

Possessives in Context

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1. The interpretation of possessives

Is there anything interesting to be said about the semantics of possessives? Consider the English Saxon genitive DP *John's dog*. The meaning conveyed by this DP depends on the meaning of the nouns *John* and *dog*: the actual denotation of *John's dog* cannot be determined unless the denotations of *John* and *dog* are known. Still, 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 even to knowing that the individual denoted by *John's dog* is a dog that stands in a certain relation to the individual called John. Thus three semantic pieces 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. Intuitively, out of the three semantic pieces listed above, it is the possessive relation that constitutes the semantic contribution of the possessive construction. Thus, the answer to the question stated above 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. Possessives license a variety of interpretations that seem hard to reduce to a single possessive relation with a well-defined semantic content. Furthermore — as in e.g. *John's picture* — it is often the case that the same possessive seems to license distinct alternative interpretations involving very different possessive relations. Carrying these observations to an extreme, it could be concluded that the semantics of the possessive relation is completely unrestricted. This, 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.

However, many authors have pointed out that this conclusion is too hasty: the interpretation of possessives seems to be subject to certain grammatical constraints. In substantiating this conclusion, most authors have focused on the fact

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of interpretations requires an explicit characterization of the way(s) in which contextual information contributes to the interpretation of extrinsic possessives.

As a preview, I reach the conclusion that interpretations of one of these two types — which I call *control* interpretations — are lexical in nature: the meaning of the possessive relation is determined during the semantic composition of the possessive. This meaning constitutes the core semantics of possessive constructions: the limited *interpretive flexibility* that most possessives seem to display can and should be accounted for in terms of pragmatic inferences that arise when this meaning is used in context. Conversely, interpretations of the other type — which I call *free* interpretations — are essentially context-dependent: the meaning of the possessive relation is left unspecified during the semantic composition and is provided by the context of use of the possessive. Free interpretations, and the unbounded interpretive flexibility that they entail, are specific to definite possessive DPs: the semantics of the definite determiner seems to play a crucial role in licensing their derivation.

2. Another type of grammatical constraint

In the remainder of this work I restrict my attention to extrinsic possessives (3). It can be shown that even within this restricted class of possessives there exist grammatical constraints on the interpretation of the possessive relation. And it can be argued (Storto, 2000a,b) that these constraints are related to the semantics of the whole possessive. The argument runs as follows.

The possessive *John's dogs* in (4a) 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. If contextual salience of a relation is a prerequisite for an extrinsic possessive to express that relation, the availability of this interpretation for *John's dogs* in (4a) shows that the relation ATTACK is salient in the context set up in (4).

- (4) Yesterday John and Paul were attacked by two (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 (4a) and (4b). In contrast to *John's dogs* in (4a), the possessive *some dogs of John's* in (4b) cannot be 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 why the sentence in (4b) sounds odd: (4b) feels like a non-sequitur because it provides information about the dogs owned by John without mentioning why this should be relevant in the context of the situation described by the first sentence. But this means that 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 (4). Thus

the mere contextual salience of a relation does not guarantee the availability of the interpretation according to which a possessive expresses this relation.

The contrast in (4) cannot be reduced to some preference for the DP *some dogs of John's* in (4b) to be interpreted as expressing the relation of ownership rather than some other contextually salient relation. Even if the absence of a similar interpretive preference for *John's dogs* in (4a) were accounted for in a principled way, no parallel contrast would be predicted in the case of possessives that — because of the lexical choice of possessum — cannot be taken to express the relation of ownership. But, as (5) shows, this is not the case: *some hurricanes of John's* cannot be interpreted as expressing the relation HIT (= the relation where the possessum is the hitter of the possessor), thus the sentence in (5b) is semantically odd.

- (5) John and Paul (two sailors) got hit many times by powerful hurricanes.
- a. Sometimes, **John's hurricanes** seriously damaged his boat.
 - b. # **Some hurricanes of John's** seriously damaged his boat.

The existence of minimal pairs like those in (4) and (5) leads to two interesting conclusions. The first conclusion was already hinted at above: contrary to what is implicitly assumed in the literature, the process through which contextual information contributes to determining a specific interpretation for the possessive relation cannot be reduced to the mere contextual salience of a suitable relation. The nature of this process should be investigated in detail, and the constraints that it is subject to should be accounted for.

The second conclusion concerns the nature of these constraints. In each of (4) and (5), 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 e.g. *John's dogs* and *some dogs of John's* that determines the contrast in (4). The contrasts in (4)–(5), then, provide evidence for the existence of grammatical constraints on the interpretation of possessives that differ from the constraints have been discussed in the existing literature.

The facts in (4)–(5) are not peculiar to English: parallel contrasts hold on a crosslinguistic basis (Storto, 2003d). For example, consider the Italian sentences in (6), which display the same contrast that occurs in (4).

- (6) *Ieri Gianni e Paolo sono stati attaccati da due gruppi di cani;*
yesterday Gianni and Paolo were attacked by two groups 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

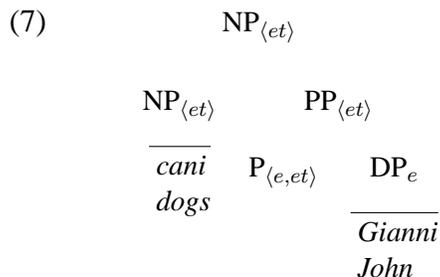
In one respect, however, the English data introduce a level of analytical complexity that is absent in the Italian data. For the case of English one could be tempted to reduce contrasts like those in (4) and (5) to the different syntactic properties of the possessive DPs involved. Simple word-order considerations point towards the conclusion that the syntactic structures of e.g. *John's dogs* and *some dogs of John's* are quite different.

For the Italian data in (6), on the other hand, a similar analytic option looks less plausible. The only difference between *i cani di Gianni* and *alcuni cani di Gianni* seems to be the choice of determiner: the relevant interpretation is available for the DP headed by the definite determiner *i* and unavailable for the DP headed by the indefinite determiner *alcuni*. The Italian data suggest the alternative hypothesis that it is a *semantic* property of the whole possessive — its definiteness specification — that correlates with the availability of the relevant extrinsic interpretation.

In order to avoid the additional analytical complexity that characterizes the English examples, I concentrate first on the interpretation of possessives in Italian. In §8 I return to the case of English and discuss whether the data in (4)–(5) should be accounted for along the same lines that I propose for Italian.

3. A little syntax

To begin, let me sketch a syntactic analysis for possessive DPs.³ I assume that the basic encoding of possession is constituted by a structure in which the possessor is the DP complement of a preposition within a PP predicate — a constituent denoting an entity of type $\langle et \rangle$ — that is combined with one of the maximal projections built upon the possessum (Storto, 2003d). In the case of possessive DPs, the PP containing the possessor is right-adjoined to the NP projected by the possessum and is interpreted as a modifier of the property denoted by the possessum NP, as shown in (7):



The structure in (7) is selected as a complement by a determiner to form a possessive DP. Of course, this basic structure must undergo some further syntactic derivation in order to obtain the attested word order for the case of English Saxon

³An important remark: I am concerned here only with DPs in which the possessum noun is not a syntactic argument-taking category. I take DPs involving argument-taking deverbal nouns like *the destruction of the city/the city's destruction* to be instances of a different syntactic (and semantic) construction.

genitives, where the possessor precedes the possessum (8a). But for the case of Italian (8b) it can be assumed that the surface structure of both definite and indefinite possessive DPs is isomorphic to their base structure.

- (8) a. John's dogs
 b. *i / alcuni cani di Gianni*
 the / some dogs of Gianni

Adopting the structure proposed in (7) has two desirable consequences. In (7) the possessor DP is licensed by the preposition that selects it as a complement in the PP predicate that is adjoined to the possessum NP. Thus there is no need of postulating the existence of a questionable POSSESSOR thematic role within DP. Furthermore, it is predicted that the PP predicate is interpreted as a *restrictive* modifier of the possessum NP: D applies to the whole structure in (7) to form a full DP, so it is expected that the semantics of the determiner applies to the property determined by the possessum *as modified by the PP predicate*. And this prediction is correct: e.g. in *John's dog* the uniqueness requirement imposed by the definite article does not apply to the property denoted by *dog*, but to a subset thereof.⁴

4. Back to semantics

4.1. A closer look at the data The data in (6) show that possessives headed by a definite determiner license the ATTACK interpretation, while possessives headed by an indefinite determiner do not. Let's call DPs of the first kind *definite possessives* and DPs of the second kind *indefinite possessives*. Indefinite possessives, thus, do not seem to license certain interpretations that are licensed by definite possessives.

What is the nature of these interpretations? The interpretations at stake in (4)–(6) are arguably extrinsic: the interpretation of the possessive relation seems to be determined by the context. This suggests the following hypothesis: indefinite possessives do not license extrinsic interpretations, i.e. they do not lend themselves to contextual specification of the interpretation of the possessive relation. But it can be argued that this hypothesis is not compatible with the observation that, like *some dogs of John's* in (4), the Italian indefinite possessive *alcuni cani di Gianni* in (6b) can and 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 their licensing the interpretation according to which the possessive relation expresses the relation of ownership: e.g. both sentences in (9) can be used to convey that some of the cars owned in the past by Gianni turned out to be unreliable.

⁴Additional arguments for a basic structure for possessive DPs along the lines of (7) can be found in the literature. For example, Larson and Cho (2003) account for the ambiguous interpretation of DPs like *John's former store* in terms of attachment of the adjective *former* to the lower or the higher NP in a structure like (7); and Storto (2003a,b) presents evidence in favor of (7) from agreement morphology in Maasai possessive DPs.

- (9) *In genere sia Gianni che Paolo comprano auto affidabili;*
 generally both Gianni and Paolo buy cars reliable
- a. ...*ma talvolta le auto di Gianni si sono rivelate pessimi affari.*
 ...but sometimes the cars of Gianni turned out to be very bad deals
- b. ...*ma alcune auto di Gianni si sono rivelate pessimi affari.*
 ...but some cars of Gianni turned out to be very bad deals

If we follow Partee (1983/1997) and Barker (1995) in assuming that the interpretation according to which a possessive expresses the relation of ownership is just a type of extrinsic interpretations, the lack of contrast between definite and indefinite possessives in (9) provides evidence against the hypothesis that extrinsic interpretations are generally unavailable for indefinite possessives. To be sure, it could be suggested that this argument is flawed,⁵ but additional data provide more conclusive evidence that indefinite possessives *do* license extrinsic interpretations. E.g. the sentence in (6b) is felicitous as a follow-up to the sentence in (10a).

- (10) a. *Ieri Gianni e Paolo si sono imbattuti in due gruppi di cani*
 yesterday Gianni and Paolo came across two groups of dogs
randagi e li hanno portati al rifugio per animali;
 stray and them took to the shelter for animals
- b. #*Ieri Gianni e Paolo sono stati attaccati da due gruppi di cani;*
 yesterday Gianni and Paolo were attacked by two groups of dogs
- ...*sfortunatamente alcuni cani di Gianni avevano la rabbia.*
 ...unfortunately some dogs of Gianni had the rabies

The indefinite possessive *alcuni cani di Gianni* is easily interpreted as referring to part of the dogs that Gianni brought to the animal shelter when (6b) is uttered in the context set up by (10a). 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). This interpretation is context-sensitive: e.g. it is not available in the “empty” context. As such, it seems to be as much context-determined as the ATTACK interpretation that is at stake in (6). Nevertheless, the contrast between the

⁵The relation ATTACK in (6) and the relation OWN (= the relation where the possessor is the owner of the possessum) in (9) are quite different from each other in terms of their salience across contexts. The ownership interpretation is generally available for possessives in all contexts of use (at least, that is, when the possessor is [+ANIMATE]). This could lead one to question its extrinsic nature: that the ownership interpretation does not seem to be context-sensitive suggests that it may not be context-determined after all. Indeed, various authors (Heine, 1997; Jensen and Vikner, 2004; Partee and Borschev, 2000, 2001; Vikner and Jensen, 2002) have suggested that the interpretation according to which a possessive expresses the relation of ownership — or possibly some more general relation of which “legal” ownership is a particular instance — is a lexically determined interpretation.

felicitousness of (6b) in the TAKE.TO.SHELTER context (10a) and the awkwardness of the same sentence in the ATTACK context (10b) is quite stark.

The existence of interpretive contrasts like the one exemplified in (10) 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 leads to the conclusion that extrinsic interpretations *do not constitute a homogeneous class*: two distinct types of extrinsic interpretations can be distinguished on the basis of their availability for indefinite possessives.

Only some extrinsic interpretations — exemplified by TAKE.TO.SHELTER in (10a) — are available for indefinite possessives; other extrinsic interpretations — exemplified by ATTACK in (10b) — are not. This suggests that the semantics of the two types of interpretations is different, and that some property of indefinite possessives makes them incompatible with the derivation of interpretations of the second type.

On the other hand, both types of interpretations are available for definite possessives: the sentence in (6a) containing the definite possessive *i cani di Gianni* is felicitous both in the TAKE.TO.SHELTER context (11a) and in the ATTACK context (11b). Definite possessives seem to be compatible with the derivation of interpretations of both types.

- (11) a. *Ieri Gianni e Paolo si sono imbattuti in due gruppi di cani*
 yesterday Gianni and Paolo came across two groups of dogs
randagi e li hanno portati al rifugio per animali;
 stray and them took to the shelter for animals
- b. *Ieri Gianni e Paolo sono stati attaccati da due gruppi di cani;*
 yesterday Gianni and Paolo were attacked by two groups of dogs
- ... *sfortunatamente i cani di Gianni avevano la rabbia.*
 ... unfortunately the dogs of Gianni had the rabies

As suggested above, I take the different availability of the two types of interpretations for indefinite possessives to indicate that their semantics is different. That is, I assume that the variety of extrinsic interpretations that are available for possessives can be reduced to two distinct semantic constructions, which — interacting with contextual information — determine the specific interpretation available for a given possessive. I use the labels *type-1* and *type-2 interpretations* to refer to these two different semantic constructions.

Two sorts of issues should be addressed in order to characterize fully these two types of interpretations. First, the nature of the semantic restrictions imposed by the two constructions should be specified. What semantic properties distinguish between relations that can be expressed by indefinite possessives and relations that cannot? Then, the distribution of the two types of interpretations should be investigated. Do other possessives pattern with definite or with indefinite possessives?

4.2. *Control vs. free interpretations...* An obvious difference between the relations ATTACK and TAKE.TO.SHELTER in (10) is constituted by the different roles played by possessor and possessum in the two cases. In the (a) context the possessor displays “agent-like” properties and the possessum “patient-like” properties: for the two to stand in the TAKE.TO.SHELTER relation the possessor must have acted on the possessum. On the other hand, the roles of possessor and possessum in the (b) context are reversed: for the two to stand in the ATTACK relation the possessum must have acted on 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. Type-1 interpretations impose the constraint 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 characterize correctly the class of relations that are compatible with type-1 interpretations. This is argued by examples like (12):

- (12) *Ieri a Gianni e Paolo sono stati affidati due gruppi di cani;*
 yesterday to Gianni and Paolo were entrusted two groups 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

In the relation BE.ENTRUSTED.TO (= the relation where the possessum is entrusted to the possessor) the possessor can hardly be described as an agent. Thus it should not be possible for indefinite possessives to express this relation if the interpretive constraint imposed by type-1 interpretations amounted to the “possessor-agenthood” condition outlined above. But the absence of a contrast in the acceptability of the follow-up sentences in (12a) and (12b) in the context that makes the BE.ENTRUSTED.TO relation salient argues that this is not the case: indefinite possessives can express this relation after all.

Thus the initial hypothesis must be abandoned. Here I propose the following alternative hypothesis: type-1 interpretations impose the restriction that the relation expressed by the possessive relation can be construed as an instance of a general relation of *control*.^{6,7} A little more formally, calling CONTROL the relation holding

⁶A similar notion has been independently proposed by Jensen and Vikner (1998) for the analysis of the verb *have*, and then extended to the analysis of English Saxon genitives (Vikner and Jensen, 2002). However, they propose that interpretations involving this relation of control constitute an instance of inherent interpretations, the semantics of control being contributed by the possessum noun. I disagree. These interpretations are available across the board for possessive constructions and do not seem to depend on the choice of possessum: the semantics of control seems to be a property of the possessive construction as a whole. Recent work by Jensen and Vikner (2004) argues for the same conclusion.

⁷Partee and Borschev (2000) suggest that Jensen and Vikner’s relation of control might be

between a possessor that has some sort of physical/volitional control of the possessum and/or of his bearing a relation to the possessum (13), 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).

- (13) CONTROL = $\{\langle pssor, pssum \rangle \mid \text{the possessor has some sort of control of the possessum or of his bearing a relation to the possessum}\}$

This definition of CONTROL is still quite vague and should probably be improved upon. However, the hypothesis that the possessive relation can express only “control relations” constitutes a significant restriction on the semantics of those possessive constructions that only license type-1 interpretations. Indefinite possessives cannot express relations like ATTACK and HIT because these do not constitute subsets of CONTROL. On the other hand, 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.⁸

Summarizing, the empirical generalization that can be drawn at this point is that the semantics of indefinite possessives is more restrictive than that of definite possessives. Whereas the latter can express both control and non-control relations, the former can only express control relations. We analyzed these facts as providing evidence for the need of distinguishing between two types of extrinsic interpretations: indefinite possessives license only type-1 interpretations, which restrict the possessive relation to express control relations. Let’s then call these interpretations *control* interpretations. And let’s call the interpretations — formerly known as type-2 — that are not subject to the restriction to control relations *free* interpretations.

- (14) *Control interpret.* = the possessive relation must express a control relation
Free interpret. = the possessive relation can express a non-control relation

appropriate for *have*, but that a different relation — which they call *possession* — should be adopted for the analysis of possessive DPs. The difference between the two is brought out by the most natural interpretation of sentences like *John has Bill’s car today*, in which John’s relation to the car is one of temporary control, whereas Bill’s relation to the car is a more stable one, most likely ownership (Barbara Partee, p.c.). I am not sure that the latter example supports Partee and Borschev’s claim. First, it is a known fact that possessive *have* sentences with definite possessum DPs tend to be interpreted as involving some sort of temporary relation — compare *John has the car* vs. *John has a car* — but this preference might be easily offset, as in *John has Bill’s car now* (where Bill is a previous owner of the car). Furthermore, the need to distinguish between more temporary and more stable possession arises when two different possessors are involved even within the same DP. For example, in languages like Italian that license multiple possessors within the same DP, only one of these possessors is interpreted as holding a stable relation to the possessum.

⁸I take “ownership interpretations” to be an instance of type-1 interpretations: ownership can be seen as one of the contextually salient relations that are compatible with the meaning of CONTROL. In addition, ownership is intuitively a very salient instance of control, and this property — as Barker (1995) suggests — can be resorted to in order to account for the fact that indefinite possessives can express this relation in very “empty” contexts.

4.3. ... *and their distribution* I take the data in the previous sections to show that free interpretations have a more restricted distribution than control interpretations: the latter are available for both definite and indefinite possessives, the former only for definite possessives.⁹

These distributional properties suggest the hypothesis that the interpretive contrast singles out the class of indefinite possessives. The distinction between control and free interpretations seems to be relevant only for indefinite possessives, which 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 (15):

- (15) *Ieri Gianni e Paolo sono stati attaccati da gruppi di cani;*
 yesterday Gianni and Paolo were attacked by groups of dogs
- a. ... *sfortunatamente i cani di Gianni non sono stati catturati.*
 ... unfortunately the dogs of Gianni not have been captured
- b. ... *sfortunatamente alcuni/molti/due dei cani di Gianni non sono stati catturati.*
 ... unfortunately some/many/two of the dogs of Gianni not have been captured
- c. ... *fortunatamente ognuno dei cani di Gianni è stato catturato.*
 ... fortunately each one of the dogs of Gianni has been captured
- d.[#] ... *sfortunatamente alcuni/molti/due cani di Gianni non sono stati catturati.*
 ... unfortunately some/many/two dogs of Gianni not have been captured
- e.[#] ... *fortunatamente ogni cane di Gianni è stato catturato.*
 ... fortunately each dog of Gianni has been captured

⁹The data show that control and free interpretations have *different* distributional properties. In particular, the fact that indefinite possessives can express only control relations argues that free interpretations are not available for indefinite possessives. The data are less conclusive with respect to the distribution of control interpretations. The empirical observation that definite possessives can express control relations can be taken to show that control interpretations are available for definite possessives as well. But unless it is assumed that free interpretations impose the restriction that the relation expressed by the possessive does not constitute a subset of CONTROL, this conclusion is not necessary: the same interpretations could be derived for definite possessives through contextual specification of the (essentially unrestricted) meaning of free interpretations. In the next sections I propose a formal system within which — given the contextual salience of a control relation — the interpretation of a definite possessive that expresses this contextually salient relation could be derived as a control or as a free interpretation, the two being empirically indistinguishable.

As argued already, the context-setting sentence in (15) makes the ATTACK relation — a non-control relation — salient: the definite possessive *i cani di Gianni* can express this relation, making (15a) felicitous as a follow-up to the first sentence.

The first new piece of data is that the sentences in (15b,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 made for 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, the partitive possessives in (15b) — e.g. *alcuni dei cani di Gianni* — license free interpretations even if, in terms of the choice of determiner, they do not differ from indefinite possessives like *alcuni cani di Gianni*, which do not license interpretations of this kind.

A second relevant piece of data is constituted by the ill-formedness of (15e). In a way parallel to (15d), 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 (15e) is “out of place” in the context of the first sentence. But, of course, possessive DPs like *ogni cane di Gianni* in (15e) are *not* indefinite. Actually, in terms of the choice of determiner, they do not differ from partitive possessive DPs like *ognuno dei cani di Gianni* ‘each of the dogs of Gianni’ in (15c) that can express the ATTACK relation.

The generalization is that for the case of possessives headed by an indefinite (15b,d) or quantificational determiner (15c,e) the presence vs. absence of an overt partitive structure seems to be crucial. Partitive possessives, like definite possessives, can express non-control relations. *Quantificational possessives*, like indefinite possessives, cannot. In terms of the distribution of control vs. free interpretations this means that, while the former type is available with all kinds of DPs, the latter is licensed only by definite and partitive possessives: indefinite and quantificational possessives are incompatible with free interpretations.

4.4. Two analytic options Summarizing, two types of extrinsic interpretations for possessives must be distinguished: control vs. free interpretations. The context of use seems to play a role in the derivation of both types of interpretations, but they differ in two respects: their semantics — the semantics of the former is more restrictive than the semantics of the latter — and their distribution — the latter are available only for definite and partitive possessives. These properties impose two requirements on the theory: (i) the meaning of the possessive relation must be left un(der)specified in the semantic composition of possessive DPs for the context to be able to contribute to their interpretation, and (ii) the semantics of the determiner must play a role in licensing the two types of extrinsic interpretations.¹⁰

One immediate consequence of the latter is that the interpretive differences between definite and indefinite/quantificational possessives must be determined at

¹⁰For the moment I leave aside the class of partitive possessives, for which the choice of determiner does not seem to be relevant. I come back to them at the end of §5.2.

the level where the meaning of the determiner combines with the meaning of the NP in (7). Compositionality requirements dictate that the semantics of the determiner is not visible at levels “lower” than the outermost NP in (7): the semantic composition of both control and free interpretations should proceed freely within this NP, and differences in the derivation of the two types of interpretations should arise only at the point where it combines with the determiner.

In principle, this result can be achieved in two distinct ways. It could be maintained that the syntactic/semantic encoding of control and free interpretations is the same within (7) and both the semantic restrictiveness of control interpretations and the restricted distribution of free interpretations could be tied to the semantics of the determiner. Alternatively, it could be claimed that control and free interpretations have distinct syntactic/semantic encodings within (7) and that the determiner plays crucial role in licensing the further semantic derivation of free interpretations.

4.5. Why the first option fails Here is a version of the first option.¹¹ First, assume that the semantics of the possessive relation is left completely unspecified within the structure in (7): the head of the possessive PP predicate denotes a variable of type $\langle e, et \rangle$. Given this hypothesis, the interpretation for (7) is the following:¹²

$$(16) \quad \llbracket \text{cani di}_{1, \langle e, et \rangle} \text{Gianni} \rrbracket^g = \\ = \text{the function from plural individuals in } \mathcal{D} \text{ to } \{0, 1\} \text{ that assigns the value} \\ \text{1 to those individuals that are groups of dogs and stand in the } g(1, \langle e, et \rangle) \\ \text{relation to Gianni}$$

The interpretation in (16) is dependent on the choice of an assignment, which specifies the relation holding between possessor and possessum. For the determiner to impose restrictions on the choice of assignment g , it is necessary that the variable $1, \langle e, et \rangle$ be “accessible” at the stage in the derivation where the semantics of the determiner combines with the interpretation of (7). 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 (17).

$$(17) \quad \begin{array}{l} i_{1, \langle e, et \rangle} / \text{alcuni}_{1, \langle e, et \rangle} \text{ cani di}_{1, \langle e, et \rangle} \text{ Gianni} \\ \text{the} \quad / \text{some} \quad \text{dogs of} \quad \text{Gianni} \end{array}$$

In the case of definite possessives no restriction on the possessive relation seems to be needed: definite possessives can express all types of contextually salient relations. Let’s thus assume that for all $\langle i, \tau \rangle$ the interpretation of $\text{the}_{i, \tau}$ is the standard semantics given in (18).

(18) *Determiners* (standard)

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

¹¹The formal system is based on Heim and Kratzer (1998). See Storto (2003d).

¹²Full compositional derivations can be found in Storto (2003d).

- (19) $\llbracket i_{1, \langle e, et \rangle} \text{ cani } di_{1, \langle e, et \rangle} \text{ Gianni avevano la rabbia} \rrbracket^g =$
 = 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

As shown in (19), the sentence $i_{1, \langle e, et \rangle} \text{ cani } di_{1, \langle e, et \rangle} \text{ Gianni avevano la rabbia}$ 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:

- (20) *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 that has a free occurrence in ϕ .

The contexts in (6) and (12) can be argued to determine respectively the two assignments $[1, \langle e, et \rangle \rightarrow \text{ATTACK}]$ and $[1, \langle e, et \rangle \rightarrow \text{TAKE.TO.SHELTER}]$. Thus both contexts are appropriate for an utterance of $i_{1, \langle e, et \rangle} \text{ cani } di_{1, \langle e, et \rangle} \text{ Gianni avevano la rabbia}$: this is why both in (6a) and (12a) 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 $alcuni_{1, \langle e, et \rangle} \text{ cani } di_{1, \langle e, et \rangle} \text{ Gianni avevano la rabbia}$ cannot be used appropriately when the context in (6) determines the assignment $[1, \langle e, et \rangle \rightarrow \text{ATTACK}]$, but still can be used appropriately when the context in (12) determines the $[1, \langle e, et \rangle \rightarrow \text{TAKE.TO.SHELTER}]$.

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. In (21) I model this requirement as a presupposition: the use of the determiner $alcuni_{i, \langle e, et \rangle}$ presupposes that the value assigned to the index $i, \langle e, et \rangle$ is a subset of CONTROL.

- (21) *Indefinite determiners* (alternative)

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

- (22) $\llbracket alcuni_{1, \langle e, et \rangle} \text{ cani } di_{1, \langle e, et \rangle} \text{ Gianni avevano la rabbia} \rrbracket^g =$
 = undefined if $g(1, \langle e, et \rangle)$ 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

The interpretation derived in (22) is, as in the case of (19), dependent on the choice of assignment. And it follows from the condition in (20) that the sentence $alcuni_{1, \langle e, et \rangle} \text{ cani } di_{1, \langle e, et \rangle} \text{ Gianni avevano la rabbia}$ 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 (12): the assignment $[1, \langle e, et \rangle \rightarrow \text{TAKE.TO.SHELTER}]$ assigns a control relation as a value to $1, \langle e, et \rangle$. But this is the case in (6) only if the assignment determined by the context is $[1, \langle e, et \rangle \rightarrow \text{OWN}]$: if the assignment determined by the context is $[1, \langle e, et \rangle \rightarrow \text{ATTACK}]$, the interpretation in (22) is not defined because the presupposition that the value assigned to $1, \langle e, et \rangle$ is a control relation is not satisfied. That *alcuni cani di Gianni* in (6) is taken to denote the dogs owned by Gianni and not the contextually salient dogs follows straightforwardly.

This is all that is needed to derive both the more restrictive semantics of control interpretations and the restricted distribution of free interpretations (extending the analysis to quantificational possessives is very straightforward). But this system — like any instantiation of the first option — presents two obvious shortcomings.

The first is that the different role played by determiners in the derivation of control vs. free interpretations is stipulated directly in the lexical entry for each determiner. Ultimately, one would want the restriction on $i, \langle e, et \rangle$ stipulated in the crude system sketched above to be reduced to known semantic properties of the determiners that impose this restriction. The problem is that the relevant determiners do not constitute a single natural class. If anything, indefinite and quantificational determiners are the *complement* of a natural class: the class of definite determiners. The system seems to miss a relevant semantic generalization.

A second problem is that the requirement that the possessive relation expresses control relations seems to be introduced in the “wrong place” in the derivation of control interpretations. This restriction is introduced by the determiner and is not part of the semantics of the possessive PP predicate; but, intuitively, the relation CONTROL holding between possessor and possessum is the meaning of the possessive construction. This is another generalization that the system seems to miss.

5. The alternative option

5.1. A basic ambiguity Let’s explore the alternative option: we assume that control and free interpretations are encoded differently in the syntax/semantics of possessives — a difference that leads to two distinct semantic derivations within (7) for the two types of interpretations — and we account for their different distribution by letting the determiner play a role in licensing the further derivation of one of the two types of interpretations.

I propose that the basic difference between control and free interpretations reduces to a lexical ambiguity for the head of the PP predicate in (7). Only the derivation of free interpretations begins — as suggested above — with a completely unspecified meaning for the possessive relation: the head of the possessive PP denotes a variable of type $\langle e, et \rangle$. The derivation of control interpretations, on the other hand, begins by specifying a more substantive meaning for the possessive relation: the head of the PP denotes a constant of type $\langle e, et \rangle$, the relation CONTROL.

Given these assumptions, the case of control interpretations is pretty straight-

forward: the availability of control interpretations for all types of possessive DPs follows immediately from the assumption that the semantics of the possessive relation is determined entirely within the possessive structure in (7).

Concretely, the interpretation in (24) is derived for the sentence *i cani di Gianni avevano la rabbia* on the basis of the denotation for *di* in (23) and the standard denotation of the determiner *i* given in (18):

$$(23) \quad \llbracket di \rrbracket = \lambda u_e . [\lambda v_e . u \text{ and } v \text{ stand in the CONTROL relation}]$$

$$(24) \quad \llbracket i \text{ cani di Gianni avevano la rabbia} \rrbracket^g =$$

= 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

This interpretation is *not* dependent on the choice of assignment: 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 (25) — again on the basis of (23) and the standard denotation of the indefinite determiner *alcuni* in (18) — for the sentence *alcuni cani di Gianni avevano la rabbia*.

$$(25) \quad \llbracket alcuni \text{ cani di Gianni avevano la rabbia} \rrbracket^g =$$

= 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

It is instructive to compare the interpretation of *alcuni cani di Gianni avevano la rabbia* in (25) with the interpretation that the same sentence received in the system sketched in the previous section (22). Both interpretations require that the relation holding between Gianni and the relevant group of dogs be an instance of CONTROL. But (25) sheds a different light on the process of contextual determination of control interpretations: contrary to the case of (22), the interpretation of the sentence is *not* formally dependent on information provided by the context of use. 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. 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 cohesion requirements make it easy for the hearer to determine which stronger meaning is being conveyed.¹³

¹³Daniel Büring (p.c.) and Barbara Partee (p.c.) wonder what happens when there are competing candidates in the same discourse: is the CONTROL relation taken to express one of these candidates or is it taken to express the union of them? Providing an answer to this question on the basis of empirical data is quite difficult: it seems indeed to be the case that “union-like” interpretations can be derived, but even in these cases it could as well be that

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

5.2. *The derivation of free interpretations* So far so good. But still it is not clear how the different distribution of control vs. free interpretations can be derived within this alternative system. As a reminder, we want to obtain that the derivation of free interpretations — a derivation in which the meaning of the possessive relation is left unspecified within the structure in (7) — converges only when the definite determiner combines with this structure.

In my talk at the Possessives Workshop I explored the possibility of treating free interpretations on a par with control interpretations, by assuming that free interpretations constitute another case of indirect rather than direct contribution of the context to the interpretation of possessives. I suggested the hypothesis that e.g. *i cani di Gianni avevano la rabbia* under a free interpretation involves existential closure of the variable $i, \langle e, et \rangle$, thus deriving an interpretation that is not dependent from the context (26) but lends itself to quite extensive pragmatic use (the semantics only requires that *some* relation holds between possessor and possessum).

$$(26) \quad \llbracket i_{1, \langle e, et \rangle} \text{ cani di}_{1, \langle e, et \rangle} \text{ Gianni avevano la rabbia} \rrbracket^g =$$

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

And I argued that the restricted distribution of free interpretations could be accounted for in a rather straightforward way under the assumption that only definite determiners can introduce an existential closure on the variable $i, \langle e, et \rangle$,¹⁴ if some principle rules out as ill-formed logical forms in which this variable is left unbound.

when certain relations are made salient in the context other related relations — their union and their converse relations are obvious candidates — are made salient as well. A similar issue arises for the case of free interpretations which is discussed in the next section as well, this time in terms of what relation is chosen as value for the relational variable $i, \langle e, et \rangle$.

¹⁴E.g. we can assume that only definite determiners have “binding” lexical entries like (i).

i. *Definite determiners* (alternative)

$$\llbracket i_{1, \langle e, et \rangle} \rrbracket = \lambda \chi_{\langle \langle e, et \rangle, \langle et \rangle \rangle} : \exists ! x \exists \mathcal{R} [\chi(\mathcal{R})](x) = 1 . \iota x \exists \mathcal{R} [\chi(\mathcal{R})](x) = 1$$

In order to derive (26), an ad-hoc compositional rule has to be defined that composes (i) and (16) after having first abstracted on the variable $i, \langle e, et \rangle$ in (16). Alternatively, it could

I tentatively suggested that the context of use might not be able to provide a value for such a variable, the idea being that it is not possible to retrieve discourse information through variables of type $\langle e, et \rangle$: information in discourse is kept track of only in terms of individuals and properties, not in terms of relational entities.¹⁵

(27) *No free relational variables*

No context \mathcal{C} determines a variable assignment $g_{\mathcal{C}}$ whose domain contains indices of the form $\langle i, \langle e, et \rangle \rangle$.

I no longer believe that this hypothesis is correct, for reasons that are discussed in §5.3. Still, it should be obvious why under these assumptions the derivation of free interpretations does not converge in the case of indefinite possessives: in all contexts the interpretation of e.g. *alcuni cani di Gianni avevano la rabbia* does not determine a truth value because no value can be assigned to the free variable $i, \langle e, et \rangle$. This conclusion can be generalized to the derivation of free interpretations in all types of indefinite/quantificational possessives.

If definite determiners are the only class of determiners that introduce existential quantification on the variable denoted by the head of the PP predicate, the derivation of free interpretations will converge only in possessives where the definite determiner combines with the structure in (7). Needless to say, this accounts for the interpretive behavior of partitive possessives as well. Partitives are assumed to be recursive DPs (Stockwell et al., 1973; Jackendoff, 1977; Barker, 1998; Chierchia, 1998, a.o.), consisting of a definite DP embedded within a bigger DP:¹⁶

- (28) a. $[_{DP_1} \text{some } \emptyset_N \text{ of}_{\text{part}} [_{DP_2} \text{the dogs}]]$
 b. *alcuni dei cani di Gianni*
 some of the dogs of Gianni
 c. $[_{DP_1} \text{alcuni } \emptyset_N \text{ de}_{\text{-part}} [_{DP_2} i \text{ cani di Gianni}]]$

Crucially, in the case of partitive possessives the possessive relation is established within the embedded definite DP₂ (28c), which by itself accounts for the fact that partitive possessives behave like definite possessives with respect to licensing free interpretations: whatever the nature of the higher determiner D₁, the derivation of free interpretations is licensed by the existential quantifier on $i, \langle e, et \rangle$ introduced by the embedded definite determiner D₂.

be assumed that the preposition *di* denotes a variable of type $\langle e, \langle et, \langle \langle e, et \rangle, et \rangle \rangle \rangle$.

¹⁵Using Heim's (1982) metaphor of file cards as means to store discourse information, this amounts to the suggestion that only individual variables — and crucially not relational variables — can constitute the index of a file card.

¹⁶Even if this recursive analysis of partitive DPs is not correct (Matthewson, 2001, e.g.), the presence of a definite determiner within partitives can still account for the availability of free interpretations, I think.

5.3. *A critical assessment* The system developed in this section accounts both for the semantic restrictiveness of control interpretations and for the restricted distribution of free interpretations. Control interpretations involve the constant relation CONTROL, which both determines the attested restrictions on the interpretation of the possessive relation and ensures that the derivation of control interpretations converges in all types of possessive DPs. Free interpretations involve the relational variable $i, \langle e, et \rangle$, which does not impose restrictions on the interpretation of the possessive relation, but can (and must) be bound only by definite determiners.

In addition, this system goes a certain way towards addressing the two shortcomings that characterized the system developed in the previous section. First, even if the differences between types of determiners in licensing the derivation of free interpretations are again stipulated, there is more hope that this stipulation can be eliminated from the theory. Special provisions are made in this system only for definite determiners: hopefully, these stipulations can be reduced to independently known properties of definite determiners. And, second, in this system the restriction to CONTROL that characterizes control interpretations is introduced within the possessive PP predicate. This — as argued in the previous section — is more consistent with the intuition that CONTROL constitutes the basic meaning of the possessive construction. I elaborate on both points in the next two sections.

Still, it is clear that the current system has shortcomings of its own. Among these, the most egregious are the need for a novel¹⁷ strong assumption on the nature of information scorekeeping in discourse in order to rule out expressions containing free relational variables, and the use of existential quantification on the variable $i, \langle e, et \rangle$ in the derivation of free interpretations. I do not have much to say here with respect to the first point. I will just note that once something like (27) is added to the grammar a host of issues arise in relation to VP anaphora, pro-V phenomena, gapping, and questions (under a Skolem function analysis). Indeed, I am ready to dismiss the proposal made in §5.2 on the basis of the second shortcoming alone.

Remember, in the current system the meaning of a definite possessive like *i cani di Gianni* under a free interpretation is not context-dependent. This possessive means something like ‘the maximal set of dogs that stand in some relation to Gianni’ and it is only an effect of pragmatic reasoning that we take this DP to mean ‘the maximal set of dogs that attacked Gianni’ in a context like (11b). But this semantics is arguably too weak. Indeed, were it not for the pragmatic effect of contextual information, a possessive DP like *i cani di Gianni* would normally denote the whole set of individuals in the denotation of *cani*, a suitable relation that relates each individual a in this set to Gianni being easily defined extensionally as the singleton set $\{ \langle a, \llbracket Gianni \rrbracket \rangle \}$. But this seems to clash with the restrictive nature of the possessive construction: intuitively, *i cani di Gianni* is normally used to denote a

¹⁷The only distant relative to the restriction in (27) that I know of is discussed in Chierchia (1984), who argues that only individual and first-order types have the full range of variable behavior. But within Chierchia’s proposal it is generalized quantifier types that are set apart from the rest: variables of type $\langle e, et \rangle$ are treated on a par with individual variables and are argued to display the full range of variable behavior.

proper subset of the set that would be denoted by *i cani*.

A truly context-dependent semantics for the free interpretation of *i cani di Gianni* would not face this problem: given the semantics of the possessive construction, the definite determiner would apply to the property that denotes the set of dogs that stand in the contextually provided relation $i, \langle e, et \rangle$ to Gianni, a set that in general is a subset of the denotation of *cani*. The analysis proposed for the derivation of free interpretations is thus inadequate: existential closure of $i, \langle e, et \rangle$ by definite determiners must be dispensed with, and the role that the latter play in licensing free interpretations is to be accounted for in some other way.¹⁸

6. CONTROL as basic meaning of possessive constructions

Let me take stock. Within the formal account sketched in the previous section control interpretations derive from the semantics of CONTROL that constitute the basic semantic contribution of the head of the possessive PP in (7). As a matter of fact, it can be argued that CONTROL constitutes the basic semantics of possessive constructions in general — not just of possessive DPs — whereas free interpretations are strictly restricted to (definite) DPs.

Consider the case of *predicate possessives*: “bare” possessors used as predicates in copular constructions. Sentences parallel to the Italian examples in (29) are presented in Partee and Borschev (2001) to show that when the postcopular material is a bare possessor rather than an elliptical DP — i.e. when *quelli* is absent in our case — the whole possessive sentence cannot receive an inherent interpretation (29a), but can only receive an extrinsic interpretation (29b).

- (29) a. *Questi professori sono #(quelli) di Gianni.*
 these teachers are #(those) of Gianni
- b. *Questi cani sono (quelli) di Gianni.*
 these dogs are (those) of Gianni

The extrinsic interpretation discussed by Partee and Borschev (2001) involves the relation of ownership, which in the terminology proposed in this paper means that (29b) constitutes an instance of control interpretations. But what about the other type of extrinsic interpretations? Predicate possessives do *not* license free interpretations: e.g. (29b) without *quelli* cannot be used to indicate that the dogs

¹⁸Additional problems arise under the assumption of existential closure on $i, \langle e, et \rangle$ proposed in §5.2. For example, it is counterintuitively predicted that the existentially closed variable could be taken to express “limit-case” relations like the relation between individuals that do not know of each other’s existence (Ed Keenan, p.c.) or the relation between individuals that are not related to each other (Yura Lander, p.c.). And, even worse, it is predicted that sentences like *That’s not John’s book!* could express the denial that any relation whatsoever holds between John and the relevant book (Barbara Partee, p.c.). None of these problems arises under a truly context-dependent semantics for free interpretations.

pointed at are those that attacked Gianni even in the context of a situation like the one described in (11b). Even if I have not addressed directly the syntax/semantics of copular possessive constructions, it is clear that the unavailability of free interpretations in constructions like (29b) can quite likely be treated on a par with the case of non-definite possessive DPs discussed above: in both cases the possessive predication is not within the scope of the definite determiner.

These data suggest the hypothesis that the semantics of CONTROL constitutes the core meaning shared by all types of possessive constructions. And the distinction between control and free interpretations provides a formal vocabulary to reformulate the empirical observation that possessive constructions seem to be characterized by a meaning that licenses a certain interpretive flexibility within a bounded range of interpretations. Due to the generality of the meaning of CONTROL and to the possibility for the context to contribute to the specification of the control relation that is expressed by the possessive relation, 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 strategy, a strategy in which the possessive construction does not actually impose any restrictions on the meaning of the possessive relation, a strategy that requires the presence of the definite determiner to succeed.

7. What is special about definites?

What properties of definite determiners can we resort to in order to account for their licensing free interpretations? Three properties have been identified in the literature that distinguish definites from other types of DPs: (i) the requirement that the property the definite determiner combines with contains a unique/maximal element, (ii) the requirement that the referent of the DP is familiar in the discourse, and (iii) the requirement that the context entails that the property the determiner combines with holds of the referent of the DP. It is quite clear that the role played by definite determiners in the derivation of free interpretations must be linked to one or more of these properties.¹⁹ Indeed, a host of data can be found that supports the following generalization: when these semantic properties of definite determiners are lacking, free interpretations are unavailable for possessives.

Two particularly interesting sets of data are provided by cases in which the apparent morphological presence of a definite determiner does not correlate with

¹⁹Building on the intuitive parallelism between the interpretation of the free relational variable in definite vs. indefinite possessives and the interpretive properties of definite vs. indefinite DPs in discourse studied by Heim (1982), in Storto (2003d, Ch.5) I pursue the hypothesis 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.

the semantic properties traditionally associated with definiteness.

One first such example is constituted by so-called *weak definite* DPs. Poesio (1994) points out that DPs like (30a) do not seem to be subject to either the uniqueness or the familiarity requirements that are normally associated to definite descriptions. Interestingly, weak definite possessives like (30b) are infelicitous in a context like the one described in (11b), which points towards the conclusion that these DPs do not license free interpretations. The semantics of definite determiners seems to play a crucial role in licensing free interpretations for possessive DPs.²⁰

- (30) a. the corner of a big intersection
 b. *il cane di uno studente*
 the dog of a student

A similar argument can be made on the basis of DPs like the Italian (31a), sometimes referred to as *bare partitives*. Apparently, these DPs are partitives without the “higher” determiner (Chierchia, 1998). This characterization would lead one to expect bare partitive possessives to behave like partitive possessives and license free interpretations. Still, the observation that (31b) cannot express a relation like *ATTACK* is surprising only until it is pointed out that bare partitives do not seem to display properties that in partitive DPs are associated to the semantics of the embedded definite determiner (Storto, 2003c; Zamparelli, 2002). Again, the absence of the semantic properties that characterize definite determiners correlates with the unavailability of free interpretations for possessive DPs.

- (31) a. *dei cani*
 of the dogs
 b. *dei cani di Gianni*
 of the dogs of Gianni

²⁰Poesio (1994) describes weak definites as DPs of the form ‘the N of DP’ where N is a relational noun and DP is indefinite. I think that the latter is an English-specific fact, due to the restriction that only relational nouns can take complements introduced by *of* (i).

- i.* the dog of a student

Furthermore, Poesio points out that Saxon genitives whose possessor is an indefinite DP — like (ii), the English equivalent of the Italian (30b) — behave like weak definites in not displaying uniqueness or familiarity requirements. And DPs like (ii) do not appear to license free interpretations either.

- ii. a student’s dog

In any event, it is fair to say that the properties of weak definites have not been accounted for in full yet — see Barker (2004) for recent discussion — which obviously weakens somewhat the argument made in the text.

8. The case of English

Now we can finally return the case of English possessives and see whether the account proposed above for Italian can be extended to cover the English facts as well. I do not intend to discuss in detail the syntax of English possessive constructions and the thorny issues concerning the nature and the motivations for the movement that displaces the possessor from its base position to a position preceding the possessum in Saxon genitives. But it is obvious that in order to account for the availability of free interpretations for DPs like *John's dogs* in English (4a) I must assume that the uniqueness and familiarity that characterize Saxon genitives are due to the presence in their syntactic structure of a covert definite determiner ι as in (32):²¹

(32) [_{DP} ι [_{??} John's dogs]]

That this assumption may be essentially correct is suggested by the observation that, when used as predicates in copular sentences, English Saxon genitives do not entail uniqueness/maximality (Mandelbaum, 1994):

(33) These [_☞ left] are **John's dogs**, and those [_☞ right] are **John's dogs** too.

The sentence in (33) is not contradictory, as one would expect it to be if the predicate *John's dogs* entailed that the dogs referred to in the first (or in the second) conjunct constitute the maximal set of dogs owned by John. This fact can be easily accounted if full DPs cannot serve as predicates in copular constructions (Zamparelli, 1995): the Saxon genitives in (33) are phrases smaller than DP that do not contain the covert definite determiner ι .

And, predictably, when Saxon genitives are used as predicates (i.e. when they are nominal constituents “stripped” of the DP layer, and thus of the covert definite determiner), they do not license free interpretations. Witness the contrast in (34). In the context of a situation where John and Paul were attacked by dogs and all the dogs were captured and brought to the dog pound, it is possible to use the sentence in (34a) to convey the information that the dogs in the left kennel are those that attacked John and the dogs in the right kennel are those that attacked Paul. But it is not possible in the same context to use the sentence in (34b) to convey the information that the dogs in the left kennel are some of the dogs that attacked John, and the ones in the right kennel are some more dogs that attacked John.

(34) Whose dogs are these [_☞ left]? And whose are those [_☞ right]?

a. These [_☞ left] are **John's dogs**. And those [_☞ right] are **Paul's dogs**.

b. # These [_☞ left] are **John's dogs**. And those [_☞ right] are **John's dogs** too.

²¹This is different from the proposal in a.o. Abney (1987), where the Saxon genitive possessor is assumed to be generated in Spec,DP. Whatever its base position, the data in (33) seem to argue that the Saxon genitive possessor can surface in prenominal position *within* the constituent that is selected as a complement by the null definite determiner.

The Saxon genitives in (34b) cannot be full definite DPs, otherwise the sentence would be contradictory. Thus they must be smaller predicate nominals, which do not contain the DP layer (and crucially, the definite determiner ι). Empirically, this seems to make the free interpretation unavailable: the sentence in (34b) seems to convey the information that both sets of dogs are part of the dogs owned by John, which is a non-sequitur if the question was aimed at asking which person(s) the two groups of dogs attacked. Again, the absence of the semantics of the definite determiner correlates with the unavailability of free interpretations.

So much for Saxon genitives. What about indefinite/quantificational possessives in English? As I pointed out at the beginning, the syntactic structure of these DPs is apparently more complex than the structure of Saxon genitives. Some authors (Barker, 1998; Zamparelli, 1998) have proposed that these *double genitive* DPs are actually a type of partitives: e.g. (35a) and (35b) share the same partitive syntax (36), differing only with respect to the position where the noun *dogs* is spelled out. If this hypothesis were completely correct we would be in trouble: partitives — in English as in Italian — do license free interpretations, but we know that double genitives are restricted to control interpretations (4b).

- (35) a. two of John's dogs
b. two dogs of John's

(36) [_{DP₁} two [_{YP} dogs_i [_{Y'} of_{part} [_{DP₂} John's dogs_i]]]]

Fortunately, additional data suggest that English double genitives differ from partitives just with respect to the properties that are resorted to in §5.2 to account for the availability of free interpretations in the latter type of DPs. In partitive DPs free interpretations are actually licensed within the definite DP embedded by the partitive preposition *of*. Thus, if it can be argued that the material that follows the preposition *of* in English double genitives is not a full definite DP the unavailability of free interpretations becomes much less mysterious.

Zamparelli (1995) points out that Saxon genitives containing numerals, in contrast to simple Saxon genitives, entail uniqueness/maximality even when used in copular sentences (37), from which he concludes that they are always full definite DPs. Interestingly, whereas it is possible to construct partitive DPs in which the DP embedded under *of* is a Saxon genitive containing a numeral (38a), the correspondent double genitives are ungrammatical in English (38b).²²

(37) # These [ left] are **my four dogs**, and those [ right] are **my four dogs** too.

- (38) a. two of John's four dogs
b. *two dogs of John's four

The material following *of* in English double genitives seems to be a predicate nominal that does not contain the null determiner ι , which dispels some of the mystery surrounding the unavailability of free interpretations for this type of possessives.

²²Some speakers seem to marginally accept DPs like (38b). Possibly, they reanalyze these DPs as instances of a different construction, e.g. *two dogs out of John's four*.

Summarizing, I propose that English Saxon genitives are not different from Italian definite possessives in any relevant respects: both constructions involve the presence of a definite determiner, which ensures the availability of free interpretations. On the other hand, English double genitives differ from Italian indefinite/quantificational possessives in that their syntactic structure is more complex, and their being restricted to control interpretations does not depend on the nature of their determiners, but on the fact that the possessive relation is introduced below the preposition *of*, at a level where no *local* definite determiner is present. Indeed, English double genitives provide evidence that strict locality constraints hold of the licensing of free interpretations (Storto, 2003d): even double genitives headed by a definite determiner like (39b) do not seem to license free interpretations.

- (39) Yesterday John and Paul were attacked by two groups of dogs;
- a. ... unfortunately **the two of John's dogs that were captured** are rabid.
 - b. # ... unfortunately **the two dogs of John's that were captured** are rabid.

9. Conclusions

In this paper I highlighted the existence of a type of grammatical constraints on the interpretation of possessives that has not been discussed previously in the literature. The semantic properties of a possessive DP as a whole play a role in licensing the availability of certain contextually determined interpretations. In addition, I made a case for the necessity of distinguishing two types of such extrinsic interpretations and addressing seriously the issue of what it means for the context of use to contribute to the interpretation of possessives.

I proposed that in the case of control interpretations the role of the context is indirect: contextual information supports and facilitates pragmatic inferences based on the semantics of CONTROL that constitutes the basic meaning of possessive constructions. The general meaning of CONTROL and the role played by pragmatic inferences account both for the fact that possessive constructions are felt to share a common semantic core and for most of the attested interpretive flexibility displayed by these constructions. Furthermore, the fact that it is up to the speaker/hearer to draw the relevant pragmatic inferences potentially provides an explanation for the general observation that speakers' judgments on the availability of certain interpretations in given contexts are sometimes not entirely consistent.

On the other hand, I argued that free interpretations are peculiar to definite possessive DPs. I suggested that interpretations of this kind arise from the possibility of leaving the semantics of the possessive relation unspecified, leaving it to the context to determine directly the relation holding between possessor and possessum. I presented data that show that this alternative route is contingent on the semantic contribution of the definite determiner, but — alas! — I stopped short of providing an adequate account for the derivation of free interpretations. See Storto (2003d, Ch.5) for an explicit attempt at developing such an account.

Appendix: A more structural alternative?

Dobrovie-Sorin (2004) proposes to distinguish *simple genitives* — Saxon genitives (English), construct state associates (Hebrew), morphological genitives (Rumanian) — from *complex/prepositional genitives* — *of*-genitives (English), *šel*-genitives (Hebrew), *al*-genitives (Rumanian) — and suggests that the contrast between what I call here free and control interpretations could be reduced to the distinction between these two types of constructions. In a sense, this is the opposite route with respect to the one that I took: rather than taking the Italian case as paradigmatic, she proposes to treat English, Hebrew and Rumanian as paradigmatic cases, and deal with Italian by assuming that postnominal *di*-marked DPs 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.

While an alternative along these lines seems worth pursuing, 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 $\langle e, e \rangle$ 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 when the possessum is a monadic noun is an instance of formal dependence on the context of use, whereas the interpretation of complex/prepositional genitives relies on the semantics of a constant *genitive relation* whose meaning is similar to CONTROL.

This proposal, in effect, builds definiteness and the licensing of free interpretation directly into the syntax/semantics of simple genitives: a monadic possessum noun can be shifted into any contextually salient genitive function, and given the ultimately functional nature of the possessum, 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 and license free interpretations, which is not the case (33–34b). Arguably, Dobrovie-Sorin's proposal can be salvaged by claiming 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 considerably weakened. Furthermore, it is not clear that this proposal can account for the fact that Saxon genitives whose possessor is indefinite do not seem to license free interpretations (see footnote 20).

Finally, 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: (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).

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