

Word vs. Phrase structure: The Rise of Genitive Compounds in German

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1. Introduction

In Old High German (OHG), two types of nominal compounds have to be distinguished: The first type subsumes N + N compounds with a noun stem as the first constituent. This type is illustrated in (1).

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|-----|----|----------------------------------|---------------------------------------|---|
| (1) | a. | <i>man-a-houbit</i>
'slave' | <i>tag-a-sterro</i>
'morning star' | <i>hell-a-phorta</i>
'gates of hell' |
| | b. | <i>pir-o-poum</i>
'pear tree' | <i>spil-o-man</i>
'minstrel' | <i>grab-o-hus</i>
'monument' |

In (1), a linking vowel such as *-a-* in (1a) and *-o-* in (1b) is used to form a compound noun. Besides the examples in (1) we find nominal compounds where this vowel has been replaced by *-e-* or disappeared completely as a consequence of phonological changes. Examples are given in (2).

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|-----|----|---|-------------------------------|------------------------------------|
| (2) | a. | <i>hov-e-stat</i>
'place of residence' | <i>tag-e-ding</i>
'court' | <i>got-e-dehto</i>
'devoutness' |
| | b. | <i>ambaht-o-man</i>
'official' | <i>got-o-spel</i>
'gospel' | <i>win-o-blät</i>
'wine leaf' |

This word formation pattern is an inherited Indo-European pattern; it is quite productive in OHG.

The second type of compounding involves N + N compounds with the first constituent exhibiting genitive case, as shown in (3).

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|-----|----|---|--|---|
| (3) | a. | <i>senefes-korn</i>
mustard-GEN.STRG ¹ seed | <i>tages-licht</i>
day-GEN.STRG light | <i>wolves-milch</i>
wolf-GEN.STRG milk |
| | b. | <i>sunnun-tag</i>
sun-GEN.WK day | <i>hanin-fuoz</i>
cook-GEN.WK foot | <i>hasin-ora</i>
hare-GEN.WK ear |

As already pointed out by Grimm (1826:599), this type occurs rather randomly in OHG. Moreover, in many cases it is difficult to decide whether (4a) or (4b) is the structure to be assigned to examples as in (3), because genitive modifiers show up in prenominal position in OHG and Middle High German (MHG) (cf. Splett 1984).

¹ The following abbreviations are used in the glosses:

GEN.STRG	=	genitive morphology of the strong inflection class
GEN.WK	=	genitive morphology of the weak inflection class
SG.	=	singular
PL.	=	plural
FEM.	=	feminine
MASC.	=	masculine
NEUT.	=	neuter

- (4) a. *senefes korn*
 [[senefes] korn]
 b. [senefes korn]

In (4a) *senefes korn*, is analyzed as a complex noun phrase with a prenominal modifier, whereas (4b) illustrates the compound interpretation. In contrast to OHG or MHG, genitive compounds become a quite productive word formation pattern in Early New High German (ENHG). In the 16th and particularly in the 17th century, the frequency of genitive compounds increases very fast. Some examples are displayed under (5).

- (5) a. *Monats frist* *Landtags Proposition*
 month-GEN.STRG period parliament-GEN.STRG proposition
- Friedens-Tractaten* *Gotes gabe*
 peace-GEN.STRG contracts God-GEN.STRG gift
- weibß kleider*
 woman-GEN.STRG clothes
- b. *Musqueten kugel* *erenkranz*
 musket-GEN.WK bullet honor-GEN.WK wreath
- frauen schender* *Elephanten Zeen*
 women-GEN.WK rapist elephant-GEN.WK teeth
- Herrenstand* *Bawren Auffruhr*
 gentlemen-GEN.WK class farmer-GEN.WK rebellion
- c. *Kinder-Blattern* *wyber lob*
 children-GEN.PL smallpox women-GEN.PL praise

The examples in (5a) show the (*e*)*s*-suffix of strong inflected masculine and neuter nouns. In (5b) the (*e*)*n*-suffix indicates genitive morphology of the weak inflection class. The first constituent of the data in (5c) may be interpreted as showing genitive morphology as well.

Work about the rise of genitive compounds (cf. Wegera 1984, Pavlov 1983, Henzen 1965, Paul 1920, Wagner 1905) goes first on the assumption that genitive compounds develop from lexicalized phrase structures, and second, that the rise of genitive compounds is related to the postposing of genitive modifiers over the course of the ENHG period. In contrast to OHG and MHG, prenominal genitive modifiers are restricted to proper names in NHG. Both assumptions are descriptively adequate. The nature of the postulated relationship between the rise of a word formation pattern and the word order changes affecting the genitive modifier, however, remains rather vague throughout the literature. Moreover, the relevant discussion only refers to ENHG data, neglecting OHG and MHG. The further question emerges how we may account for the sudden increase in productivity of genitive compounds in ENHG. Hence, no explanation is provided for the rise of this word formation pattern.

I shall argue in the following that the word formation pattern of genitive compounds only arises in ENHG and that the older instances have to be accounted for in terms of lexicalized syntactic structures. I shall further defend the view that the rise of genitive compounds cannot be conceived as the result of a competition among surface forms. It is the main concern of this paper to show that both, the rise of genitive compounds and the changes affecting genitive modifiers, can be accounted for in assuming that the functional category D arises in ENHG; namely, that both changes reflect the change of noun phrase structure.

The question whether the process of compounding has to be described as a morphological or syntactic process has been a subject of much debate. Recent investigations of compounding usually refer to the phenomenon of verbal compounding as their empirical base. Here, the examination of genitive compounds introduces a whole new set of data. And, as the following will show, the historical data clearly favor a lexical over a syntactic approach to the process of compounding.

The outline of the paper is as follows: In section 2, I present briefly the proposal made by Pavlov (1983) for the rise of genitive compounds in ENHG and give some arguments against his account. Section 3 will adduce more evidence that the word formation pattern of genitive compounds only arises in ENHG. In section 4, I shall discuss some changes concerning the structure of noun phrases and relate this changes to the rise of genitive compounds.

A note on the analyzed historical data: As well known, the problem of a reliable data base is not easy to solve for historical linguists. As far as this investigation is concerned, I argue mainly on the basis of data collected in newspapers of the 16th and 17th century, since newspapers provide a data base that is appropriate in two respects: First, they show stylistic variation, since they include a number of different text types, such as documents, letters, and so on. Second, newspapers exhibit dialectal variation, since each issue of the newspaper includes contributions from different regions. The data base is also big enough to ensure the reliability of the proposed analysis.

2. Against an Isomorphic Account

The only recent proposal concerning the rise of genitive compounds is Pavlov (1983) who argues on the basis of ENHG facts. According to him, it is due to the lexicalization of noun phrases with prenominal modifiers that genitive compounds arise, since lexicalization motivates a structural ambiguity of these phrases. Pavlov (1983) distinguishes two cases where the first constituent either gets a referential or a generic interpretation. Since reference is associated only with maximal projections, the ambiguous structure can be interpreted as a syntactic phrase in the first case but not in the latter.

The first case concerns structures including a determiner that may refer to either the head noun of a nominal compound or to the prenominal modifier of a syntactic phrase, as illustrated in (6) and (7).

- (6) *dieser Stadt Graben* 'that city moat'
 a. [[dieser Stadt] Graben]
 b. [dieser [Stadt Graben]]
- (7) *der pfaffen stand* 'the priests-GEN.WK class'
 a. [[der pfaffen] stand]
 b. [der [pfaffen stand]]

Assuming that the determiner in (6) and (7) refers to the first constituent as indicated by the a-readings, the first constituent has to be interpreted referentially; in this case (6) and (7) have to be analyzed as phrase structures. The first constituent gets a generic interpretation however, if we assume the readings shown in (6b) and (7b) where the determiner refers to the head noun; in this case (6) and (7) qualify as word structures, i.e. as compounds.

The second case discussed by Pavlov (1983) concerns structures without a determiner. Diachronic changes in the determiner system do not allow to decide for the ENHG data whether the prenominal modifier lacks a determiner as a consequence of these changes or as a consequence of the compounding process. Examples are given in (8) and (9).

- (8) *fewres flamen* 'fire-GEN.SG.STRG flames'
 a. [[fewres] flamen]
 b. [fewres flamen]
- (9) *wyber lob* 'women-GEN.PL.STRG praise'
 a. [[wyber] lob]
 b. [wyber lob]

As in the examples (6) and (7), the first constituent might be interpreted referentially; in this case (8) and (9) are syntactic structures. Or the first constituent might get a generic interpretation in which case (8) and (9) are morphological structures.

The conclusion Pavlov (1983) draws from these facts is that the described ambiguity motivates the rise of genitive compounds. He claims that there is a universal principle of a one-to-one relationship between form and meaning, i.e. the principle of isomorphism (cf. Vennemann 1978, Wurzel 1984 among others). And this principle determines language change. According to Pavlov (1983), the following means are used in ENHG to disambiguate the structures in (6) through (9) in creating a formal distinction between syntactic and morphological structures: (i) a consequent orthographic distinction of both structures, (ii) the postposing of prenominal genitive modifiers, and (iii) the consolidation of the determiner system.

But lexicalization of a syntactic structure does not motivate its reanalysis as a morphological structure. Many instances of lexicalized phrase structures might be given where no reanalysis to a

word structure is observed. Henzen (1965), for example, points out some cases of lexicalized phrases combining adjective + noun in German, like

- (10) *das Rote Meer* *der Goldene Hirsch*
 'the Red Sea' 'the Golden Deer'.

Another set of data is provided by French compounds: According to Spencer (1991), French compounds are lexicalized syntactic structures rather than morphological structures. Examples are

- (11) *parti ouvrier* *toit-terrasse*
 'workers' party' 'sun roof'

It is a crucial difference between syntactic and morphological structures that syntactic structures are referentially transparent whereas words are opaque. Thus, the examples in (12) are syntactically transparent because both constituents are marked for plural, as the *s*- respective the *x*-suffix in (12) shows.

- (12) *hommes grenouilles* *les choux fleurs*
 'frogmen' 'cauliflower-PL'

Likewise, the alleged ambiguous structures in (6) through (9) are rather instances of lexicalized syntactic structures than compounds, since instances of referential transparency occur frequently, as illustrated by the examples in (13) and (14).²

- (13) a. *ausser dessen wollen sie (...), auch [deß vorigen Landtags schluß] weichen*
 besides want they (...), also [the last parliament-GEN.STRG decision] to retreat
 'besides, they want to deviate from the decision of the last sitting of parliament'
 (1609: Relation 213.2)
 b. *vnd [seines Glaubens bekandtmuß] vor etlich 1000. Persohn gethan*
 and [his faith-GEN.STRG confession] in front of 1000 people done
 'and (he has) done his creed in front of 1000 people'
 (1609: Relation 120.30)

Landtagsbeschuß as well as *Glaubensbekenntnis* in (13) are nominal compounds in NHG. In ENHG, however, they are obviously lexicalized syntactic structures, as indicated by the prenominal adjective in (13a) and the possessive pronoun in (13b), triggering a referential interpretation of the prenominal genitive. The reference clearly indicates that the structures in (13) include a syntactic phrasal category.

- (14) a. *eyn schoyn jonffer kloister, [die edel sijnt]*
 a beautiful maiden convent that noble are
 'a beautiful maiden convent whose maiden are noble'

² In colloquial German, we find many examples such as *grüne Bohneneintopf*, *gelbe Erbsensuppe*, *roher Schinkenteller*, where the adjective obviously refers to the first constituent of the compound.

- b. *ouch essen sij gemeynlich cameels fleysch, [der gar vil in deser inselen ist]*
 also eat they usually camel-GEN.STRG meat, of which quite many on that island is
 'usually, they also eat camel meat, since many camels live on that island

The phrases in (14) contain relative clauses referring to the prenominal modifier of a lexicalized syntactic structure. Their syntactic transparency excludes an analysis in terms of a morphological structure. Hence, there is no reason to assume that the ENHG data discussed by Pavlov (1983) are ambiguous between a syntactic and a morphological structure.

The stress pattern of syntactic and morphological phrases provides a further argument: Whereas a syntactic phrase bears the main stress on the second constituent in a complex noun, nominal compounds are always stressed on the first syllable. Thus, in spoken language at least, the alleged ambiguity never arises.³

The restriction of his data base to ENHG provides another argument against Pavlov's (1983) proposal. The alleged ambiguity of data like (6) through (9) already exists in OHG (recall the structures in (4)). To extend Pavlov's proposal to the OHG and MHG facts would leave us with the question why we observe only a few compounds of the genitive type in OHG and MHG whereas ENHG is characterized by a sudden increase in productivity of this word formation pattern. I shall argue that this increase in productivity correlates to the reanalysis of lexicalized syntactic phrases as nominal compounds in ENHG. Evidence for the rise of a new word formation pattern will be given in 3.2. In the remainder of this subsection we will return to the instances of genitive type compounds found in OHG and MHG.

As argued above, the sequence prenominal genitive + noun has to be accounted for in terms of lexicalized phrase structures. The quite limited instances in OHG and MHG where we seem to have evidence for a morphological rather than a syntactic structure might result from analogical extension: The productive compound formation pattern linking two nouns without inflection is transmitted to some lexicalized phrase structures. But analogical extension does not motivate the rise of a new word formation pattern, as indicated by the fact that genitive compounds are a quite restricted phenomenon in OHG, whereas in ENHG the type of genitive compounds is rather productive. This assumption is supported by the following two observations. The examples are taken from Splett (1984):

There are instances of N + N compounds where the distinction between the two types of compounding is hard to make, as the examples in (15) illustrate.

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|------|----------------------------------|------------------------------------|
| (15) | <i>helle-wazer</i>
hell water | <i>suone-tag</i>
repentance day |
|------|----------------------------------|------------------------------------|

³. This has been pointed out to me by Elmer Antonsen.

Taking into account the phonological changes affecting vowels in OHG, the first constituent of both examples in (15) might be analyzed either as an uninflected noun stem or as exhibiting genitive case.

We further observe the co-occurrence of both types where they are formally distinct:

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|------|--------------------|-----|----------------------------------|
| (16) | <i>rep(a)-plat</i> | vs. | <i>rebun-plat</i> |
| | wine leaf | | wine-GEN.WK leaf |
| | <i>taga-sterro</i> | vs. | <i>tages-stern</i> |
| | day star | | day-GEN.STRG star 'morning star' |
| | <i>hunt-fliega</i> | vs. | <i>hundes-fliuaga</i> |
| | dog fly | | dog-GEN.STRG fly |

The conclusion to draw from these data is that in OHG and MHG genitive compounds appear as isolated cases. They do not provide evidence against the hypothesis that the word formation pattern of genitive compounds arises only in ENHG.

3. The Rise of a Word Formation Pattern

3.1 The Reanalysis

In ENHG, lexicalized phrase structures are reanalyzed as nominal compounds resulting in the rise of a new word formation pattern. Sequences like (17) are no longer analyzed as (17a) but as (17b).

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|------|--|------------------|
| (17) | <i>dieser Stadt Graben</i> | 'that city moat' |
| a. | [[<i>dieser Stadt</i>] <i>Graben</i>] | |
| b. | [<i>dieser</i> [<i>Stadt Graben</i>]] | |

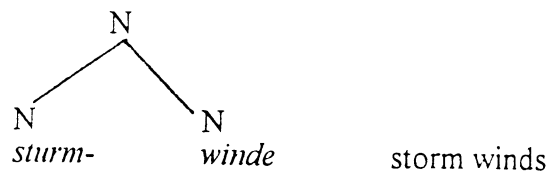
The type of reanalysis in (17) can be described as the loss of a morpheme boundary.

Reanalysis means a structural reinterpretation, i.e. a given surface structure is assigned a different underlying structure. Recent generative literature assumes that reinterpretation of a surface structure happens in the course of language acquisition:⁴ The language learning child infers a syntactic structure compatible with observed linguistic data and universal principles. Motivated by various instances of language change in different modules of the grammar, this syntactic structure might be different from the one acquired by the child's parents. Necessarily, both structures must share some structural properties (cf. Wunderlich 1986). Hence, reanalysis only happens if two different underlying structures can be assigned to one surface structure. In this respect, changes affecting the morphology-syntax interface are quite plausible, since syntactic and morphological structures share a number of crucial structural properties. This is particularly true for the word formation pattern of compounds.

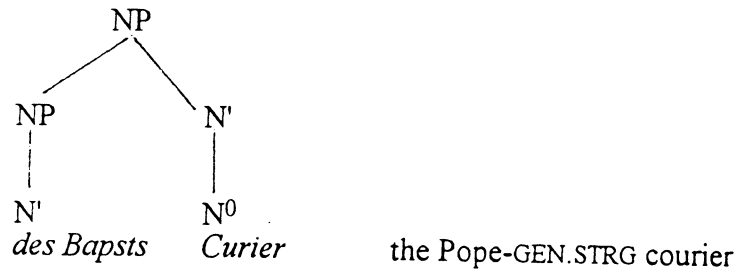
⁴ Cf. van Kemenade (1987:8) and Faarlund (1990:9), among others, referring to Andersen (1973:767).

Word as well as phrase structures exhibit a binary structure, as illustrated in (18).

(18) a.



b.

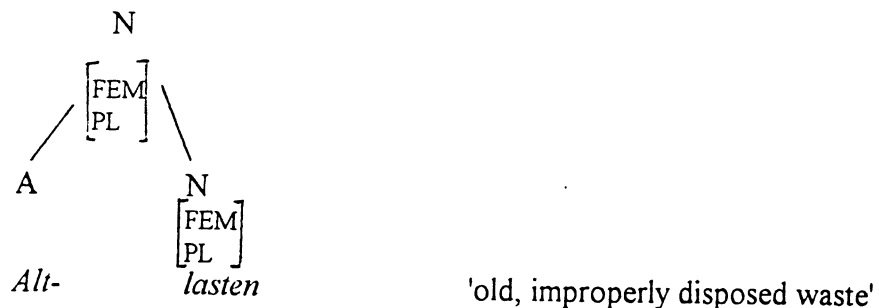


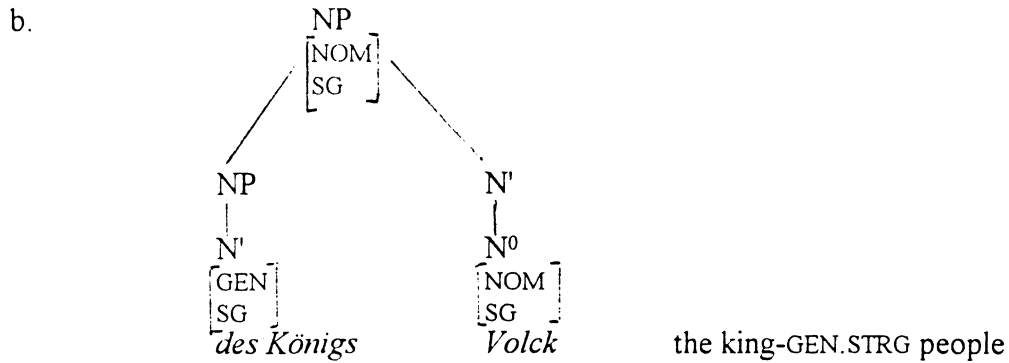
Word and phrase structures are recursive: Complex nominal compounds appear as well as complex noun phrases including two prenominal genitive modifiers. In both examples we deal with tripartite structures. The data are given in (19).

- (19) a. [[[[Preis] + angaben] + verordnung]
price + declaration + decree
b. [[[[J.F.Dht.] Beichtvaters] ankunfft]
[[[your's royal majesty] father confessor-GEN.STRG] arrival]
'the arrival of the father confessor of your royal majesty'

Moreover, word and phrase structures both have an endocentric structure: The head of morphological and syntactic structures determines category, gender, and plurality of the compound or the phrase, respectively. And in word as well as phrase structures the head shows up as the rightmost constituent, as illustrated in (20).

(20) a.





In (20a), the noun *Alllasten* is built up by an adjective and a noun. The properties of the compound are determined by the head of the compound, i.e. the noun *Lasten*. Likewise, the phrase structure in (20b) gets its properties from the head noun *Volck*.

This structural overlapping of compounds and syntactic phrases in ENHG is a necessary condition for the reanalysis, but it cannot be its trigger.

3.2 Evidence for a Reanalysis in ENHG

In the previous section we discussed the mechanism of reanalysis. If it is reanalysis of lexicalized syntactic phrases what happens in ENHG, we should find some data reflecting the morphological structure in contrast to the syntactic structure before the reanalysis. Thus, this subsection is about the effects of the reanalysis in question.

Strong evidence for the proposed reanalysis is provided by the development of the case marking suffix. In a noun phrase, genitive case is assigned to the prenominal modifier by the head noun. Reanalysing the noun phrase as a morphological structure implies the loss of case assignment; to put it differently, the suffix does not indicate genitive case any more but becomes a mere linking element, similar to the linking vowel we observed in OHG compounds of the first type. Consequently, the inflectional suffix *-s* marking the genitive singular of masculine and neuter strong inflected nouns shows up with genitive compounds where it is non-paradigmatic. For instance, if the first constituent is a feminine noun derived by the suffix *-ung* and *-ion*, respectively. Examples are given under (21).⁵

- (21) a. *Beförderungs-sachen von den Regierungs-Räthen*
 promotion-GEN.STRG matters of the government-GEN.STRG councillors
- die Werbungs-gelder beschwerungs Articul*
 recruitment-GEN.STRG costs complaint-GEN.STRG article
- die verpflegungs-gelder*
 the food-GEN.STRG costs

⁵ I am aware of the fact that it is misleading to mark the linking element as genitive morphology in spite of the reanalysis as word structure. I decided to do so for ease of reference.

- | | | |
|----|--|---|
| b. | <i>Religions-sachen</i>
religion-GEN.STRG matters | <i>Passions-Andacht</i>
Passion-GEN.STRG worship |
| | <i>Ratifications Brief</i>
ratification-GEN.STRG letter | <i>die Gratulations-complimenten</i>
the congratulation-GEN.STRG compliments |

Some further examples of compounds where the first constituent is a feminine noun are displayed under (22).

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|------|--|--|
| (22) | <i>Stadts=Räthe</i>
'councillors' | <i>wegen der Heyrahts Pacten</i>
due to the marriage-GEN.STRG pacts |
| | <i>am Weyhnachtsabend</i>
at Christmas-GEN.STRG Eve | <i>die Niederlags Verwandten</i>
the settlement-GEN.STRG relatives |

These linking elements are added without any relation to the inflectional paradigms of the first constituents. Some of those elements are lost again, as the NHG *Stadträte* indicates in comparison to the ENHG lexical item (cf. (22)).

Likewise the suffix *-s* occurs with weak inflected nouns, as

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|------|----|--|
| (23) | a. | <i>der Bawers-man</i>
the farmer-GEN.STRG man |
| | b. | <i>des Bauer-n</i>
the farmer-GEN.WK |

where we would expect the *n*-suffix of the weak inflection (cf. (23)).

Another set of data corroborates the reanalysis of lexicalized syntactic phrases: In ENHG, some nouns lose the *en*-suffix as case suffix in the context of the general loss of case morphology. This development affects the weak inflected feminine nouns and some weak inflected masculine nouns as well. Inside word structure, however, the old inflection is kept, as the example in (24) for the masculine noun *Dolch* shows where the *en*-suffix is replaced by the *s*-suffix of the strong inflection.

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|------|----|--|
| (24) | a. | <i>etlich Dolch-en-stich</i>
some dagger-GEN.WK stabs |
| | b. | <i>des Dolch-s</i>
the dagger-GEN.STRG |

These facts can be accounted for in a straightforward way if we assume that the lexicalized syntactic structures are reanalyzed as word structures in ENHG, and the distribution of the relevant affixes is not governed by rules of inflectional morphology. Then the change of the case marking suffix is a natural consequence of this reanalysis: As a maximal phrase, the prenominal modifier gets genitive case from the head noun. Reanalysing the syntactic structure however implies the reinterpretation of the first constituent as N, i.e. as part of an N + N compound. Case, however, is assigned to the compound as a whole and realized as an inflectional suffix attached to the head noun.

A closer look at the change of the inflectional suffix will give us some additional information about the time course of the change under investigation. The *s*-suffix appears rather arbitrarily with derived nouns on *-ung* and *-ion* at the beginning of the 17th century. Only in the second half of the 17th century, the *s*-suffix is obligatory in this context. Some examples from 1597 and 1609 are given in (25).

(25)	1597: <i>Defension Ordnung</i> defense rules	<i>Defension wesen</i> defense system	
	1609: <i>Religion Artickul</i> religion article	<i>Protestationschrift</i> protest document	<i>Appellation Rath</i> appeal council

We might conclude that reanalysis happened in the 16th century. In the second half of the 17th century, the new word formation pattern seems to be well established.

The spread of the linking element also affects former N + N compounds with a noun stem as first constituent, as Grimm (1826) and Paul (1920:12) pointed out. Compounds still used by Luther without the *s*-affix appear with the linking element since the 17th century. (26) gives some examples.

(26)	a.	<i>ampt-knecht</i> office servant	vs.	<i>Amts-knecht</i> office-GEN.STRG servant
	b.	<i>blut-freund</i> blood friend	vs.	<i>Bluts-freund</i> blood-GEN.STRG friend
	c.	<i>geschlecht-register</i> family register	vs.	<i>Geschlechts-register</i> family-GEN.STRG register
	d.	<i>gericht-amt</i> court office	vs.	<i>Gerichts-amt</i> court-GEN.STRG office
	e.	<i>rat-herr</i> council member	vs.	<i>rats-herr</i> council-GEN.STRG member

What we find in the 17th century is a fast increase of the word formation pattern N + N with the first constituent exhibiting genitive case motivating the spread of the linking element *-s* to nouns where any reference to genitive case morphology is excluded, i.e. to strong inflected feminine nouns and weak inflected nouns. In NHG, some of these linking elements without reference to genitive case morphology are lost again, others are kept (cf. the feminine nouns in (21)): The distribution of those linking elements in NHG is determined by both inflectional and phonological properties of the first constituent (cf. Fuhrhop 1995).

Semantic arguments also support the reanalysis of a syntactic as a morphological structure: Since the 16th century, structures appear where the first constituent exhibits the singular form; the phrase structure interpretation, however, would require the plural form. ENHG data are given under (27a); (27b) shows corresponding NHG examples.

(27)	a.	<i>weibß kleider</i> woman-GEN.STRG clothes	<i>mynchs orden</i> monk-GEN.STRG order	<i>wider ritters recht</i> against knight-GEN.STRG law
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- b. *Anwaltskammer* *Freundeskreis* *Schiffsverkehr*
 lawyer-GEN.STRG association friend-GEN.STRG circle ship-GEN.STRG traffic

In (27b) *Anwaltskammer* denotes an association of lawyers, *Freundeskreis* a circle of friends, etc. (28) illustrates an example where the plural meaning of the first constituent becomes obvious through the context. The affix -s, however is attached to the noun *Buchtrucker*, like in the examples of (27a), thus resulting in a mismatch between a syntactic and a morphological structure.

- (28) *Die Königl. Commissarii haben sich 15. Buchtruckers-Schriften bemächtigt/*
 'the royal commissioners have taken hold of 15 book printer-GEN.STRG documents/
der König will nur eine gewisse Zahl derselben haben
 the King wants only a certain number of them'
 (1667: Postzeitung 46.34)

For the interpretation of noun phrases with prenominal genitives the relationship between the head noun and the modifier is of crucial importance. Likewise, the interpretation of compounds depends not only on the meaning of the constituent parts but also on their relationship (cf. Fanselow 1981). Some of the possible links between modifier and head also relate nominal compounds. After reanalysing the syntactic structure, relations restricted to nominal compounds appear, such as the local relation, exemplified by the data in (29).

- (29) *Brucken zoll,* *ku:echen prediger*
 bridge-GEN.WK duty kitchen-GEN.WK preacher

Supporting evidence for the reanalysis is further supplied by the rise of copulative compounds where both constituents cannot be interpreted as the first constituent determining the second one; rather, their relationship has to be described in terms of coordination, as illustrated by the examples in (30).

- (30) a. *der Bawersman*
 the farmer-GEN.STRG man
 'this man who is a farmer'
 b. *den armen Boursleuten*
 the poor farmer-GEN.STRG people
 'these poor people who are farmers'
 c. *alle Manspersonen*
 all man-GEN.STRG persons
 'all male persons'
 d. *ohne MannsErben*
 without man-GEN.STRG. heir
 'without male heirs'
 e. *Leibs Erben*
 body-GEN.STRG heirs
 'real heirs'

To sum up, there is strong evidence for the reanalysis of lexicalized syntactic structures happening in ENHG. Syntactic, morphological and semantic arguments corroborate this

hypothesis. The reanalysis of phrase structures has one further mere superficial effect: According to Wegera (1984), the frequency of nominal compounds written as single words increases during the second half of the 16th century. Still, the following stylistic alternations are found in the 17th century, cf. (31).

- | | | |
|------|---|--|
| (31) | <i>Rechts Sachen</i>
law-GEN.STRG matters | <i>die Kohlen=Schiffe</i>
the coal-GEN.WK ships |
| | <i>der Heringsfang</i>
the hering-GEN.STRG catch | <i>durch MenschenHendt</i>
by men-GEN.WK hands |

However, the changes with respect to the spelling of the structures in question only reflect the structural change. They do not constitute a mean to disambiguate between syntactic and morphological structures, as claimed by Pavlov (1983).

3.3 Compounding as Morphological Process

Having discussed the mechanisms and effects of the rise of genitive compounds in ENHG, this section will deal with the theoretical status of the compounding process. The development of genitive compounds, particularly the rise of linking elements derived from genitive case morphology, has important ramifications for the analysis of verbal compounds, exemplified in (32) for NHG. Here and in the pages to follow I shall refrain to verbal compounds derived by the suffixes *-ung* and *-ion*.

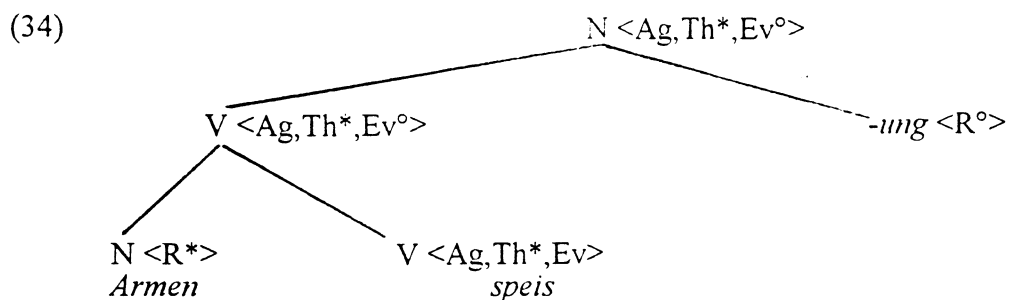
- | | | |
|------|--|---|
| (32) | a. <i>Friedensverhandlungen</i>
peace-GEN.STRG negotiations | <i>Armenspeisung</i>
poor people feeding |
| | b. <i>Vertragsratifikation</i>
treaty-GEN.STRG ratification | <i>Buchrezension</i>
book review |

Two theoretical viewpoints concerning the analysis of verbal compounds are held in the literature:

- Syntactic approaches (cf. Fabb 1984, Sproat 1985) assume the structure in (33) for compounds as in (32).

- (33) [[*Armen + speis*] + *ung*]_N

In (33), the verb stem *speis* combines in a first step with its direct object *Armen* to satisfy the Theta Criterion: According to Sproat (1985), the internal theta role of the transitive verb *speisen* is discharged via theta identification, because theta role assignment is restricted to maximal projections. The second step comprises the derivation of the verbal compound *Armenspeisung* by the suffix *-ung*. Sproat's analysis is illustrated in (34).

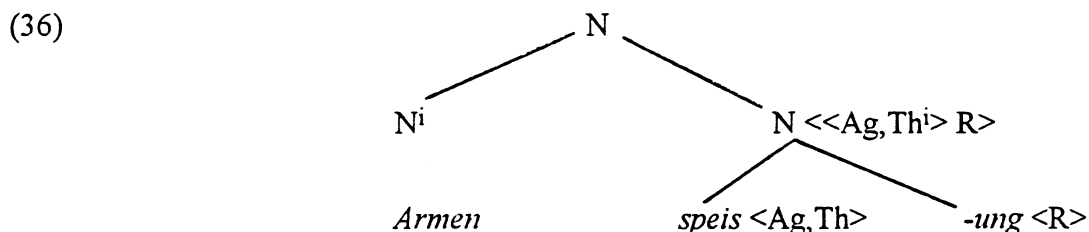


In (34), the theta role R of the common noun *Armen* is discharged by identification with the internal theta role of the verb *speisen*, and the referential role R of the *ung*-suffix is identified with the event argument of the verb.

• Lexical approaches such as DiScullio/Williams (1987), Bierwisch (1989), and Grimshaw (1990) assume the derivation process preceding the process of compounding, i.e. a structure as in (35).



Here, the verb stem *speis* combines with the suffix *-ung* to form a derived noun; then compounding concatenates the nominalized verb with the noun *Armen*. Contrary to syntactic approaches they assume that compounding is a morphological process, i.e. happens in the lexicon. The following analysis is suggested by DiScullio/Williams (1987): They treat affixes as functors with the argument structure of the verb as their value. Like Sproat, they assume affixes introduce a referential theta role R. Hence, it is the derived argument structure of the noun that has to be satisfied in the process of compounding.



Due to functional composition, the noun *Speisung* is derived from the verb stem *speis* and the suffix *-ung*. The derived argument structure implies the internal theta role of the transitive verb *speisen* satisfied by the non-head of the verbal compound as indicated by coindexation.⁶

⁶ It is still controversial whether the non-head functions as a modifier or as an argument of the head noun. Sproat (1985) on the one hand, claims that nouns never license arguments, thus analysing the non-head as a modifier of the head noun. On the other hand, DiScullio/Williams (1987) argue that non-heads of verbal compounds are arguments licensed by the derived argument structure. A third point of view is taken by Grimshaw (1990) who allows only for a subclass of verbal compounds (i.e. complex event nouns) the notion of argument for the non-head. A detailed discussion of this matter would be beyond the focus of this paper.

The historical facts clearly favor a lexical over a syntactic approach to compounding. The first argument concerns the particular development of genitive compounds described above. Three stages may be distinguished in the development of nominal compounds with the first constituent exhibiting genitive case morphology: First, noun phrases appear where the genitive modifier may appear preminally. These syntactic structures occur rather frequently in OHG and MHG. Second, some of these syntactic structures become lexicalized; still, they are syntactically transparent, allowing adjectival modifiers and relative clauses modifying the first constituent. Third, lexicalized syntactic structures are reanalysed as morphological structures identified through their syntactic opacity. We may conclude from this development of genitive compounds in German that compounding is a morphological process at least in German. Compounds in Roman languages such as French however, rather behave like the lexicalized syntactic structures at the beginning of ENHG (cf. section 2). The question arises whether the apparent compounds in such languages really should be analyzed as morphological structures.

The genesis of genitive compounds in general carries over to verbal genitive compounds: They develop from syntactic phrases including a prenominal genitive modifier as the examples in (37) indicate:

- (37) a. *ein statliche Gelt Verehrung*
a considerable money giving
b. *zu schuldigster Danksagung*
to the duest thanksgiving

The adjectival modifiers in (37) obviously relate to the prenominal genitive emphasizing that the noun phrases in (37) are syntactic but no morphological structures. Only since the 17th century these lexicalized syntactic structures are reanalyzed as morphological structures (cf. the arguments in 3.2), and we find the following instances in the underlying text corpus.

- (38) a. *Kriegsverfassung* *mit teglich speiß vnd leybs narung*
war-GEN.STRG constitution with daily fare and body-GEN.STRG food
Landsordnung *von jhrer Stillstandshandlung*
country-GEN.STRG rules about their armistice-GEN.STRG negotiations
b. *Anstands Tractation* *bey der Reichs Constitution*
armistice-GEN.STRG negotiations with the kingdom-GEN.STRG constitution
gute Friedensconditiones *grosse Kriegspreparation*
good peace-GEN.STRG conditions extensive war-GEN.STRG preparation

The former case marking suffix -s also spreads to compounds where the first constituent is a feminine noun, as in (39).

- (39) a. *die Neutralitäts Versicherung* *vor der Achts erklerung*
the neutrality-GEN.STRG confirmation before the outlawry-GEN.STRG explanation

ohne vorhergehende Religions Bewilligung
without preceding religion-GEN.STRG approving

- b. *ein Böhm. Religions Rebellion*
a Bohemian religion-GEN.STRG rebellion

The historical data provide strong evidence for a lexical approach to the process of compounding: The fact that linking elements derived from case morphology appear inside the morphological structure can be explained only by concatenation of two nouns.⁷ An analysis where the internal theta role of the verb is satisfied first, fails, because it could not account for the appearance of linking elements in verbal compounds.⁸

4. Changes in Noun Phrase Structure

What we discussed so far concerned the mechanism of reanalysis as well as its effects. This section focusses on the cause for the assumed reanalysis. As pointed out in the introduction, it is a widely held assumption that diachronic changes affecting the prenominal position of the genitive modifier are somehow related to the rise of genitive compounds in ENHG. The nature of this relationship remained rather vague, however. I will discuss some changes affecting the structure of nominal phrases in ENHG, paying particular attention to the genitive modifier. I will argue that these changes as well as the rise of genitive compounds in German might be related to a crucial change affecting the underlying structure of noun phrases in ENHG; namely the rise of the functional category D. Hence, this approach will unify the rise of genitive compounds and the diachronic changes concerning genitive modifiers on a more abstract level. At first, I provide some basic facts about the structure of noun phrases in NHG.

4.1 The Noun Phrase Structure in NHG

The existing parallels between sentences (CP, IP) and noun phrases motivated Abney (1987) to extend the set of functional categories to the functional category D. Haider (1988) and Olsen

⁷ The development of linking elements over the course of the NHG period resulted in a loss of transparency with respect to the compositional nature of nominal compounds with deverbal nouns.

⁸ Nominal compounds with a deverbal noun as their head lack the linking element for paradigmatic and phonological reasons, such as with feminine nouns or with nouns as *Tax-commission* 'tax commission', *Roßfütterung* 'horse feeding'.

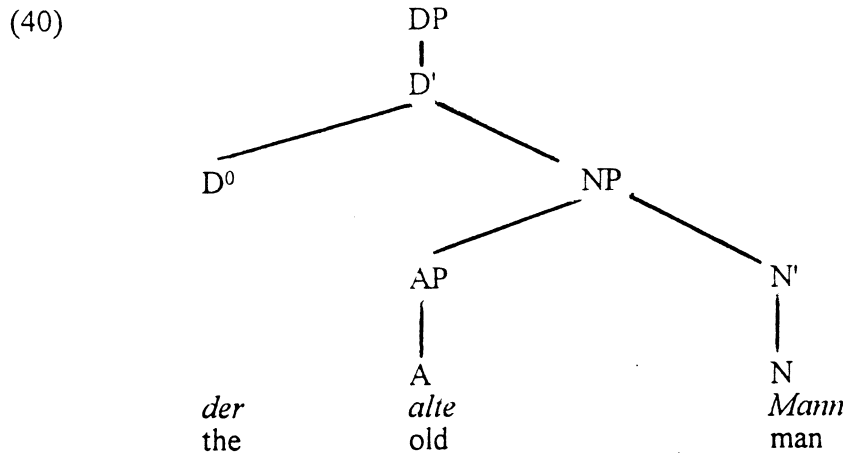
A different behaviour has been observed with *-er* compounds such as *Buchdrucker*, *Bierbrauer*. According to Wilmanns (1896), they seem to exhibit accusative case morphology instead, as the ENHG examples indicate:

(i) *Fleischhacker* 'butcher', *Weinhawer* 'wine-grower', *stiffelmacher* 'boot maker'

(ii) *Fanenführer* 'standard-bearer', *Suppenfresser* 'soup-eater', *Trummenschlager* 'drum beater'

These data rather suggest a syntactic approach to the analysis of *-er* compounds at least in ENHG.

(1989) provided some evidence that this analysis carries over to NHG; they assume the following structure for German noun phrases:



The noun phrase is analyzed as a determiner phrase with NP as the complement of the head D, like VP is the complement of the functional category I. The determiner is base-generated in D, i.e. it is no longer interpreted as a modifier of the head noun (cf. Vater 1986). This analysis straightforwardly accounts for distributional facts of determiners behaving rather like a lexical than a phrasal category.

According to Vater (1991), we have to distinguish between morphological and semantic determination. Morphological determination on the one hand includes the grammatical features person, number, gender and case, i.e. the AGREEMENT features. Semantic determination on the other hand, refers to definiteness. The NHG determiner system includes the following elements:

- (41)
- a. *d-er, d-ie, d-as*
the-MASC, the-FEM, the-NEUT
 - b. *dies-er, dies-e, dies-es*
that-MASC, that-FEM, that-NEUT
 - c. *jen-er, derjenig-e, derselb-e*
that-MASC, he-MASC who, the same-MASC

The roots of the determiners in (41) indicate definiteness, their inflectional morphemes the AGREEMENT features. Besides the determiners listed in (41), prenominal genitives can mark the head noun for definiteness. In NHG, prenominal genitives are restricted to proper names; data with common nouns are at best questionable. The relevant contrast is given in (42).

- (42)
- a. *Berlins Theater, Paulines alte Wohnung*
Berlin-GEN.STRG theaters, Pauline-GEN.STRG former apartment
 - b. *??der Frauen Anliegen, ??des Kindes Traum*
the women-GEN.WK request, the child-GEN.STRG. dream
 - c. **des Buches Eigentümer, *des Hauses Fenster*
the book-GEN.STRG owner, the house-GEN.STRG window

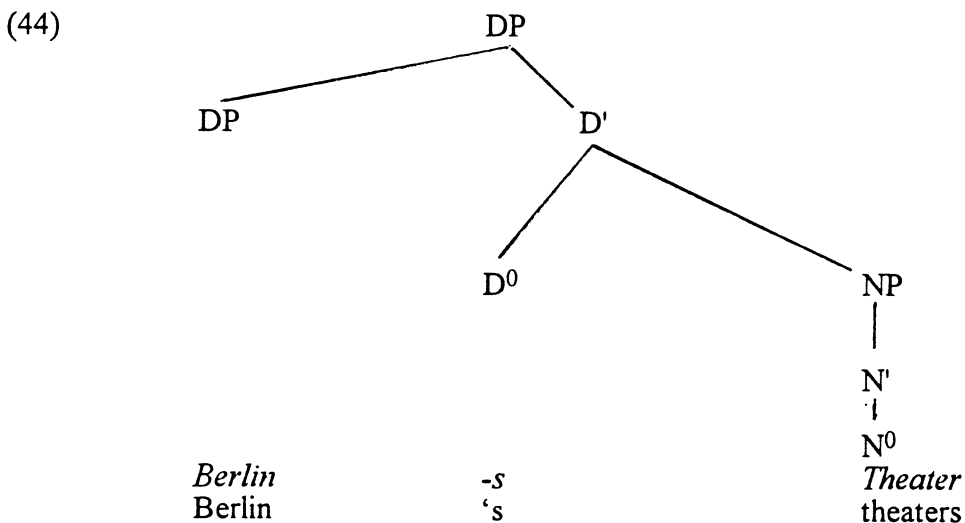
As illustrated in (42), common nouns are excluded from the prenominal position as compared to the proper names in (42a). Obviously, for some speakers slight differences arise with respect to the fact whether the common noun is [+ human] as in (42b) or [- human] as in (42c).

Another restriction holding for prenominal genitives concerns cooccurrence facts: Modifying prenominal genitive phrases yields ungrammatical results as shown in (43).

- (43) a. **Der jungen Lisas neues Fahrrad steht im Hof*
 the young Lisa-GEN.STRG new bike is in the courtyard
 b. **[[[Müllers] Lisas] neues Fahrrad] steht seit gestern im Hof*
 Müller-GEN.STRG Lisa-GEN.STRG new bike is in the courtyard
 c. **Lisas aus Berlin neues Fahrrad steht im Hof*
 Lisa-GEN.STRG from Berlin new bike is in the courtyard
 d. **Lisas, die unbedingt ein schwarzes wollte, neues Fahrrad steht auf dem Hof*
 Lisa-GEN.STRG who absolutely wanted a black one, new bike is in the courtyard

As (43) illustrates, the ungrammaticality arises regardless of the position of the modifier: The prenominal adjective in (43a) and the prenominal genitive in (43b) as well as the postnominal prepositional phrase in (43c) and the relative clause in (43d) are ill formed.

The relation between the head noun and the prenominal genitive is established by the feature [POSS], base-generated in the functional category D. Following Haider (1988), Olsen (1991) and Bhatt (1990), I assume that it is the affix *-s* which realizes the feature [POSS], whereas the genitive phrase is in the specifier of DP. A simplified structure is given in (44).



This analysis accounts for the complementary distribution of determiners and prenominal genitive phrases: The realization of the feature [POSS] by the affix *-s* excludes the occurrence of determiners in D. Moreover, this analysis emphasizes the common semantic function of determiners and prenominal genitive phrases; namely, to mark the head noun for definiteness.

4.2 Genitive Modifiers in ENHG

Diachronic changes affecting the prenominal position of genitive modifiers have been of particular interest in diachronic syntax (cf. Wagner 1905, Behaghel 1932, Carr 1933, Fritze 1976, Ebert 1986, 1988). The brief review of the NHG facts has illustrated the semantic restrictions characterising the position of the prenominal genitive. These restrictions do not hold, however, in OHG and MHG. At the beginning of the 16th century, we still observe the distribution of genitive modifiers independent from their semantics. The relevant data are displayed under (45) and (46); the data are taken from Luther's "An den Adel deutscher Nation" from 1520.

- (45) a. *des teuffels list*
the devil-GEN.STRG ruse
b. *des menschen seel*
the man-GEN.STRG soul
c. *in allen reychen der menschen*
'in all kingdoms of human beings'
d. *zur straff der bosen*
'for the punishment of evil persons'
- (46) a. *des glaubens sach*
the faith-GEN.STRG thing
b. *zu yhres redlichen stands erhaltung*
to their honest class-GEN.STRG preserving
c. *ym schweysz deynis angesichts*
'in the sweat of his brow'
d. *in abgrund der hell*
'in the depth of hell'

The examples illustrate that no semantic restrictions determine the distribution of genitive modifiers in ENHG: Neither common nouns with the feature [+human] nor common nouns with [-human] are restricted to the postnominal position. They appear prenominal as well. Proper names behave as expected, as shown by the data in (47).

- (47) a. *deß Cardinals Spinola Bruder*
the Cardinal-GEN.STRG Spinola brother
b. *des Königs in Polen gesundtrunck*
the King-GEN.STRG of Poland health drink
c. *auff absterben deß Jllishaskij*
the death the-GEN Jllishaskij
d. *die Schiffe des Simon Dantzer*
the ships the-GEN Simon Dantzer

A further change affecting the prenominal genitive concerns its property of being modified. Recall the ungrammaticality of any modifier in NHG and consider the data in (48).

- (48) a. *[[deß Vvaivoda [in Siebenbürgen]] Bottschafft]*
the-GEN Vvaivoda in Siebenbürgen ambassador
'the ambassador of the Vvaivoda in Siebenbürgen'
(1609: Relation 146.38)

- b. [[[*Des Türckischen Beegs/ [so als ein Geysel allhie ligt]]/ Diener] einer]
the Turkish Beeg-GEN.STRG who as a hostage here is servant one
'one of the servants of the Turkish Beeg who is here as a hostage'
(1609: Aviso 34.16)*

(48) shows that in ENHG postnominal modification of prenominal genitives yields grammatical results, no matter how complex this modifier is. Not only prepositional phrases as in (48a) but also relative clauses intervene between the prenominal genitive phrase and the head noun, as in (48b). These structures are ungrammatical in NHG. Furthermore, we do find adjectival phrases preceding a prenominal genitive phrase as in (49). In NHG, this word order is ill formed.

- (49) a. *vielfeltiges des Graffen bitten*
many and diverse the Count-GEN.STRG pleas
'many and diverse pleas of the Count'
(1609: Aviso 35.18)
- b. *auff gethane jre May: werbung*
after done his Majesty-GEN.STRG request
'after the request done by his Majesty'
(1609: Relation 131.30)

The facts described above suggest that the prenominal genitive behaves as a typical modifier. It does not seem to mark the head noun for definiteness as observed in NHG. So, we observe the cooccurrence of a prenominal genitive and the indefinite determiner *ein*. The relevant examples are given in (50).

- (50) a. *In dem chamen si zu ainem der frawen schloß*
meanwhile came they to a the women's castle
'meanwhile the came to one of the women-GEN.PL castles'
- b. *Ich cham nicht all spat in ain diser frawen gezellt*
I came not too late in one that women's tent
'I did not come too late in one of these women-GEN.PL tents'

In spite of the prenominal genitive, the NP has an indefinite interpretation. This is also true if the indefinite determiner intervenes between the genitive phrase and the governing noun (cf. 51).

- (51) a. *er (...) erwischet der frawen ein hand*
he (...) grabbed the woman-GEN.WK hand
'he grabbed one of the woman's hands'
- b. *doch hat er der begerten hilff keine vertröstung bekommen*
though has he the-GEN desired help no hope got
'though he got no hope for the desired help'
(1609: Relation 191.8)

Supporting evidence for a different semantic function of the prenominal genitive in ENHG is provided by the fact that even a definite determiner may appear between a prenominal genitive modifier and the head noun. Recall, that the complementary distribution of definite determiners and prenominal modifiers has been an important argument for the DP-analysis in NHG given in (44), relying on their identical semantic function. ENHG examples are given in (52).

- (52) a. *der bapst der [[vnsers christlichen priesterthu:oms] die ho:echste oberkeit] ist*
the Pope who [[our Christian priesthood-GEN.STRG] the highest authority] is
'the Pope who is the highest authority of our Christian priesthood'
b. *Diese deß Papsts vnd Keysers Zusammenkunft*
that the Pope-gen.strg and emperor-gen.strg meeting
'that meeting of the Pope and the Emperor'

Data like (50) through (52) suggest that the genitive modifier and the determiner do not share one structural position, as assumed for NHG. This observation carries over to the possessive pronoun: With respect to NHG data, it is assumed that possessive pronouns are base-generated in the SpecDP position as well. According to Philipp (1980:111) however, possessive pronouns cooccur with determiners as well, what yields ungrammatical results in NHG. The relevant grammaticality contrast is displayed under (53) and (54).

- (53) a. *ich volg der deinen lere*
I follow the-DAT your-DAT doctrine
'I follow your doctrine'
b. *von Job dem meinen lieben Knecht*
from Job the-DAT my-DAT dear-DAT servant
'from Job, my dear servant'
- (54) a. **ich folge der deinen Lehre*
b. **von Job, dem meinen lieben Knecht*

As the examples in (53) and (54) show, there is neither a complementary distribution of possessive pronouns and determiners. Hence, there is no reason to assume that possessive pronouns are base-generated in the same structural position in ENHG as the determiner.

4.3 Determiners and Adjectives in ENHG

The ENHG data of prenominal genitives including possessive pronouns do not corroborate the assumption of a functional category D. Thus, the determiner itself seems to be the only category relevant for D. Recall that the class of determiners in NHG determines the head noun semantically as well as morphologically. A closer look on some ENHG data shows that the determiner lacks in a number of ENHG contexts where it is obligatory in NHG. For example, the determiner is optional with a generic interpretation of a noun, as (55a) and (55b) illustrate. Likewise, it is optional with abstract nouns, as shown in (55c) and (55d).

- (55) a. *ie groezer [o sünde], ie groezer [o helle]*
'the greater the sin, the greater the hell'
b. *den pesten ritter, der ye [o schilt] zu hals gehieng*
'the best knight who ever wore (a) shield'
c. *Mich zwingt [o armu:ot], das ich hie herumb geh*
me forces poverty that I walk around here
'poverty forces me to walk around here'

- d. *wo [o forcht] der schand vnd des schadens sie nit abwendet*
 where fear the-GEN disgrace and the-GEN harm her not prevent
 'where the fear of disgrace and harm does not prevent her'

The data in (55) support the assumption that it is semantic determination what defines the relationship between determiner and noun. Evidence for this assumption is provided by the following coordination facts (cf. 56), where one determiner refers to two coordinated nouns.

- (56) a. *des Evangelii und gebets vorachtung*
 the gospel-GEN.SG and prayer-GEN.SG contempt
 b. *des Bapst odder Cardinel gesindt*
 the Pope-GEN.SG or the cardinal-GE.PL servants
 c. *das land und stedt*
 the country-NOM.NEUT.SG and cities-NOM.FEM.PL

The coordination data displayed under (56) show only one determiner preceding the coordinated nouns: In (56a) both nouns coincide in number and gender, whereas they differ in number in (56b), and in number and gender in (56c). Hence, it is quite reasonable to assume that a determiner like *der* denotes definiteness of the relevant noun or nouns respectively, but does not realize the morphological determination.

The different behaviour of determiners in ENHG is also supported by a property of adjectival inflection: In NHG, a correlation exists between the inflection of an adjective and the cooccurrence of a determiner insofar that the presence of a determiner decides whether the adjective shows strong or weak inflection. Cooccurring with a definite determiner, the adjective bears the weak inflection as (57a) shows; without a determiner however, the adjective exhibits strong inflection as in (57b). I adopt Olsen's (1989) proposal to account for this phenomenon in terms of an agreement chain saying that the AGREement features are realized by the adjectival inflection if the noun phrase lacks a determiner.

- (57) a. *der wirtschaftliche Erfolg hängt vor allem (...)*
 the-NOM economic-NOM.WK success depends in the first line (...)
 b. *wirtschaftlicher Erfolg hängt vor allem (...)*
 economic-NOM.STRG success depends in the first line (...)

Assuming the assumption to be correct that determiners in ENHG determine a noun semantically but not morphologically, we would expect that there is no correlation between the inflection of an adjective and the occurrence of a determiner. This prediction is born out, as exemplified by the contrast in (58) and (59).

- (58) a. *nach törlicher rede*
 after stupid-DAT.STRG speech
 b. *langs leben*
 long-NOM.STRG life

- (59) a. *des morgendes tages*
the-GEN morning-PRT.GEN.STRG day's
'of the daybreak'
b. *dieser alter Mensch*
that-NOM old-NOM.STRG man

This observation carries over to possessive pronouns; in NHG the adjective shows weak inflection when the AGREement features are realized by a possessive pronoun. In ENHG however, the adjective is strong inflected regardless of a realized possessive pronoun. (60) and (61) give the relevant contrast between NHG and ENHG.

- (60) a. [*meine neuen Bücher*]
my-NOM.PL new-NOM.PL.WK books
b. [*seinen alten Walnußbaum*]
his-AKK.SG old-AKK.SG.WK walnut tree
- (61) a. [*meine lichte summerblumen*]
my-NOM.PL light-coloured-NOM.PL.STRG summer flowers
b. [*durch jre starcke wort*]
by their-AKK.SG vehement-AKK.SG.STRG words

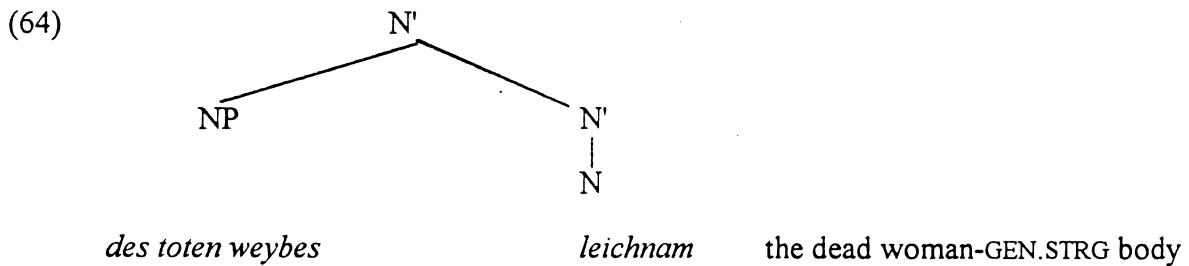
To summarize: There is strong evidence that NHG and ENHG differ with respect to their determiner systems. Neither prenominal genitive phrases nor possessive pronouns seem to be in the specifier position of DP. The determiner itself denotes the definiteness of a noun; as far as the data in (55) through (61) are concerned, no arguments support the assumption that morphological determination, i.e. the realization of AGREement features, has to be related to that structural position as well.

5. The Rise of Genitive Compounds and the Structure of DP

Distributional facts of genitive modifiers, possessive pronouns and determiners have shown that there are no arguments to assume a functional category D in noun phrase structures in ENHG. Compared to corresponding facts in NHG, there is no evidence in ENHG for a structural position where the concept of definiteness and the AGREement features may be realized by different means such as determiners, prenominal genitive phrases and possessive pronouns. We might conclude from these facts that noun phrases in ENHG always are NPs and never DPs. Assuming the analysis for NHG noun phrases to be correct we might draw the further conclusion that the functional category D only arises in ENHG. Under such an approach it is the rise of the functional category D that triggers the severe structural changes affecting the noun phrase in ENHG. As suggested by the historical data discussed above, determiners and prenominal genitive phrases are analyzed as modifiers of the head noun, at least until the end of the 15th century. This view accounts straightforwardly for the word order alternations observed until the beginning of ENHG, cf. (62) and (63):

- (62) a. NP^g + AP + N
 b. AP + NP^g + N
- (63) a. Det + NP^g + N
 b. NP^g + Det + N

Following Higginbotham (1983), I assume that arguments of nouns always are optional; hence they have to be analyzed as modifiers. The relation between the head noun and the modifier is established through the mechanism of theta identification, one of four modes to satisfy a theta-role, where the external argument R of the genitive modifier is identified with an argument of the head noun (Higginbotham 1985). The genitive modifier is base-generated inside NP; as a restrictive modifier it will be adjoined to N' (cf. Vater 1986, Zimmermann 1991). (64) shows a simplified structure:



In (64), the prenominal genitive gets case from the head noun. According to the historical facts, genitive case seems to be the default case of nominal modifiers in noun phrases, because nominal modifiers obligatory show up with genitive case until ENHG. Only then appositive noun phrases appear showing agreement Case (cf. Ebert 1986:89). Genitive modifiers may precede or follow their head noun. The relation between head noun and modifier is established by theta identification in the sense of Higginbotham (1985).

Morphological changes motivating the loss of nominal morphology might be one factor responsible for the reinterpretation of determiners as expressing semantic as well as morphological determination, thus triggering the rise of the functional category D. Noun phrase structures are reinterpreted as DP structures. The extensive changes affecting the noun phrase structure also include prenominal genitive modifiers. Depending on the contribution of the modifier to the meaning of the noun phrase, there are two options for the development of these genitive phrases:

- The genitive modifier is reinterpreted as a possessive noun phrase in cases where it has a referential reading. These possessives are base-generated in SpecNP where they function as theta-binders in the sense of Higginbotham (1985) who proposes theta-binding as another mode of thematic discharge, i.e. as a mode of closing a structure with respect to a theta-role: Determiners or measure-words bind an open argument position that is accessible from SpecNP. Likewise, possessive noun phrases bind the open position in the theta grid of the head noun.

Since SpecNP is no case position, the possessive phrase moves to SpecDP where the functional category D assigns possessive case to the maximal phrase in SpecDP (cf. 4.1, p. 16). The rise of the functional category D blocks genitive case assignment to a prenominal position, since there is no government relation between the noun and the prenominal genitive phrase. Hence, case assignment to a genitive phrase is restricted to the postnominal position.

- The genitive modifier is reinterpreted as the first constituent of a nominal compound in cases where it has a generic reading. This reading typically arises when noun phrases are lexicalized (cf. the examples discussed in section 2, p. 4).⁹ The reanalysis of lexicalized phrase structures is favored by a set of data where the first constituent lacks overt genitive case morphology as feminine nouns of the strong inflection class do. They parallelize the type of nominal compounds where the first constituent corresponds to the noun stem. In ENHG, genitive morphology may even lack in cases of masculine and neuter nouns.

The proposal predicts that only prenominal genitive modifiers with a referential reading and the feature [+ human] may appear in SpecDP, because modifiers with the feature [- human], as in the noun phrases *des glaubens sach, zu yhres redlichen stands erhaltung* (cf. the data in (46)) are not compatible with an interpretation as possessive phrases. As a matter of fact, this prediction is born out: Since the end of the 15th century, genitive modifiers with the feature [- human] appear obligatorily in postnominal position, as shown by Wagner (1905), Behaghel (1932), Carr (1933), Fritze (1976), and Ebert (1986, 1988).

6. Conclusion

To conclude: In this investigation, I have argued that the rise of genitive compounds reflects the change of noun phrase structure in ENHG and cannot be accounted for in terms of lexicalization. Developments concerning the position of prenominal genitive phrases can be traced back to this change as well. Rather, both surface structure changes are related to a change of the underlying structure. Furthermore, supporting evidence for the transition from lexicalized syntactic structures to morphological structures clearly indicates that a lexical approach to compounding is more adequate than a syntactic one.

⁹ In the history of Italian a similar process occurs: There are instances of a compounding pattern N^s + N such as *terremoto* 'earth quake', *acquedotto* 'water pipe', *caprifoglio* 'honeysuckle' (the examples are taken from Rohlfs 1954:226). This word formation pattern may be explained by the word order change in Italian changing from an OV to a VO language. Problematic are younger examples of the type N + N^s, as *favomele* 'honeycomb', *capostazione* 'stationmaster', *acquavite* 'spirits'. A possible explanation would refer to the loss of case morphology in Italian and its replacement by prepositions.

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