constituent that then combines with the phrase containing the possessum noun.

b.
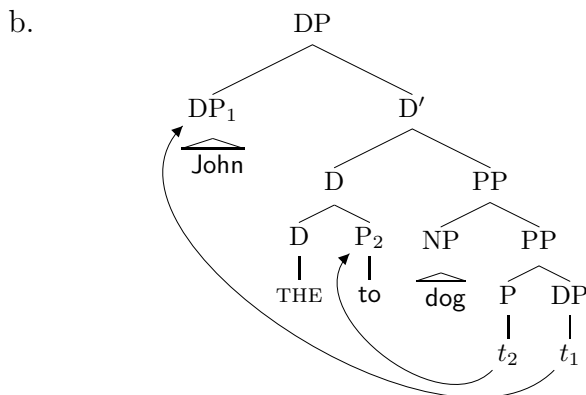
Of course, the nature of the movement operation postulated in (183) must be characterized in some detail. And it must be explained why such movement takes place in English and not, for example, in Italian.

My understanding of the current state of syntactic research is that no agreement has emerged on these issues. For example, it is not even commonly agreed that it is the possessor DP that moves to the left periphery of the Saxon genitive DP: den Dikken (1998) proposes that it is the whole PP within which the possessor DP is licensed that moves. Nor is there agreement on what the nature of this movement operation is. Essentially, however, two general hypotheses have been pursued in the literature. The first hypothesis builds on Chomsky's (1970; 1981; 1986) original proposal that—in the case of Saxon genitives whose possessum is a deverbal noun—the prenominal position of the possessor DP is determined as a consequence of the requirement that this DP be licensed for Case. Chomsky's account could be extended to the case of Saxon genitives whose possessum is not an argument-taking noun, if it can be argued that the possessor DP is not licensed for Case by the preposition that selects it as a complement.[6] The second hypothesis that has been pursued is that movement of the possessor

[6]Carson Schütze points out that this conclusion is not unexpected if—as sketched in (183)—we want to maintain that the preposition incorporates into the head of the Saxon genitive DP (or whatever the functional head that selects the possessive adjunction structure as a complement is). It is a standard assumption in the clausal domain that if a preposition incorporates into a higher verbal/functional head it loses its Case assigning ability.

DP (or of a category containing this DP) is triggered by structural properties of the whole possessive DP. Some syntactic feature requires that a constituent be in Spec,DP at surface structure, a requirement that is satisfied by movement of the possessor DP (or of a category containing it).[7]

These are issues whose proper solution I leave open for further research: as argued above, given the semantic analysis proposed in the previous chapter, the choice of a particular solution seems to be immaterial to the conclusion that Saxon genitives are expected to license free interpretations.

In the abstract, however, an analysis of the English Saxon genitive based on syntactic movement is probably attractive in the light of the observation that the Saxon genitives seem—so to speak—to blur the syntactic differences that otherwise exist in English between noun phrases headed by a noun that is an argument-taking category and noun phrases headed by a noun that is not an argument-taking category. Indeed, it is was already mentioned in the introduction to this chapter that deverbal process nouns like **destruction** license a DP complement in a PP headed by the preposition **of**, but this is not an option for monadic non-deverbal nouns like **dogs**: compare (184a) and (184c).

(184)   a.   the destruction of Rome

   b.   Rome's destruction

   c.   *the dogs of John

   c.   John's dogs

The semantic differences in the relation holding between the head noun and the

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[7]For example, den Dikken (1998) proposes that movement of the PP containing the possessor DP is an instance of DP-internal *Predicate Inversion* (Moro, 1997): the predicate in the possessive small clause raises to a position above the subject of the small clause. One problem with den Dikken's proposal is that the parallelism with Predicate Inversion in the sentential case is not complete: whereas Predicate Inversion in the sentential case is an alternative to raising of the subject of predication to Spec,IP, it does not seem possible in English Saxon genitives for the subject of predication—the possessum NP—to surface in Spec,DP preceding the possessor. See (Storto, 2001a,b).

"possessor" DP in the two cases seem to have structural—i.e. syntactic—effects in the grammar of English. This is consistent with the hypothesis that the two types of relations receive a different structural encoding in the syntax of English. And yet, these syntactic differences seem to be blurred by the Saxon genitive construction: the prenominal possessor in (184b) seems to entertain the same kind of semantic relation to the noun destruction as the DP in the postnominal PP in (184a). But, in terms of syntactic structure, the possessive in (184b) does not seem to differ from the possessive in (184d).

Of course, this state of affairs is not unexpected within the general framework of Transformational Generative Grammar adopted in this thesis. One basic assumption within this framework is that the surface structure of phrases (DPs, in this case) conforms to structural requirements, imposed by the grammar of each particular language, which are quite independent from the nature of the semantic relations established among the constituents of the phrases themselves. These structural requirements are the trigger for movement transformations which displace syntactic objects from their original positions, and which, ultimately, may blur the distinctions between structural configurations encoding different semantic relations.

Jensen and Vikner's proposal

Still, an alternative hypothesis that has been suggested at various points in the literature for English Saxon genitives is that the possessor is generated in prenominal position. I want to discuss briefly here a particularly coherent—from a semantic point of view—version of this idea and argue that even under this alternative characterization of the syntax of English Saxon genitives the gist of the semantic proposal made in the previous chapters can be maintained.

The analysis of the semantics of English Saxon genitives (and Danish genitive

constructions) defended by Per-Anker Jensen and Carl Vikner—Jensen and Vikner henceforth—in a series of recent papers (Jensen and Vikner, 1994, 2002; Vikner and Jensen, 2002) suggests a different take on the problem of accounting for the observation that the syntax of English Saxon genitives seems to "ambiguously" encode possessive relations that intuitively one would want to treat as formally distinct in the semantics.[8] They propose that the syntactic relation holding between possessor and possessum is one and the same in all Saxon genitives: the possessor—a category that they call *GP* for *Genitive Phrase*—is generated in prenominal position—in particular Spec,NP[9]—rather than being displaced to that position by syntactic movement. For example, the structure that they propose for a Saxon genitive like the man's mother is given in (185):

(185)
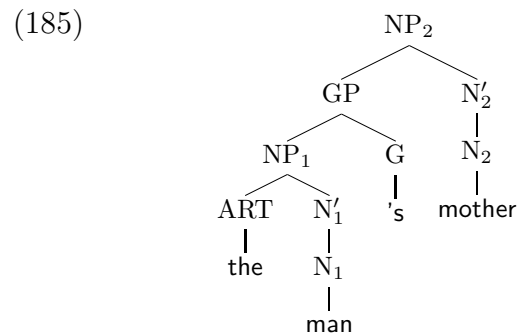
The syntactic analysis proposed by Jensen and Vikner for English Saxon genitives does not differ much—at a first look—from the analysis proposed by Anderson (1983) discussed in chapter 3 and repeated below:

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[8]Jensen and Vikner do not explicitly emphasize this issue in their work. As far as I can see, however, the spirit of their proposal is consistent with the concern that I attribute to them to account for the different interpretations that the English Saxon genitive is amenable to, while maintaining at the same time that (i) these interpretations are formally distinct in the semantics, but (ii) are not encoded differently in the syntax.

[9]Jensen and Vikner do not adopt the DP Hypothesis.

(46)   b.
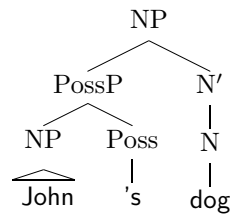
But, this apparent similarity notwithstanding, the analysis proposed by Jensen and Vikner differs from Anderson's proposal in one important respect: Anderson suggests that the syntactic head Poss introduces the semantic relation holding between possessor and possessum, whereas Jensen and Vikner maintain that the semantic relation holding between possessor and possessum is always contributed by the N_2' projected by the possessum noun.

It is important to point out that this assumption immediately solves the problem with the "ambiguity" of the Saxon genitive construction: a single syntactic encoding corresponds to possessives that have interpretations that are formally distinct in semantic terms because different semantic relations are contributed by different N_2'. In particular, notice that this account does not face the problem—which was pointed out in connection with Anderson's proposal in chapter 3—of having to account for the Saxon genitive affix on the possessor in possessives like Rome's destruction as a special separate case: the Saxon genitive marking is never argued to contribute the relation between possessor and possessum, which in Rome's destruction is contributed by the relational meaning of the possessum noun destruction in exactly the same way as this meaning contributes to the interpretation of the DP the destruction of Rome.

Jensen and Vikner propose that the Saxon genitive marker 's denotes an entity of type $\langle\langle et, t\rangle, \langle\langle e, et\rangle, \langle et, t\rangle\rangle\rangle$—i.e. a function that takes a generalized quantifier as input and produces as output a function from relations to generalized

quantifiers—defined as in (186).[10] Jensen and Vikner's original formalization—the first line, a formalization made in a system where expressions of natural language are first translated into an intermediate formal language that is then interpreted—is reformulated in the second line in terms of the formal system adopted in this thesis.[11]

(186) 's $\rightsquigarrow \lambda \mathbf{P}_{\langle et,t \rangle}[\lambda \mathcal{R}_{\langle e,et \rangle}[\lambda P_{\langle et \rangle}[\mathbf{P}(\lambda u_e[\exists x[\mathcal{R}(u)(x) \ \& \ \forall y[\mathcal{R}(u)(y) \leftrightarrow y = x]$
$\& \ P(x)]])]]]$

$[\![\text{'s}]\!] \ = \ \lambda k_{\langle et,t \rangle} \cdot [\lambda r_{\langle e,et \rangle} \cdot [\lambda g_{\langle et \rangle} \cdot k([\lambda u_e \cdot \exists! x \, r(u)(x) = 1 \ \& \ g(x) = 1])]]$

The Saxon genitive marker takes the denotation of the possessor as an argument and maps it onto the function that—applied to a relation—gives the generalized quantifier denoting the set of properties that hold of a unique individual x that stands in the given relation to entities that satisfy the properties in the original generalized quantifier denoted by the possessor. Essentially, then, the GP is a function that, applied to a relation, gives the generalized quantifier corresponding to the unique individual that stands in that relation to the entities in the denotation of the possessor. For example, the denotation of the man's mother is the generalized quantifier denoting the set of properties that hold of the mother

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[10]Jensen and Vikner's actual formalization—at least in the preprint of (Vikner and Jensen, 2002) that I consulted—is the one given in (i):

i. 's $\rightsquigarrow \lambda \mathbf{P}_{\langle et,t \rangle}[\lambda \mathcal{R}_{\langle e,et \rangle}[\lambda P_{\langle et \rangle}[\mathbf{P}(\lambda u_e[\exists x[\forall y[\mathcal{R}(u)(y) \leftrightarrow y = x] \ \& \ P(x)]])]]]$

But, as far as I can see, this formulation is incorrect: the generalized quantifier denoted by (i) allows for the possibility that the property denoted by $\mathcal{R}(u)$ does not hold of the individual chosen as value for x. That is, the statement that the relevant property holds of this unique individual x is missing.

[11]For simplicity, in (186) I abstract from the maximality presupposition contributed by the definite specification of the DP—Jensen and Vikner adopt a Russellian approach to definiteness in their formalization. I ask the reader to bear with my sloppiness, and still assume that a presupposition of maximality is part of the lexical entry for the Saxon genitive marker 's in the second line of (186).

of the individual denoted by the man;[12] an intuitively correct characterization of

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[12]Here is a sample derivation for the meaning of the man's mother within the system proposed by Jensen and Vikner. The derivation in (ii) is given within the formalism adopted in this thesis, with the difference that—in order to simplify things—the Russellian lexical entry for the definite determiner is used: Jensen and Vikner take the denotation of the possessor DP to be a generalized quantifier, and thus we would need to define a type-shifting operation to change the type of the Fregean denotation of the man from e to $\langle et, t \rangle$. The lexicon used in (ii) is given in (i).

i. $[\![\text{mother}]\!] = \lambda w \, . \, [\lambda t \, . \, t \text{ is } w\text{'s mother}]$

   $[\![\text{man}]\!] \quad = \lambda v_e \, . \, v \text{ is a man}$

   $[\![\text{'s}]\!] \quad = \lambda k_{\langle et,t \rangle} \, . \, [\lambda r_{\langle e,et \rangle} \, . \, [\lambda g_{\langle et \rangle} \, . \, k([\lambda u_e \, . \, \exists! x \, r(u)(x) = 1 \, \& \, g(x) = 1])]]$

   $[\![\text{the}]\!] \quad = \lambda f_{\langle et \rangle} \, . \, [\lambda h_{\langle et \rangle} \, . \, \exists z (f(z) = 1 \, \& \, \forall y (f(y) = 1 \rightarrow y = z) \, \& \, h(z) = 1)]$

ii. $[\![\text{the man's mother}]\!] =$

   1. $= [\![\text{the man's}]\!] \, ([\![\text{mother}]\!])$ \hfill FA

   2. $= [\![\text{'s}]\!] \, ([\![\text{the man}]\!]) \, ([\![\text{mother}]\!])$ \hfill FA

   3. $= [\![\text{'s}]\!] \, ([\![\text{the}]\!] \, ([\![\text{man}]\!])) \, ([\![\text{mother}]\!])$ \hfill FA

   4. $= [\lambda k_{\langle et,t \rangle} \, . \, [\lambda r_{\langle e,et \rangle} \, . \, [\lambda g_{\langle et \rangle} \, . \, k([\lambda u_e \, . \, \exists! x \, r(u)(x) = 1 \, \& \, g(x) = 1])]]]$ $([\lambda f_{\langle et \rangle} \, . \, [\lambda h_{\langle et \rangle} \, . \, \exists z (f(z) = 1 \, \& \, \forall y (f(y) = 1 \rightarrow y = z) \, \& \, h(z) = 1)]] \, (\lambda v_e \, . \, v \text{ is a man})) \, (\lambda w \, . \, [\lambda t \, . \, t \text{ is } w\text{'s mother}])$ \hfill LT (four times)

   5. $= [\lambda k_{\langle et,t \rangle} \, . \, [\lambda r_{\langle e,et \rangle} \, . \, [\lambda g_{\langle et \rangle} \, . \, k([\lambda u_e \, . \, \exists! x \, r(u)(x) = 1 \, \& \, g(x) = 1])]]]$ $(\lambda h_{\langle et \rangle} \, . \, \exists z ([\lambda v_e \, . \, v \text{ is a man}](z) = 1 \, \& \, \forall y ([\lambda v_e \, . \, v \text{ is a man}](y) = 1 \rightarrow y = z) \, \& \, h(z) = 1)) \, (\lambda w \, . \, [\lambda t \, . \, t \text{ is } w\text{'s mother}])$ \hfill βC

   6. $= [\lambda k_{\langle et,t \rangle} \, . \, [\lambda r_{\langle e,et \rangle} \, . \, [\lambda g_{\langle et \rangle} \, . \, k([\lambda u_e \, . \, \exists! x \, r(u)(x) = 1 \, \& \, g(x) = 1])]]] \, (\lambda h_{\langle et \rangle} \, . \, \exists z (z \text{ is a man } \& \, \forall y (y \text{ is a man} \rightarrow y = z) \, \& \, h(z) = 1)) \, (\lambda w \, . \, [\lambda t \, . \, t \text{ is } w\text{'s mother}])$ \hfill βC

   7. $= [\lambda r_{\langle e,et \rangle} \, . \, [\lambda g_{\langle et \rangle} \, . \, [\lambda h_{\langle et \rangle} \, . \, \exists z (z \text{ is a man } \& \, \forall y (y \text{ is a man} \rightarrow y = z) \, \& \, h(z) = 1)]([\lambda u_e \, . \, \exists! x \, r(u)(x) = 1 \, \& \, g(x) = 1])]] \, (\lambda w \, . \, [\lambda t \, . \, t \text{ is } w\text{'s mother}])$ \hfill βC

   8. $= [\lambda r_{\langle e,et \rangle} \, . \, [\lambda g_{\langle et \rangle} \, . \, \exists z (z \text{ is a man } \& \, \forall y (y \text{ is a man} \rightarrow y = z) \, \& \, [\lambda u_e \, . \, \exists! x \, r(u)(x) = 1 \, \& \, g(x) = 1](z) = 1)]] \, (\lambda w \, . \, [\lambda t \, . \, t \text{ is } w\text{'s mother}])$ \hfill βC

   9. $= [\lambda r_{\langle e,et \rangle} \, . \, [\lambda g_{\langle et \rangle} \, . \, \exists z (z \text{ is a man } \& \, \forall y (y \text{ is a man} \rightarrow y = z) \, \& \, \exists! x \, r(z)(x) = 1 \, \& \, g(x) = 1)]] \, (\lambda w \, . \, [\lambda t \, . \, t \text{ is } w\text{'s mother}])$ \hfill βC

   10. $= \lambda g_{\langle et \rangle} \, . \, \exists z (z \text{ is a man } \& \, \forall y (y \text{ is a man} \rightarrow y = z) \, \& \, \exists! x \, [\lambda w \, . \, [\lambda t \, . \, t \text{ is } w\text{'s mother}]](z)(x) = 1 \, \& \, g(x) = 1)$ \hfill βC

   11. $= \lambda g_{\langle et \rangle} \, . \, \exists z (z \text{ is a man } \& \, \forall y (y \text{ is a man} \rightarrow y = z) \, \& \, \exists! x \, [\lambda t \, . \, t \text{ is } z\text{'s mother}](x) = 1 \, \& \, g(x) = 1)$ \hfill βC

   12. $= \lambda g_{\langle et \rangle} \, . \, \exists z (z \text{ is a man } \& \, \forall y (y \text{ is a man} \rightarrow y = z) \, \& \, \exists! x \, x \text{ is } z\text{'s mother } \& \, g(x) = 1)$ βC

   13. $=$ the function that maps a predicate of type $\langle et \rangle$ to the value 1 if this predicate holds of the unique individual that is the mother of the unique man in the discourse context, and maps it to the value 0 otherwise \hfill βC

the meaning of this noun phrase.

Still, Jensen and Vikner have to say something more for the case of Saxon genitives whose possessum noun is a monadic noun: in this case, the denotation of N$_2'$ would *not* be an entity of type $\langle e, et \rangle$. Their proposal is that in such cases lexically-driven *type coercion*—essentially a mechanism of type shifting—applies to determine an appropriate entity of type $\langle e, et \rangle$ on the basis of the semantics of the possessum.

Jensen and Vikner maintain that this process is lexically-driven in a very strict sense. Following (Pustejovsky, 1995), they assume that the lexical representation of words specifies—among other things—four essential aspects of their meaning that Pustejovsky calls *qualia roles*:

(187)   *Qualia Roles* (Pustejovsky, 1995)

      a.   CONSTITUTIVE: the relation between an object and its constituent parts or between an object and what that object is logically part of;

      b.   FORMAL: that which distinguishes it within a larger domain;

      c.   TELIC: its purpose and function;

      d.   AGENTIVE: factors involved in its origin or "bringing it about".

Type coercion amounts to applying one of a handful of type-shifting operations that—given a noun—select one among the relations represented in its *qualia structure* when semantic composition requires that a relation, and not just an entity of type $\langle et \rangle$, be provided by the noun.

In order to account for what in this thesis I call control and free interpretations of English Saxon genitives, Jensen and Vikner propose two additional type-shifters that do not refer to the qualia structure of a noun, defined in (188):

(188)   a. $Ctr(W) = \lambda y[\lambda x[W'(x) \ \& \ \text{control}'(x)(y)]]$

      b. $Prag(W) = \lambda y[\lambda x[W'(x) \ \& \ \text{related.to}'(y)(x)]]$

The *Ctr* shifter introduces the same relation that I call CONTROL.[13] The *Prag* shifter introduces a very vague constant relation, whose intended interpretation—according to Jensen and Vikner—is determined on the basis of contextual information. For the reasons discussed already at various places in the previous chapters, the adoption of this radically underspecified constant meaning does not provide—in my opinion—an appropriate analysis of the semantics of free interpretations. However, this shortcoming of Jensen and Vikner's proposal can be easily amended by assuming that the type-shifter *Prag* introduces a free relational variable, whose meaning is then specified directly by the context of use of the Saxon genitive possessive.

Even under the assumption of Jensen and Vikner's analysis of English Saxon genitives nothing has to be changed in the account proposed in chapter 5 for the derivation of free interpretations. The theory still expects Saxon genitives to license free interpretations. Indeed, the lexical entry for 's in (186) obtains the result that the relation to which the function corresponding to the meaning of the GP applies—i.e. the relation contributed by the N_2'—ends up embedded within the predicate on which the requirements determined by the semantics of definiteness are imposed. In particular, this holds of the free relational variable introduced by the *Prag* shifter. Thus, as per the stipulation in (153), it is expected that this variable is not subject to Generalized Novelty.

The upshot of the above observations is that the central proposal advanced in

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[13]Somewhat oddly, Jensen and Vikner maintain in (Vikner and Jensen, 2002) that this relation is akin to the relations that are specified by the qualia structure of a possessum noun. Granted that the *lexical* nature of this relation is undeniable, a formal difference exists between this relation and those relations that according to Jensen and Vikner are specified in the lexical entry for the possessum noun: the latter depend on the choice of a given possessum, but control interpretations are generally available with all sorts of possessum nouns. This supports the conclusion—suggested in this work—that the CONTROL relation is not contributed by the semantics of the possessum, but by the interpretation of the possessive construction itself. Jensen and Vikner seem to acknowledge this problem in (Jensen and Vikner, 2002).

this thesis—namely, that the distribution of free interpretations in possessives is to be accounted for in terms of the semantics of definiteness—can be maintained even if the syntax of English Saxon genitives is argued to be considerably different from the syntax proposed in chapter 3 for Italian definite possessives. But can the argument be made that the analysis proposed for Italian possessives *should* be maintained in order to account for the English facts? After all, if the peculiar syntax of English Saxon genitives is acknowledged, and if it can be argued that the syntax of English postnominal genitives differs significantly from it, the hypothesis could be pursued that these syntactic differences determine the interpretive differences between the two constructions. For example, it could be suggested that the $Prag$ shifter applies only in the semantic derivation of Saxon genitives, and no free relational variable is ever introduced in the semantic derivation of English postnominal genitives.

In the rest of this chapter I collect evidence for the argument presented in the appendix to this chapter that the above conclusion is not tenable, and that the gist of the analysis proposed in the previous chapters must be resorted to in order to account for the interpretive properties of English possessives.

6.1.3 A problem?

The generality of the conclusion that Saxon genitives are definite DPs has been challenged on the basis of the data summarized in the paradigm in (189):

(189) a.   There is a man in the garden.
       b. *There is the man in the garden.
       c.   There is a man's dog in the garden.
       d. *There is the man's dog in the garden.

Whereas Saxon genitives headed by a definite possessor seem to behave like definite descriptions in the context of existential **there** sentences, Saxon genitives

headed by an indefinite possessor seem to behave like indefinite DPs. This has led various authors to the hypothesis that the definiteness specification of the possessor determines the definiteness specification of a Saxon genitive DP as a whole.[14]

A precise characterization of the relation existing between the [±definite] interpretation of a Saxon genitive DP and the [±definite] specification of its possessor DP is obviously a relevant issue for a semantic analysis of English possessives, but I think that this issue can be safely side-stepped for the purpose of this thesis. For present purposes, I have been and I will be concerned only with possessives whose possessor is a proper name. Saxon genitives whose possessor is a proper name are uncontroversially assumed to be definite, and their licensing free interpretations is completely unproblematic within the analysis proposed in the previous chapter.[15]

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[14]See in particular (Barker, 1995, ch.3), where the more general claim is defended that the semantics of the possessor in a Saxon genitive DP—be it a definite, an indefinite, or a quantificational DP—"controls" the semantic properties of the whole Saxon genitive DP.

[15]Of course, this does not mean that the conclusions that are eventually reached in the debate about the definiteness status of Saxon genitives with a non-definite possessor DP do not affect the predictions of the theory developed in this thesis. For example, Barker's (1995) hypothesis that the semantic properties of a Saxon genitive are determined by the properties of the possessor DP predicts—within the current theory—that not all Saxon genitives license free interpretations, but only those with definite possessors. And the data in (189) showing that Saxon genitives with an indefinite possessor do not behave like definite DPs in existential there sentences are quite suggestive in light of the observation that the availability of free interpretations with possessives of this kind seems to be—at least—not as straightforward as it is in the case of Saxon genitives whose possessor is a definite DP. See footnote 53 in chapter 5. Saxon genitives with an indefinite possessor seem to display the interpretive properties that characterize weak definite DPs, in that they do not seem to presuppose maximality. Possibly, an account for the interpretive properties of weak definite possessives can be extended to the case of Saxon genitives with an indefinite possessor, but these are issues that I leave open for future research.

6.2 Copular possessives in English

In this section I argue—following observations by Partee and Borschev (2001)—
that English does not really have constructions that correspond to the Italian
"bare possessor" predicate possessives that appear in copular sentences like Questi
cani sono di Gianni 'these dogs are of Gianni'. Still, copular possessives in English
are interesting because they seem to provide evidence that the analysis proposed
in chapter 5 for the derivation of free interpretations in Italian definite possessives
must be resorted to in order to account for the availability of these interpretations
in English Saxon genitives.

6.2.1 Elliptical Saxon genitives

I already mentioned in chapter 2 that it is doubtful that English has constructions
that correspond to the predicate possessives discussed for the case of Italian.
Indeed, despite the apparent parallelism between the English data in (7) and
the Italian data in (190a,b), which seems to suggest that the postcopular Saxon
genitive marked possessor John's in English is a bare possessor like the PP di
Gianni in Italian, it can be easily shown that this parallelism is misleading.

(7)   a.   This car is John's.
        b. #This uncle is John's.

(190)   a.   Questa auto è (quella) **di Gianni**.
           this   car is (that) of Gianni

        b. ?Questo zio   è #(quello) **di Gianni**.
           this   uncle is #(that) of Gianni

        c. Questo professore è #(quello) **di Gianni**.
           this   teacher   is #(that) of Gianni

Various authors (Stockwell et al., 1973; Partee, 1983/1997, a.o.) have taken
the data in (7) as arguments in favor of the conclusion that inherent possessive

relations cannot be built "across" a copula: possessor and possessum must be combined within the same DP for an inherent possessive relation to be available. But the assumption that is implicit to this conclusion—namely that the postcopular material in the English examples in (7) is not a full possessive DP—seems to be unwarranted.

In the Italian example (190b) ill-formedness arises when the postcopular material is not a full possessive DP: when the demonstrative *quello* 'that' is present to indicate an elliptical full DP in postcopular position the sentence becomes well-formed under the relevant inherent interpretation.[16] The same holds for the case of (190c)—which is included as a term of comparison for (191c) below—ill-formedness arises when the material in postcopular position is not a full DP. But, as argued convincingly by Partee and Borschev (2001), the English data in (7) are not amenable to the same explanation. A closer inspection of English copular possessives suggests that postcopular Saxon genitive marked possessors in English are *always* part of an elliptical full possessive DP, and that the problem with sentences like (7b) must be due to the subject of the copular sentence.

Two kinds of data lead to this conclusion. First, the observation that sentences like (7b) do not improve when a full Saxon genitive is in postcopular position (191a,b). And then the observation that if the subject of the copular be sentence is appropriately chosen, the resulting sentence is well-formed under an inherent interpretation of the possessive construction, independently of whether

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[16]A residual marginality remains. This may be due to the relational noun like zio that appears as a subject without a complement DP and thus requires that its relational denotation be reduced to a predicate of type $\langle et \rangle$, an on-line type-shifting operation that may reduce the acceptability of this example. Possibly, an additional problem with such "monadic" uses of nouns like zio is that there hardly seem to be properties—beyond the relational meaning of the noun itself—that qualify an individual as an uncle (the same is not the case with nouns like mother that could in general be argued to qualify an individual with a series of properties that go beyond the mere relational meaning of the noun).

the postcopular material is a full Saxon genitive or an elliptical DP (191c–d).

(191) a. *That father is **John's (father)**.

b. *That favorite movie is **John's (favorite movie)**.

c. That teacher is **John's (teacher)**.

d. His [pointing] father is also **John's (father)**.

Descriptively, the data in (191) suggest that the problem with the bad examples in (a) and (b) is that they contain intrinsically relational nouns (or adjective-noun phrases) that have to be interpreted as monadic in subject position while being interpreted as relational in the (elliptical) Saxon genitive possessive in postcopular position, of which they constitute the possessum. The good examples in (c)–(e) on the other hand, contain either a noun like teacher which—describing a profession—can be taken to have two distinct lexical entries—a monadic and a relational one—that are used respectively in the subject and in the postcopular Saxon genitive, or an intrinsically relational noun that is interpreted as relational both in the subject and in the postcopular Saxon genitive DP.

Partee and Borschev (2001) suggest that sentences like (191a,b) might be out under the relevant intrinsic reading because of "a restriction (perhaps a processing restriction) on shifting an expression away from its basic meaning and then back again". Of course this remains a simple suggestion, which comes rather short of providing a full explanation. What is relevant for present purposes is that the data discussed by Partee and Borschev caution us from rushing to quick conclusions when using English copular possessive constructions as a testbed for the theory proposed in the previous chapters for the case of Italian.[17]

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[17]Partee and Borschev (2001) argue that there are some uses of Saxon genitive marked possessors in English that seem akin to the Italian predicate possessives discussed in this thesis. They mention examples like (i)–(iii) in which the Saxon genitive possessor appears in structural positions that intuitively license only predicative expressions, but conclude that they have no convincing structural arguments to support their intuitions:

For example, the observation that a sentence like (192) does license free interpretations—witness its felicitousness when uttered in the same dog-pound scenario that is described in chapter 2 when the interpretive properties of Italian predicate possessives are first presented—does *not* provide an argument against the theory proposed in the previous chapters. The postcopular material in (192) can be argued to be the elliptical form of a full Saxon genitive DP, a definite DP which the theory expects to license free interpretations.

(192) [BACKGROUND: John and Paul were attacked by two different groups of dogs, the dogs were all captured and brought to the dog pound; pointing to a group of kennels at the pound...]
These dogs are **John's**.

Still, I argue below that English copular possessive constructions seem to provide empirical evidence that bears on the issues discussed in this thesis, and that this evidence *supports* the theory proposed in the previous chapters.

Before getting to that, however, let me briefly address the question why English postcopular Saxon genitive possessors cannot or are usually not taken to be "bare" possessors like Italian predicate possessives, and are instead taken to be part of an elliptical DP. It seems to me that the answer was already implicitly given when discussing the syntactic differences that hold between Italian possessives and English Saxon genitives. In English Saxon genitives the possessor surfaces in a structural position—say Spec,DP—which is contingent on the presence of a full DP structure. On the other hand, possessors in Italian DP surface in a PP that can be used independently as a predicate. Whether

i.   The house, the barn, and the land are finally ours and ready to move into.

ii.   It's already/now/finally/almost ours.

iii. Anything we find on this land is John's.

I will thus refrain from addressing the issue whether examples can be constructed along the lines of (i)–(iii) that bring some evidence for or against the theory proposed in this thesis.

it is assumed that Saxon genitive possessors are generated in or moved to their surface position, it seems to me that their presence is sufficient to signal that the postcopular material is an elliptical DP, rather than a bare possessor.[18]

6.2.2 Predicate Saxon genitives

In discussing in §6.1 the analysis of English Saxon genitives proposed by Jensen and Vikner I pointed out that—for the purpose of the theory developed in this thesis—it is sufficient that the free relational variable which underlies free interpretations be embedded in the predicate on which the requirements due to the semantics of definiteness are imposed, for the prediction to follow that free interpretations are available for English Saxon genitives. And, as already mentioned, this is the case both under the assumption of a movement-based syntax of Saxon genitives along the lines proposed for Italian possessives in chapter 3 and under the alternative syntactic analysis proposed by Jensen and Vikner.

In chapter 3 an argument was proposed—on the basis of Italian data— for the stronger conclusion that it is necessary to keep separate the structural level at which the possessor and possessum are combined and the level at

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[18]The stronger hypothesis that English postcopular Saxon genitive marked possessors are *always* elliptical DPs and that English does *not* have "bare possessor" predicate possessives at all has one interesting consequence for the syntactic analysis that is proposed for Saxon genitives. If a movement-based analysis is endorsed, the trigger for movement of the possessor from the PP within which it is projected should be some property of the possessor DP, and not some property of a higher syntactic node in the whole possessive DP. Under the latter assumption, it would be sufficient for a full DP structure not to be projected for the PP within which the possessor is projected to be used as a bare possessor predicate in copular sentences. This possibility is excluded if movement of the possessor is necessary to "check" some syntactic feature of the possessor against the features of a node in the full structure of a possessive DP. I am sympathetic to this stronger hypothesis, but I do not have any empirical arguments to support it. For the record, it is my impression that the alleged examples of English predicate possessive proposed by Partee and Borschev (2001)—see footnote 17—are elliptical instances of the predicate Saxon genitives discussed below in the text, rather than bare possessors like the Italian predicate possessives.

which the semantics of definiteness is introduced. Interestingly, an additional argument for this conclusion can be made on the basis of an often overlooked fact concerning English Saxon genitives. English Saxon genitives arguably display the interpretive properties of definite DPs when they are used in argument position. For example, consider again the data in (182):

(182) a. [#] **John's dogs** are on the left, and **John's dogs** are on the right too.

      b. [#] **The dogs that belong to John** are on the left, and **the dogs that belong to John** are on the right too.

But this parallelism between Saxon genitives and definite descriptions does not seem to hold in postcopular position: the sentence in (193a) is not a contradiction as it would be expected to be if the Saxon genitive **John's dogs** triggered the same maximality presupposition that is triggered—even in postcopular position (193b)—by the definite description **the dogs that belong to John**. This asymmetry is discussed in (Mandelbaum, 1994).

(193) a. These on the left are **John's dogs**, and those on the right are **John's dogs** too.

      b. [#] These on the left are **the dogs that belong to John**, and those on the right are **the dogs that belong to John** too.

The contrast between the interpretive properties of Saxon genitives in argument vs. postcopular position provides an argument in favor of the conclusion that even in English Saxon genitives the structural level at which the possessor and possessum are combined is below the structural level at which the semantics of definiteness is introduced. Indeed, it can be maintained that a phonologically null counterpart of the definite determiner contributes the definite specification of a Saxon genitive DP, and that this null determiner selects as a complement the syntactic category within which the Saxon genitive marked possessor and

the possessum are combined.[19] One stage of the syntactic derivation of English Saxon genitives would then display the structure sketched in (194):

(194) $[_{\text{DP}}\text{THE}\ [_{\text{XP}}\text{John's dogs}]]$

Given this hypothesis, the absence of maximality presuppositions—the hallmark of the semantics of definiteness—for Saxon genitives in postcopular position can be accounted for if these Saxon genitives are not full DPs, but instances of the nominal category smaller than DP labeled as XP in (194).[20] Saxon genitives in argument position, on the other hand, must be full DPs, and thus are always interpreted as definite.[21]

Whatever the details of the account proposed for the peculiar interpretive properties of English Saxon genitives in postcopular position, the theory proposed in the previous chapters for the interpretation of Italian possessives makes the prediction that if a postcopular Saxon genitive is—as in the case of (193a)— interpreted as not carrying the semantic hallmark of definiteness, this possessive construction will not license free interpretations. And this seems to be the case, as shown by the contrast in (195):

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[19]Of course, the choice is still left open to assume that the possessor is generated in a position that linearly precedes or follows the possessum.

[20]This is essentially the analysis of the facts in (193) proposed by Mandelbaum (1994) and Zamparelli (1995). Notice that the conclusion that is being advocated here is not that postcopular Saxon genitives are *always* categories smaller than DP denoting predicates, i.e. entities of type $\langle et \rangle$. In general, postcopular Saxon genitives can be either full DPs or these smaller categories—their overt form being ambiguous between the two structural analyses—but sentences like (193a) are compatible only with the syntactic analysis according to which the postcopular material is not a full DP, because the maximality presupposition triggered by the full DP structure is not compatible with the meaning of the sentence.

[21]I caution the reader not to confuse the predicate Saxon genitives discussed here with the *property-denoting* Saxon genitives discussed at length in (Munn, 1995; Kolliakou, 1999; Strauss, 2002), an example of which is the possessive DP a women's college. The predicate Saxon genitives discussed in the text can be distinguished from property-denoting Saxon genitives in various ways, the clearest of which being the observation (Strauss, 2002) that property-denoting Saxon genitives cannot have a proper name as possessor.

(195) [BACKGROUND: John and Paul were attacked by two different groups of dogs, the dogs were all captured and brought to the dog pound; looking at some kennels at the pound...]

Whose dogs are these (on the left)? And whose dogs are those (on the right)?

    a. These on the left are **John's dogs**. And those on the right are **Paul's dogs**.

    b. #These on the left are **John's dogs**. And those on the right are **John's dogs** too.

The sentence in (195), where the postcopular John's dogs can be interpreted as a definite full DP, can be used to convey the information that the dogs pointed at first are the ones that attacked John, and the ones pointed at afterwards are the ones that attacked Paul. But the sentence in (195b), where the postcopular Saxon genitive cannot be interpreted as a definite full DP, cannot be used to convey the information that both groups of dogs are among those that attacked John.[22]

The interpretive properties of sentences like (195b) provide a rather striking argument in favor of the conclusion that at least a central component of the analysis proposed for the derivation of control and free interpretations in Italian possessives—namely the role of the semantics of definiteness in licensing the derivation of free interpretations—must be maintained even if one wants to pursue the hypothesis that the interpretive facts concerning English Saxon genitives and postnominal genitives can be accounted for in terms of the structural differences between the two constructions.

Actually, strictly speaking, the above argument is by itself sufficient to rule out the hypothesis that the interpretive contrasts between English Saxon genitives

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[22]The oddness of (195b) cannot be reduced to the presence of the coordination: the exact same sentence is *not* odd in (193a), where the intended interpretation is a control rather than a free interpretation.

and postnominal genitives could or should be accounted for in purely structural terms. Once it is recognized that the semantics of definiteness is crucial in Saxon genitives to license the semantic derivation of free interpretations, it becomes immaterial whether the free relational variable that underlies the derivation of free interpretations can be inserted in the semantic derivation of English postnominal genitives or not: even under the liberal assumption that a free relational variable can enter their semantic derivation, postnominal genitives are (correctly) not expected to license free interpretations because they are not [+definite] (see the discussion in the next section). Still, let me address in the next section some basic facts concerning the syntax/semantics of English postnominal genitives, before getting back to these more general issues in the appendix to this chapter.

6.3   English postnominal genitives

This section begins with a disclaimer, too. None of the existing analyses of the syntax and semantics of English postnominal genitives that I am familiar with is completely satisfactory, in my opinion. I would have liked to present here a more satisfactory alternative to the analyses I am familiar with, but I ultimately realized that I cannot render full justice to the complexities of the issue, because some of these complexities still defy my attempts to reign them into a full-fledged theory.

Thus, in this section I limit myself to introducing some basic problems concerning the syntax and the semantics of English postnominal genitives and briefly outlining two general approaches to the analysis of these DPs that take a fundamentally different stance on these basic issues. And I try to assess how these two different approaches fare with respect to the attested interpretive properties of English postnominal genitives in the context of the theory proposed in this

thesis.

In a nutshell, I conclude that—given an appropriate formulation of either approach—the interpretive properties of English postnominal genitives are not surprising within the theory for the derivation of control and free interpretations developed for the case of Italian possessives in the previous chapters. Still, I suggest that the syntax of English postnominal genitives should probably be resorted to in order to account for the more categorical nature—as compared to Italian indefinite or quantificational possessives—of the unavailability of free interpretations for these DPs.

6.3.1 The syntax/semantics of postnominal genitives

Descriptively, the peculiar feature of English postnominal genitives is that a Saxon genitive marked possessor linearly follows the possessum noun. Thus postnominal genitives display the opposite linear order of possessor and possessum from the one that is observed in Saxon genitive DPs. This difference in the linear order of the constituents of the possessive DP seems to correlate with the definiteness specification of the whole DP. As argued already in §6.1, Saxon genitive DPs are normally interpreted as [+definite]; postnominal genitive DPs, on the other hand, are normally headed by indefinite or quantificational determiners (196a), and can be headed by a definite determiner only if they are modified by a restrictive relative clause (196b):

(196) a.   a/two/some/many/most book(s) of John's
       b.   the book(s) of John's *(that I read last)
       c.   that/those book(s) of John's (that I read last)

Still, this correlation does not seem to be perfect: postnominal genitive DPs can be headed by demonstratives—which are usually taken to be akin to definite determiners—irrespective of whether a restrictive relative clause is present (196c).

A first general approach to the analysis of postnominal genitives in English takes their [−definite] specification as a point of departure. Postnominal genitives are analyzed—so to speak—as a construction that complements the Saxon genitive construction: "the [postnominal genitive, G.S.] construction is available to make possible anything other than a simple definite possessive, which is all the preposed construction can express" (Lyons, 1986, p. 140). Still, within this general approach, authors have taken different stances concerning the issue of whether the two constructions—Saxon genitives and postnominal genitives— are transformationally related, or just distinct constructions in complementary distribution.

Lyons (1986) argues that the two constructions in (197a) and (197b) are distinct. In particular, he argues that the postnominal genitive in (197b) is a variant of the construction in (197c), where of John is a complement of friend:

(197)   a.   John's friend
        b.   a friend of John's
        c.   a friend of John

The two constructions share the same basic syntax in (198) and differ only in that in the postnominal genitive the preposition of assigns genitive Case to its complement, whereas in (197c) the complement of the preposition is assigned objective Case.

(198)
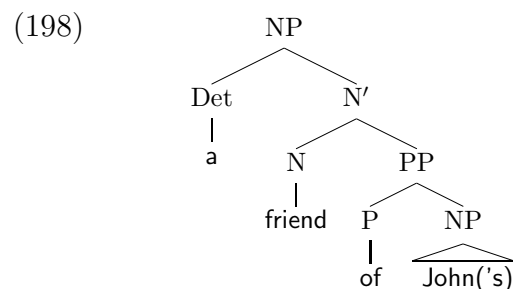
Lyons argues that "since this genitive Case assignment after a preposition is highly marked and exceptional, it is [...] not surprising that it is subject to

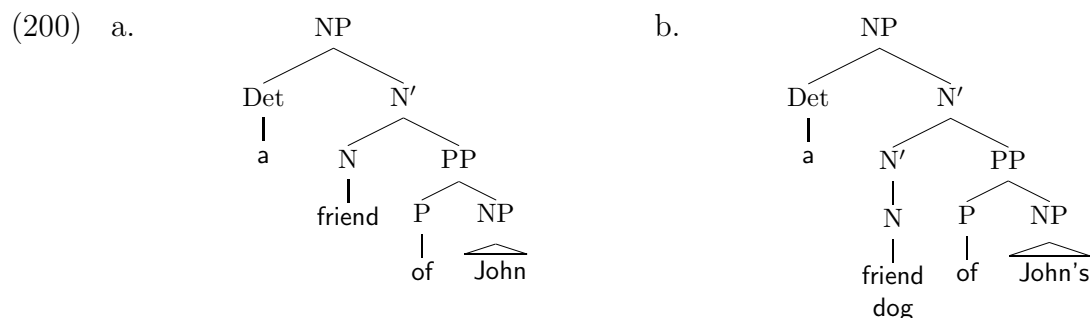some rather complex and unclear conditions and is affected by considerations like animacy and heaviness of NPs, and is in part optional" (Lyons, 1986, p. 137).

The optionality in the assignment of genitive Case predicted by Lyons's proposal, however, does not seem to be completely substantiated. While it is true that judgments on the well-formedness of postnominal genitive constructions are somewhat slippery, and possibly even subject to dialectal and idiosyncratic variation, still—as argued by Barker (1998)—a solid generalization is that the construction exemplified in (197c) is *not* well-formed when the possessum noun is a monadic noun, whereas the construction exemplified in (197b) is not sensitive to the difference between relational and monadic possessum nouns. Witness the contrast in (199):[23]

(199)   a.   a dog of John's
        b.   *a dog of John

This suggests that the two sentences in (197b,c) should be treated as instances of two distinct constructions: in (197c) of John is a syntactic argument of the noun friend (200a); in (197b) and (199a) of John's is an N′ adjunct (200b).

(200)   a.

```
                NP
              /    \
           Det      N′
            |      /   \
            a     N     PP
                  |    /   \
               friend P     NP
                      |      |
                      of    John
```

b.

```
                NP
              /    \
           Det      N′
            |      /   \
            a     N′     PP
                  |     /   \
                  N    P     NP
                  |    |      |
               friend  of   John's
                dog
```

---

[23]One apparent problem is that even in possessives whose possessum is monadic noun intuitions concerning the necessity of the Saxon genitive marker 's become quite slippery when the possessor is very heavy. Consider the status of the possessive a/that dog of the woman who lives across the street('s). However, it does not seem unreasonable that heaviness of the possessor is really a *confounding* factor here: processing considerations might account for the degraded status of the relevant judgments.

The difference between the two constructions would be—essentially—that in (200a) the head noun selects the denotation of the noun phrase in its complement PP as a semantic argument (the preposition **of** is semantically empty), an option that is not available for monadic nouns. On the other hand, the semantic relation holding between the PP adjunct and the head noun in (200b) could be taken to be modification. Similarly to the case of Italian possessives, the preposition **of** that assigns genitive Case to its complement is semantically potent and introduces the relation holding between possessor and possessum. Or, equivalently, the preposition could be taken to be semantically empty, the possessive relation being contributed by the Saxon genitive affix on the possessor. Under either hypothesis, the PP adjunct would denote a predicate of type $\langle et \rangle$ that is combined with the denotation of the possessum noun by Predicate Modification.[24]

Still, adopting an analysis in which the PP adjunct in (200b) denotes a predicate of type $\langle et \rangle$ seems rather problematic to me in that—under such an assumption—it is not clear why the parallelism with the Italian case breaks down in that the PP adjunct—or the embedded Saxon genitive marked possessor (see again the discussion in §6.2)—cannot be used as a bare possessor predicate in copular sentences in English:

(201) *This dog is **of John's**.

A better alternative would be to follow Jensen and Vikner's lead and take the relation between the possessor and the possessum noun in (200b) to be the same relation holding in Saxon genitive DPs between a possessor and the possessum it combines with. Remember that Jensen and Vikner took a Saxon genitive marked possessor to be an entity of type $\langle \langle et, t \rangle, \langle \langle e, et \rangle, \langle et, t \rangle \rangle \rangle$. But if the argument

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[24]But notice that something more should be said for the case of a friend of John's, where the possessive relation seems to be contributed by the possessum noun.

made at the end of §6.2 for the necessity of keeping distinct in English Saxon genitives the structural level at which possessor and possessum are combined and the level at which definiteness is introduced, Jensen and Vikner's proposal should be reformulated by taking the Saxon genitive marker to be an entity of type $\langle\langle et, t\rangle, \langle\langle e, et\rangle, \langle et\rangle\rangle\rangle$, i.e. a function that ultimately derives a predicate of type $\langle et\rangle$ as denotation of the syntactic constituent within which the Saxon genitive marked possessor and the possessum are combined, a predicate that is in turn taken as an argument by the denotation of the determiner.

Now, once this modification is made to Jensen and Vikner's proposal, the Saxon genitive marked possessor can be taken to denote the same entity whether it appears in Saxon genitive DPs or in postnominal genitive DPs. And, if desired, it can be argued that the two constructions are transformationally related, as has been argued among others by Stockwell et al. (1973) and Kayne (1994). These two analyses differ in what they take the base configuration of English possessive DPs to be, and in what they propose as the syntactic transformation relating the two types of constructions,[25] but abstracting away from these details they can be treated on a par: they maintain that—modulo their word-order differences, which are derived by syntactic movement—English postnominal genitives differ

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[25]Stockwell et al. propose that the Saxon genitive construction is derived from a basic structure like (200b) by a movement operation that displaces the possessor to Spec,DP when the DP is headed by (a null counterpart of) the definite determiner the and no modifying relative clause is present. Kayne proposes that the postnominal genitive construction is derived from a structure along the lines sketched in (194), by movement of a phrase containing the possessum to Spec,DP. Following work by Szabolcsi (1983, 1994) on the Hungarian noun phrase, Kayne argues that this movement is triggered when the possessive DP is specified as [−definite]. Lest the reader get confused, let me point out that I am being rather sloppy in this section, using at times the label NP and at other times the label DP. I hope that it is sufficiently clear to the reader that with both I mean the maximal syntactic projection in noun phrases.

from Saxon genitives only because of their [−definite] specification.[26,27]

A rather different approach to the syntax and semantics of English postnominal genitives is proposed by Barker (1998). Barker argues that, contrary to what is a basic assumption in the first approach, English postnominal genitives are not "simple" possessive DPs, but have a more complex syntactic and semantic structure.

One piece of evidence that he presents in favor of this conclusion is the following observation. English possessives seem in general subject to some sort of "thematic uniqueness" constraint, which requires that only one possessor be projected in a possessive DP. Thus, for example, the DP in (202a) is not well-formed even if there is nothing odd in semantic terms with it: the DP could conceivably be used to indicate the one among John's children that Mary stands in some (control-like) relation to. The problem, Barker argues, seems to be that of John has a semantic role that could be played by a Saxon genitive possessor[28] and somehow this is not compatible with the projection of another possessor

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[26]I might have been somewhat unfair to Stockwell et al. (1973) above. The movement rule that they propose does not have anything to do with the [±definite] specification of the possessive DP, but only with whether this DP is headed by the and is not modified by a relative clause. However, the idiosyncrasy of this movement rule is rather suspect, which suggests that an analysis along the lines proposed by Stockwell et al. would probably have to be reformulated in terms of a movement operation related to the [+definite] nature of the DP.

[27]Kayne (1994) argues that the well-formed version of examples like (196b) is not a counterexample to the conclusion that postnominal genitives are [−definite]. In these cases the definite determiner applies to the relative clause, a syntactic constituent that is not an extended projection of the postnominal genitive DP. See footnote 34 for some discussion of the apparent counterexample due to postnominal genitives headed by demonstratives, as in (196c).

[28]Actually, as mentioned already in the introduction to this chapter, Barker takes of John in (202a) to be a possessor. According to Barker, a DP like a child of John is a possessive construction.

within the DP.[29]

(202) a. *Mary's child of John

     b. my favorite story of yours

     c. Mary's most recently purchased book of John's

At first sight, the examples in (202b,c) seem to constitute exceptions to the above generalization: two possessors seem to be licensed in the same possessive DP. Barker argues that these are just apparent exceptions. The DPs in (202) can be still assumed to satisfy the "one possessor only" constraint if it is maintained that they are not simple, but recursive DPs: each of the two possessors is projected in a separate DP. The "one possessor only" generalization provides evidence in favor of the conclusion that postnominal genitives should be analyzed as recursive DP structures.[30]

A second concern that leads Barker to pursue a different approach to the analysis of postnominal genitives is that the main semantic property of postnominal genitives can be argued not to be [−definiteness], as analyses like the one proposed by Kayne (1994) would lead one to expect. Nor it it generally the case—another prediction of the analyses discussed above—that the addition of a relative clause makes the use of a definite determiner possible with postnominal genitives. Indeed, not only is the definite postnominal genitive DP in (203a) ill-formed, but so is its indefinite counterpart in (203b); and the addition of a relative clause does not ameliorate the status of either (203c).

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[29]The apparent counterexample to this generalization due to picture NPs might have already come to the reader's mind. Indeed, e.g. John's picture of Mary is completely well-formed in English. Still, the "depicted object" complement of picture NPs seems differs in important respects from the complement of relational nouns like child, witness the observation that whereas the latter cannot be used by itself in the postcopular position of English be sentences—e.g. *This child is of John—the former can—e.g. This picture is of John.

[30]The examples in (202) are from (Barker, 1998). The intuition underlying Barker's argument seems to be that—modulo semantic plausibility—postnominal genitive DPs with two possessors like (202b,c) are well-formed in English. Not all speakers I consulted, however, agree that this is generally the case.

(203) a. *I met **the two parents of John's**.

  b. *I met **two parents of John's**.

  c. *I met **(the) two parents of John's that you pointed out last night**.

The problem with the postnominal genitive two parents of John's seems to be independent of whether a definite determiner precedes it, or of whether it is modified by a relative clause. Intuitively, the problem is that this DP somehow seems to convey the information that John has parents *in addition to* the two individuals denoted by the postnominal genitive DP. Differently put, it seems that the entity denoted by this possessive DP cannot be the maximal entity that satisfies its descriptive content, but only a proper part thereof: this can be seen as the root of the inference that John has more than two parents that an utterance of (203b) triggers.

Barker takes this property—which he calls *anti-uniqueness*[31]—to be the main semantic characteristic of postnominal genitives, and sets out to account for this property in terms of the recursive-DP syntactic/semantic structure that he proposes for this class of English possessives. Indeed, another class of English DPs—which have been treated as recursive DPs in the literature—display the same semantic property: partitive DPs are subject to the same anti-uniqueness restrictions. Exactly like postnominal genitive DPs, partitives can in general be headed by a definite determiner only when they are modified by a relative clause:

(204) a. two friends of John's

  b. the two friends of John's *(that you pointed out last night)

  c. two of John's friends

  d. the two of John's friends *(that you pointed out last night)

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[31]For obvious reasons, in the present work we might want to dub this property *anti-maximality*.

And a paradigm parallel to the one in (203) can be constructed to argue that the main semantic property of partitives is not [−definiteness], but anti-uniqueness:

(205) a. *I met **the two of John's parents**.

   b. *I met **two of John's parents**.

   c. *I met **(the) two of John's parents that you pointed out last night**.

Following a proposal originally made by Jackendoff (1968), Barker argues that the preposition **of** that appears in English postnominal genitives is the same preposition that appears in partitives (the *Partitive Hypothesis*). English postnominal genitives and partitive possessives, thus, are structurally rather similar: both are recursive DPs whose embedded DP is a Saxon genitive embedded by the partitive preposition **of**. A syntactic implementation of this idea is proposed by Zamparelli (1998), who argues that the structure of both types of DPs is—modulo P(honological)F(orm) differences due to which of the two copies of the possessum noun is spelled out—the one sketched in (206).

(206) $[_{\text{DP}_1}\text{two}\,[_{\text{YP}}\text{friends}_i\,[_{\text{Y}'}\text{of}_{\text{part}}\,[_{\text{DP}_2}\text{John's friends}_i]]]]$

However, for Barker's purposes it is sufficient to maintain the weaker assumption that the **of** in postnominal genitives and partitive **of** share a common semantic core, i.e. the semantics of partitivity:[32] in postnominal genitives the identity between the null possessum in the embedded DP_2 and the predicate denoted by the noun in the higher DP_1 could be enforced in the semantics, as shown in the second line of (207).

(207) $\llbracket\text{of}_{\text{part}}\rrbracket \quad = \lambda u_e\,.\,[\lambda f_{\langle et\rangle}\,.\,[\lambda v_e\,.\,f(v)=1\ \&\ v<u]]$
$\llbracket\text{of}_{\text{poss.part}}\rrbracket \ = \lambda k_{\langle et,e\rangle}\,.\,[\lambda f_{\langle et\rangle}\,.\,[\lambda v_e\,.\,f(v)=1\ \&\ v<k(f)]]$

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[32]Barker argues that the assumption that **of** in postnominal genitives has a partitive semantics explains paradigms like the one given below:

i.   a friend of the two women's

ii. * a friend of both women's

Of course, an appropriate formulation of the semantics of partitivity is necessary in order to explain the anti-uniqueness property shared by possessive partitives and postnominal genitives. Barker argues that—contrary to what is commonly assumed (Ladusaw, 1982, e.g.)—the semantics of partitivity requires that the predicate that combines with the determiner of DP_1—i.e. the denotation of YP in (206)—hold of the *proper* parts of the entity denoted by the embedded DP_2, but not of the whole denotation of DP_2. This is the contribution of the relation $<$ in the lexical entries in (207).

In general, thus, the denotation of YP will be a lattice-theoretical structure without a maximal element, which immediately explains why a definite determiner cannot combine directly with the predicate denoted by YP. And, at the same time, this explains the effects of modification by a restrictive relative clause: in general, a relative clause makes the use of a definite determiner possible because it can be taken by the hearer to "filter" the lattice-theoretical structure denoted by YP so that it selects a substructure thereof—the entities in the denotation of YP that satisfy the predicate denoted by the relative clause—that has a maximal element. Of course, when world knowledge available to the hearer makes it

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The contrast between (i) and (ii) can be reduced to the *Partitive Constraint* formulated in (Ladusaw, 1982), which requires the complement of the partitive preposition to denote an entity, and thus excludes DPs headed by an inherently quantificational determiner like both. The exact nature of the Partitive Constraint has been a matter of debate in the literature since it was proposed in its original incarnation by Barwise and Cooper (1981), and still is an open issue. See (Barker, 1998) and the contributions in (Hoeksema, 1996) for some discussion. It is not clear to me, however, that the problem with (ii) should be reduced to the Partitive Constraint. As noticed in (Zamparelli, 1998), postnominal genitives like (iii) seem to be bad, even under the inverse-linked reading under which the corresponding partitive DP is well-formed (iv).

iii. * two friends of every woman's

iv.   two of every woman's friends

In the next section I speculate that postnominal genitives—if having a partitive semantics at all—seem to impose the restriction that their embedded DP be non-presuppositional. If this is the case, the ill-formedness of both (ii) and (iii) could follow from this restriction.

clear that the relative clause does *not* filter out a semi-lattice structure from the denotation of the YP, the presence of a relative clause does not make it possible for the definite determiner to be used. For example, consider the data given below, under the assumption that one person's left and right middle fingers are the same length:

(208)   a.   *I hurt **the one of my fingers**.
        b.   *I hurt **the one of my fingers on my left hand**.
        c.   *I hurt **the longest one of my fingers**.
        d.   I hurt **the longest one of my fingers on my left hand**.

Furthermore, relative clauses are not expected to have any effect in cases like (203) because the numeral **two** requires that the denotation of the YP be a group of arity 2, but—given the effects of proper partitivity—the denotation of **parents of John's** can contain groups of arity 2 only if John is taken to have more than two parents. Which is a requirement that cannot be "amended" by modifying the YP with a relative clause.

Despite the appealing account that it suggests for the semantic properties of English postnominal genitives, a variety of issues have to be addressed by the supporter of the Partitive Hypothesis, many of which were already pointed out by Lyons (1986) as arguments against Jackendoff's original analysis. Among these, some are very easy to dismiss, like the observation that the **of** PP in partitives can apparently be left-dislocated (209a), but the one in postnominal genitives cannot (209b).

(209)   a.   **Of the students**, **many** are no longer here.
        b.   ***Of John's**, **a friend** is no longer here.
        c.   **Of the students**, **Mary and John** are no longer here.
        d.   ***Mary and John of the students** are no longer here.

The contrast in (209c,d) should be sufficient to demonstrate that the dislocated of PP construction in sentences like (209a) is only apparently derived by extracting the PP from a partitive DP.

Other issues are a little harder to settle. It is not my intention to address them here, because this would lead us to too far afield. I refer the reader to (Barker, 1998) for arguments against the criticism that the semantics of proper partitivity is rather easy to detect in partitives, but seems harder to detect—if not absent altogether—in postnominal genitives. I refer the reader to (Zamparelli, 1998) for an attempt at accounting for the differences in the nature of the determiners that can head DP_1 and DP_2 in partitives vs. postnominal genitives in terms of the assumption that they differ only in terms of their PF.[33] And I relegate to a footnote some remarks on the observation that postnominal genitives in English can be headed by demonstrative determiners—which are usually taken to be definite—even when no relative clause is present.[34]

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[33]An additional difference between partitives and postnominal genitives is, of course, that the noun that provides the descriptive content of the DP is always spelled out in the embedded DP_2 in partitives, and always spelled out in the embedding DP_1 in postnominal genitives. Lyons (1986) argues that this asymmetry is not explained by, and thus constitutes an argument against, the Partitive Hypothesis. In effect, neither Barker (1998) nor Zamparelli (1998) seem to take this asymmetry as a fact in need of explanation. In my opinion, the properties of postnominal genitives can be explained if—as argued in the next section—these DPs involve syntactic extraction of the noun from the embedded DP_2. But the properties of partitives—in English and crosslinguistically—suggest that the conclusion that partitives are a recursive DP structure is probably incorrect. Of course, if partitives are not recursive DPs (Matthewson, 2001, e.g), the strong version of the Partitive Hypothesis defended by Barker or Zamparelli cannot be maintained. Still, an analysis of English postnominal genitives according to which they are recursive DPs with a partitive semantics could be maintained.

[34]This observation constitutes a problem not only for the hypothesis underlying the first approach that postnominal genitives are always [−definite], but has been proposed as an additional argument against the Partitive Hypothesis, too. Indeed, postnominal genitives and partitives differ in that the latter can be headed by a demonstrative only when they are modified by a relative clause. That is, only partitives seem to behave as the Partitive Hypothesis would predict, requiring modification by a relative clause for a demonstrative determiner to be used:

i.   **Those houses of yours (that were sold)** are in good condition.

ii.   **Those of the houses *(that were sold)** are in good condition.

6.3.2 Control vs. free interpretations in postnominal genitives

Let me summarize. Two distinct approaches have been proposed in the literature to account for the syntax/semantics of English postnominal genitives. The first approach treats these DPs as differing from Saxon genitives only in terms of their [−definite] specification, and tries to derive their different morpho-syntactic structure—in particular the postnominal position of the Saxon genitive marked possessor—in terms of this basic semantic difference. The second approach—the

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However, it is not clear what conclusions to derive from contrasts like (i) vs. (ii) for at least three reasons. First, as pointed out to me by Carson Schütze, it is not clear that the those in (ii) is a real demonstrative: it can be replaced with the (ones) without any change in meaning, whereas the same does not hold for the case of (i) when no relative clause is present. In addition, as Barker (1998) points out, postnominal genitives headed by demonstratives without a modifying relative clause are characterized by a property that distinguishes them from the corresponding partitives and postnominal genitives that are modified by a relative clause. Postnominal genitives of the first kind essentially require intonational prominence on the possessum noun. Indeed, any attempt to shift the phonological prominence from the possessum to the Saxon genitive marked possessor—by using a conjunction of two DPs as possessor (iv), by modifying the possessor with an adjective (v), or by using an expletive (vi)—is rather questionable, if not impossible. (I reworked Barker's original examples. Barker's original examples contain a functional noun—mother—as possessum. These examples highlight how postnominal genitives introduced by a demonstrative that are not modified by a relative clause seem to violate the anti-uniqueness property as well—consider That nose of his!. I think that Barker's point can be made for all postnominal genitives introduced by demonstrative with no modifying relative clause, and not just those that blatantly seem to violate anti-uniqueness.)

iv. [?] those houses of his and Bill's

v. * those houses of the tall man's

vi. * those houses of the jackass's

Finally, as pointed out to me by Barbara Partee, the demonstrative in postnominal genitives of this kind must be deaccented, and cannot be interpreted contrastively:

vii. **Those houses of yours *(that were sold)** are in good condition, the others however. . .

Both English partitives and postnominal genitives introduced by a demonstrative do not seem to require this kind of intonational pattern when followed by a relative clause. Of course, arguing that e.g. those houses of yours is not like the postnominal genitives discussed above does not exempt the analysis from having to provide an alternative syntactic/semantic analysis for this different construction. However, this is a task that I cannot render full justice to here. I thus leave postnominal genitives headed by demonstratives aside for future research, and I will not be concerned here with their interpretive properties.

Partitive Hypothesis—proposes that English postnominal genitives differ from Saxon genitives in that they are recursive DPs, akin to possessives partitives, and that the apparent postnominal position of a Saxon genitive marked possessor is—as the adjective says—just apparent, the possessor being part of a Saxon genitive DP embedded by the partitive preposition of. And the conclusion that postnominal genitives are always [−definite] follows from their partitive semantics.

Now, a cursory look at the interpretive data that have been the main issue of investigation of this thesis suggests that the Partitive Hypothesis cannot be correct: English postnominal genitives do not license free interpretations (210b), but English partitive possessives—like Italian partitive possessives—do so (210c).

(210)   Yesterday John and Paul were attacked by (different) groups of dogs;
     a.   . . . unfortunately **John's dogs** were rabid.
     b. [#]. . . unfortunately **some/two/many/most dogs of John's** were rabid.
     c.   . . . unfortunately **some/two/many/most of John's dogs** were rabid.

The availability of free interpretations with English partitive possessives can be accounted for along the same lines proposed for the case of Italian partitive possessives: once the availability of free interpretations with English Saxon genitives is explained—see §6.1—the theory proposed in the previous chapter predicts free interpretations to be available with English partitive possessives as well, because the embedded DP_2 in these recursive DPs is a Saxon genitive DP, and the relation holding between possessor and possessum is established within these embedded Saxon genitives. In particular, a free relational variable that enters the semantic composition of the embedded Saxon genitive DP is expected—like in Saxon genitives in general—not to be subject to Generalized Novelty.

But, within the Partitive Hypothesis proposed by Barker (1998), exactly the same reasoning can be made for English postnominal genitives, which embed a Saxon genitive DP within which the possessive relation is introduced, and thus are expected to license free interpretations as well (211). Ergo, the Partitive Hypothesis—at least the version proposed by Barker—cannot be correct. This problem for the Partitive Hypothesis was originally pointed out in (Storto, 2000a).

(211) $[_{DP_1}$ some/two/many/most $[_{YP}$ dogs$_i$ $[_{Y'}$ of$_{part}$ $[_{DP_2}$ John's dogs$_i$]]]]

On the other hand, the data in (210) are not surprising under the alternative analysis according to which English postnominal genitives are non-recursive indefinite DPs. The theory proposed in the previous chapter for the derivation of free interpretations in Italian possessives can account for the interpretation of English postnominal genitives exactly as it accounts for the absence of free interpretations in Italian indefinite or quantificational possessives.[35] A free relational variable that enters the semantic composition of a postnominal genitive DP will be subject to the requirements of Generalized Novelty—the variable is not part of a predicate to which the semantics of definiteness applies, so it is not under the scope of the stipulation in (153)—the result is that the postnominal genitive DP cannot denote a contextually salient relation like ATTACK.[36]

Thus, the analysis proposed in the previous chapters for Italian possessives can be adopted unchanged in order to provide an account of the interpretive

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[35]Of course, as in the case of Italian possessives, the availability of control interpretations—with both Saxon genitives and postnominal genitives—can be accounted for in terms of the proposal made in chapter 4 (§4.3.2) that the basis for control interpretations is the relational constant denoting the relation CONTROL.

[36]The reader might wonder: what about "definite" postnominal genitives followed by a relative clause? Do they license free interpretations? And how does the analysis presented in this thesis fare with respect to these data? Unfortunately, the judgments that I was able to collect are not terribly clear. If you are a native speaker of English, you might want to inspect your own intuitions concerning the status of e.g. (i) in the context set up in (210):

i.   . . . unfortunately **the dogs of John's that were captured** turned out to be rabid.

properties of English postnominal genitives, under the assumption that the first approach to the syntax/semantics of these DPs outlined in the previous section is correct. Even in this case, however, the question arises whether this analysis should be adopted and/or whether it is sufficient to account for the interpretive properties of English postnominal genitives.

A potentially troublesome observation is that—while above I suggested treating English postnominal genitives as the English equivalent, at least in semantic terms, of Italian indefinite and quantificational possessives—English postnominal genitives do not seem to display the marginal availability of free interpretations that seems to characterize Italian indefinite and quantificational possessives. See again the generalizations in (32) in the appendix to chapter 2.[37] This finding is rather unexpected within the current setting: English postnominal genitive DPs are taken not to differ from Saxon genitives except in terms of

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A cautious assessment of the data that I was able to collect is that the availability of free interpretations with these "definite" postnominal genitives is not as straightforward and unproblematic as it is the case with Saxon genitives. This is not necessarily a problem for the account of the derivation of free interpretations proposed in the previous chapter and adopted in §6.1 for English Saxon genitives. A fundamental property of the system is that the effects of a definite determiner are very local, affecting only variables in the predicate it combines with. Now, the observation that in examples like (i) the definite determiner combines with the predicate corresponding to the conjunction of the predicate denoted by dogs of John's and the predicate denoted by the relative clause could be capitalized on in order to account for the unavailability of free interpretations in these examples. Let me point out that—as far as I can see—this unavailability does *not* follow within the current system: the locality constraints in the licensing of free interpretations are derived in terms of Heim's (1982) LF-construction rules, and I do not see why this machinery would require the postnominal genitive dogs of John's to be interpreted before its containing definite "shell" is interpreted. Unless, that is, a promotion analysis of relative clauses along the lines proposed by Kayne (1994, a.o.) is adopted. I must admit, however, that it is not clear to me how the interpretation of a DP modified by such a relative clause would be derived compositionally.

[37]A word of caution: the empirical investigation that elicited the relevant data both in Italian and in English did not satisfy all the conditions—size of the consultant pool, controlled experimental situation, etc.—that would be required to give a proper "scientific" basis to the observation that such an interpretive contrast holds between Italian quantificational/indefinite possessives and English postnominal genitives. More research is necessary to test whether these preliminary findings hold up to further scrutiny.

their [±definite] specification, which is the same semantic difference that derives the interpretive differences between definite possessives and other possessive constructions in Italian. Now, if the analysis proposed for the case of Italian possessives is imported wholesale in order to account for the interpretive properties of English possessives, it is not clear why the marginal availability of free interpretations that characterizes Italian indefinite and quantificational possessives should not characterize English postnominal genitives as well.[38]

If these preliminary empirical findings are confirmed, the problem raised by the unexpected behavior of English postnominal genitives can in principle be addressed in various ways. The most radical would be to reject the theory proposed in this thesis altogether: the current theory can account only for the Italian facts and not for English, thus there is probably a better theory out there that can account for both the Italian and the English facts. Or, it could be maintained that the current theory is correct for the case of Italian, but something different must be proposed for the case of English possessives. A third option would be to maintain that the theory developed for the Italian case is crosslinguistically valid, and that the differences between Italian and English follow from independent differences between possessives in the two languages.

Indeed, this is the place where the peculiar syntax of English postnominal genitives might play a role. The theory proposed for the case of Italian possessives is very general and is entirely *semantic*, in that the availability

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[38]Actually, given the current state of the "official" theory, what is not clear is rather why Italian indefinite and quantificational possessives display this marginal availability of free interpretations. Indeed, the "official" theory achieves a completely satisfactory empirical coverage of the English facts, and only a somewhat satisfactory empirical coverage of the Italian data. Still, once the necessity of weakening the theory in order to account for the Italian data is acknowledged, the problem raised in the text arises: if the theory is weakened to account for the more complex Italian data, and no structural differences are postulated to exist between Italian indefinite/quantificational possessives and English postnominal genitives, the absolute unavailability of free interpretations with postnominal genitives is surprising.

of free interpretations is linked to the semantics of definiteness that applies to the predicate denoted by the possessive construction. But nothing in the current theory excludes the possibility that peculiar morpho-syntactic properties of certain possessive DPs in a given language interact with this semantic theory.

As a matter of fact, here the basic assumption of the Partitive Hypothesis—i.e. the idea that postnominal genitives are recursive DPs—might make its unexpected comeback. I argued in (Storto, 2000a) that the unavailability of free interpretations in English postnominal genitives definitely argues against the version of the Partitive Hypothesis proposed by Barker (1998). But I pointed out in the same paper that it can be argued independently that one assumption made by Barker should be revised, and—once this revision is made—the gist of the Partitive Hypothesis can be maintained.

The crucial observation is that—for the Partitive Hypothesis to derive the incorrect prediction that free interpretations are available with postnominal genitives—it must be maintained (as Barker does) that the Saxon genitive possessive embedded by partitive **of** in English postnominal genitives is a definite DP. If it can be argued that this DP is not definite, the Partitive Hypothesis does not expect postnominal genitives to license free interpretations more than an analysis along the lines of e.g. (Kayne, 1994) does: under either approach the possessive relation would be established within a [−definite] possessive construction, from which the requirement that the free relational variable encoding the possessive relation be subject to Generalized Novelty follows within the current analysis.

And we already saw some data—the facts concerning Saxon genitives in postcopular position discussed in §6.2—that cast doubt on the conclusion that all Saxon genitives are necessarily [+definite]. Now, the question is whether the hypothesis that the nominal following **of** in English postnominal genitives is

[−definite] can be supported empirically. Some evidence that this might be the case can be gathered on the basis of the following observations.

Zamparelli (1995) points out that Saxon genitive DPs with a numeral like my four dogs seem to presuppose maximality even when they are used in postcopular position—witness the contradictory interpretation of (212), which contrasts with the case of Saxon genitives without a numeral (193a) discussed in §6.2—from which he concludes that DPs of this kind are always [+definite].[39]

(193)   a.   These on the left are **John's dogs**, and those on the right are **John's dogs** too.

(212) [#] These on the left are **my four dogs**, and those on the right are **my four dogs** too.

If this conclusion is accepted, the contrast in (213) can then be argued to show that—even under the assumption that both constructions have a recursive-DP structure and a partitive semantics—English possessive partitives and postnominal genitives differ in that the embedded nominal in the latter cannot be [+definite].

(213)   a.   two of John's four dogs
         b.   *two dogs of John's four

Indeed, the problem with (213b) cannot be simply the "stray" John's four: such an elliptical Saxon genitive DP is normally licensed in English:

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[39]Zamparelli proposes a structural explanation for the obligatory definiteness of DPs like my four dogs. He argues for a "layered" functional structure in the DP, where the outermost two layers are labeled P(redicative)DP and S(trong)DP. The possibility that Saxon genitives in postcopular position are not interpreted as presupposing maximality—i.e. the data discussed by Mandelbaum (1994)—follows from the possibility for the Saxon genitive marked possessor to surface either in Spec,PDP or in Spec,SDP. A postcopular Saxon genitive possessive could then be either a PDP—a predicate, not triggering maximality—or a full SDP—an argument, interpreted as [+definite]. Now, Zamparelli suggests that the structural position for numerals like four is Spec,PDP, which entails that in a Saxon genitive like John's four dogs the possessor is in Spec,SDP and the whole possessive must be by necessity interpreted as a full SDP, from which its obligatory definiteness follows. See (Zamparelli, 1995) for details.

(214)   These are **Mary's three dogs**, and those are **John's four ~~dogs~~**.

The data in (213), combined with Zamparelli's observation, suggest that the material following the preposition of is not a full [+definite] DP, and is either a smaller syntactic category XP (194)—similarly to what was proposed for the case of postcopular predicate Saxon genitives in §6.2—or a [−definite] DP. The two options are shown in (215):

(194) $[_{\text{DP}} \text{THE} \, [_{\text{XP}} \text{John's dogs}]]$

(215)   a. $[_{\text{DP}} \text{some/two/many/most} \, [_{\text{YP}} \text{dogs}_i \, [_{\text{Y}'} \text{of}_{\text{part}} \, [_{\text{XP}} \text{John's } \text{dogs}_i]]]]$

      b. $[_{\text{DP}} \text{some/two/many/most} \, [_{\text{YP}} \text{dogs}_i \, [_{\text{Y}'} \text{of}_{\text{part}} \, [_{\text{DP}_{[-\text{def}]}} \text{John's } \text{dogs}_i]]]]$

Under either alternative, the nominal within which the possessive relation is introduced is not the complement of a definite determiner. Thus if a free relational variable enters the semantic derivation of English postnominal genitives, this variable is expected to be subject to the requirements of Generalized Novelty. Within the current proposal, this is sufficient to account for the unavailability of free interpretations with this class of possessive DPs.

What is interesting about the data in (213) is not simply that they allow for the possibility of accounting for the absence of free interpretations—a fact that is unproblematic within the first approach to the syntax/semantics of English postnominal genitives—within an analysis that maintains the basics of the Partitive Hypothesis,[40] but that they suggests a possible avenue to explore in order to account for the *absolute* unavailability of such interpretations, and thus for the contrast between English postnominal genitives and Italian indefinite and quantificational possessives.

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[40]Many details should be taken care of before claiming to have resurrected the Partitive Hypothesis. In particular, the proposed semantic properties of the embedded DP in postnominal genitives are not compatible with standard formulations of the Partitive Constraint.

Here we enter the realm of speculations and pointers for future research, so I will be rather brief. The problem with (213b) could be due—rather than to some unexplained restriction that bans [+definite] DPs from the embedded position in postnominal genitives—to the syntactic derivation of these DPs. Indeed, the hypothesis that postnominal genitives involve ellipsis seems to clash with the observation that the allegedly elided copy of the possessum noun cannot be spelled out in these DPs, contrary to a well-known property of typical instances of ellipsis.Consider the contrast between (214) and (216).

(216) *two dogs of John's dogs

The ill-formedness of (216) suggests—under a revised version of the Partitive Hypothesis—that the surface form of English postnominal genitives is derived by extracting the possessum from the embedded DP. And the idea that the semantic properties of a DP are relevant in determining whether extraction from this DP is possible has been suggested in the syntactic literature for quite a while (Chomsky, 1973; Fiengo and Higginbotham, 1981; Fiengo, 1987, a.o.). In particular, Diesing (1992) suggests that the crucial property is whether the DP is presuppositional or non-presuppositional: only non-presuppositional DPs license extraction.

Diesing's proposal is rather suggestive in light of the (very speculative) remarks made in the previous chapter (§5.4.2) that the marginal availability of free interpretations with Italian indefinite and quantificational possessives should probably be accounted for in terms of their presuppositional interpretation. If all these speculations can be given some substance—which, alas!, is far from obvious—the absolute unavailability of free interpretations with this class of English possessives would provide a rather striking piece of evidence in favor of a syntactic analysis according to which postnominal genitives are recursive DPs, which constitutes a basic tenet of the Partitive Hypothesis.

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Unfortunately, the facts concerning the syntax and semantics of extraction from DPs are far from clear even in descriptive terms, let alone explained, in the existing literature. Thus I will draw a very simple conclusion from the above discussion: the analysis proposed in the previous chapters for the derivation of control and free interpretations in Italian possessives is very general, and leaves quite a bit of room for the morpho-syntax of a specific language to generate patterns of interpretations that do not necessarily mirror those displayed by Italian possessives. Testing whether the analysis makes correct predictions for the case of a specific language requires a thorough investigation of the morpho-syntax and semantics of possessive constructions in this particular language. My hope is that the theory will withstand such thorough empirical testing.

6.4   Conclusion

Summarizing, the outcome of the discussion in the previous sections is that the proposal developed in chapters 4 and 5 to deal with the distribution of free vs. control interpretations in Italian possessive constructions can account for the interpretive properties of English possessives in a very straightforward way. This result highlights the strength of the current proposal: the theory is formulated as a general *semantic* theory, which is not completely tied to the syntax proposed in chapter 3 for Italian definite possessives. Syntactic differences holding between English possessives and Italian possessives are thus not expected to determine interpretive differences between possessive DPs from the two languages that can be shown to have essentially the same semantics—in particular with respect to the nature of the determiner that selects as a complement the syntactic node within which the possessor and the possessum are combined.

Appendix: A purely structural alternative?

The greater attention paid in this chapter to the effects that syntactic assumptions concerning possessive constructions have on the predictions that follow from a rather general theory like the one proposed in the previous chapters raises the issue of whether an even greater attention to syntactic details could eventually render the theory proposed in the previous chapters unnecessary. Repeating what was already said in the introduction to this chapter, if it can be shown that much of the contrast in the distribution of free vs. control interpretations in English possessives rides on the syntactic differences holding between Saxon genitives and postnominal genitives, the hypothesis could be advanced that a purely structural account of the interpretive contrasts investigated in this thesis might be feasible, both for the case of English and more generally on a crosslinguistic basis. To conclude this chapter, let me briefly outline—and dismiss—one such analysis that has been recently suggested by Dobrovie-Sorin (2002), and one alternative structural analysis that I considered for the English data during the research leading to this thesis.

Simple vs. *complex* genitives

Dobrovie-Sorin (2002) proposes to distinguish *simple genitives*—Saxon genitives (English), construct state associates (Hebrew), morphological genitives (Rumanian)—from *complex/prepositional genitives*—postnominal genitives (English), ʃel-genitives (Hebrew), al-genitives (Rumanian)—and suggests that the contrast between control and free interpretations could be reduced to the distinction between these two types of constructions. In a sense, this is the opposite route from the one that I took: rather than taking the Italian case as paradigmatic, she proposes to treat English, Hebrew and Roumanian as

paradigmatic cases, and deal with Italian by assuming that postnominal di-marked possessors in Italian are actually ambiguous between genitive-marked DPs—in the case of definite possessives—and prepositional PPs—in the case of indefinite/quantificational possessives.

I am not convinced that Dobrovie-Sorin's specific proposal is tenable. She argues that the possessum in simple genitives is interpreted as a function of type $\langle ee \rangle$ that, applied to the denotation of the possessor, yields the individual that constitutes the denotation of the possessive DP. And she proposes that the contrasts discussed in this paper can be accounted for by arguing that the selection of a specific *genitive function* to derive the interpretation of simple genitives is context-dependent, whereas the interpretation of complex/prepositional genitives relies on the semantics of a constant *genitive relation* whose meaning is similar to CONTROL.

This proposal builds definiteness into the syntax/semantics of simple genitives: given the functional nature of the possessum noun, the result of applying its denotation to the possessor is a unique (possibly plural) individual. But then it is predicted that Saxon genitives should always entail uniqueness/maximality, which has already been shown not to be the case (193). Probably it could be argued that predicate Saxon genitives are instances of complex/prepositional genitives, but then the morphological basis for the initial distinction between the two types of genitives is weakened somewhat.[41] In addition, the interpretive properties of English Saxon genitives are apparently quite different from those displayed by Hebrew construct state associates, which points towards the conclusion that the two are rather different syntactic constructions. In particular:

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[41]Furthermore, it is not clear how the fact that Saxon genitives whose possessor is indefinite do not seem prone to licensing free interpretations (see footnote 53 in chapter 5) could be accounted for within Dobrovie-Sorin's proposal.

(i) Hebrew construct state associates always entail uniqueness—even when used in copular constructions (Daphna Heller, p.c.)—and (ii) it has been argued that Hebrew construct state associates are restricted to *lexical* interpretations for the possessive relation (Heller, 2002, 2003).

Argument vs. *predicate* possessives

A different structural alternative to the theory proposed in this thesis could build on the analysis of English Saxon genitives proposed by Jensen and Vikner and some recent work carried out by Barbara Partee and Vladimir Borschev (Partee and Borschev, 2000, 2001, a.o.). Partee and Borschev try to distinguish two types of possessive constructions—*argument* vs. *predicate* possessives—in terms of the way in which the possessor and possessum are combined in the semantics: either one of the two denotes a function that takes the other as an argument, or one of the two denotes a predicate that modifies the other. The basic idea would be to take the interpretive differences holding between English Saxon genitives and postnominal genitives to arise from these two different modes of combination.

Fleshing out this idea a little bit, it could be suggested that Jensen and Vikner's analysis of English Saxon genitives instantiates the argumental mode of combination: the possessor selects the relational denotation of the possessum as an argument. And it could be maintained that only this mode of combination introduces—via type shifting of the denotation of a monadic possessum noun— the free relational variable that underlies the derivation of free interpretations. English postnominal genitives would not license free interpretations because they instantiate the alternative predicative mode of combination, which can only introduce the constant relation CONTROL.

Lest this suggestion seem completely arbitrary, let me point out that some of the data discussed in the previous sections could be taken to support the

hypothesis that English postnominal genitives instantiate a predicative mode of combination. Indeed, the data in (213b)—i.e. the ungrammaticality of postnominal genitives where a numeral follows the Saxon genitive marked DP— could be taken to show that the material following **of** in postnominal genitives is necessarily a predicate—a category smaller than a full DP (215a)—and not an argument. And the observation that the unavailability of free interpretations with English postnominal genitives is absolute seems to put them into the same bag with Italian predicate possessives, constructions in which the predicative nature of the postcopular bare possessor is uncontroversial.

Even leaving the details of the analysis open, it seems to me that the basic skeleton sketched above already raises some rather serious problems, which make it doubtful that this line of research will ultimately lead to a complete replacement for the theory developed in the previous chapters. Two immediate problems are the following. If the possessor in English postnominal genitives is a predicate, it is not immediately clear why this predicate cannot be used as a "bare" possessor predicate in English copular sentences. And at the same time it is not clear why the alleged parallelism between the case of English postnominal genitives and Italian predicate possessives breaks down in that only English postnominal genitives, but not Italian predicate possessives, license inherent possessive interpretations, as shown again in (217).

(217) a. a friend of John's
       b. #Questo amico è **di Gianni**.
           this   friend is of Gianni

A solution to the above problems could probably be given in terms of the predicate possessor's combining with the possessum within the same DP or across

a copula,[42] but two additional problems seem to indicate that this line of research will at best provide *part* of an analysis for the distribution of control vs. free interpretations, which will nevertheless have to be complemented by the gist of the proposal developed in the previous chapters.

Indeed, I already pointed out at the end of §6.2 that the interpretive properties of predicate Saxon genitives in English require that the availability of free interpretations in Saxon genitives be linked to the semantics of definiteness—which constitutes a central hypothesis underlying the analysis proposed in the previous chapter—and this irrespective of whether it is assumed that Saxon genitives are the only English possessive construction where a free relational variable enters the semantic composition. Furthermore, it should be pointed out that any attempt to extend an analysis in terms of modes of combination to Italian possessives will have to face the problem that Italian indefinite and quantificational possessives differ from both English Saxon genitives and postnominal genitives in that they do marginally—but only marginally—license free interpretations. Some mechanism preventing a straightforward availability of free interpretations with Italian [−definite] possessives seems nevertheless to be required in a crosslinguistic theory for the distribution of free vs. control interpretations.

Essentially, these observations entail that some principle(s) allowing free relational variables in the scope of a definite determiner to be interpreted as

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[42]For example, the fact that (of) John's cannot be used as a "bare possessor" predicate in English copular sentences might follow from syntactic requirements that license this predicate only when it adjoins to a NP, and not when it adjoins to a DP in a small clause. And the unavailability of inherent interpretations in Italian predicate possessive constructions could be blamed on the subject of predication, whose relational interpretation is not accessible anymore when the DP headed by this possessum noun is "closed-off": the difference with respect to the case of English postnominal possessives would be due to the fact that in the latter case the possessor combines with a category smaller than DP built on the possessum noun. But, again, I am not sure that either of these suggestions can be developed into a coherent solution to the problems pointed out in the text.

familiar and preventing variables that are not in the scope of a definite determiner from doing the same will have to be maintained in the theory. And this—in a nutshell—is the gist of the proposal made in chapter 5, which thus cannot be traded in for a purely structural account of the distributional contrasts between free and control interpretations.[43]

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[43]Of course, I am *not* claiming that integrating the suggestions made above—or better, some coherent development of the approach suggested above—with the gist of the analysis proposed in the previous chapter might not ultimately lead to a more adequate and conceptually desirable theory. Just to mention one interesting point, notice that an "integrated" theory of the kind mentioned in the text would *not* need to assume that Novelty is a general property of free variables, but could revert to a system along the lines of the one sketched in §5.1, where Novelty is a property of variables within [−definite] DPs and Familiarity is a property of variables within [+definite] DPs. The problematic case of Italian predicate possessives would be taken care of by the distinction between argumental and predicational modes of combination.

CHAPTER 7

Epilogue: The Bigger Picture

7.1 A summary of the proposal

7.1.1 The analysis as a whole

In this thesis I pointed out the existence of two types of extrinsic interpretations
for possessive constructions and proposed a formal account for their interpretive
and distributional properties.

That two types of extrinsic interpretations for possessives must be distin-
guished was argued on the basis of the Italian data in (15)–(16):

(15)   a.   Ieri   Gianni e   Paolo si sono imbattuti in due gruppi
            yesterday Gianni and Paolo came across   two groups
            (distinti)   di cani randagi e   li   hanno portati al   rifugio
            (different) of dogs stray   and them took   to the shelter
            per animali;
            for animals

        b. [#]Ieri   Gianni e   Paolo sono stati attaccati da due gruppi
           yesterday Gianni and Paolo were   attacked by two groups
           (distinti)   di cani;
           (different) of dogs

      . . . sfortunatamente **alcuni cani di Gianni** avevano la   rabbia.
          unfortunately   some dogs of Gianni had   the rabies

(16) a. Ieri   Gianni e   Paolo si sono imbattuti in due gruppi
        yesterday Gianni and Paolo came across   two groups
        (distinti)   di cani randagi e   li   hanno portati al   rifugio
        (different) of dogs stray   and them took   to the shelter
        per animali;
        for animals

    b. Ieri   Gianni e   Paolo sono stati attaccati da due gruppi
        yesterday Gianni and Paolo were   attacked by two groups
        (distinti)   di cani;
        (different) of dogs

        … sfortunatamente **i   cani di Gianni** avevano la   rabbia.
        unfortunately   the dogs of Gianni had   the rabies

Building on these data I have shown that only a subset of contextually salient
relations can be expressed by all types of possessive constructions. And that only
some possessive constructions seem to display the unbounded flexibility that is
usually attributed in the literature to the interpretation of possessives in context.

   In particular, I proposed that the relations that can be expressed by all
possessive constructions share the property of being construable as instances of
a general relation, which I call CONTROL:

(20)   CONTROL = {⟨possessor,possessum⟩ | the possessor has some sort of
                    control of the possessum or of his bearing a relation to
                    the possessum}

Relations that are not compatible with the general semantics of CONTROL
can be expressed only by a restricted class of possessive constructions.   I
thus distinguished the two types of extrinsic interpretations on the basis of
whether they impose the restriction that the relation expressed by the possessive
construction be a control-like relation:

(23)   *control interpretations* = the possessive relation *must* express
                                    a control relation
        free interpretations   = the possessive relation *can* express
                                    a non-control relation

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I argued on the basis of Italian data—e.g. (24) and (27)—that control interpretations are available across the board with all types of possessive constructions, while free interpretations seem to be available only with definite and partitive possessive DPs:

(24) Ieri   Gianni e   Paolo sono stati attaccati da gruppi (distinti) di
      yesterday Gianni and Paolo were   attacked by groups (different) of
      cani;
      dogs

     a.   … sfortunatamente **i   cani di Gianni** non sono stati catturati.
         unfortunately   the dogs of Gianni not have been captured

     b.   … sfortunatamente **alcuni**/**pochi**/**molti**/**due dei   cani di Gianni**
         unfortunately   some/few/many/two   of the dogs of Gianni
         non sono stati catturati.
         not have been captured

     c.   … fortunatamente **ognuno dei   cani di Gianni** è   stato
         fortunately   each one of the dogs of Gianni has been
         catturato.
         captured

     d. [#] … sfortunatamente **alcuni**/**pochi**/**molti**/**due cani di Gianni** non
         unfortunately   some/few/many/two   dogs of Gianni not
         sono stati catturati.
         have been captured

     e. [#] … fortunatamente **ogni cane di Gianni** è   stato catturato.
         fortunately   each dog   of Gianni has been captured

(27) [in the dog-pound scenario described in chapter 2]

     a.   Questi cani sono quelli **di Gianni**.
         these dogs are those of Gianni

     b. [#] Questi cani sono **di Gianni**.
         these dogs are of Gianni

The empirical generalizations are spelled out in (28), and summarized in table 2.4:

(28)   *Empirical generalizations (the idealized picture)*

    a.   control interpretations are available across the board (with all types of possessive DPs and with predicate possessives)

    b.   free interpretations

        i.   are available with definite and partitive possessives

        ii.   are not available with indefinite possessives

        iii.   are not available with quantificational possessives

        iv.   are not available with predicate possessives

	definite poss.	partitive poss.	indefinite poss.	quantif. poss.	predicate poss.
control	✓	✓	✓	✓	✓
free	✓	✓	*	*	*

Table 2.4: Distribution of control vs. free interpretations (final revision)

A semantic ambiguity

I argued that the interpretive and distributional differences between control and free interpretations should be accounted for in *grammatical* terms, and—in particular—in terms of a basic *semantic* ambiguity. The distinction between control and free interpretations corresponds to the choice between two distinct meanings that are available for the syntactic construction that encodes the possessive relation between possessor and possessum.

I proposed that—in the case of Italian, at least—the syntactic encoding of possession within DP and at the sentential level is not very different. In both cases the possessor is projected within a PP predicate that is combined with the category projected by the possessum. The two cases differ in the nature of the syntactic category that combines with the "possessive" PP.

(54) *Possession within DP*

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                    NP
            ┌────────┴────────┐
           NP                 PP
        ┌───┴───┐        ┌─────┴─────┐
     possessum  P              DP
                          ┌─────┴─────┐
                             possessor
```
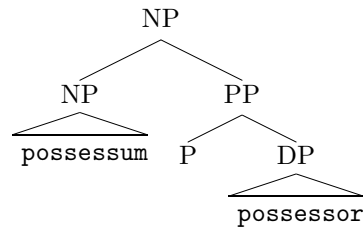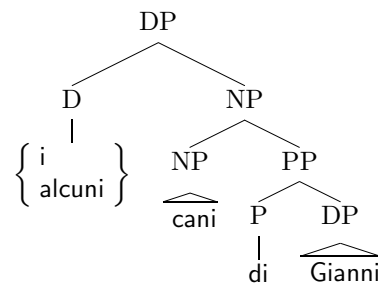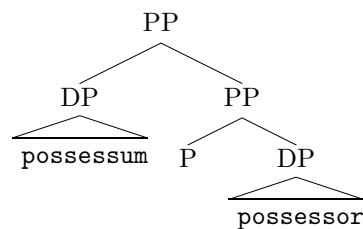
In the DP-internal case, the PP is adjoined to the NP projected by the possessum, and is interpreted as a modifier of the predicate denoted by this NP. The whole possessive adjunction structure is then selected as a complement by the determiner.

(56) i/alcuni   cani di Gianni
      the/some dogs of Gianni

```
                    DP
            ┌────────┴────────┐
           D                  NP
           │            ┌──────┴──────┐
        ⎧ i    ⎫       NP            PP
        ⎨      ⎬     ┌──┴──┐      ┌───┴───┐
        ⎩ alcuni⎭    cani   P        DP
                           │      ┌───┴───┐
                          di      Gianni
```

In the sentential case, the the DP projected by the possessum is adjoined to the possessive PP in a small-clause configuration: the predicate denoted by the PP is predicated of the possessum DP.

(69) *Possession in sentences*

```
                    PP
            ┌────────┴────────┐
           DP                 PP
        ┌───┴───┐        ┌─────┴─────┐
     possessum  P              DP
                          ┌─────┴─────┐
                             possessor
```

This small clause is then selected as a complement by the verb essere 'be'. Raising of the possessum DP to Spec,IP determines the surface form of Italian possessive be sentences.

(72) b.

```
                    IP
           ┌─────────┴─────────┐
         DP₁                    I′
      questi cani          ┌────┴────┐
                          I          PP
                          |      ┌────┴────┐
                         sono   t₁        PP
                                      ┌────┴────┐
                                      P         DP
                                      |
                                     di       Gianni
```
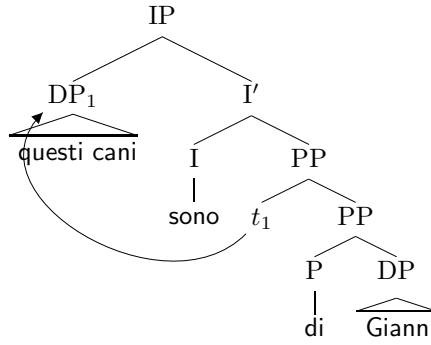
The basic semantic distinction between control and free interpretations is implemented in the formal analysis in terms of the difference between a constant and a variable denotation for the head of the possessive PP, which contributes the meaning of the possessive relation. Control interpretations are argued to arise from possessive constructions in which the meaning of the possessive relation is specified as the constant relation CONTROL. Free interpretations arise from possessive constructions in which the meaning of the possessive relation is left unspecified, the possessive relation being encoded by a free variable of type $\langle e, et \rangle$.

(85)   *Hypothesis 2*
       The head of the "possessive" PP predicate is lexically ambiguous:
       a.   it can denote a variable of type $\langle e, et \rangle$, or
       b.   it can denote a constant of type $\langle e, et \rangle$, the relation CONTROL.

Control interpretations

In the derivation of control interpretations the meaning of the possessive relation is determined *entirely* within the possessive construction. The possessive construction states that the CONTROL relation holds between possessor and possessum:

(86) $[\![\text{di}]\!] = \lambda u_e \,.\, [\lambda v_e \,.\, u$ and v stand in the CONTROL relation$]$

(87) $[\![\text{i cani di Gianni avevano la rabbia}]\!]^g =$

    10. $=$ undefined if there is not a maximal individual in $\mathcal{D}$ that is a group of dogs and stands in the CONTROL relation to Gianni, if defined: 1 if each atomic individual in this maximal group of dogs had rabies, 0 otherwise βC

(88) $[\![\text{alcuni cani di Gianni avevano la rabbia}]\!]^g =$

    10. $=$ 1 if there is a group of dogs in $\mathcal{D}$ that stands in the CONTROL relation to Gianni and each atomic individual in this group of dogs had rabies, 0 otherwise βC

(90) $[\![\text{questi cani sono di Gianni}]\!]^g =$

    7. $=$ undefined if there is not a maximal entity in $\mathcal{D}$ that is a group of dogs and is close to and pointed to by the speaker, if defined: 1 if this group of dogs stands in the CONTROL relation to Gianni, 0 otherwise βC

No particular provisions have to be made for the meaning of sentences containing possessives under a control interpretation to be determined. The sample interpretations derived in (87), (88) and (90) are *not* context-dependent, thus LFs containing these possessives will in general be well-formed. This accounts for the availability of control interpretations with all types of possessive constructions.

The semantics of the CONTROL relation defines the boundaries within which the interpretive flexibility of possessives that license only control interpretations can range. In control interpretations the meaning of the possessive relation is always the CONTROL relation. But, as is generally the case with the meaning of natural language expressions, this meaning can be used in context to convey more specific information.

Contextual information plays a *pragmatic* role in control interpretations: it licenses the possibility that speakers draw inferences that—building on the basic semantics of the possessive construction—obtain the result that the interpretation conveyed using a certain possessive is more restrictive than its "literal" meaning.

The contribution of the context, thus, is *indirect*: it is constrained by the basic semantics of the possessive construction, and it depends on the speakers' granting that the information provided by the context is sufficient to justify certain pragmatic inferences to be drawn.

Free interpretations

In the case of free interpretations the meaning of the possessive relation is *not* determined within the possessive construction. The meaning of the possessive relation must be determined *directly* by the context of use of the possessive, through an assignment of value for the relational variable introduced by the head of the possessive PP:

(158) $[\![$i cani di$_{j,\langle e,et \rangle}$ Gianni avevano la rabbia$]\!]^g =$

7. $=$ undefined if there is not a maximal individual in the discourse model that is a group of dogs and stands in the $g(j, \langle e, et \rangle)$ relation to Gianni, if defined: 1 if each atomic individual in this maximal group of dogs had rabies, 0 otherwise βC

(160) $[\![$alcuni cani di$_{j,\langle e,et \rangle}$ Gianni avevano la rabbia$]\!]^g =$

7. $=$ 1 if there is a group of dogs in $\mathcal{D}$ that stands in the $g(j, \langle e, et \rangle)$ relation to Gianni and each atomic individual in this group of dogs had rabies, 0 otherwise βC

(162) $[\![$questi cani sono di$_{j,\langle e,et \rangle}$ Gianni$]\!]^g =$

8. $=$ undefined if there is not a maximal entity in the discourse model that is a group of dogs and is close to and pointed to by the speaker, if defined: 1 if this group of dogs stands in the $g(j, \langle e, et \rangle)$ relation to Gianni, 0 otherwise βC

The sample interpretations derived in (158), (160) and (162) are context-dependent: the variable $j, \langle e, et \rangle$ must be assigned a value for the meaning of the possessive construction to be determined (155).

(155) *Truth of an LF with respect to a file*
Let F be a file, ϕ an LF. Then if ϕ is appropriate with respect to F, ϕ is true with respect to F if at least one assignment g in F can be extended to $g_{+\phi}$ such that $[\![\phi]\!]^{g+\phi} = 1$, ϕ is false with respect to F otherwise.

Thus, LFs containing these possessives will be subject to felicity conditions that govern the assignment of a value to free variables in discourse. It is argued that the restricted distribution of free interpretations follows from these felicity conditions.

Building on the intuitive parallelism between the interpretation of the free relational variable in definite vs. indefinite possessives (145) and the interpretive properties of definite vs. indefinite DPs in discourse studied by Heim (1982, 1983a) (144), it is suggested that the (un)availability of free interpretations should be accounted for in terms of the (im)possibility for the relational variable in the possessive construction to be assigned a contextually salient (i.e. familiar) relation as a value.

(145) Ieri   Gianni e   Paolo sono stati attaccati$_{1,\langle e,et\rangle}$ da due gruppi
yesterday Gianni and Paolo were   attacked   by two groups
(distinti)   di cani;
(different) of dogs

     a.   . . . sfortunatamente **i**   **cani di**$_{1,\langle e,et\rangle/*2,\langle e,et\rangle}$ **Gianni** avevano la
           unfortunately   the dogs of   Gianni had   the
           rabbia.
           rabies

     b. $^{\#}$. . . sfortunatamente **alcuni cani di**$_{2,\langle e,et\rangle/*1,\langle e,et\rangle}$ **Gianni** avevano la
           unfortunately   some   dogs of   Gianni had   the
           rabbia.
           rabies

(144) Fido$_1$ (the dog) and Fluffy$_3$ (the cat) were outside playing in the garden. The cat stayed out till the following morning, on the other hand. . .

     a.   . . . **the dog**$_{1/*2}$ came in (around dinner time).

     b.   . . . **a dog**$_{2/*1}$ came in (around dinner time).

(143)   *The Familiarity/Novelty Condition*
Let F be a file, ϕ an atomic proposition. Then ϕ is appropriate with respect to F only if, for every noun phrase DP_i with index i that ϕ contains:

a.   *The Familiarity Condition*
if DP_i is definite, then $i \in Dom(F)$, and

b.   *The Novelty Condition*
if DP_i is indefinite, then $i \notin Dom(F)$.

Expanding on Heim's original analysis of (in)definiteness in terms of Familiarity/Novelty (143), a more "asymmetric" system is proposed, in which (Generalized) Novelty (148) is an interpretive requirement that holds generally of free variables, and Familiarity effects are due to the (Fregean) semantics of definiteness (reformulated in terms of *discourse maximality* (152)):

(148)   *The Generalized Novelty Condition*
Let F be a file, ϕ an atomic proposition. Then ϕ is appropriate with respect to F iff for every free variable $\langle i, \tau \rangle$ that ϕ contains, $\langle i, \tau \rangle \notin Dom(F)$.

(152)   *Discourse maximality*
For productive uses of the definite determiner, there must be a maximal entity in the discourse model that satisfies the descriptive content of its nominal complement.

Thus, it is suggested that—contrary to common assumptions—the interpretive behavior of referential pronouns does *not* constitute the paradigm for the interpretive behavior of free variables in languages, but a special case. Referential pronouns, indeed, are [+definite] DPs and thus are expected to display the interpretive properties that characterize definite DPs and variables associated with definite DPs.

The Novelty requirement that holds in general of free variables accounts for the general unavailability of free interpretations with most types of possessives. The

relational variable in the possessive construction is subject to Generalized Novelty, and it is proposed that LFs containing novel free variables of type $\langle e, et \rangle$—which would otherwise be interpreted as if they were existentially closed—are not well-formed.[1]

It is argued that the interpretive constraints imposed by the semantics of definiteness have an effect not only on the denotation of [+definite] DPs, but on variables embedded in the nominal complement of a definite determiner as well. In particular, definiteness results in the possibility that free variables embedded in the nominal complement of a definite determiner are exempt from the requirements of (Generalized) Novelty. A full explanation for the possibility of these exceptions to Generalized Novelty is not provided. The "official" theory restates the observation that these exceptions are licensed by the semantics of definiteness in terms of the stipulation in (153).

(153)   *The Stipulative Remnant*
        Free variables in the nominal complement of a definite determiner are not
        subject to Generalized Novelty.

At a more speculative level, it is suggested that Generalized Novelty should be taken to be a default interpretive requirement, which can be overridden if other contrasting interpretive requirements are imposed on certain free variables (166). And it is pointed out that a thorough analysis of presupposition satisfaction in discourse—i.e. the way(s) in which the appropriateness condition in (150) is satisfied—probably holds the key to an explanation of the effects of the semantics

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[1]A less stipulative explanation for the apparent absence of these interpretations should probably be given in terms of the vagueness of the meaning attributed to the possessive relation, which (i) arguably provides a very "tenuous" link between possessor and possessum—thus hardly defining the latter in terms of the former—which might be undesirable in "functional" terms, and (ii) is probably blocked by the more specific meaning of CONTROL, which is concurrently available for the possessive construction.

of definiteness on variables that are embedded in the nominal complement of a definite determiner.

(166) *The Generalized Novelty Condition* (as a default)
Let F be a file, ϕ an atomic proposition. Then ϕ is appropriate with respect to F iff for every free variable $\langle i, \tau \rangle$ that ϕ contains, $\langle i, \tau \rangle \notin Dom(F)$, if no other interpretive conditions demand otherwise.

(150) *Appropriateness condition for presuppositional LFs*
Let F be a file, ϕ an LF that triggers presupposition ψ. Then ϕ is appropriate with respect to F iff all assignments g in F are such that ψ is true relative to F.

It is thus expected that free interpretations are available with definite possessive DPs only. That free interpretations are available with partitive possessives—i.e. that the relational variable in these DPs is not subject to Generalized Novelty—follows from this variable's being within a [+definite] DP (97c) which—following Heim's (1982; 1983a) LF construction rules—is adjoined independently to the sentential node in the syntactic trees that constitute the object language of the formal system of semantic interpretation (147).

(97) b. alcuni dei   cani di Gianni
          some of the dogs of Gianni

      c. $[_{DP_1}$alcuni $\emptyset_N$ de-$_{part}$ $[_{DP_2}$i cani di Gianni$]]$

(147) Alcuni dei   cani di Gianni avevano la   rabbia.
      some   of the dogs of Gianni had   the rabies

336
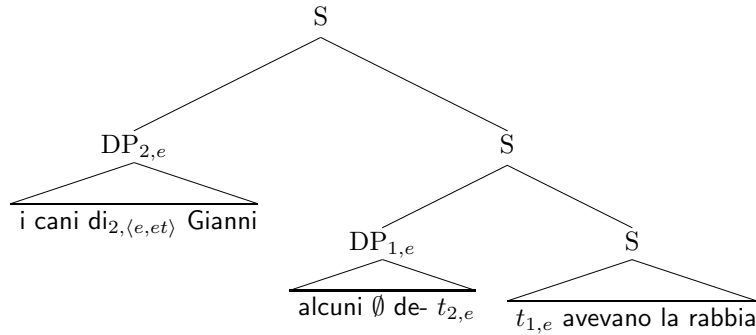
Furthermore, the adoption of Heim's system of LF construction rules provides a straightforward explanation for the attested locality restrictions on the licensing of free interpretations: the definite determiner does not have "licensing effects" on (relational variables in) DPs that are embedded within the predicate with which the determiner combines (84).

(84) #Ieri   Gianni e   Paolo sono stati attaccati da due gruppi (distinti)
     yesterday Gianni and Paolo were   attacked by two groups (different)
     di cani. Purtroppo   **il padrone di alcuni cani di Gianni** è Piero.
     of dogs unfortunately the master   of some   dogs of Gianni is Piero

A very robust property of the proposal is that, while control interpretations are expected to be available with all types of possessives, free interpretations are essentially a property of possessive DPs. The "official" proposal reduces the availability of free interpretation to the semantics of the definite determiner that selects the possessive adjunction structure as a complement. But, more generally, it is argued that the analysis proposed—even if weakened in order to account for the more complex details of the Italian data discussed in the appendix to chapter 2—still remains restrictive enough to account for the robust unavailability of free interpretations with Italian predicate possessives.

7.1.2   A crosslinguistic theory?

The theory proposed in this thesis for the derivation of control vs. free interpretations is entirely *semantic*. A basic semantic ambiguity is argued to characterize the syntactic construction encoding the relation between possessor and possessum, irrespective of the type of possessive of which this construction is ultimately part: the meaning of the possessive relation can be established entirely within this construction, or left unspecified to be eventually determined by the context of use. And the restricted distribution of free interpretations is argued to follow from the requirements imposed by the semantics of the definite determiner

on (variables embedded within) its nominal complement.

The facts concerning the interpretive properties of Italian bare partitive possessives and weak definite possessives support the conclusion that it is the presuppositional semantics of definiteness—and not just the presence of what looks like a definite determiner—that is crucial for the derivation of free interpretations. Their apparent similarity to partitives notwithstanding, so-called bare partitive DPs do not display the interpretive properties that are normally ascribed to the semantic contribution of the definite determiner in partitives. In particular, no maximality presupposition seems to be imposed on the descriptive content of a bare partitive DP, which—given the analysis proposed in this thesis— leads to the correct prediction that bare partitive possessives do not license free interpretations (171).

(171) $^{\#}$Ieri   Gianni e   Paolo sono stati attaccati da gruppi di cani;
       yesterday Gianni and Paolo were   attacked by groups of dogs;
       sfortunatamente dei   cani di Gianni non sono stati catturati.
       unfortunately   of the dogs of Gianni not have been captured

Similarly, weak definite DPs license a reading under which no maximality presupposition is imposed on the descriptive content of the DP, the presence of an overt definite determiner notwithstanding. This property can be resorted to— within the analysis proposed in this thesis—in order to account for the observation that weak definite possessives license free interpretation to a very reduced extent, if at all (179).

(179) $^{\%}$Ieri   alcuni professori e   alcuni studenti sono stati morsi da cani
       yesterday some professors and some students were   bitten by dogs
       randagi; purtroppo   **il   cane di uno studente** aveva la   rabbia.
       stray   unfortunately the dog   of a   student   had   the rabies

In addition, it is argued that the conclusion that the possessive relation is embedded within the predicate on which the Fregean semantics of definiteness is

imposed can be argued to follow *whatever* syntax is proposed for a [+definite] possessive DP in a given language. Accounting for the general observation that the possessor behaves like a restrictive modifier of the possessum requires that the two be combined—i.e. that the possessive relation be established between the two—so that a predicate is determined to which the semantics of the definite determiner applies. The gist of the analysis proposed in this thesis, thus, is rather independent from the syntactic assumptions that are adopted for the analysis of possessive constructions in a particular language. And, indeed, the proposal is shown to extend straightforwardly to the case of English and account for the interpretive contrast between Saxon genitive and postnominal genitive DPs:

(8)   Yesterday John and Paul were attacked by (different) groups of dogs;
    a.   . . . unfortunately **John's dogs** were rabid.
    b. [#] . . . unfortunately **some dogs of John's** were rabid.

This does *not* mean that the analysis excludes the possibility that the morpho-syntactic structure of possessives in a given language plays a role in determining the (un)availability of certain interpretations, nor that the general analysis proposed in this thesis can account immediately for the subtleties of the interpretation of possessive constructions in a given language without resorting to a detailed morpho-syntactic analysis of these constructions. The analysis was developed for the case of Italian, where the only apparent difference between definite possessives—which license free interpretations—and indefinite possessives—which do not—seems to be the [±definite] specification of their determiners. But, for example, it was argued that—under the assumption that the semantic theory is weakened in order to account for the complex pattern of data from Italian—the peculiar syntax of English postnominal genitives should probably be resorted to in order to account for the robust unavailability of free interpretations with these possessive constructions.

Furthermore, the conclusion that a certain language lexicalizes the distinction between control and free interpretations is not unexpected under the current proposal. A possible example has been pointed out to me by Dominique Sportiche, who informs me that in his dialect of French the Dative possessive construction—e.g. le chien à Jean 'the dog to Jean'—seems to allow only for control interpretations, but the Genitive possessive construction—e.g. le chien de Jean 'the dog of Jean'—allows for the full range of free interpretations. What would be unexpected in such cases is that the construction that lexicalizes free interpretations is available with non-definite possessives, and—to remain on the case of Sportiche's French—the observation that DPs like *un chien de Jean 'a dog of Jean' or predicate possessive constructions like *Ce chien est de Jean 'this dog is of Jean' do not seem to be well-formed argues that this is *not* the case.[2]

Still, it is argued that—even granting the possibility that the morpho-syntax of possessive constructions can play a role in determining the (un)availability of specific interpretations—the gist of the semantic analysis proposed in this thesis for the derivation of free interpretations—which links the availability of these interpretations to the semantics of definiteness—cannot be dispensed with from the theory in light of the interpretive properties of a.o. predicate Saxon genitives

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[2]Nor does the current proposal exclude that the morpho-syntax of other particular languages may lexicalize more specific meanings for the possessive relation, which select only a subset of the relations that are compatible with the meaning of the CONTROL relation. Arguably, the conclusion that CONTROL constitutes the basic meaning of possessive constructions on a crosslinguistic basis (see below in the text) would need to be revised if empirical evidence is provided that some language lexicalizes interpretations that involve a subset of non-control relations. But this would not hinder the overall conclusion that two types of extrinsic interpretations for possessives must be distinguished: some interpretations—call them *restricted* interpretations—are lexically determined in that the semantics of the possessive relation is determined entirely within the possessive construction, which accounts for the restrictive semantics of possessives that license only interpretations of this kind; other interpretations— truly *free* interpretations—are entirely dependent on the context for the semantics of the possessive relation to be determined, which accounts for the unbounded interpretive flexibility of those possessives that license such interpretations.

in English. Another type of possessive constructions in which the absence of maximality presuppositions—i.e. the absence of the semantics of definiteness—correlates with the unavailability of free interpretations, even if no apparent morphological properties differentiate this construction from "full" Saxon genitive DPs, which license free interpretations (195).

(195) [BACKGROUND: John and Paul were attacked by two different groups of dogs, the dogs were all captured and brought to the dog pound; looking at some kennels at the pound...]
Whose dogs are these (on the left)? And whose dogs are those (on the right)?

    a.   These on the left are **John's dogs**. And those on the right are **Paul's dogs**.

    b.   #These on the left are **John's dogs**. And those on the right are **John's dogs** too.

It is thus proposed that the semantic theory developed in this thesis should be maintained as part (at least) of a more ambitious analysis of the interpretation of possessive constructions on a crosslinguistic basis.

7.2 The bigger picture

7.2.1 Possessives as a (somewhat) unitary category

I argued in this thesis that the class of extrinsic interpretations for possessives should be split into two distinct classes, which correspond to two distinct meanings for the possessive construction. Thus, in terms of a general taxonomy of the interpretations licensed by possessives a three-way partition seems necessary: inherent interpretations vs. control interpretations vs. free interpretations. According to this tripartite taxonomy, the crucial difference between the three types of interpretations is in the "source" of the semantics for the possessive relation: it can be provided by the semantics of the possessum

noun (inherent interpretations), by the semantics of the possessive construction (control interpretations), or by the context of use (free interpretations).

The status of control interpretations within this taxonomy should be emphasized. The interpretive flexibility of e.g. Italian indefinite possessives notwithstanding, control interpretations are *lexical* in that the semantics of the possessive relation is entirely determined within the possessive construction— i.e. by the constant lexical entry for the head of the PP predicate within which the possessor is projected. This is where the taxonomy differs from the proposals by Partee (1983/1997) and Barker (1995), which take the prototypical case of control interpretations—the relation of ownership—to be entirely determined by contextual information.

And, of course, control interpretations are extrinsic in that the semantics of the possessive relation is not determined by the choice of possessum. In effect, it is proposed in this thesis that CONTROL is the basic meaning of the possessive construction, and that all possessive constructions—no matter the choice of possessum or possessor[3]—should be able to express control relations. This hypothesis was used in chapter 6 as an argument for the conclusion that DPs of the form 'the/a N of DP' in English are not possessive constructions: these constructions do not seem to allow for the possibility that even the most prototypical instance of CONTROL—i.e. the relation of ownership—holds between the head noun and the DP in the of PP.

Let me now return to the questions raised by Taylor (1996) that were mentioned at the beginning of this thesis. Taylor argues that the interpretive

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[3]Vikner and Jensen (2002) argue that the requirement that the possessor be [+animate] is part of the meaning of CONTROL. It is not entirely clear to me that this is the case. Indeed, it is not completely clear to me that the definition of CONTROL adopted in this thesis—which would fit well with such a restriction on the nature of the possessor—is completely adequate as a characterization of the basic semantics of possession. But if Jensen and Vikner's suggestion is proven to be correct, the above statement should be revised.

flexibility of possessives is problematic for analyses that approach these constructions in terms of their interpretive properties: the risk for analyses of this kind is that of treating possessive constructions as having a series of interpretations that are not related to each other, in effect *not* providing a unitary characterization of the class of possessive constructions. As an alternative, Taylor suggests that a unitary account for the semantics of possessive constructions can be given only in terms of their function.

The proposal advanced in this thesis suggests a different reply to Taylor's concerns. The conclusion that a unitary characterization of the class of possessives can only be given in functional terms is too hasty. It is proposed that the semantics of CONTROL constitutes the basic meaning for the possessive construction, and that the semantics of this relation underlies most of the variety of interpretations that are available for possessive constructions. The relations that can be expressed under control interpretations—it is argued—are semantically related in that they can all be construed as instances of CONTROL. To be more precise, it is proposed that the *same* semantic content underlies the class of control interpretations. The interpretive flexibility of e.g. Italian indefinite or predicate possessives does not require that the possessive construction be postulated to be polysemous: the interpretive flexibility can be accounted for in terms of different pragmatic uses of the general semantics of the CONTROL relation.[4]

Still, a certain (limited) amount of polysemy *is* postulated in the theory defended in this thesis. In addition to control interpretations possessives license inherent and free interpretations, which have both been argued—the first in

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[4]To be sure, a theory of use—i.e. of the function that possessives usually play in discourse— is going to be part of a complete analysis of possessive constructions. What is argued against in the text is that a unitary characterization of possessives can only be given in terms of such a functional analysis.

e.g. the work of a.o. Partee (1983/1997), Barker (1995), Vikner and Jensen (2002), the second in this thesis—to constitute distinct meanings for possessives. Is the postulation of this sort of polysemy a problem in light of Taylor's observations? I would like to maintain that the postulated polysemy is *not* problematic, and that polysemy of this sort is actually expected to arise in language.

Let me address first the contrast between control interpretations and inherent interpretations. I did not discuss explicitly the case of inherent interpretations, but it was pointed out that under these interpretations the possessor is interpreted as a semantic argument of the possessum noun. In the case of control interpretations, on the other hand, the possessor is interpreted as a modifier of the possessum noun. Recent work by Dowty (2000) suggests that the semantic distinction between arguments and modifiers—and the corresponding syntactic distinction between complements and adjuncts—is less categorical than it has been assumed (often implicitly) within grammatical theory. Dowty argues that "a complete grammar should provide a *dual analysis* of every complement as an adjunct, and potentially, an analysis of any adjunct as a complement" (Dowty, 2000, p. 1). Such an analysis, he claims, is necessary not only in order to account for language change, but for a proper account of language learning as well.[5]

For present purposes, Dowty's arguments highlight that the contrast between inherent and control interpretations that characterizes possessives is not an exceptional property of this class of constructions. The ambiguity between an adjunct/modifier analysis—in which the semantics of the relation holding between the head of the construction and its modifier is derived compositionally from the

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[5]Dowty suggests that language learners reach the conclusion that a "satellite" of a syntactic head is a complement only after a first stage in which this satellite is analyzed as an adjunct: "the [...] adjunct analysis [...] is a PRELIMINARY ANALYSIS which serve language-learners as a semantic "hint" or "crutch" to figuring out the idiosyncratic correct meaning of the complement analysis" (Dowty, 2000, p. 10).

general meaning of a preposition—and a complement/argument analysis—where the semantics of the relation holding between the head and the complement is lexicalized in the (somewhat more) idiosyncratic meaning of the head—is a general property of natural language. The polysemy corresponding to control vs. inherent interpretations is just a specific instance of this general phenomenon.

As for the contrast between control and free interpretations, it seems to me that this is another case of polysemy that can be traced back to a general property of natural language. In general, semantic theories allow for the possibility that the meaning of certain expressions is left underspecified in the semantic composition, and is determined only when the expression is used in a context, contextual information providing some "missing piece(s)" for the meaning of those expressions to be determined.

In the particular semantic formalism adopted in this thesis, this is modeled in terms of variables: introducing a variable in the semantic composition amounts to "shifting the burden" of determining part of the meaning of a given expression onto the context of use. And free interpretations—according to the analysis proposed in this thesis—constitute a specific instance of this process. Rather than specifying the interpretation of the possessive relation within the possessive construction, the burden of determining the semantics of this relation can be shifted onto the context of use. But the latter process is subject to felicity conditions that obtain the result that this strategy can be applied successfully only for a restricted class of possessive constructions. Even the polysemy corresponding to control vs. free interpretations is thus an instance of a more general phenomenon in language.

7.2.2   The interpretive flexibility of possessives (reprise)

Contextual information is a major force behind the interpretive flexibility of (extrinsic) possessives. But only in some cases does contextual information directly provide the semantics of the possessive relation. Absolute interpretive flexibility (i) is not a general property of possessives, (ii) nor is it a special property of the possessive construction. This type of flexibility is an instance of the general availability of variable meanings in language. And the restricted availability of this absolute flexibility follows from interpretive constraints on the interpretation of free variables.

In the general case, the interpretive flexibility of possessives is constrained by the semantics of the possessive construction. A certain range of flexibility is allowed only because the general semantics of CONTROL can—so to speak— be put to a lot of different uses. The contribution of contextual information is indirect and *mediated*, it being left to each individual speaker to decide (i) whether a relation can be construed as an instance of CONTROL, and (ii) whether it is plausible to take a possessive construction to express that relation when used in a given context. That different speakers may have different intuitions concerning "extreme" uses of the basic semantics of possession is a consequence of this indirect effect of context. And the "grey area" between relations that qualify as "possession" and relations that do not, is the result of the tension between the contentful semantics of the possessive construction, and the pragmatic uses that can be made of this basic semantics.

Judge McCarthy was right, after all.

References

Abbott, Barbara 1996. Doing without a partitive constraint. In Jacob Hoeksema (ed.), *Partitives*, pp. 25–56. Berlin: Mouton de Gruyter.

——— 1999. Support for a unique theory of definite descriptions. In *Proceedings of Semantics and Linguistic Theory IX*, pp. 1–15. Ithaca, NY: CLC Publications, Cornell University.

——— 2000. Presuppositions as nonassertions. *Journal of Pragmatics*, **32**:1419–1437.

——— 2001. Definiteness and indefiniteness. Manuscript, Michigan State University. To appear in Laurence R. Horn and Gregory Ward (eds.), *Handbook of Pragmatics*. Oxford: Blackwell.

Abney, Steven 1987. *The English Noun Phrase in Its Sentential Aspect*. Ph.D. thesis, Massachusetts Institute of Technology.

Anderson, Mona 1983. Prenominal genitive NPs. *The Linguistic Review*, **3**:1–24.

Barendregt, H. P. 1984. *The Lambda Calculus*. Amsterdam: Elsevier.

Barker, Chris 1993. Definite possessives and discourse novelty. In *Papers from the Twenty-Eighth Annual Meeting of the Chicago Linguistic Society*, vol. 1, pp. 26–41. Chicago, Ill.: CLS, University of Chicago.

——— 1995. *Possessive Descriptions*. Stanford, Ca.: CSLI Publications.

——— 1998. Partitives, double genitives, and anti-uniqueness. *Natural Language and Linguistic Theory*, **16**(4):679–717.

——— 2002. Possessive weak definites. Manuscript, University of California, San Diego. To appear in *Proceedings of the UMass Workshop on the Semantics/Syntax of Possessive Constructions*.

Barker, Chris and David Dowty 1993a. Nominal thematic proto-roles. Manuscript, University of Rochester and The Ohio State University.

——— 1993b. Non-verbal thematic proto-roles. In Amy Schafer (ed.), *Proceedings of NELS 23*, vol. 1, pp. 49–62. Amherst, Mass.: GLSA, University of Massachusetts.

Barwise, Jon and Robin Cooper 1981. Generalized quantifiers and natural language. *Linguistics and Philosophy*, **4**(1):159–219.

Barwise, Jon and John Perry 1983. *Situations and Attitudes*. Cambridge, Mass.: MIT Press.

Belvin, Robert and Marcel den Dikken 1997. *There*, happens, *to, be, have. Lingua*, **101**:151–183.

Benveniste, Emile 1966. *Problèmes de Linguistique Générale*. Paris: Gallimard.

Birner, Betty and Gregory Ward 1994. Uniqueness, familiarity, and the definite article in English. In *Berkeley Linguistics Society 20*, pp. 93–102. BLS, University of California, Berkeley.

Brisson, Christine 1998. *Distributivity, Maximality, and Floating Quantifiers*. Ph.D. thesis, Rutgers.

Burton, Strang 1997. Past tense on nouns as death, destruction and loss. In Kiyomi Kusumoto (ed.), *Proceedings of the North East Linguistic Society 27*. Amherst, Mass.: GLSA, University of Massachusetts.

Chierchia, Gennaro 1998. Partitives, reference to kinds and semantic variation. In Aaron Lawson (ed.), *Proceedings of Semantics and Linguistic Theory VII*, pp. 73–98. Ithaca, NY: CLC Publications, Cornell University.

Cho, Sungeun 2002. The structural asymmetry between possessors and possessums. Presented at the UMass Workshop on the Semantics/Syntax of Possessive Constructions.

Chomsky, Noam 1970. Remarks on nominalization. In R. A. Jacobs and P. S. Rosenbaum (eds.), *Readings in English Transformational Grammar*, pp. 184–221. Waltham, Mass.: Ginn.

——— 1973. Conditions on transformations. In Stephen R. Anderson and Paul Kiparsky (eds.), *A Festschrift for Morris Halle*, pp. 232–286. New York, NY: Holt, Rinehart and Winston.

——— 1981. *Lectures on Government and Binding*. Dordrecht: Foris.

——— 1986. *Knowledge of Language: Its Nature, Origin, and Use*. New York, NY: Praeger.

——— 2000. Minimalist inquiries: The framework. In R. Martin, D. Michaels, and J. Uriagereka (eds.), *Step by Step: Essays on Minimalist Syntax in Honor of Howard Lasnik*. Cambridge, Mass.: MIT Press.

Christophersen, Paul 1939. *The Articles: A Study of their Theory and Use in English*. Copenhagen: Munksgaard.

Clark, Herbert H. 1977. Bridging. In P. N. Johnson-Laird and P. C. Wason (eds.), *Thinking: Readings in Cognitive Science*, pp. 411–420. Cambridge: Cambridge University Press.

Condoravdi, Cleo 1997. *Descriptions in Context*. New York, NY: Garland.

Diesing, Molly 1992. *Indefinites*. Cambridge, Mass.: MIT Press.

den Dikken, Marcel 1997. The syntax of possession and the verb 'have'. *Lingua*, **101**:129–150.

———— 1998. Predicate inversion in DP. In Artemis Alexiadou and Chris Wilder (eds.), *Possessors, Predicates and Movement in the Determiner Phrase*. Amsterdam: John Benjamins.

Dobrovie-Sorin, Carmen 2002. Genitives and determiners. Presented at the UMass Workshop on the Semantics/Syntax of Possessive Constructions.

Dowty, David 1991. Thematic proto-roles and argument selection. *Language*, **67**(3):547–619.

———— 2000. The dual analysis of adjuncts/complements in categorial grammar. In C. Fabricius-Hansen, E. Lang, and C. Maienborn (eds.), *Approaching the Grammar of Adjuncts*, ZAS Working Papers in Linguistics **17**, pp. 53–78. Berlin: Zentrum für Allgemeine Sprachwissenschaft.

Egli, Urs and Klaus von Heusinger 1995. The epsilon operator and e-type pronouns. In Urs Egli, P.E. Pause, C. Schwarze, A. von Stechow, and G. Wienold (eds.), *Lexical Knowledge in the Organization of Language*, pp. 121–141. Amsterdam: John Benjamins.

Elbourne, Paul 2002. *Situations and Individuals*. Ph.D. thesis, Massachusetts Institute of Technology.

Emonds, Joseph E. 1994. Two principles of economy. In Guglielmo Cinque, Jan Koster, Jean-Yves Pollock, Luigi Rizzi, and Raffaella Zanuttini (eds.), *Paths towards Universal Grammar: Studies in Honor of Richard S. Kayne*, pp. 155–172. Washington, D.C.: Georgetown University Press.

Enç, Mürvet 1991. The semantics of specificity. *Linguistic Inquiry*, **22**(1):1–25.

Evans, Gareth 1980. Pronouns. *Linguistic Inquiry*, **11**:337–362.

Farkas, Donka F. 2002. Varieties of indefinites. In Brendan Jackson (ed.), *Proceedings of Semantics and Linguistic Theory XII*. CLC Publications, Cornell University.

Fiengo, Robert 1987. Definiteness, specificity, and familiarity. *Linguistic Inquiry*, **18**(1):163–166.

Fiengo, Robert and James Higginbotham 1981. Opacity in NP. *Linguistic Analysis*, **7**(4):395–421.

Freeze, Ray 1992. Existentials and other locatives. *Language*, **68**(3):553–595.

Frege, Gottlob 1893. Über Sinn und Bedeutung. *Zeitschrift für Philosophie und Philosophische Kritik*, **100**:25–50. First appeared in English as: On sense and reference, *The Philosophical Review*, **57** (1948):207–230 (translation by Max Black).

——— 1923–1926. Logische Untersuchungen. Dritter Teil: Gedankengefüge. *Beiträge zur Philosophie des deutschen Idealismus*, pp. 36–51.

Gazdar, Gerald 1979. *Pragmatics: Implicature, Presupposition, and Logical Form.* New York, NY: Academic Press.

Geach, Peter 1962. *Reference and Generality.* Ithaca, NY: Cornell University Press.

Giorgi, Alessandra and Giuseppe Longobardi 1991. *The Syntax of Noun Phrases.* Cambridge: Cambridge UP.

Grimshaw, Jane 1990. *Argument Structure.* Cambridge, Mass.: MIT Press.

Guéron, Jacqueline 1986. Le verbe *avoir. Recherches Linguistiques*, **14/15**:155–188.

Heim, Irene 1982. *The Semantics of Definite and Indefinite Noun Phrases.* Ph.D. thesis, University of Massachusetts, Amherst.

——— 1983a. File change semantics and the familiarity theory of definiteness. In Rainer Bäuerle, Christoph Schwarze, and Arnim von Stechow (eds.), *Meaning, Use and Interpretation of Language.* Berlin: Mouton de Gruyter.

——— 1983b. On the projection problem for presuppositions. In M. Barlow, D. Flickinger, and M. Wescoat (eds.), *Proceedings of WCCFL 2*, pp. 114–125. Palo Alto, Ca.: Stanford University.

——— 1991. Artikel und definitheit. In Arnim von Stechow and Dieter Wunderlich (eds.), *Semantik: Ein internationales Handbuch der zeitgenössischen Forschung*, pp. 487–535. Berlin: Walter de Gruyter.

Heim, Irene and Angelika Kratzer 1998. *Semantics in Generative Grammar.* Oxford: Blackwell.

Heller, Daphna 2002. Possession as a lexical relation: Evidence from the Hebrew construct state. In Line Mikkelsen and Chris Potts (eds.), *WCCFL 21 Proceedings*, pp. 101–114. Somerville, Mass.: Cascadilla Press.

——— 2003. On the construct state: Uniqueness and genitive relations. Manuscript, Rutgers. To appear in *Proceedings of IATL 18.*

Hoeksema, Jacob 1996. *Partitives.* Berlin: Mouton de Gruyter.

Hoekstra, Teun 1994. *Have* as *Be* plus or minus. In Guglielmo Cinque, Jan Koster, Jean-Yves Pollock, Luigi Rizzi, and Raffaella Zanuttini (eds.), *Paths towards Universal Grammar.* Georgetown: Georgetown University Press.

Huang, C.-T. James 1982. *Logical Relations in Chinese and the Theory of Grammar.* Ph.D. thesis, Massachusetts Institute of Technology.

Jackendoff, Ray 1968. Possessives in English. In Stephen Anderson, Ray Jackendoff, and Jay Keyser (eds.), *Studies in Transformational Grammar and Related Topics*, AFCRL-68-0032, pp. 25–51.

Jacobson, Pauline 1999. Towards a variable-free semantics. *Linguistics and Philosophy*, **22**(2):117–184.

——— 2000. Paycheck pronouns, Bach-Peters sentences, and variable-free semantics. *Natural Language Semantics*, **8**(2):77–155.

Jensen, Per Anker and Carl Vikner 1994. Lexical knowledge and the semantic analysis of Danish genitive constructions. In S.L. Hansen and H. Wegener (eds.), *Topics in Knowledge-based NLP Systems*, pp. 37–55. Copenhagen: Samfundslitteratur.

——— 2002. The genitive and lexical semantics. Presented at the UMass Workshop on the Semantics/Syntax of Possessive Constructions.

de Jong, Francisca and Henk Verkuyl 1985. Generalized quantifiers: The properness of their strength. In Johan van Benthem and Alice ter Meulen (eds.), *Generalized Quantifiers: Theory and Application*, pp. 21–43. Dordrecht: Foris.

Kadmon, Nirit 1987. *On Unique and Non-unique Reference and Asymmetric Quantification.* Ph.D. thesis, University of Massachusetts, Amherst.

——— 1990. Uniqueness. *Linguistics and Philosophy*, **13**(3):273–324.

——— 2001. *Formal Pragmatics.* Oxford: Blackwell.

Kamp, Hans 1984. A theory of truth and semantic representation. In Jeroen Groenendijk, Theo Janssen, and Martin Stokhof (eds.), *Truth, Interpretation and Information*, pp. 1–41. Dordrecht: Foris.

Kamp, Hans and Uwe Reyle 1993. *From Discourse to Logic.* Dordrecht: Kluwer.

Karttunen, Lauri 1974. Presuppositions and linguistic context. *Theoretical Linguistics*, **1**:181–194.

——— 1976. Discourse referents. In James McCawley (ed.), *Syntax and Semantics 7: Notes from the Linguistic Underground*, pp. 363–385. New York, NY: Academic Press.

Kayne, Richard 1993. Toward a modular theory of auxiliary selection. *Studia Linguistica*, **47**:3–31.

——— 1994. *The Antisymmetry of Syntax.* Cambridge, Mass.: MIT Press.

Keenan, Edward L. 1987. A semantic definition of "indefinite NP". In Eric Reuland and Alice ter Meulen (eds.), *The Representation of (In)definiteness*, pp. 286–317. Cambridge, Mass.: MIT Press.

Keenan, Edward L. and Jonathan Stavi 1986. A semantic characterization of natural language determiners. *Linguistics and Philosophy*, **9**:253–326.

Kempson, Ruth 1977. *Semantic Theory.* Cambridge: Cambridge University Press.

Kolliakou, Dimitra 1999. *De*-phrase extractability and individual/property denotation. *Natural Language and Linguistic Theory*, **17**(4):713–781.

Kratzer, Angelika 1998. Scope or pseudo-scope? Are there wide-scope indefinites? In Susan Rothstein (ed.), *Events in Grammar*, pp. 163–196. Dordrecht: Kluwer.

Ladusaw, William 1982. Semantic constraints on the English partitive construction. In *Proceedings of the First West Coast Conference on Formal Linguistics*, pp. 231–242. Stanford, Ca.: CSLI Publications.

Langacker, Ronald W. 1995. Possession and possessive constructions. In John R. Taylor and Robert E. MacLaury (eds.), *Language and the Cognitive Construal of the World*, pp. 51–79. Berlin: Mouton de Gruyter.

Lappin, Shalom and Tanya Reinhart 1988. Presuppositional effects of strong determiners: A processing account. *Linguistics*, **26**:1022–1037.

Larson, Richard and Sungeun Cho 1999. Temporal adjectives and the structure of possessive DPs. In Sonya F. Bird, Andrew Carnie, Jason D. Haugen, and Peter Norquest (eds.), *Proceedings of the 18th West Coast Conference on Formal Linguistics*, pp. 299–311. Somerville, Mass.: Cascadilla Press.

Lewis, David 1979. Score-keeping in a language game. In Rainer Bäuerle, Urs Egli, and Arnim von Stechow (eds.), *Semantics from Different Points of View*. Berlin: Springer.

Link, Godehard 1983. The logical analysis of plural and mass terms: A lattice-theoretical approach. In Rainer Bäuerle, Christoph Schwarze, and Arnim von Stechow (eds.), *Meaning, Use and Interpretation of Language*, pp. 302–323. Berlin: Walter de Gruyter.

Löbner, Sebastian 1985. Definites. *Journal of Semantics*, **4**:279–326.

Lyons, Christopher 1986. The syntax of English genitive constructions. *Journal of Linguistics*, **22**:123–143.

Mandelbaum, Deborah 1994. *Syntactic Conditions on Saturation*. Ph.D. thesis, The City University of New York.

Matthewson, Lisa 1999. On the interpretation of wide-scope indefinites. *Natural Language Semantics*, **7**(1):79–134.

——— 2001. Quantification and the nature of crosslinguistic variation. *Natural Language Semantics*, **9**(2):145–189.

May, Robert 1985. *Logical Form: Its Structure and Derivation*. Cambridge, Mass.: MIT Press.

McCawley, James D. 1972. A program for logic. In D. Davidson and G. Harman (eds.), *Semantics of Natural Language*, pp. 498–544. Dordrecht: Reidel.

——— 1979. Presupposition and discourse structure. In C.-K. Oh and D. Dinneen (eds.), *Syntax and Semantics 11: Presupposition*, pp. 371–388. New York, NY: Academic Press.

Milsark, Gary 1974. *Existential Sentences in English*. Ph.D. thesis, Massachusetts Institute of Technology.

Montague, Richard 1974. The proper treatment of quantification in ordinary English. In Richmond Thomason (ed.), *Formal Philosophy. Selected*

papers of Richard Montague, pp. 247–270. New Haven, Conn.: Yale University Press.

Moro, Andrea 1988. Per una teoria unificata delle frasi copulari. *Rivista di Grammatica Generativa*, **13**:81–110.

——— 1997. *The Raising of Predicates*. Cambridge: Cambridge UP.

Munn, Alan 1995. The possessor that stayed close to home. In V. Samiian and J. Schaeffer (eds.), *Proceedings of WECOL 24*, pp. 181–195.

Neale, Stephen 1990. *Descriptions*. Cambridge, Mass.: MIT Press.

Ouhalla, Jamal 1998. Possession in sentences and noun phrases. Manuscript, Queen Mary College, London.

Partee, Barbara 1983/1997. Genitives – A case study. In Johan van Benthem and Alice ter Meulen (eds.), *The Handbook of Logic and Language*, pp. 464–470. Dordrecht: Elsevier. Appendix to: Theo Janssen, Compositionality.

——— 1986. Ambiguous pseudoclefts with unambiguous *be*. In Stephen Berman, Jae-Woong Choe, and Joyce McDonough (eds.), *Proceedings of the North East Linguistic Society 16*. Amherst, Mass.: GLSA, University of Massachusetts.

——— 1987. Noun phrase interpretation and type-shifting principles. In Jeroen Groenendijk, Dick de Jongh, and Martin Stokhof (eds.), *Studies in Discourse Representation Theory and the Theory of Generalized Quantifiers*, pp. 115–143. Dordrecht: Foris.

Partee, Barbara and Vladimir Borschev 1998. Integrating lexical and formal semantics: Genitives, relational nouns, and type-shifting. In R. Cooper and Th. Gamkrelidze (eds.), *Proceedings of the Second Tbilisi Symposium on Language, Logic, and Computation*, pp. 229–241. Tbilisi: Center on Language, Logic, Speech, Tbilisi State University.

——— 2000. Genitives, relational nouns, and the argument-modifier distinction. In C. Fabricius-Hansen, E. Lang, and C. Maienborn (eds.), *Approaching the Grammar of Adjuncts*, ZAS Working Papers in Linguistics **17**, pp. 177–201. Berlin: Zentrum für Allgemeine Sprachwissenschaft.

——— 2001. Some puzzles of predicate possessives. In Robert M. Harnish and István Kenesei (eds.), *Perspectives on Semantics, Pragmatics, and Discourse: A Festschrift for Ferenc Kiefer*, pp. 91–117. Amsterdam: John Benjamins.

Partee, Barbara, Alice ter Meulen, and Robert E. Wall 1987. *Mathematical Methods in Linguistics*. Dordrecht: Kluwer.

Peregrin, Jaroslav and Klaus von Heusinger 2002. Dynamic semantics with choice functions. In Hans Kamp and Barbara Partee (eds.), *Context Dependence in the Analysis of Linguistic Meaning*. Amsterdam: Elsevier Science.

Poesio, Massimo 1994. Weak definites. In *Proceedings of Semantics and Linguistic Theory IV*. Ithaca, NY: CLC Publications, Cornell University.

Postal, Paul 1966. On so-called 'pronouns' in English. In F. Dinneen (ed.), *Report on the Seventeenth Annual Round Table Meeting on Linguistics and Language Studies*, pp. 177–206. Georgetown: Georgetown University Press.

Poutsma, H. 1914–16. *A Grammar of Late Modern English, for the Use of Continental, especially Dutch, Students*. Groningen: Noordhoff.

Pustejovsky, James 1993. Type coercion and lexical selection. In James Pustejovsky (ed.), *Semantics and the Lexicon*, pp. 73–94. Dordrecht: Kluwer.

——— 1995. *The Generative Lexicon*. Cambridge, Mass.: MIT Press.

Quirk, R., S. Greenbaum, G. Leech, and J. Svartvik 1985. *A Comprehensive Grammar of the English Language*. London: Longman.

Reinhart, Tanya 1995. Interface strategies. Tech. Rep. OTS-WP-TL-95-002, OTS, Universiteit Utrecht.

——— 1997. Quantifier scope: How labor is divided between QR and choice functions. *Linguistics and Philosophy*, **20**(4):335–397.

Ritter, Elizabeth and Sara Thomas Rosen 1997. The function of *have*. *Lingua*, **101**:295–321.

Ross, John Robert 1967. *Constraints on Variables in Syntax*. Ph.D. thesis, Massachusetts Institute of Technology.

Russell, Bertrand 1905. On denoting. *Mind*, **14**:479–493.

Schwarzschild, Roger 1996. *Pluralities*. Dordrecht: Kluwer.

Stalnaker, Robert 1974. Pragmatic presuppositions. In Milton K. Munitz and Peter K. Unger (eds.), *Semantics and Philosophy*, pp. 197–213. New York, NY: New York University Press.

———— 1978. Assertion. In Peter Cole (ed.), *Syntax and Semantics 9: Pragmatics*, pp. 315–332. New York, NY: Academic Press.

Stanley, Jason and Zoltán Gendler Szabó 2000. On quantifier domain restriction. *Mind & Language*, **15**(2/3):219–261.

von Stechow, Arnim 2000. Some remarks on choice functions and LF-movement. In Klaus von Heusinger and Urs Egli (eds.), *Reference and Anaphoric Relations*, pp. 193–228. Kluwer.

Stockwell, Robert, Paul Schachter, and Barbara Partee 1973. *The Major Syntactic Structures of English*. New York, NY: Holt, Rinehart and Winston.

Storto, Gianluca 2000a. Double genitives aren't (quite) partitives. In Arika Okrent and John Boyle (eds.), *Papers from the Thirty-Sixth Regional Meeting of the Chicago Linguistic Society*, vol. 1, pp. 501–516. Chicago, Ill.: CLS, University of Chicago.

———— 2000b. On the structure of indefinite possessives. In Brendan Jackson and Tanya Matthews (eds.), *Proceedings of Semantics and Linguistic Theory X*, pp. 203–220. Ithaca, NY: CLC Publications, Cornell University.

———— 2000c. *On the Structure of (So-called) Possessive DPs*. Master's thesis, University of California, Los Angeles.

———— 2001a. Agreement in Maasai and the structure of possessive DPs (I). In *Proceedings of the 25th Penn Linguistic Colloquium*, PWPL **8**.1. Philadelphia, Penn.: Department of Linguistics, University of Pennsylvania. To appear.

———— 2001b. Agreement in Maasai and the structure of possessive DPs (II). In William E. Griffin, Kristina Collins, and Brian Reese (eds.), *The Role of Agreement in Natural Language: TLS 5 Proceedings*. Munich: LINCOM Europa. To appear.

———— 2003a. On the status of the partitive determiner in Italian. In Josep Quer, Jan Schroten, Mauro Scorretti, Petra Sleeman, and Els Verheugd (eds.), *Romance Languages and Linguistic Theory 2001 ('Going Romance 2001')*, pp. 317–332. Amsterdam: John Benjamins. To appear.

———— 2003b. Possessives in context. Manuscript, University of California, Los Angeles. To appear in *Proceedings of the UMass Workshop on the Semantics/Syntax of Possessive Constructions*.

Stowell, Timothy 1978. What was there before *there* was there? In Donka
  Farkas, Wesley M. Jacobsen, and Karol W. Todrys (eds.), *Papers from
  the Fourteenth Regional Meeting of the Chicago Linguistic Society*, pp.
  458–471. Chicago, Ill.: CLS, University of Chicago.

——— 1981. *Origins of Phrase Structure*. Ph.D. thesis, Massachusetts Institute
  of Technology.

——— 1983. Subjects across categories. *The Linguistic Review*, **2**:285–315.

Strauss, Uri 2002. Individual-denoting and property-denoting possessives.
  Manuscript, University of Massachusetts, Amherst. To appear in
  *Proceedings of the UMass Workshop on the Semantics/Syntax of
  Possessive Constructions*.

Strawson, Peter F. 1950. On referring. *Mind*, **59**:320–344.

Szabó, Zoltán Gendler 2000. Descriptions and uniqueness. *Philosophical Studies*,
  101:29–57.

Szabolcsi, Anna 1983. The possessor that ran away from home. *The Linguistic
  Review*, **3**:89–102.

——— 1994. The noun phrase. In *Syntax and Semantics 27: The Structure of
  Hungarian*, pp. 179–274. San Diego, Ca.: Academic Press.

Taylor, John R. 1996. *Possessives in English*. Oxford: Oxford University Press.

Tucker, A. N. and J. Tompo Ole Mpaayei 1955. *A Maasai Grammar with
  Vocabulary*. London: Longmans, Green and Co.

Vergnaud, Jean-Roger and Maria Luisa Zubizarreta 1992. The definite determiner
  and the inalienable constructions in French and in English. *Linguistic
  Inquiry*, **23**(4):595–652.

Vikner, Carl and Per Anker Jensen 2002. A semantic analysis of the English
  genitive: Interaction of lexical and formal semantics. *Studia Linguistica*,
  56(2):191–226.

Westersthal, Dag 1985. Determiners and context sets. In Johan van Benthem
  and Alice ter Meulen (eds.), *Generalized Quantifiers in Natural Language*,
  no. 4 in GRASS, pp. 45–71. Dordrecht: Foris.

Williams, Edwin 1981. Argument structure and morphology. *The Linguistic
  Review*, **1**:81–114.

——— 1982. The NP cycle. *Linguistic Inquiry*, **13**:277–295.

Winter, Yoad 1997. Choice functions and the scopal semantics of indefinites. *Linguistics and Philosophy*, **20**(4):399–467.

Woisetschlaeger, Erich 1983. On the question of definiteness in 'an old man's book'. *Linguistic Inquiry*, **14**(1):137–154.

Zamparelli, Roberto 1995. *Layers in the Determiner Phrase*. Ph.D. thesis, University of Rochester.

——— 1998. A theory of kinds, partitives and OF/Z possessives. In Artemis Alexiadou and Chris Wilder (eds.), *Possessors, Predicates and Movement in the Determiner Phrase*. Amsterdam: John Benjamins.

——— 2002. Dei ex machina: A note on plural/mass indefinite determiners. Manuscript, Università di Bergamo.

Zucchi, Alessandro 1993. The ingredients of definiteness and the definiteness effect. *Natural Language Semantics*, **3**:33–78.