Possessives Consist of Heads and Complements: Some Notes*

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This paper argues that German(ic) Possessor Doubling Constructions such as *Peter sein Auto* '(Peter his =) Peter's car' are Possessive Phrases, consisting of a possessive head *sein* 'his' and its complement *Peter*, the Possessor. It is proposed that PossP is base-generated in the theta domain of the nominal head. If left in situ, Norwegian *bilen hans Per* 'car-the his Peter' obtains; if moved, German *Peter sein Auto* 'Peter his car' is brought about where the Possessor has moved to a higher position within PossP.
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## 1.	Introduction

The *genitivus thematicus* (i.e. *genitivus subiectivus*, *obiectivus*, *possessivus*), often also referred to simply as "Possessive", has attracted a lot of attention in the literature (e.g. see the recent collections of papers in Alexiadou & Wilder 1998 and Coene & D'hulst 2003; for model-theoretic semantics of possessives, see Barker 1995; for typological surveys over possessive noun phrases and pronouns, see Koptjevskaja-Tamm 2003 and Manzelli 1980, respectively). Among others, it has been widely noted (e.g. Delsing 1998) that the Germanic languages may express possession in a number of ways. For instance, the Saxon Genitive Construction (SGC) and the Possessor Doubling Construction (PDC) may appear pre-nominally:[1]

(1)	*Saxon Genitive Construction*
	a.	Mary's book
	b.	Marias Buch					(German)
	c.	Marie se boek					(West Flemish)
			(Haegeman 2003: 221)

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[1] Note that the Possessor Doubling Construction seems to be possible in earlier stages of English and some varieties of French:

(i)	a.	Canterbury and Chillingworth their books		(Early Modern English)
			(Verhaar 1997: 96, Janda 1980: 249, Barker 1995: 23)
	b.	J'ai	vu	[Pierre son livre].				(non-Standard French)
		I have seen	Pierre his	book
			(Zribi-Hertz 2003: 150)

I take the absence of the PDC in Modern English and its presence in some Romance dialects to be due to no "deep" difference in the grammars concerned. Note also that there is a person restriction on the PDC in that it can only be in the third person (in Roehrs, in preparation a, I argue that this restriction is semantic in nature).

(2)   *Possessor Doubling Construction*
      a. *   Mary her book
      b.   Maria ihr Buch   (German)
      c.   Marie euren boek   (West Flemish)
              (Haegeman 2003: 221)

First, while basically all Germanic languages have the SGC, the occurrence of the PDC is more restricted. Second, although the morphological manifestation of the SGC may range from an apparent case marker in German to a cliticized element in English to an (apparently) free-standing morpheme in West Flemish (and Afrikaans, see Torp 1992: 155-6, Haegeman 2004: 708-9), the PDC is more homogenous in that it always involves a possessor and a possessive pronoun. Finally, in contrast to the Germanic languages, pre-nominal possession in the Romance languages cannot be expressed by a nominal but only by a *pro*nominal element (but cf. footnote 1):

(3)   a. *   (il) Gianni+GEN libro   (Italian)
                the Gianni+GEN book
      b.   il libro di Gianni
                the book of Gianni
      c.   il suo libro
                the his book
                'his book'
              (Giorgi & Longobardi 1991: 119, 121)

Rather than focusing on the differences between the individual languages or language families, this paper attempts to make the first steps toward a homogenous account of possession. Following Anderson (1983-84), I argue that possessives consist of heads and phrases, forming a Possessive Phrase (PossP). I propose that the PossP consists of a possessive head that selects a complement, the "Possessor". Furthermore, I suggest that the Possessor may move inside the PossP and that the PossP itself may move inside the matrix DP.

      The discussion will lead to some surprising conclusions: (i) although assigning a theta-role to the Possessor, the possessive head itself is not responsible for the "possessive" relation; and (ii) possessive pronouns do not directly participate in establishing Binding relations.

      The paper is organized as follows: after giving some arguments that possessives are in Spec positions, I flesh out the basic proposal in some detail. Section 3 provides some arguments in favor of the view that possessives contain heads and section 4 discusses some consequences of the proposal. Another, more tentative argument for the head status of possessive pronouns is provided in section 5. After discussing some open issues in section 6, I summarize the main findings of this paper in the conclusion. Due to space restrictions, most of the discussion focuses on PDCs, but the discussion is meant to be taken more general.

2.   Proposal

Before I turn to the concrete proposal, consider some arguments that possessives are not in D but rather in a Spec position.

2.1.   Possessives are not in D

Abney (1987: 79) proposes (but ultimately "disprefers" the idea, p. 85) that possessive –*s* is in D (also Radford 1993: pp. 92). Considering overt distributional evidence from dialects of Swedish and Old Icelandic, we observe that possessives may co-occur with determiners, which are typically assumed to be in D (cf. also Hungarian in (8a)):[2]

(4)   a.   Karins **den** stora bilen   (Finland Swedish)
                Karin's the big   car-the
                'Karin's big car'
                        (Santelmann 1993: fn. 19)
        b.   mett **te** stór húse   (Lappträsk Swedish)
                my   the big house-the
                'my big house'
                        (Vangsnes 1999: 157, 1996: 2)
        c.   minn **inn** hvassi hjǫrr   (Old Icelandic)
                my   the sharp   sword
                        (Wessén 1970: 49, Heusler 1932: 126)

Assuming that D can host one element only, we conclude that the possessives in (4) cannot be in D but only in Spec,DP. I turn to a second argument that possessives may not be in D.

        It is often assumed that the phi-features of the DP are determined by the head D (e.g. Hellan 1986). If we compare a noun phrase involving a possessive pronoun to one headed by a pronominal determiner (e.g. Postal 1966, Roehrs 2004b), we can construct a second argument against the assumption that possessives are in D (cf. also Olsen 1989): while the verb and the anaphor agree with the pronominal determiner in (5b), they do not with the first person possessive pronoun in (5a):

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[2] The co-occurrence of an overt determiner with a pre-nominal possessive raises some interesting issues. First, since the possessive and the determiner are not in the same position, their typical complementary distribution does not follow from a structural account. In order to capture their non-co-occurrence, we can either assume some kind of Doubly-filled DP Filter (e.g. Abney 1987: 271) or we follow the functional account by Haspelmath (1999). Second, Abney (1987: 83) observes that with regard to relative clauses, the definite determiner has different licensing capabilities vis-à-vis the possessive:

(i)   a.   the book (of John's) that I read
        b. *   John's book that I read

Abney concludes that (ib) cannot involve an elided *the* as the example would be expected to be grammatical on a par with (ia). However, with the data of (4) in mind, one could speculate that there *is* an elided *the*, perhaps of a different kind (cf. also Kayne 2004: 5). Note that there is no agreement in the literature on the notion of definiteness of possessives with regard to specificity and uniqueness (e.g. Barker 1995: pp. 78; Campbell 1996: 174-5; Lyons 1999: 26, pp. 130; Schoorlemmer 1998: 60). Pending a solution to this issue and further information about the interpretation in (4), the account of the contrast in (i) has to remain open.

(5) a. Mein armer Lehrer ärgert   sich.   (German)
         my   poor teacher is-angry refl.3.sg
         'My poor teacher is angry.'
     b. Ich armer Lehrer ärgere   mich.
         I   poor   teacher am-angry refl.1.sg
         'I poor teacher am angry.'

The "disagreement" in (5a) follows straightforwardly if we assume that the possessive pronoun is embedded *inside* a PossP, which is in Spec,DP, and that the features of the determiner percolate up to the DP directly (from the article head in D) or indirectly (by Spec-head agreement between a phrasal demonstrative and D):[3]

(6) a. $[_{DP}^{i}$ $[_{PossP}$ mein $]$ $[_{D'}^{i}$ D^{i} $[_{NP}$ armer Lehrer $]]]$

     b. $[_{DP}^{i}$ ich^{i} $[_{NP}$ armer Lehrer $]]$

(For more details, see Roehrs in progress.) I turn to evidence that possessives are in Spec positions.

2.2.   Possessives are in Spec Positions

As is well-known, possessives – be they pronouns or full DPs – may occur in different positions (for interesting data from Middle High German, see Giusti 1995: 83):

(7) a. **min** gamle sko   (Norwegian)
         my old   shoe
     b. den gamle skoen   **min**
         the old   shoe-the my
         'my old shoe'

(8) a. **Mari-nak** a   vendég-e-Ø   (Hungarian)
         Mary-DAT the guest-poss-3sg
         'Mary's guest'

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[3] In fact, I argue below that the possessive pronoun is a predicate. Also, a reviewer reminds me that superscripts (and subscripts, see below) are not autonomous elements in the Minimalist Program (e.g. Chomsky 1995), as they are excluded by the Inclusiveness Condition. I use these devices for illustration purposes to keep the presentation simple. For instance, rather than percolation of agreement features from D via D' to DP, one could assume the Bare Phrase Structure model (Chomsky 1994), where the head itself is projected, taking along its phi-properties. Simplifying somewhat, if an element α is merged with an element β, a new object $\gamma = \{\alpha, \{\alpha, \beta\}\}$ is created. This can be illustrated for the DP-level of (6b) as follows:

(i)   ich

      ich   Complement

It is clear from (i) that there is no percolation of features but the relevant features of the pronoun are still on the top node. For the rest of the paper, I will use traditional X'-Theory and feature percolation.

b.   (a) **Mari-Ø**   vendég-e-Ø
        the Mary-NOM guest-poss-3sg
            (Szabolcsi 1983: 91, 89)

This holds not only for "non-thematic" head nouns but also for deverbal ones:

(9)   a.   Cäsars   langwierige Eroberung Galliens   (German)
              Caesar's prolonged   conquest   Gaul's
              'Caesar's prolonged conquest of Gaul'
      b.   Galliens langwierige Eroberung

There are two points to consider. First, assuming that the generalized "Predicate-Internal Subject" Hypothesis (e.g. Fukui & Speas' 1986) and Baker's (1988) UTAH also apply to deverbal nouns, we are led to conclude that the subject *Cäsar* 'Caesar' in (9a) and the object *Gallien* 'Gaul' in (9b) must have moved from lower positions. Second, assuming Travis' (1984) Head Movement Constraint, *Galliens* must have raised across the head noun by phrasal movement (see below for evidence that possessives of non-theta nouns can be base-generated in different positions). For more arguments that possessives are not in D but in Spec,DP in German, see Olsen 1989.
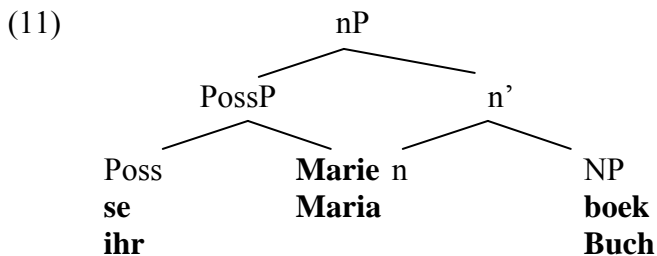
2.3.   The Proposal Proper

As a point of departure, note that both the SGC and the PDC consist of two independent elements (cf. Fiva 1985: pp. 41; Radford 1993: 95; also Krause 1999): a head (*se* or *ihr*) and a phrase (the "Possessor", *Marie* or *der Maria*):

(10) a.   Marie **se** boek   (West Flemish)
              Mary's book
      b.   (der) Maria **ihr** Buch   (German)
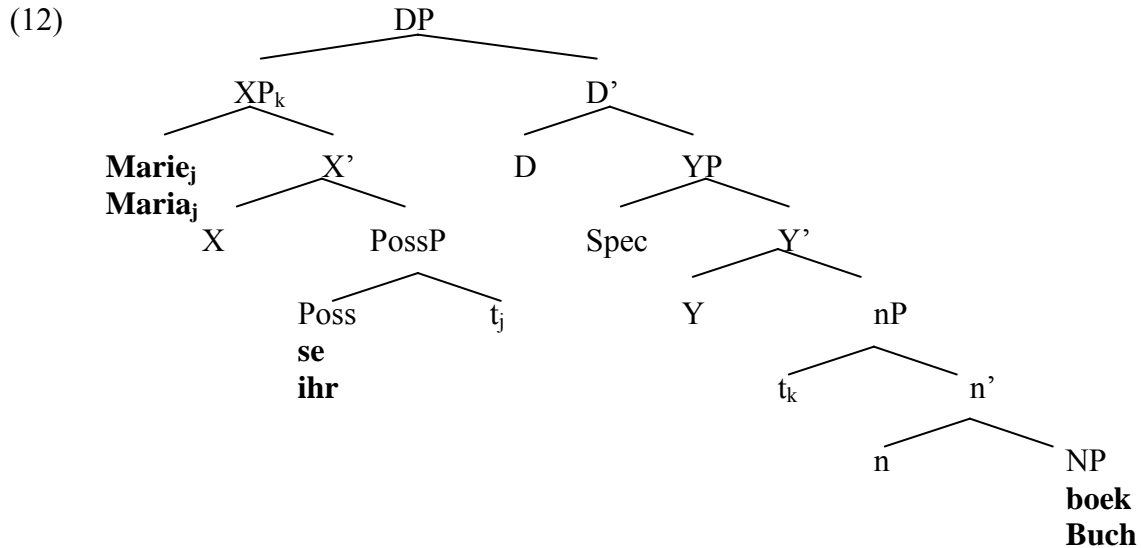   the   Mary her book

I will basically follow Anderson (1983-84) in treating possessives as PossP (cf. also Abney's [1987: 84-5] KP in Spec,DP). She proposes that case and theta-role assignment occurs both inside PossP and to PossP itself. Consider this in more detail.

        Assuming generalized transformations, I propose that the possessive head Poss takes its complement to the right, projecting a PossP. Depending on the theta-role to be assigned to it, this PossP is then merged in different positions in the nP-shell (cf. Valois 1991) (although I will simply assume here that it is always merged in Spec,nP for ease of exposition):

(11)   nP
                    ┌────────────┴────────┐
              PossP   n'
          ┌──────┴──────┐   ┌──────┴──────┐
      Poss   **Marie** n   NP
      se   **Maria**   **boek**
      ihr   **Buch**

Note already here that with partial N-raising across PossP, we derive *post*-nominal PDCs such as *bilen hans Per* '(car-the his Per =) Per's car' (see section 3.3.).

Continuing the derivation in (11), the Possessor may then move to Spec,XP and XP itself may raise to Spec,DP to license D, as in Longobardi (1994) (YP stands for intermediate phrases that can host other elements, for instance, adjectives):

(12)

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                              DP
                  ┌────────────┴────────────┐
               XP_k                         D'
          ┌─────┴─────┐              ┌───────┴───────┐
       Marie_j        X'            D               YP
       Maria_j    ┌───┴───┐                     ┌────┴────┐
                  X      PossP                 Spec       Y'
                      ┌────┴────┐                     ┌────┴────┐
                    Poss        t_j                   Y         nP
                     se                                    ┌────┴────┐
                    ihr                                   t_k       n'
                                                               ┌─────┴─────┐
                                                               n          NP
                                                                         boek
                                                                         Buch
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Some remarks are in order here. Movement out of PossP implies that possessives are more complex than illustrated in (11).[4] Again, for ease of exposition, I will abstract away from this further complexity and call the entire element PossP (rather than XP). In section 3.3, I provide evidence from Icelandic that the (post-nominal) PDC may move as a constituent. There are other issues worth mentioning here.

First, I have only illustrated movement to Spec,DP. However, other landing sites are assumed to be possible (cf. Duffield 1996: 319 for Semitic). In particular, I assume that possessives clitics (Cardinaletti 1998) move inside PossP to some Spec position and then cliticize onto a higher head (as in Picallo 1994: 293-6).

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[4] This is independent of one's assumption about Anti-locality (e.g. Abels 2003). As pointed out by Grohmann & Haegeman (2002), a floating quantifier can intervene between the Possessor and the possessive pronoun. This is illustrated here with an example from German:

(i)   a.   *all den   Leuten* ihr   Haus
               all the-DAT people their house
        b.   *ihnen   allen*   ihr   Haus
               they-DAT all-DAT their house

In (ib), the quantifier intervenes between the two elements. I interpret this case of Quantifier Float such that the pronoun *ihnen* 'them' has moved to a higher Spec position within a complex phrase (XP), located in Spec,DP. This is different from Grohmann & Haegeman (2002) (see Roehrs 2004a for a more comprehensive discussion). Incidentally, Corver (1997) argues that the functional head hypothesis extends to the adjectival system. In section 5, I tentatively propose that PossP and complex AdjP behave in a similar way.

Second, I have not given a cause for the movement of PossP. I believe there is no homogenous "trigger" for it (for some discussion, see the beginning of the next section). Third, noting that movement inside XP seems to be countercyclic with regard to the matrix DP, I will tentatively assume that XP constitutes a separate phase (e.g. Chomsky 2000).

Having sketched the basic derivations, I now turn to some evidence that the possessive (= PossP) contains a possessive head. I argue that this head is a predicate/functor that may assign case, that it is of various lexical categories, and that it *helps* to establish binding and possessive relations (but does not itself participate in them). Besides the general proposal of a PossP, here are the other main claims:

(13)   (i)   The possessive head itself does not participate in the binding relations. Rather, its complement, the overt Possessor or *pro*, bears the index which is passed up to the entire PossP.
       (ii)   Unlike the overt Possessor, *pro* needs to be identified with regard to its referent. I argue that this is a lexical property of the possessive head that may vary in languages (German vs. Norwegian).
       (iii)   The possessive head provides the basis for establishing a "possessive" relation between the Possessor and the possessum by assigning an unspecified theta-role to the Possessor, its complement. In the case of a deverbal head noun, this theta-role is specified because PossP itself is the semantic argument of the head noun; in case of a non-theta head noun, the unspecified theta-role is contextually specified, allowing a wide range of interpretations.

Despite the evidence against the assumption of a possessive *pronoun* mentioned above and discussed in detail below, I will continue to use traditional terminology throughout the paper.

3.   Possessives Contain Heads

Genitive case assignment has received a lot of attention, often involving drastically different proposals. For instance, while in Chomsky (1981: 170) genitive case is the only case that is not assigned under government, in Chomsky (1986: 193) genitive case is an inherent case assigned at D-structure and differently realized at S-structure, depending on the position of the possessive. Interestingly, both case-assignment and case-realization are now subject to government. In an attempt to overcome the arbitrary character (and application) of the notion government, the Minimalist Program (e.g. Chomsky 1995) employs Checking Theory. Considering the "optionality" of some possessives (cf. Grimshaw's 1988 argument-adjuncts), such an approach needs to answer the question as to why the Inverse Case Filter (Bošković 1997: pp. 134) is not violated when no possessive is present.

Compatible with general Minimalist assumptions, I propose that the possessive head, which is independently required to help establish the possessive relation, assigns *lexical* case. This connection between semantic and morphological aspects avoids the assumption of "optional" case assignment/checking with non-theta nouns. In what follows, I make a distinction between the distribution of PossP in the DP, abstract Case assignment,

and morphological case realization. In other words, I propose that there is no uniform way to account for the distribution of the PossP. Rather, I suggest that a number of different factors are responsible.

Among others: Focus movement in Greek (Horrocks & Stavrou 1987: 86), Norwegian and Icelandic[5], different language-specific requirements to license possessive clitics and weak pronouns (as suggested for German and English in Roehrs 2004a; for Romance in Cardinaletti 1998: 19), abstract Case assignment as in (23a) below, and perhaps even Scrambling. In view of this multitude of factors, there is one immediate consequence: if the distribution of PossP in the DP is not accounted for by uniform, abstract structural Case assignment/checking, then we expect that possessives may occur in different morphological cases.

3.1. Different Morphological Cases

As is well-known, identical predicates may assign different cases in different languages. Assuming possessive heads to be predicates, we predict that their complements (the "Possessors") may occur in different morphological cases. Consider the following four possessive constructions, in which the Possessor may appear not only in the genitive, but also in the dative, nominative, and accusative cases. [6, 7] Besides these different case possibilities on the Possessor, note that in both the pre- and post-nominal PDCs in (15) and (17), the possessive pronoun and the Possessor do not agree in case:

(14) *Pre-nominal Possessors*
  a.   des   Kaisers   neue Kleider   (Early New High German)
       the-GEN emperor-GEN new clothes
       'the emperor's new clothes'
  b.   Mari-nak   a   vendég-e-Ø   (Hungarian)
       Mary-DAT the guest-poss-3sg
       'Mary's guest

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[5] The pre-nominal possessor in Norwegian is claimed to have contrastive meaning (Delsing 1998: 88, Grohmann & Haegeman 2002: 13, Janus & Ritchie 1980: 125). As for Icelandic pre-nominal genitives, the judgments vary according to Delsing (1993: 158 fn. 17): some judge them as poetic, whereas others consider them grammatical if they are given contrastive stress.

[6] As far as I am aware, these different morphological cases do not co-relate with different semantic meanings, as for instance, the semantic difference between possession and appartenance 'belonging to' (Benveniste 1966: 145 fn. 2, as cited in den Dikken 97: 135 fn. 6):

(i)   a.   liber est Marco   / ei   (Latin)
           book is   Marcus-DAT / he-DAT
           'Marcus / he has a / the book'
      b.   liber est Marci   / eius
           book is   Marcus-GEN / he-GEN
           'the book belongs to Marcus / him'
                  (den Dikken 1997: 136)

[7] To the best of my knowledge, the genitive and dative cases seem to be the most frequent in Germanic (for other languages, see Koptjevskaja-Tamm 2003: pp. 679). To the extent that it is fruitful to speculate about this, one could assume that possessives tend to be marked this way to facilitate parsing or mark a certain semantic relation. Perhaps, note with regard to the first option that Gallmann (1996, 1998) has pointed out that the genitive in German needs special morphological and syntactic licensing.

c.   (a) Mari-Ø   vendég-e-Ø
the Mary-NOM guest-poss-3sg
        (Szabolcsi 1983: 91, 89)

(15)   *Pre-nominal PDC*
a.   für des   knaben sein   leben   (Early New High German)
for the-GEN boy   his-ACC life
'for the boy's life'
        (Behaghel 1923 : 640)
b.   dem   Vater sein Haus   (German)
the-DAT father his   house
c.   bei den   Doktor sein   Haus   (Texas German)[8]
at the-ACC doctor his-ACC house
        (Eikel 1967: 94; Dal 1971: 176)
c'.   hem   z'n boek   (Dutch)
he-ACC his book
        (Verhaar 1997: 93, Ramat 1986: 580)

(16)   *Post-nominal Possessors*
a.   das Haus des Jungen   (German)
the house the-GEN boy
'the boy's house'
b.   huse   pojkom   (Northern Swedish)
house-the boy-the-DAT
        (Delsing 1998: 98)
b'.   huse   n   mormor   (Ljusvattnet)
house-the Art-DAT grandmother
        (Holmberg & Sandström 1995: 39)
b''.   **stuþ trikila i stafn skibi**   (Runic, Södermanland 164)
stood valiantly on prow ship-DAT
'He valiantly stood on the prow of the ship'
        (Wessén 1970: 16)

(17)   *Post-nominal PDC*
a.   húsið   hans Jóns   (Icelandic)
house-the his   Jon-GEN
'John's house'
        (Delsing 1998: 101)

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[8] In dialects where the dative case is being replaced by the accusative, one may find both the dative and the accusative. The preposition *bei* 'at', although also changing in its case assigning properties, takes the accusative in both (15c) and (i):

(i)   Er   war bei dem   Doktor sein   Haus   (Texas German)
he-NOM was at   the-DAT doctor his-ACC house
'He was at the doctor's house'
        (Eikel 1967: 91)

	b.	galom hans farfarom	(Västerbotten)
		farm-the his grandfather-the-DAT	
		(Delsing 1998: 101)	
	c.	bilen hans Jon	(Norwegian)
		car-the his Jon-NOM/ACC	

To reiterate, although the genitive is possible in all these constructions, the dative, accusative or nominative case may also occur. These differences follow straightforwardly, if case assignment/checking is not structural but lexical. Assuming that case assignment is a matter of heads, we have evidence for the presence of a head inside the possessive, here assumed to be Poss. In fact, one can argue that accusative case is probably inherent: as non-theta nouns do not assign a subject theta role, accusative cannot be structural as this would present an exception to Burzio's Generalization. Assuming the same for the dative (but cf. Krause 2001: 204) and the other cases, we are led to believe that the case assigner is a lexical head (rather than a functional one).

3.2.   Different Lexical Categories of the Possessive Head

I suggested above that the distribution of PossP in the DP is not always due to abstract Case assignment/checking but also to other factors. If this is true, we expect the occurrence of possessives that, themselves, do not require case to be licensed in the DP. Thus, besides noun phrases, we should also find other lexical phrases such as adjective phrases and prepositional phrases (and perhaps others). This fits well with the proposal that possessive heads are predicates, which themselves come in different lexical categories.

It is well-known that, like many other languages (e.g. Manzelli 1980, Lyons 1999: 124-5), Italian has adjectival possessives (for this claim in German, see Löbel 1996; but Olsen 1996 for a reply):

(18)   il   suo libro   (Italian)
        the his book
        'his book'
                (Giorgi & Longobardi 1991: 119)

Second, the possessive head may also be a preposition.[9] For instance, I propose that *von*-phrases '*of*-phrases' in German are not brought about by case assignment/realization (e.g. Lindauer 1995, 1998) but are full-fledged preposition phrases throughout the derivation. Evidence for this assumption comes from pre-nominal *von*-phrases, which precede the determiner and seem to have some focal stress. Compare (19a) to (19b). Crucially, pre-nominal *of*-phrases in English are not possible, as in (19c):

(19)   a.   das Buch von der Mutter   (German)
                the book of   the mother

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[9] This has been independently argued for in the clausal domain (e.g. den Dikken 1997: pp. 135). Lyons (1999: 23, 124) suggests in passing that '*s* is a postposition. This comes close to Larson & Cho's (1998) proposal that '*s* is the spell-out of THE+*to*, where the (incorporated) locative preposition *to* establishes the possessive relation.

b.   von der Mutter   { das / ein / ?(?)dieses / *Ø / *ihr / *sein } Buch
c. *   of the mother('s) { the / a /   this   / Ø / her / his }   book

The difference between (19b) and (19c) follows immediately if German *von* is not a case marker but English *of* is.[10] Furthermore, employing the Verb-Second Phenomenon in German as a test for constituency of the possessive and the rest of the noun phrase, we conclude that the pre-nominal *von*-phrase forms a constituent with the possessum in (20a). In fact, the *von*-phrase seems to be outside the DP proper, assuming that the quantifier *alle* 'all' in (20b) and (20c) is higher than the DP:[11]

(20)   a.   [$_{CP}$ [Von Peter das Buch] [$_{C'}$ habe ich gelesen]]
                   of   Peter the book   have I   read
        b.   von Peter alle Bücher
                of   Peter all books
        c. ??   alle von Peter die Bücher
                all   of   Peter the books

If the *von*-phrase is outside the DP, we expect to find an overt determiner before the head noun, as in (19b). The argument that *von* is different from English *of* can be strengthened further. The following points are inspired by the data and discussion in Haider (1992: 321-2).

        "Nominalized" verbs do not allow a pre-nominal thematic *von*-phrase:

(21)   a.   das Quälen   von diesen Tieren
                the torturing of   these animals
        b. *   von diesen Tieren das Quälen

In order to capture the difference between non-theta (19b) and theta nouns (21b), I propose that the *von*-phrase can be base-generated outside the DP proper in the former case but not in the latter. First, this fits well with Chomsky's (1986) assumptions about the possibility of base-generated adjunction to arguments. Second, this proposal straightforwardly explains that the pre-nominal *von*-phrase can appear with both a definite and an indefinite

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[10] There is also evidence that the preposition *of* may not be a dummy in English possessives in all cases (as shown in unpublished work by Radford, cited in Panagiotidis 2002: 89; Lyons 1986: 142-3).
[11] This is similar to non-possessive PPs: *Aus Italien das Obst ist gut* 'from Italy the fruits are good'. Furthermore, although a pre-nominal *von*-phrase may not occur within a prepositional phrase in German, this is possible in Bulgarian. Compare (ib) to (iib):

(i)   a.   mit   dem   Handtuch von deinem Vater   (German)
                with the-DAT towel   of   your   father
        b. *   mit [von deinem Vater] dem Handtuch
(ii)   a.   s   kûrpata [na bašta] ti   (Bulgarian)
                with towel-the to father CL-DAT-2.SG
                'with your father's towel'
        b.   s [na bašta] ti kûrpata
                        (Dimitrova-Vulchanova & Giusti 1998: 352)

I interpret the ungrammaticality in German as a language-specific fact, perhaps due to the lack of adjacency needed for case assignment in the matrix prepositional phrase.

determiner in (19b): while movement out of a definite DP should be degraded (e.g. Bowers 1988), movement through Spec,DP should leave a copy there, triggering definiteness of the DP (see below). With the data of (4) in mind, the possibility of the indefinite determiner would be unexpected.

These issues do not arise under base-generation of PossP. Crucially, if it is correct that PossP can be base-generated outside the DP proper, it is hard to see how *von* in (19b) can be the realization of case as PossP is not even part of the DP proper. To be clear, PossP is syntactically adjoined to the DP as a whole, but semantically part of it. This means that base-generation of PossP outside the DP proper is still close enough to establish the possessive relation between the Possessor and the possessum. In fact, in section 4.2, we will see that the possessive relation and its corresponding interpretations are different for non-theta and theta nouns. Finally, note in this context that there seem to be many other differences between these type of nouns that I will basically abstract away from here (cf. also Koptjevskaja-Tamm 2003b).

Summarizing so far, we have seen that adjectives and prepositions can function as the head of possessives. Considering the different lexical categories, I take this as evidence for a head inside PossP. Finally and more tentatively, I suggest that "nominal" genitive possessives may, in fact, be the complement of an empty nominal possessive head:[12]

(22)   a.   das Buch des   Mannes   (German)
                the book the-GEN man
       b.   das Buch [$_{PossP}$ Ø$_N$ [des Mannes]]

With Ø$_N$ a null element, it needs to be licensed. I propose that it is a null suffix that encliticizes to the head noun in the sense of Bošković & Lasnik (2003: 534-6). This assumption derives the facts that the morphologically genitive phrase has to be adjacent to

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[12] Possessors of body parts can be in the dative in Old Swedish (and Old Norse) and in the accusative with kinship terms in Faroese:

(i)   a.   skär tungu or   höfþi manni   (Old Swedish)
                cut   tongue from head man-DAT
                '(he) cuts the tongue from a man's head'
                        (Wessén 1970: 15),
       b.   døtur   keypmannin   (Faroese)
                daughter merchant-the-ACC
                'the merchant's daughter'
                        (Koptjevskaja-Tamm 2003b: 706, Delsing 1996: 52)

Again, this variation hints at the fact that possessive case is not structural but rather lexical. In this case, we might assume that certain inalienable possessive heads assign a different case or, alternatively, that they are "transparent" for case assignment from the head noun. This transparency could be argued to follow from the formation of a complex predicate between the possessive head and the head noun to derive cases of inalienable possession. Lyons (1999: pp. 128) observes in this respect that inalienable possession is usually morphologically simpler and the Possessor is structurally closer to the possessum (also Koptjevskaja-Tamm 2003b: pp. 701, Rijkhoff 2002: pp. 86, Chappell & McGregor 1996). I will not flesh out this part of the proposal further.

the head noun and that there can only be one of them.[13] In fact, adjacency effects are often taken to be reflexes of morphological (here suffixation) rather than syntactic phenomena (e.g. Lasnik 1981). Furthermore, considering that the head noun also seems to partially raise in German and English (e.g. *die Wut des Präsidenten t gegen sich* 'the wrath of the President against himself'), it is not clear how to capture this adjacency effect syntactically as the head noun and the possessive are neither in a Spec-head nor in a head-complement but rather in a "head-lower phrasal position" relation, which, in principle, allows the occurrence of an intervening (perhaps adjoined) phrase, contrary to facts. Finally, if the proposal that the "nominal" possessive involves a null affix is accepted, then we also have an explanation of double case-markings.

I suggested above that the distribution of the possessive due to abstract Case is independent of the case assignment inside it. Assuming this to be correct, we expect both of these case-licensing operations to co-occur, where the abstract case has its own morphological manifestation. In other words, our proposal predicts the possibility of double case marking:

(23)   a.   kongen av Frankrikes   (Norwegian)
                 king-the of France's
                 'France's king'
                      (Hellan 1986: 99)
        b.   (*av) Frankrikes konge
              of France's   king
        c.   kongen av [$_{PossP}$ Ø$_N$ [Frankrikes]]

Under my assumptions, (23a) involves case marking inside the PossP by a null nominal possessive head and case assignment to the "nominal" PossP as a whole by the insertion of the case marker *av* (similar to English *of*), as illustrated in (23c). To the extent that this analysis is correct, it avoids the question of how case assignment to one and the same element can occur twice.[14]

With the pre- and post-nominal PDCs in (15) and (17), we noticed that the possessive pronoun and the Possessor do not agree in case. However, rather than analyzing these cases as involving double case marking, I propose that German *sein* 'his' and Norwegian *sin* 'refl.' involve regular "feature sharing", that is concord, within the noun

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[13] These two (traditional) claims are by no means fully justified: for exceptions to adjacency, see Löbel (1991) and Lühr (1991); for exceptions to the number of genitives, see (9a) above and Alexiadou (2001: chap. 3 sect. 1).

[14] The Norwegian example in (23a) is different from English *a book of Mary's* as the latter is usually indefinite by itself and the Possessor must be animate. It is unclear to me how to derive the properties of this construction at this point. For concreteness, I will assume some empty category (ec) representing the null possessum (cf. Barker 1995: 26, Zamparelli 1998, Panagiotidis 2002: 116). This assumption is plausible due to the different possessive pronouns, as shown in (ib):

(i)   a.   a book of Mary's ec
        b.   a book of {mine/*my} ec

For other proposals, see, *inter alia*, the collection of papers in *Lingua* 101 (1997), Barker 1997, den Dikken 1998, Larson & Cho 1998, Lyons 1986, and references cited therein.

phrase (see also footnote 15) and that the genitive ending of Norwegian *hans* has been reanalyzed as part of the stem (cf. also *bilen hans/*Pers* 'his/Peter's car').

Having documented that possessive heads differ in lexical category, we have given evidence that PossPs involve heads. Note that languages apparently differ with regard to what kind of possessive heads they make lexically available. Finally, although possessive heads may differ with regard to their lexical category, I will continue to use PossP to designate the projected phrase.

3.3.   The Lack of Condition C Effects

Besides the often discussed pre-nominal PDC *Per sin bil* 'Per refl. car' (e.g. Fiva 1985), Northern Scandinavian also has the post-nominal PDC *bilen hans Per* 'car-the his Per', as already illustrated in section 3.1 (for the distribution of this construction in the Scandinavian languages, see Delsing 1993: chap. 5; for other languages, see Koptjevskaja-Tamm 2003a: pp. 665, Verhaar 1997: pp. 96). What is interesting to note about the latter is that it contrasts with its clausal counterpart with regard to co-reference: while the pronominal element *han* 'he' cannot be co-indexed with *Per* in (24a), *hans* 'his' has to be in (24b):

(24)   a. *   Han$_i$ ser   Per$_i$ i   speilet   (Norwegian)
                he   sees Per in mirror-the
         b.   bildet   hans$_i$ Per$_{i / *k}$
                  picture-the his   Per
                  'Per's picture'

If we were to treat the clause and the DP in a parallel fashion with regard to c-command, we would also expect a Condition C violation of the classical Binding Theory (Chomsky 1981) within the DP, contrary to fact. This apparent problem needs an explanation. The following discussion argues that, because possessive pronouns are heads, they themselves do not participate in Binding relations. As such, this presents another argument that possessives contain a head. At the end of this subsection, I argue against an alternative account of (24b), which involves lack of c-command. Consider first some basic properties of the post-nominal PDC.

First of all, *hans* is not the genitive of the preproprial (i.e. expletive) article *han* in proper name uses such as *han Per* '(he = the) Peter': Delsing (1998: 101-2) observes, among others, that *hans* cannot only co-occur with a Possessor in the dative (cf. (17b)) but also with a preproprial article:

(25)   bilen   hans n   Jon
        car-the his   the Jon
        'Jon's car'
                (Holmberg & Sandström 1995: 33)

A second basic characteristic is that *hans* and its Possessor cannot be separated by "rightward" movement, as in (26b). Furthermore, the PossP cannot follow other complements, as in (26c):

(26) a. bildet   hans$_i$ Per$_i$ av Kari
          picture-the his   Per of Kari
      b. * bildet hans t$_k$ av Kari Per$_k$
      c. ?* bildet t$_k$ av Kari [hans Per]$_k$

Crucially, however, there is evidence from Icelandic that the post-nominal PDC can raise as a constituent.

Apart from partial N-raising of *bækur* 'books' (cf. Taraldsen 1990) to an intermediate article phrase (artP) (see Vangsness 1999, 2004, Julien 2002, and Roehrs & Sapp 2004), I assume that (27a) presents the basic word order. With this in mind, I interpret the contrast in (27b-c) such that PossP *hans Péturs* first moves out of Spec,nP to a higher Spec position à la Kayne and then artP raises to Spec,DP as an instance of remnant movement. This is illustrated in (27d), where partial N-raising is not specially marked:[15]

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[15] Consider two things: first, a *pro*nominal possessive does not have to move out (Vangsnes 1999: 145):

(i)   a. hinar þrjár frægu   bækur mínar   (Icelandic)
          the   three famous books my
      b. frægu   bækurnar mínar þrjár
          famous books.DET my   three
      c. [$_{DP}$ [$_{AdjP}$ frægu bækurnar mínar]$_i$ D [$_{NumP}$ þrjár t$_i$]]

Second, and more importantly, there is evidence from *wh*-extraction that, on the face of it, seems to undermine a uniform account of the pre-nominal and the post-nominal PDCs with regard to constituency (for general discussion of possessor extrations, see Gavruseva 2000):

(ii) a. Du hast [wem   seine Bücher] gesehen?   (German)
          you have who-DAT his   books   seen
          'You saw whose books?'
      b. * [Wem seine]$_i$ hast du [t$_i$ Bücher] gesehen?

If we simply treat the pre-nominal PDC as a constituent in Spec,DP, we would expect (iib) to be grammatical. Note, however, that *seine* 'his' has a varying inflectional ending (here –*e*) that agrees with the head noun. If we assume that this ending is base-generated in D and later "merges" with *sein* 'his' under adjacency, as in Olsen (1989) (for a slightly different alternative, see Roehrs 2002), then we can account for the ungrammaticality in (iib) straightaway. Interestingly, taking possessives and demonstratives to be phrases, the assumption of a required adjacency between the possessive pronoun in Spec,DP and D also accounts for the following contrast:

(iii) a. diese meine Freunde
          these my   friends
      b. * meine diese Freunde

More generally, this morphological solution to the problematic (iib) allows us to treat both the pre- and post-nominal PDCs as constituents, that is, they are uniform in the relevant sense. There are some further issues.
       Notice also that a much milder degree of ungrammaticality results if only the dative Possessor is extracted:

(iv) ?? Wem$_i$ hast du [[t$_i$ seine] Bücher] gesehen?

The contrast between (iib) and (iv) follows if we assume that violations of the Stranded Affix Filter are worse than violations due to syntactic movement. For reasons that I do not fully understand, (iv) improves with the

(27) a. þessar fjórar bækur$_i$ mínar t$_i$ (Icelandic)
          these four   books my
          'these my four books'
      b. bækurnar fjórar hans Péturs
          books-the four   his Peter-GEN
          'Peter's four books'
      c. * bækurnar hans Péturs   fjórar
          books-the his   Peter-GEN four
                  (Vangsnes 2004)
      d. [$_{DP}$ [$_{artP}$ bækurnar t$_k$]$_i$ D [$_{NumP}$ fjórar [$_{PossP}$ hans Péturs]$_k$ t$_i$]]

PossP behaves just like a complement in that both have to vacate the phrase containing the partially raised head noun before (remnant) movement of that phrase takes place:

(28) a. frægu bækurnar fjórar um   tónlist
          famous books-the four   about music
          'the four famous books about music'
      b. * frægu bækurnar um   tónlist fjórar
          famous books-the about music four
                  (Vangsnes 2004)
      c. [$_{DP}$ [$_{AdjP}$ frægu bækurnar t$_k$]$_i$ D [$_{NumP}$ fjórar [$_{XP}$ um tónlist]$_k$ t$_i$]]

To sum up these preliminary remarks, we established that *hans* itself is not the preproprial article of *Per*, that the possessive *hans Per* cannot be separated, and that this possessive can move as a constituent.

In what follows, I will show that under traditional assumptions, *hans* is in an A-position as it can bind anaphors but not pronouns or R-expressions. However, being in an A-position should lead to a Condition C violation with regard to *Per* inside the post-nominal PDC, contrary to the facts. This apparent problem is solved if we assume that *hans* is actually a possessive head with *Per* its overt complement. First, consider the picture that emerges under traditional assumptions.

As can be seen in (29b), *hans* can bind the reflexive *seg* '(him)self' but not the pronoun *ham* 'him' or the R-expression *Per*. Assuming Binding to be A-binding (Chomsky 1981), we conclude that the binder *hans* is in an A-position from where it can c-command the anaphor, the pronoun, and the R-expressions:

(29) a. his$_i$ picture of himself$_i$
      b. bildet   hans$_i$ av {seg$_i$ / *ham$_i$ / *Per$_i$}
          picture-the his   of {refl /   him /   Per}
          'his picture of himself/him/Per'

---

verb *sein* 'to be', as in *Wem ist das sein Buch?* '(To whom is this his book? =) Whose book is this?' (see Delsing 1998: 96).
        Finally, I have not been able to test *wh*-extraction with Icelandic post-nominal PDCs so far.

Next we add *Per* to (29b), generating a post-nominal PDC. Interestingly, we find the exact same grammaticality contrasts. What is interesting here is that *hans* A-binds the anaphor *seg* across the R-expression *Per*, which itself *must* be coreferential with *hans*, as already seen in (24b). In contrast to our expectations, this does not result in a Condition C violation in (30b).

(30) a. Peter's picture of himself
      b. bildet   hans$_i$ Per$_i$ av {seg$_i$ / *ham$_i$ / *Per$_i$}
          picture-the his   Per of {refl /   him / Per}
          'Per's picture of himself/him/Per'

Similar facts hold for a complement of a head noun, which itself contains a possessive. Again, *hans* can bind the reflexive *sin* but not the pronominal *hans* or the nominal *Per*:

(31) a. his picture of his brother
      b. bildet   hans$_i$ av {sin$_i$ / *hans$_i$ / *Pers$_i$} bror
          picture-the his   of {refl / his / Per's} brother
          'his picture of his/Per's brother'

Again, the addition of *Per* does not change the binding possibilities:

(32) a. Peter's picture of his brother
      b. bildet   hans$_i$ Per$_i$ av {sin$_i$ / *hans$_i$ / *Pers$_i$} bror
          picture-the his   Per of {refl / his   / Per's} brother
          'Per's picture of his/Per's brother'

To summarize, I have shown that *hans* must be in an A-position in traditional terms, c-commanding the complement of *av*. At the same time, however, this does not lead to a Condition C violation with regard to *Per* inside the post-nominal PDC.

In order to explain this paradoxical situation, recall that I base-generate the PossP in the nP-shell, with the complement of the possessive head, the Possessor, to the right (cf. (11)). In other words, I propose that the post-nominal PDC is a possessive in situ, with the head noun *bild* 'picture' raised:[16]

(33) a. bildet   hans Per
          picture-the his   Per
          'Per's picture'
      b. [$_{DP}$ bild$_i$-et [$_{nP}$ [$_{PossP}$ hans [$_{DP}$ Per]] t$_i$ [$_{NP}$ t$_i$]]]

---

[16] Delsing (1998) also takes the possessive pronoun to be a head. In fact, it heads a PossP as part of the extended functional structure of the DP. Assuming that PossP is between DP and NP, he derives the post-nominal PDC by moving the Possessor *Per* to Spec,PossP, *hans* to D and *boken* to Spec,DP (p. 103):

(i)   [$_{DP}$ boken$_k$ [$_{D'}$ hans$_i$ [$_{PossP}$ Per$_j$ [$_{Poss'}$ t$_i$ [$_{NP}$ t$_k$ t$_j$]]]]]

Besides the question of the phrasal status of *boken*, it is not clear how the Double Definiteness effect is derived when an adjective is added, as in *den gamle boken hans Per* '(the old book-the his Per =) Per's old car'. An account with the post-nominal PDC in situ does not face this and other problems.

To account for the lack of a Condition C violation, I propose that *hans* is not actually a pronoun but a possessive predicate and, as such, cannot bear an index (below I suggest that the entire PossP bears the index). There is an alternative account of the post-nominal PDC, where *hans* does not c-command *Per*. If this approach could be upheld, it would avoid the conclusion that the possessive pronoun is a predicate.

Assuming as above that the constituent *hans Per* is in Spec,nP, one could propose that *hans* is in Spec,YP, an A-position, and *Per* is right-adjoined to YP:

(34)

```
                        nP
                    /        \
                 YP            n'
               /    \
             YP       Peri
           /    \
       hansi     Y'
               /    \
              Y      (ZP)
```
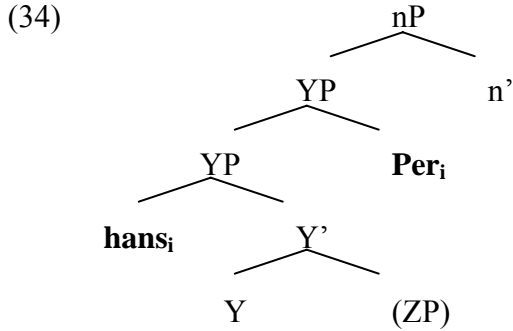
Taking the first branching segment (rather than category) to be the relevant characteristics of c-command, *hans* would not c-command *Per* and a Condition C violation would not be expected. Furthermore, with *Per* in an A'-position, we would not expect a Condition B violation with regard to *hans* either. However, if we define c-command in such a way, all the other binding facts become mysterious as *hans* could never c-command out of YP and Spec,nP in general. Thus, an approach involving the lack of c-command of *hans* with regard to *Per* will not work for explaining the lack of a Condition C violation in the post-nominal PDC.

To sum up, we have seen three arguments that the possessive contains a head. They came from different morphological case assignments to the Possessor, different lexical categories of the possessive head, and the lack of Condition C violations. Next, I turn to the issue of the obligatory "co-indexation" between the possessive pronoun and the Possessor inside the PossP (cf. (24b)) and some other consequences.

4.   Consequences

In the last section, we concluded that *hans* is not a pronoun but a possessive head, explaining the lack of Condition C violation in the post-nominal PDC. Considering the main proposal that PossP consists of a possessive head and a complement (i.e. the "Possessor"), we are now ready to address the following questions: (i) why do *sin* and *hans* have to be co-indexed with *Per* in the PDC, and (ii) in the absence of an overt Possessor, how can *hans* (and *sin* under our assumptions) by itself enter into binding relations with other elements.

As we will see below, there is one uniform answer to both questions: keeping in mind that the possessive pronoun is actually a predicate, I propose that in the absence of an overt Possessor, PossP contains *pro*. With regard to (i), I suggest that *pro* has to be

referentially identified (and there is no such thing as "co-indexation"); as for (ii), it is *pro* (or rather PossP), which enters into Binding relations.

4.1. Co-indexation Between the Possessor and the "Possessive Pronoun"

To repeat, the Possessor and the possessive pronoun have to be co-indexed in the PDC, independent of the language or the position of the PDC:

(35) a.   Peter$_i$ sein$_{i/*k}$ Buch   (German)
          Peter his   book
      b.   Per$_i$ sin$_{i/*k}$ bok   (Norwegian)
          Per his   book
      c.   boken   hans$_{i/*k}$ Per$_i$
          book-the his   Per

A morphological reflex of this is, for instance, that *sein* 'his' cannot be replaced by *ihr* 'her' in (35a). What makes this restriction interesting is that co-indexations are different for Possessors that are outside the DP; for instance, when the Possessor is the subject in a clause containing the possessum DP. Here, it is a lexical property of the possessive pronoun that determines the binding relations. For instance, German *sein* 'his' can but does not have to be co-indexed with the subject of the clause. This is in sharp contrast to Norwegian (and other languages, see Manzelli 1980: 79 table 12), where anaphoric *sin* 'refl' has to be co-indexed with the subject and pronominal *hans* 'his' must not be (for a possible correlation between the adjectival status of anaphoric possessives and the pronominal status of non-anaphoric possessives, see Cardinaletti 1998: 48 fn. 27):

(36) a.   Peter$_i$ liest sein$_{i/k}$ Buch   (German)
          Peter reads his   book
      b.   Per$_i$ leser sin$_{i/*k}$ bok   (Norwegian)
          Per reads his   book
      c.   Per$_i$ leser hans$_{*i/k}$ bok
          Per reads his   book

To capture the difference between (35) and (36), I suggest that in the case of DP-external possession, as in (36), *sein*, *sin* and *hans* have *pro* as an null complement. Assuming that the possessive head obligatorily takes a complement – either an overt Possessor or *pro*, I propose that it is a mono-valent functor. With the possessive head not bearing an index, we arrive at the following picture (cf. Svenonius 1993: 212-3 fn. 14 and Radford 1993: 94-5, who have *pro* alone in Spec,DP; Delsing 1998: 95 puts *pro* in Spec,PossP):[17]
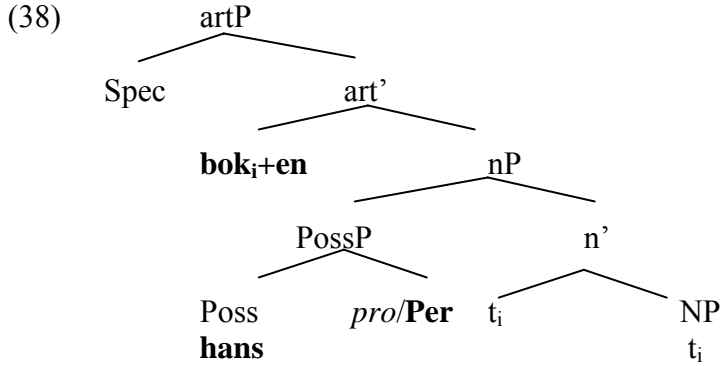
(37) a.   *(*pro$_i$* / Per$_i$) sin bok
              Per refl book

---

[17] A question arises about the status of *pro*. As Szabolcsi (1994: pp. 186) notes, the Possessor in Hungarian, when pronominal, can be dropped under the same conditions as in the clausal domain. Unlike in Hungarian, the overt Possessor here is not contrastively stressed, which is not entirely surprising considering the fact that the Germanic languages are not pro-drop. It would go beyond the scope of this paper to investigate this possible parallelism between the nominal and clausal domain.
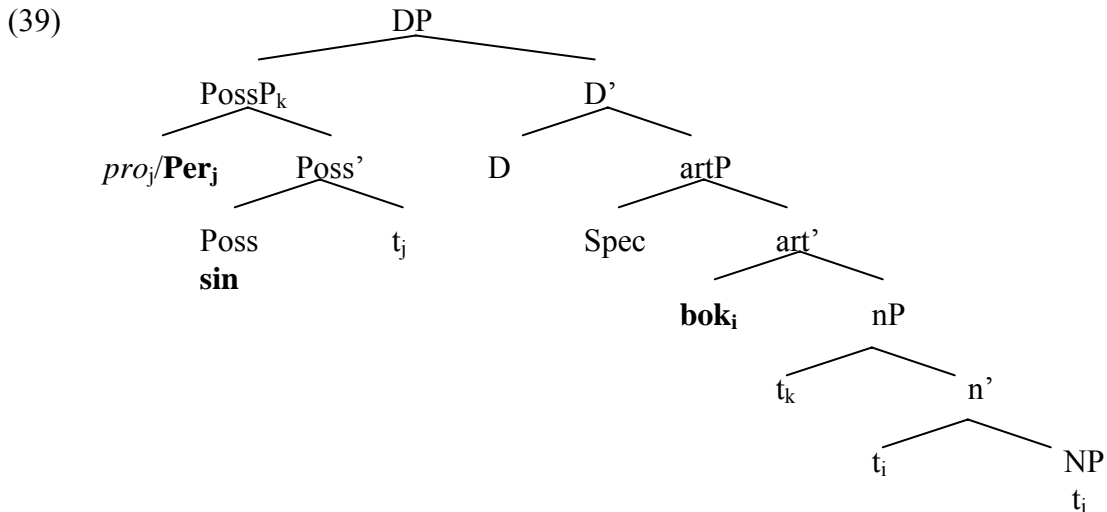
b. boken hans *(Per$_i$ / *pro$_i$*)
book-the his Per

Note that there is no co-indexation between the Possessor and the possessive head. (In fact, I will suggest below that the index is (also) on the entire PossP.) For clarity, consider again the derivations of (37).

Starting with the post-nominal PDC in (37b), PossP is in situ in Spec,nP. The head noun *bok* moves partially to art (I abstract away from the structure of the noun phrase above artP here):

(38)

```
          artP
         /    \
      Spec    art'
             /    \
        bok_i+en   nP
                  /   \
              PossP    n'
             /    \   /   \
          Poss  pro/Per t_i  NP
          hans              t_i
```

Turning to the pre-nominal PDC in (37a), the head noun also moves to art as above. Besides that, PossP moves to Spec,DP and the Possessor moves inside PossP (recall from footnote 4 that PossP is actually more complex and does not involve movement of the complement to its Spec position, as shown here for space reasons; I also gloss over the explanation of the lack of the suffixal determiner on the head noun in this case):

(39)

```
                    DP
                  /    \
             PossP_k    D'
            /     \    /    \
     pro_j/Per_j  Poss'  D    artP
              /    \        /    \
           Poss    t_j   Spec    art'
           sin                  /    \
                             bok_i    nP
                                     /   \
                                   t_k    n'
                                         /   \
                                       t_i    NP
                                              t_i
```

We argued above that the possessive head itself cannot enter into any binding relations. If this is true, we have an argument that there must be a *pro* if the possessive head is by itself. In other words, possessive pronouns always involve a PDC. I claim that this is also true for English, especially in light of footnote 1, where English went through a stage of allowing the PDC in its grammar. (As usual, I will continue using traditional

terminology.) As a null element, *pro* needs to be licensed and referentially identified (Rizzi 1986) (for the "possessive" relation itself, see section 4.2).

I suggest that *pro* is syntactically licensed as it is the complement of the possessive head. As for identification, consider the two scenarios from above, the one involving an overt DP-internal Possessor and the one with *pro*: on the one hand, if the Possessor is overt, as in the PDC, there is no *pro* to be identified. If there is a DP-external Possessor, a Condition C violation is brought about. On the other, if the Possessor is covert, *pro* has to be referentially identified. I propose that this is due to the lexical property of the possessive head, as pointed out in the discussion surrounding (36). In other words, Norwegian *sin* or *hans* will identify the reference of *pro* linguistically or with the help of discourse-salient factors (however these options are technically instantiated, e.g. by LF-raising of *sin* to Infl in the spirit of Chomsky 1986: 175, going back to Lebeaux 1983). Note in passing that unlike in the Romance languages, the possessive head restricts the identity of *pro* with regard to gender in the Germanic languages.

To summarize, while the overt Possessor does not have to be identified, the possessive head identifies the semantic referent of *pro* according to its own lexical properties. This derives the different "co-indexations" in (35) and (36). The assumption of *pro* can be strengthened.

Above we concluded that, if the possessive head itself does not enter into any binding relations, we have a good argument for the presence of a null Possessor (*pro*), if the possessive pronoun is by itself. A second argument for the presence of *pro* can be derived from "(in)definiteness spread" (Abney 1987), according to which the Possessor of the DP determines the definiteness of the entire DP by Spec-head agreement (e.g. Longobardi 1994: 629 fn. 25; Stateva 2002: pp. 669).

To set the stage, the definiteness of the Possessor in the SGC has the same effect in the *there*-context in (40b) as the associate noun phrase does in (40a). Abstracting away from the stylistic clash of the colloquial PDC in a fairy-tale context (note the shortened '*nem* from *einem* 'a-DAT'), the definiteness of the Possessor also determines that of the entire DP. Observe the contrast in (40c). Crucially, the possessive pronoun does not seem to play a role. However, without an overt Possessor, as in (40d), the sentence is ungrammatical (similar facts for the PDC in (40c-d) can be found in West Flemish, see Haegeman 2003: pp. 233):

(40)   a.   There is a dog / *the dog / ??John in the garden.
        b.   There is {a man's / *the man's / ??John's} dog in the garden.
                 (Dobrovie-Sorin 2003: 97)
        c.   Es war einmal {'nem   König / *dem   König} seine Tochter.
              it was once   {a-DAT king / the-DAT king}   his   daughter
              'Once upon a time, there was { a / *the } king's daughter.'
        d. *   Es war einmal [*pro* seine Tochter].
              it was once   his   daughter
              'Once upon a time, there was his daughter.'

To reiterate, irrespective of the possessive pronoun in (40c), the overt Possessor determines the definiteness of the entire DP. In contrast, when no (overt) Possessor is present in (40d), the sentence is obligatorily definite. This effect in the latter case follows straightforwardly if we assume that the definite pronominal element *pro* is present, making the entire DP definite (by means of the same mechanism).[18] This then presents a second argument for the presence of *pro* (for more arguments for *pro*, see Roehrs, in preparation b). We now turn to a more detailed discussion of the "possessive" relation and return to Binding.

4.2. Theta-roles and Binding

So far, I have subsumed all the possessive constructions under the term PossP and have stayed agnostic about their semantics. As is well-known, the possessive can have an (almost) unlimited range of interpretations (Jackendoff 1977: 13, Williams 1982b: 283). A simple abstract HAVE-function is not enough to account for the variety of theta-roles (Anderson 1983-84: 3). There are at least two cases to consider: while with non-theta nouns, almost any semantic interpretation is possible, deverbal nouns only allow a limited set, namely those typically assigned by their corresponding verbs (Safir 1987):

(41)   a.   Peters Auto   (German)
                  Peter's car
       b.   Cäsars   Eroberung Galliens
                  Caesar's conquest   Gaul's
       c.   Galliens Eroberung

While *Peter* in (41a) may be the owner of the car, he could also be the person who mentioned a certain car, drove or washed it etc. (for some restrictions, see Barker 1995: chap. 2), and people can refer to this car as Peter's in the conversation. Such readings are impossible in (41b) (cf. Haider 1988: 54; Dimitrova-Vulchanova & Giusti 1998: 353). For instance, (41b) cannot mean that Caesar told us a different version of the story of the conquest of Gaul than perhaps Peter. However, it could mean that there were two different campaigns, one led by Caesar and the other by Peter. In other words, the only interpretation possible seems to be that of an agent with regard to *Cäsars* and that of a theme with *Gallien* 'Gaul'. How can this interpretative difference be explained?

Starting with the non-theta noun in (41a), notice first that the "theta roles" involved there are not the traditional (verbal) ones such as theme and agent. Recalling that the possessive head is a mono-valent functor, I basically follow Szabolcsi (1994: 193) and Zimmermann (1991: 41) in suggesting that the possessive head assigns an unspecified theta-role to its complement, the Possessor. This theta-role is then contextually determined,

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[18] A reviewer wonders if (in)definiteness spread is indeed what is involved in these cases (cf. also Sobin 2002: 608; Lyons 1999: 23 fn. 12, 25 fn. 14), considering that the indefinite DP in (ib) is degraded with a definite complement:

(i)   a.   There is {a/??the} boy's picture on the wall.
        b.   There is a picture of {a/??the} boy on the wall.

I will assume here that specificity/presuppositionality is the relevant feature, without reviewing the enormous literature on this topic. This does not present a problem for our discussion involving *pro* as it is specific (unlike arbitrary PRO, for instance).

allowing a wide range of interpretations.[19] This specification of the theta-role of the Possessor is what I mean by establishing a "possessive" relation.[20] As for the theta nouns in (41b-c), I propose that the unspecified theta-role assigned by the possessive head is specified by the deverbal head noun, which takes the possessive, i.e. the PossP containing the Possessor, as its semantic argument, just like verbal predicates take noun phrases as arguments in the clause. Finally, considering the inner make-up of the PossP in more detail, if the PossP is to be a semantic argument of a deverbal noun, it presumably has to be of type <e>, a referring element.

To make the discussion concrete, I suggest that the possessive head is a functor of type <α,e>, where the argument α of the functor is typically of type <e>.[21] To avoid confusion, note that the assignment of the unspecified theta-role by the possessive head is

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[19] A reviewer wonders what an unspecified theta-role is and why (such) a theta role is assigned at all. Starting with the latter, I argued that Possessors usually involve DPs (overt or *pro*) and as such I assume that they need a theta-role to be interpreted. Conversely, the Possessor cannot be an expletive: **there's car / *there's arrival of Peter* (cf. also Higginbotham 1983: 416 fn. 9). This fact follows straightforwardly if Poss assigns a theta-role. With regard to the nature of an unspecified theta-role, this proposal could be understood in the context of Dowty (1991), who argues for thematic proto-roles.

Simplified, thematic proto-roles are fuzzy, cluster concepts, defined by sets of verbal entailments, which themselves are independent of one another. Setting up the opposition between a Proto-Agent and a Proto-Patient, arguments can differ in the degree to which they bear their respective role (which depends on the number of entailments and their relative ranking). Building on this notion of non-discreteness, we could suggest that an unspecified theta-role is characterized by no entailment or a low-ranking one. (Barker & Dowty 1993 extend this proposal to relational nouns but, with the exception of their footnote 5, do not discuss non-relational nouns such as *car*.)

[20] The semantic role played by Poss could actually be more direct. Higginbotham (1983: 397-8, pp. 415) proposes that structures such as $[_{NP} NP_1\text{'s } N']$ are interpreted as [the *x*: N' (*x*) & R (*x*, NP$_1$)], where R expresses some contextually determined relation. The main difference between his (cf. also Lyons 1986: pp. 129, Barker 1995: pp. 54) and my proposal is that R is a two-place relation while Poss is mono-valent. I will leave my proposal unchanged for the following reason: if we were to assume a two-place possessive predicate in general, then this might cause problems with theta-nouns such that the possessive predicate takes the theta head noun as one of its arguments and the theta head noun itself take PossP as one of its arguments.

[21] First, this function is different from Dobrovie-Sorin's (2003: pp. 88) function of type <e,e>. Second, the semantic argument of the functor does not have to be a syntactic argument: in certain dialects in Norwegian, proper names take an obligatory pronoun (i.e. a preproprial article) in front of them when they occur in argument position (Gohmann & Haegeman 2002: 13 cite a personal communication by Marit Julien):

(i) a. Æ ser *(han) Per.   (Norwegian dialects)
         I see   him Per
     b. *(Han) Per e her.
            he   Per is here

Interestingly, this pronoun becomes optional in the PDC:

(ii) (han) Per sin   katt
      him Per REFL cat

Assuming that the same facts hold for theta nouns and that deverbal nouns take the same kinds of arguments as verbal predicates, the possible absence of the determiner in the PDC is explained by the "mitigating" function of the possessive functor. In other words, the assumption that a possessive pronoun is a functor explains why syntactic non-arguments may function as semantic arguments of deverbal nouns as the functor may "typeshift" its own argument, the Possessor. Furthermore, it is not surprising under these assumptions that apparent adjectival possessors seem to satisfy theta roles: they contain a *pro* and together make up a referring expression.

different from the identification of *pro* due to the lexical properties of the possessive head. In the former case, the unspecified theta-role is assigned to its complement, be it overt or *pro*; in the latter case, identification is only required with *pro*. We return to Binding.

In section 3.2, I argued that the *von* 'of' in German *von*-phrases is not a case marker but a possessive head. As such, it is present throughout the derivation. Furthermore, I argued that the possessive head is not itself responsible for establishing binding relations but rather its complement, the overt or covert Possessor is. The question that arises is how the Possessor can bind another element outside the PossP, if we take c-command as a necessary requirement for binding.

Just above, I argued that the entire PossP may satisfy a theta-role. Since possessives are (usually) referential, I propose that the "Binder" is actually the entire PossP (perhaps with the index passed up from the Possessor mitigated by the possessive functor). For clarity, I provide the following illustrations:[22]

(42) a. [$_{PossP}$ John's]$_i$ destruction of himself$_i$
      b. der Brief [$_{PossP}$ von Peter]$_i$ an sich$_i$
          the letter   of Peter   to himself

(43) a. [$_{PossP}$ Per sitt]$_i$ bild   av seg$_i$
              Per his   picture of refl.
          'Per's picture of himself'
      b. bildet [$_{PossP}$ hans Per]$_i$ av seg$_i$
          picture-the his   Per   of refl.

In all these cases, the PossP c-commands its anaphor.

To sum up this subsection, I proposed that the possessive head assigns an unspecified theta-role to the Possessor, its complement. This theta-role is then specified contextually (in case of a non-theta head noun) or linguistically (by a deverbal head noun). Second, I suggested that the entire PossP enters into Binding relations.

To conclude the entire section, we gave answers as to why *sin* and *hans* have to be "co-indexed" with *Per* in the PDC (unlike *pro*, overt Possessors do not have to be

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[22] Going back to work of Kayne's, Giorgi & Longobardi (1991: 125-6) point out that "referential" adjectives cannot be possible antecedents for anaphors (or pronouns):

(i)   a. *   the Albanian destruction of itself/themselves
      b.   Albania's destruction of itself
      c.   the Albanian's destructions of themselves

In order to account for this difference, I tentatively suggest that the presence of PossP in (ib-c) and its lack in (ia) is of crucial importance. In other words, unlike Italian possessive adjectives, referential adjectives do not project PossP. Note in passing that, if this is so, PossP cannot be relevant for control phenomena (data from Radford 1993: 79):

(ii)   the Spanish decision PRO to revalue their currency

identified) and as to how *hans* and *sin* can, by themselves, enter into binding relations with other elements (overt and covert Possessors, or rather PossP, enter into binding relations).

5. A Note on Movement Inside the PossP

Besides the typical pre-nominal and post-nominal PDC in (43), there are more distributional possibilities. For instance, depending on the dialect, an overt Possessor may either precede or follow the pronominal possessive head in pre-nominal position:[23]

(44) a. æ   mand {sin / hans} hat   (Western Jutlandic)
          the man   relf. / his   hat
          'the man's hat'
                (Delsing 1993: 153, Verhaar 1997: 97, Torp 1992: 156)
      b. hans Per   hus   (Northern Swedish)
          his   Peter house
          'Peter's house'
                (Delsing 1993: 153 fn. 10, Delsing 1998: 103)

First, both of these pronominal possibilities seem to be rather limited in their occurrence. I assume that this is so for different reasons. Setting aside (44a), it seems instructive to relate PossP, which is internally complex, to other complex DP-internal phrases. In particular, if we treat embedded PossP and complex adjectival phrases on a par, the order in (44b) comes as a surprise. Let us see why this is so.

As is well-known, the adjectival head of an embedded AdjP cannot be separated from the head noun by its complement in (45b) (Corver 1997):

(45) a. die [$_{YP}$ auf ihren Sohn$_k$ [$_{AdjP}$ stolze t$_k$]] Mutter   (German)
          the   (of her   son)   proud   mother
      b. * die [$_{AdjP}$ stolz(e) auf ihren Sohn] Mutter
          the   proud of her   son   mother

This restriction has received different accounts (for instance, Emonds' 1985: 130 Recursion Restriction, Williams' 1982a Head-Final Filter).[24] The reverse holds for languages where the adjective typically follows:

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[23] I am not aware that any of the following possibilities exist (they are thus marked *):

(i)   a. * huset   Per hans
            house-the Per his
      b. * sitt   Per hus
            refl. Per house
      c. * huset   Per sitt
            House-the Per refl.
      d. * huset sitt Per

[24] Other languages are not subject to this restriction:

(i)   i [periphani ja to jo tis] mitera   (Greek)
         the proud   for the son her mother
                (Alexiadou & Wilder 1998: 311)

(46)   a.   la mère [fière   de son fils]   (French)
              the mother proud of her son
        b. *   la mère [de son fils fière]

Treating adjectival modifiers and pre- and post-nominal PDCs alike, (44b) seems to present a "marked" case.[25] If this parallelism is real, we can derive another argument for the proposal that possessive pronouns are heads of an embedded phrase: if the possessive pronoun were not a head, we would expect examples of the kind in (44b) to be more widely attested. As this is not the case, we have another indication that the possessive pronoun is the head of an embedded PossP, parallel to adjectives inside extended adjective constructions.

6.   Open Issues

In section 3.2, we argued that (certain) possessives of non-theta head nouns can be base-generated in their surface position, even outside the DP proper. If this is true, it is not clear to me how to derive the fact that there is usually only one pre-nominal possessive (note that the c-example does not seem to be fully ungrammatical):

(47)   a.   die dreiseitige Beschreibung Galliens von Peter
              the three-page description   Gaul's   from Peter
        b.   Galliens dreiseitige Beschreibung von Peter
        c.   von Peter die dreiseitige Beschreibung Galliens
        d. ?(?) von Peter Galliens dreiseitige Beschreibung

An account, involving a Relativized Minimality violation (for theta-nouns, see Picallo 1994: 285-7), seems little promising for several reasons: first, we would expect (47d) to be worse; second and more importantly, movement of the second possessive would not, in any case, cross the higher base-generated *von*-phrase.

Likewise, it is not clear how to exclude two freely interpretable possessive with non-theta nouns:[26]

(For some possible cases in English similar to (i), see Radford 1993: 84).
[25] German also allows a post-nominal AdjP. In this case, both orders are possible:

(i)   a.   die Mutter [$_{AdjP}$ stolz [$_{PP}$ auf ihren Sohn]]
              the mother   proud   of her   son
       b.   die Mutter [$_{AdjP}$ [$_{PP}$ auf ihren Sohn] stolz]

Alexiadou & Wilder (1998: 312) analyze cases such as (ia) as involving a post-nominal small clause containing a PRO (cf. Cinque 1994: pp. 92):

(ii)   die [$_{NP}$ [$_{NP}$ Mutter] [$_{SC}$ PRO stolz auf ihren Sohn]]

I assume something similar for (ib). As such, these post-nominal adjectival elements are not assumed to be parallel to post-nominal PDCs.
[26] Interestingly, two non-distinct possessives are not impossible with theta-nouns:

(48) * Peters Auto meiner   Mutter
          Peter's car   my-GEN mother
          'Peter's car of my mother'

This possibility cannot be ruled out due to lack of a sensible interpretation: assuming that the car belongs to my mother and that *Peter* stands in some other relation to the car (e.g. he drove or washed it), the sentence would have a reasonable interpretation. Furthermore, (48) cannot be ruled out by Lasnik's (1988) extension of the Theta-Criterion, according to which double realizations of the *subject*-role are banned. This is so because two potential subject-roles, that of the possessive and that of the agent (i.e. creator) can co-occur (p. 9): *Bill's painting by Picasso*. Presumably some general semantic constraint must hold, in which only one unspecified theta-role can be specified by a salient relation in the discourse. I leave these issues for further research.

7.   Conclusion

This paper argued that possessives consist of heads and phrases, forming a Possessive Phrase (PossP). I proposed that the PossP consists of a possessive head that selects a complement, the "Possessor". Furthermore, I suggested that the Possessor may move inside the PossP and that the PossP itself may move inside the matrix DP. The discussion led to some surprising conclusions: (i) the possessive head itself is not responsible for the "possessive" relation; rather, it provides the basis for establishing a "possessive" relation between the Possessor and the possessum by assigning an unspecified theta-role to the Possessor, which is specified contextually (with non-theta head nouns) or linguistically (by deverbal nouns); and (ii) possessive pronouns do not directly participate in establishing Binding relations but only their projection PossP, containing the overt Possessor or the identified *pro*. I argued that the identification of *pro* is a lexical property of the possessive head that may vary in languages (German vs. Norwegian). Attempting to provide a homogenous account of possession, a number of details had to be glossed over.

        For instance, it is unclear what lexical category the possessive pronoun belongs to. Interestingly, it seems to have an intermediate status with regard to Fukui & Speas' (1986) system of functional and lexical categories: on the one hand, it is functional in that it enters into an agreement relation with the Possessor (this relation also helps to identify *pro*); on the other, it is lexical in that is assigns a theta-role to its complement (albeit unspecified). This might well be a sign of grammaticalization in progress, evidenced by the fact that although *hans* has an apparent genitive ending, it does not agree with its complement, the Possessor, which, as pointed out above, can be in the dative or accusative/nominative (cf. (17b-c)). Furthermore, it is not entirely clear why adjectival possessors, as in Italian, always take *pro,* prepositional ones always an overt complement and possessive anaphors/pronouns, as in Norwegian, may take either. These differences could be made to follow from the different case-assigning properties of the possessive heads. Finally, this paper has not attempted to account in detail for the differences between the individual

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(i) ?   Roms   geplante Eroberung von Gallien durch seine Soldaten   (German)
           Rome's planned conquest of   Gaul   by   its   soldiers

constructions, languages, or language families or the differences of possessives with non-theta vs. theta nouns. I will leave the investigation of these questions for another time.

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