

Case Underspecification in Morphology, Syntax and the Lexicon

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1 Objectives

In this article, I want to pursue two objectives.

Firstly, I want to show that a difference exists between items that are specified with respect to Case and items that are underspecified with respect to Case. This difference can be observed in all components of grammar: in the lexicon, in the morphology and in the syntax. This may be formulated as the following hypothesis:

- (1) **H0:** In all components of grammar, an opposition exists between specification and underspecification with respect to Case.

Secondly, I want to demonstrate how morphology and syntax interact. My data are taken from the German noun phrase. Here, it becomes apparent that items that are traditionally classified as modifiers play a central role in the distribution of Case features within the noun phrase.

The following phenomena will be discussed. (i) In German, nouns can only be marked with a Case suffix, if they agree with an inflected article or an inflected adjective. (ii) A phrase may only take Genitive Case, if it has at least one head specifically marked for Case, which – according to (i) – must be an article or an adjective. I will demonstrate that phenomena (i) and (ii) can be explained by assuming that nominal heads as well as the nouns occupying them can either be specified or underspecified with respect to Case. (iii) A DP_2 that is coindexed with a DP_1 can take its Case from DP_1 or remain underspecified with respect to Case. Therefore, I will propose that the traditional assumption that each DP is specified with respect to Case should be restricted to arguments.

2 The data base

The facts discussed in this essay concern the German inflection of items occurring in nominal phrases (NPs), i.e. nouns, adjectives and articles (determiners).

As for their syntax, I assume in accordance with most recent work that the constituents traditionally conceived of as NPs must be regarded as layered structures with (at least) two components: an NP (in the narrow sense) and a functional shell, labeled DP, as first proposed by Hellan (1986) and Abney (1987). See section 4.3 for details.

2.1 The German noun inflection

The nouns of German are inflected for number and case. With respect to Case, I will refer to the following inflection paradigms given in their traditional presentation:

(2)

| | Paradigm 1 | Paradigm 2 | Paradigm 3 |
|------------|----------------------|-----------------------|-----------------------|
| Nominative | die Flasche | der Wald | der Planet |
| Genitive | der Flasche | des Wald- es | des Planet- en |
| Dative | der Flasche | dem Wald(- e) | dem Planet- en |
| Accusative | die Flasche | den Wald | den Planet- en |
| | Paradigm 4 | Paradigm 5 | |
| Nominative | das Herz | die Tage | |
| Genitive | des Herz- ens | der Tage | |
| Dative | dem Herz- en | den Tage- n | |
| Accusative | das Herz | die Tage | |

(*Flasche* = ‘bottle’; *Wald* = ‘forest’; *Planet* = ‘planet’; *Herz* = ‘heart’; *Tag* = ‘day’)

As I will show below, these traditionally assumed paradigms must be replaced with paradigms that contain noun forms that are underspecified (i.e. incompletely specified) with respect to Case

Paradigms 1 to 4 refer to singular nouns. Paradigm 1 is applied to feminine nouns (except proper names that lack an article). Paradigm 2 is the default paradigm for masculine and neuter nouns. Paradigm 3 is applied to a marked subset of masculine nouns. Paradigm 4 has a highly marked status. In present-day German, there is only one noun that is inflected according to this paradigm, namely the noun given above, *Herz* (‘heart’).

Paradigm 5 is the default paradigm for nouns that end on *-e*, *-el*, *-er* in the plural.

There are other paradigms, e.g. for proper names without article, which I will not deal with in this essay.

In modern German, paradigm 3 has become instable, i.e., the nouns belonging to this paradigm tend to be inflected as nouns of paradigm 1. In (3), both variants are accepted as correct by normative grammarians:¹

- (3)
- a. mit [_{DatP} ein-em Magnet-**en**]
with a-CAS magnet-CAS
‘with a magnet’
 - b. mit [_{DatP} ein-em Magnet]
with a-CAS magnet
‘with a magnet’

¹ In the rest of this essay, I will use the following abbreviations:

SUF = Suffix

CAS = Suffix bearing a Case feature. As indicated below, the suffixes of adjectives and articles (determiners) are portmanteau morphemes, i.e. they bear not only Case features, but also number and gender features. Nevertheless, I refer to them as CAS, abstracting from the number and gender features.

NomP = Nominative phrase

GenP = Genitive phrase

DatP = Dative phrase

AccP = Accusative phrase

ObIP = Oblique phrase (Non-Nominative phrase)

UnderP = DP underspecified with respect to Case

Lexically or morphologically based variations such as (3) are to be distinguished from syntactically conditioned variations such as that shown in (4):

- (4) a. ein Orchester mit [DatP Dirigent]
 an orchestra with conductor
 ‘an orchestra with a conductor’
- b. ein Orchester mit [DatP eigen-em Dirigent-en]
 an orchestra with own-CAS conductor-CAS
 ‘an orchestra with an own conductor’

In the following argumentation, I neglect lexical and morphological variation of the type in (3) and concentrate upon syntactically controlled phenomena.

2.2 *The German inflection of adjectives and articles (determiners)*

Adjectives and articles (determiners) have suffixed and suffixless word-forms. Suffixless adjectives and articles lack any case and phi-features; they are not specified in this respect. The suffixes of inflected adjectives and articles are portmanteau morphemes; i.e., a single suffix bears Case, number and gender features. In the following sections, I abstract away from the number and gender features, i.e., I indicate only the Case features of inflected adjectives and articles.

With respect to suffixless word-forms, the following distinction should be taken into account: whereas suffixless adjectives and articles lack Case and phi-features, suffixless nouns bear Case and phi-features. Suffixless nouns may be underspecified for Case (and number), but this phenomenon must not be confused with non-specification.

Adjectives carry suffixes drawn from two sets, called ‘strong’ and ‘weak’ since Grimm (1822). The following tables show the inflection of the adjective *hart* (‘hard’):

Forms with strong suffixes:²

(5)

| | masculine singular | feminine singular | neuter singular | plural |
|------------|--------------------|-------------------|-----------------|---------|
| Nominative | hart-er | hart-e | hart-es | hart-e |
| Genitive | hart-en | hart-er | hart-en | hart-er |
| Dative | hart-em | hart-er | hart-em | hart-en |
| Accusative | hart-en | hart-e | hart-es | hart-e |

Forms with weak suffixes:

(6)

| | masculine singular | feminine singular | neuter singular | plural |
|------------|--------------------|-------------------|-----------------|---------|
| Nominative | hart-e | hart-e | hart-e | hart-en |
| Genitive | hart-en | hart-en | hart-en | hart-en |
| Dative | hart-en | hart-en | hart-en | hart-en |
| Accusative | hart-en | hart-e | hart-e | hart-en |

² Contrary to the traditional assumptions, the masculine and neuter singular forms of the Genitive case prove to be not fully specified for Genitive; see the discussion in section 4.2.

In German, qualifying adjectives within DPs (= attributive adjectives) normally precede their nouns. In this use, they are always inflected according to the patterns given above.

- (7) auf [DatP d-em *rot-en* Planet-en]
 on the-CAS *red-CAS* planet-CAS
 ‘on the red planet’

However, there exists a small class of adjectives that cannot be inflected (cf. (8)–(9)). Such adjectives bear neither Case nor phi-features, they are not specified in this respect:

- (8) lila (‘pink’), prima (‘good, excellent’)

- (9) auf [DatP d-em *lila* Planet-en]
 on the-CAS *lila* planet-CAS
 ‘on the pink planet’

The distribution of strong and weak adjectival forms in a DP is controlled by the articles of that DP. Adjectives bear strong suffixes unless the DP has an article (determiner) which itself bears a strong suffix:

- (10) a. hart-**es** Holz
 hard-CAS_{strong} wood
 ‘hard wood’
- b. kein hart-**es** Holz
 no hard-CAS_{strong} wood
 ‘no hard piece of wood’
- c. dies-**es** hart-**e** Holz
 that-CAS_{strong} hart-CAS_{weak} Holz
 ‘that hard wood’

The distribution of strong and weak adjective forms will not be discussed further in this essay. For an explanation of this phenomenon, see Gallmann (1996).

Articles (determiners) are inflected in a similar way; they lack the forms with ‘weak’ suffixes. The following tables show the inflection of *dieser* (‘this’) and *keiner* (‘no’).

(11)

| | masculine singular | feminine singular | neuter singular | plural |
|------------|-----------------------|----------------------|--------------------|---------|
| Nominative | dies-er | dies-e | dies-es | dies-e |
| Genitive | dies-es | dies-er | dies-es | dies-er |
| Dative | dies-em | dies-er | dies-em | dies-en |
| Accusative | dies-en | dies-e | dies-es | dies-e |

Some articles (determiners) of the *dieser* type have also a Genitive form on *-en*. For an explanation see Section 4.2:

- (12) a. am Ersten [GenP jed-**es** Monat-**s**]
 on-the first each-CAS month-CAS
 ‘on the first of each month’
- b. am Ersten [GenP jed-**en** Monat-**s**]
 on-the first each-CAS month-CAS
 ‘on the first of each month’

The inflection of *kein* ('no'):

| (13) | | masculine singular | feminine singular | neuter singular | plural |
|------|------------|-----------------------|----------------------|--------------------|---------|
| | Nominative | (kein) | kein-e | (kein) | kein-e |
| | Genitive | kein-es | kein-er | kein-es | kein-er |
| | Dative | kein-em | kein-er | kein-em | kein-en |
| | Accusative | kein-en | kein-e | (kein) | kein-e |

For some feature combinations, the articles of the *kein* type lack suffixed forms if used in a DP with a noun. When they stand alone, however, as in the elliptical construction (14 b), only the suffixed forms can be used:

- (14) a. * Anna liest *kein* Buch, und Zoe liest auch *kein*
Anna reads *no* book, and Zoe reads also *no*
- b. Anna liest *kein* Buch, und Zoe liest auch *kein-s*
Anna reads *no* book, and Zoe reads also *no-CAS*
- Both: 'Ann is not reading a book, and neither is Zoe'

Some articles can have both inflected and non-inflected forms in the same context, for example *manch* ('many a'):

- (15) a. *manch* rot-er Planet
many red-CAS planet
'many a red planet'
- b. *manch-er* rot-e Planet
many-CAS red-CAS planet
'many a red planet'

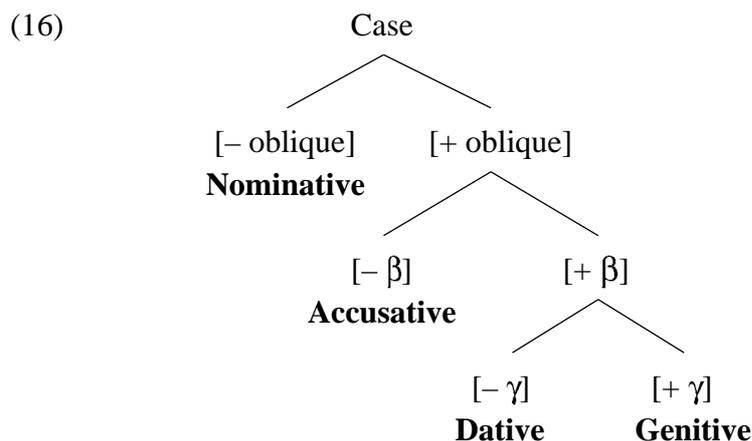
Contrary to the *kein* type (13), the non-inflected form of the *manch* type can be chosen rather freely (for constraints, see below, (35)).³

3 Assumptions about Case

Following Wunderlich (1996), I assume that grammatical features are ordered in binary oppositions. In a given feature pair, one of the features is functionally marked with respect to the other feature. Usually, the marked feature is labeled with a positive value, the unmarked with a negative value, e.g. [+ α] vs. [- α]. Strictly speaking, however, the unmarked, i.e. negative values are redundant. If an item is not positively marked with respect to a given feature pair, it need not be explicitly marked negative; it can be underspecified with respect to this feature class.

This approach can be applied to morphological Case. I want to propose that German has a primary opposition that can be labeled [\pm oblique]. The [-oblique] Case is traditionally named Nominative. The hierarchical ordering of German Case features may tentatively be stated as follows:

³ As an exception, the form *dies* of *dieser* ('this') is a specified shortened form of *dieses*.



The traditional Case labels ‘Accusative’, ‘Genitive’ etc. turn out to be abbreviations for Case feature bundles. For example, the Genitive case is conceived of as the feature bundle [+ oblique, + α , + β]. For convenience, I will use the traditional Case designations in the following sections.

The hierarchy given in (16) is far from self-evident. In the first place, the exact nature of the features [$\pm \beta$] and [$\pm \gamma$] is not clear; perhaps, [$\pm \gamma$] can be understood as [\pm adnominal]. In the second place, the +/– signs of β might need to be inverted. The analysis of the Dative as the unmarked oblique Case accords with the observation that DPs agreeing with Accusative DPs often have the Dative form (see section 6).

In the current literature, the Case system itself and the relations between syntactic positions and the Case system are often confounded. The reason lies in the fact that there are some obvious connections between syntactic configurations and Cases. For example, Wunderlich (1997) posits two configurational features for verbal arguments, [\pm hr] = ‘there is a/no higher role’ and [\pm lr] = ‘there is a/no lower role’, as first proposed by Kiparsky (1989, 1992). On the basis of these features, Wunderlich defines three ‘structural Cases’:

- (17) [\pm lr] & [\pm hr] = Dative
 [\pm hr] = Accusative
 [] (= underspecified) = Nominative

However, this approach is misleading. Cases are not identical with configurational features, e.g., the Dative cannot be conceived as the feature bundle [\pm lr] & [\pm hr], since the Dative is also regularly found in PPs. There are no ‘structural Cases’ in the literal sense, only ‘structural Case relations’. Slightly modifying Wunderlich’s approach, we can state the following relations instead (presupposing Wunderlich’s Specificity Principle, cf. (24)):

- (18) [\pm lr] & [\pm hr] \rightarrow Dative
 [\pm hr] \rightarrow Accusative
 [] (= underspecified) \rightarrow Nominative

The alternative would be to assume different homophonous Cases, e.g. a Dative₁, assigned by bitransitive verbs to indirect objects (= the ‘structural Dative’), and a Dative₂, assigned by some prepositions to their complements (= a sort of ‘lexical Dative’), and presumably some other Datives. The fact that Dative₁ and Dative₂ (and the other Datives) are indistinguishable from a morphological viewpoint would then be a mere accident, a phenomenon of the so-called ‘Case syncretism’.

4 Underspecified nominal heads

In section 1, I have stated the following hypothesis:

- (1) **H0:** In all components of grammar, an opposition exists between specification and underspecification with respect to Case.

This hypothesis can be given a more concrete form with respect to nominal heads and the word-forms inserted in these heads:

- (19) **H1:** In the syntax, a distinction should be made between nominal heads that are specified with respect to Case and nominal heads that are underspecified with respect to Case.
- (20) **H2:** In the lexicon and in the morphology, a distinction should be made between items that are specified with respect to Case and items that are underspecified with respect to Case.

4.1 *The Suffix Condition*

The following examples illustrate the assumptions (19) and (20). The examples all show DPs with Dative case (hence labeled DatP). The noun occupying the N^o position in these DPs, however, can bear a case suffix only in some instances:⁴

- (21) a. von [DatP E.T.s Planet]
from E.T.'s planet
'from E.T.'s planet'
- b. * von [DatP E.T.s Planet-**en**]
from E.T.'s planet-CAS
'from E.T.'s planet'
- c. * von [DatP sein-**em** Planet]
from his-CAS planet
'from his planet'
- d. von [DatP sein-**em** Planet-**en**]
from his-CAS planet-CAS
'from his planet'
- (22) a. von [DatP E.T.s lila Planet]
from E.T.'s pink planet
'from E.T.'s pink planet'
- b. * von [DatP E.T.s lila Planet-**en**]
from E.T.'s pink planet-CAS
'from E.T.'s pink planet'
- c. * von [DatP E.T.s rot-**em** Planet]
from E.T.'s red-CAS planet
'from E.T.'s red planet'

⁴ Contrary to the noun *E.Ts* ('E.T.'s'), which is specified for Genitive case, the possessive pronoun *seinem* ('his') and the adjective *rotem* ('red') are specified for Dative case.

- d. von [DatP E.T.s rot-**em** Planet-**en**]
 from E.T.'s red-CAS planet-CAS
 'from E.T.'s red planet'

As shown in Gallmann (1996), oppositions such as those in (21) and (22) are best explained with the assumption that the nominal word-forms in the d-examples are specified with respect to Case, whereas in the a-examples, the word-forms are underspecified with respect to Case.

As we can expect from the Case hierarchy (16), the underspecified Case forms are identical with the Case forms that are traditionally labeled as Nominative forms.

Irrespective of the distribution of nominal word-forms, the DPs in their entirety are specified for Dative. This assumption is correct even for those DPs that contain suffixless nouns, as can be shown by considering constructions with agreeing DPs, for example appositions. The suffixed article *diesem* ('this') of the apposition in (23) is unambiguously specified for Dative; therefore, one must assume that the apposition as a whole is specified for Dative (see also (74)):

- (23) von [DatP ETs Planet, [DatP dies-**em** wundersam-**en** Himmelskörper]]
 from [DatP ET's planet, [DatP this-CAS marvelous-CAS celestial-globe]]
 'from ET's planet, this marvelous celestial globe'

There is an interplay between word-forms and the heads the respective word-forms are inserted in. That is, the features of the word-forms are determined by a principle which Wunderlich (1997) has named Specificity Principle:

- (24) Specificity Principle:

Each context selects the most specific linker⁵ compatible with it.

For our context, this means: each head selects the most specific word-form compatible with it.

The way in which the Specificity Principle functions can be demonstrated by considering verb forms that are inflected with respect to person. In German, the head I° has phi-features (via spec-head-agreement with the subject). Verb forms that are moved to I° (or through I°) before or after spell-out show these features visibly. Apart from number, two oppositions of person play a role in the German system, namely $[\pm 1]$ and $[\pm 2]$; the respective plus-values are the marked ones (Wunderlich and Fabri 1996).⁶

In the context of a subject with feature $[+ 2]$, the head I° also has the feature $[+ 2]$. Since the German verb paradigms include forms with feature $[+ 2]$ in the indicative and the subjunctive moods, the specificity principle entails that the head I° can only be occupied by verb forms that are positively specified with respect to the feature $[+ 2]$. In the following examples, this requirement is met only by the form *würdest*:

- (25) a. * *Würde* du bitte nachschauen?
 Would you please look?
 'Would you have a look, please?'

⁵ 'Linker' is used here by Wunderlich in a broader sense, i.e. not in purely semantic notion.

⁶ The so-called 3rd person is therefore to be regarded as underspecified, i.e. $[- 1, - 2]$. In German, the combination $[+ 1, + 2]$ is excluded. Other languages, however, may have this feature bundle (traditionally named 1st person plural inclusive).

- b. *Würde-st* du bitte nachschauen?
 Would-SUF you please look?
 ‘Would you have a look, please?’

In the imperative of the singular, the verbal paradigms of German have no forms that are positively specified for the feature class $[\pm 2]$, since $[+ 2]$ is the default value in the imperative and forms with the value $[- 2]$ and $[+ 1]$ are excluded (at least in the singular); the value $[+ 2]$ therefore need not be marked by a suffix. For that reason, the imperative forms of the singular not only combine with the personal pronoun *du* (‘you’, singular), but also with indefinite pronouns such as *einer*, *jemand* (‘someone, anyone’) that are not positively specified with respect to the feature $[\pm 2]$:⁷

- (26) a. *Schau* du bitte nach!
 Look you please!
 ‘Have a look, please!’
- b. *Schau* einer bitte nach!
 Look someone please!
 ‘Someone shall have a look, please!’

Presupposing the specificity principle, we must assume that in the a-examples of (21) and (22) the syntactic head N° is underspecified with respect to Case – otherwise the existing specified nominal forms should be selected. However, as the b-examples of (21) and (22) (repeated here) show, specified forms are excluded in the context in question: nominal word-forms specified for Case cannot occupy underspecified N° positions.

- (21) a. von [_{DatP} E.T.s Planet]
 from E.T.’s planet
 ‘from E.T.’s planet’
- b. * von [_{DatP} E.T.s Planet-**en**]
 from E.T.’s planet-CAS
 ‘from E.T.’s planet’
- (22) a. von [_{DatP} E.T.s lila Planet]
 from E.T.’s pink planet
 ‘from E.T.’s pink planet’
- b. * von [_{DatP} E.T.s lila Planet-**en**]
 from E.T.’s pink planet-CAS
 ‘from E.T.’s pink planet’

From a descriptive point of a view, the distribution of the nominal forms is clear: the nominal forms specified for Case are triggered by preceding words that are adjectively inflected, here the possessive article *seinem* and the qualifying adjective *rotem*, both with Dative suffix *-em*; see (21 d) and (22 d), repeated below. The triggering of noun inflection by qualifying adjectives, i.e. by typical modifiers, is striking (22 d):

- (21) d. von [_{DatP} sein-**em** Planet-**en**]
 from his-CAS planet-CAS
 ‘from his planet’

⁷ For morphological and syntactic aspects of the imperative clause see recently Platzack and Rosengren (1997).

- (22) d. von [DatP E.T.s rot-**em** Planet-**en**]
 from E.T.'s red-CAS planet-CAS
 'from E.T.'s red planet'

Wunderlich's Specificity Principle predicts correctly that in this context nominal forms that are underspecified with respect to Case are ungrammatical in the German standard language. Cf. (21 c) and (22 c), repeated here:

- (21) c. * von [DatP sein-**em** Planet]
 from his-CAS planet
 'from his planet'
- (22) c. * von [DatP E.T.s rot-**em** Planet]
 from E.T.'s red-CAS planet
 'from E.T.'s red planet'

Proceeding from such observations, the following purely descriptive generalization can be obtained (Gallmann 1990, 1996):

- (27) Underspecification Condition for nominal heads (German):

The nominal head of a DP is underspecified with respect to Case unless the DP contains a adjective or an article⁸ specified for Case.

The Specificity Principle (24) predicts that a nominal head that is not specified with respect to Case cannot be occupied by a specified nominal word-form, especially by a word-form bearing a Case suffix. Thus, the Underspecification Condition (27) and the Specificity Principle (24) jointly imply (28):

- (28) Suffix Corollary (German):

Nominal word-forms are underspecified with respect to Case (and therefore necessarily have no Case suffixes), unless they are preceded by an adjectively inflected word-form with Case suffix within its DP.

The Underspecification Condition (27) and the Suffix Corollary (28) cannot be reduced to a postsyntactic morphological rule that diminishes morphological redundancy. Quite to the contrary, nouns have Case suffixes exactly in phrases where there is at least one other item with a Case suffix; the nominal Case suffixes are therefore redundant.⁹ And in those phrases where there is no other item with Case suffix, the noun also lacks a Case suffix.

Additional instances of Suffix Corollary (28) may be shown. Let us consider the Dative suffix *-e* of the so called strong masculine and neuter nouns of German (Paul 1968); see paradigm 1 in (2). This suffix is optional, in usual texts it is regarded as stylistically marked. In certain syntactic contexts, however, nouns with this suffix are considered ungrammatical, regardless of the stylistic level of the respective text. The properties of these syntactic contexts are correctly described by the Suffix Corollary (28); witness the contrast between the Dative phrase in (29 d) with an adjectively inflected word-form and the Dative phrase in (29 b) without such a word-form:

⁸ More accurately, one should speak of adjective phrases and article phrases. As for article phrases, see section 4.3.

⁹ As an exception, the Genitive suffix *-s* is partly non-redundant; see section 4.2.

- (29) a. aus [DatP Holz]
of wood
'made of wood'
- b. * aus [DatP Holz-**e**]
of wood-CAS
'made of wood'
- c. aus [DatP hart-**em** Holz]
of hard-CAS wood
'made of wood'
- d. aus [DatP hart-**em** Holz-**e**]
of hard-CAS wood-CAS
'made of wood'

With regard to the Dative plural suffix *-n*, the Suffix Corollary (28) is not fully correct (for a diachronically motivated explanation see Gallmann 1996):¹⁰

- (30) a. [DatP Europas Wälder-**n**] droht der Tod
Europe's forests-CAS threatens the death
'Europe's forests are threatened by death'
- b. § [DatP Europas Wälder] droht der Tod
Europe's forests threatens the death
'Europe's forests are threatened by death'
- c. [DatP Unser-**en** Wälder-**n**] droht der Tod
Our-CAS forests-CAS threatens the death
'Our forests are threatened by death'
- d. * [DatP Unser-**en** Wälder] droht der Tod
Our-CAS forests threatens the death
'Our forests are threatened by death'

In certain contexts, the absence of the Dative plural suffix *-n* is already accepted by normative grammarians:

- (31) a. in [DatP drei *Meter* Höhe]
in three *meters* high
'in a height of three meters'
- b. in [DatP drei *Meter-n* Höhe]
in three *meters-CAS* high
'in a height of three meters'
- (32) a. mit [DatP zwei *Drittel* Öl und einem Drittel Essig]
with two *thirds* Oil and one third vinegar
'with two thirds oil and one third vinegar'
- b. mit [DatP zwei *Drittel-n* Öl und einem Drittel Essig]
with two *thirds-CAS* Oil and one third vinegar
'with two thirds oil and one third vinegar'

¹⁰ In the following examples, the §-sign marks expressions that can often be observed and therefore are explicitly mentioned in normative grammars, but are rejected there as "mistakes".

- (33) a. mit [_{DatP} ein-em Paar *Schuhe*]
with one-CAS pair *shoes*
'with one pair of shoes'
- b. mit [_{DatP} ein-em Paar *Schuhe-n*]
with one-CAS pair *shoes-CAS*
'with one pair of shoes'

4.2 *The Genitive Condition*

The Suffix Corollary (28) applies without exception to Genitive phrases. However, Genitives are also subject to what looks like a visibility condition (34), which must additionally be taken into account

- (34) Genitive Condition:

A Genitive phrase must have at least one head with a word-form positively specified for Genitive.

In other words, a Genitive phrase cannot consist solely of word-forms that are either not specified, or are underspecified, with respect to the Genitive case.

In German, this condition is fulfilled by r- and s-suffixes, but not by n-suffixes. The n-suffixes prove to be specified for Case in a reduced degree only: they bear the feature [+ Oblique], but not the more specific feature [+ Genitive].¹¹ Consider the following examples:

- (35) a. * der Traum [_{GenP} manch prima Schüler-s]
b. der Traum [_{GenP} manch-**en** prima Schüler-s]
c. der Traum [_{GenP} manch-**es** prima Schüler-s]
the dream many(-CAS) good schoolboy-CAS
'the dream of many a good schoolboy'
- d. der Traum [_{GenP} manch klug-**en** Schüler-s]
e. der Traum [_{GenP} manch-**en** klug-**en** Schüler-s]
f. der Traum [_{GenP} manch-**es** klug-**en** Schüler-s]
the dream many(-CAS) intelligent-CAS schoolboy-CAS
'the dream of many an intelligent schoolboy'
- g. * der Traum [_{GenP} manch prima Student-**en**]
h. * der Traum [_{GenP} manch-**en** prima Student-**en**]
i. der Traum [_{GenP} manch-**es** prima Student-**en**]
the dream many(-CAS) good student-CAS
'the dream of many a good student'
- j. * der Traum [_{GenP} manch klug-**en** Student-**en**]
k. * der Traum [_{GenP} manch-**en** klug-**en** Student-**en**]
l. der Traum [_{GenP} manch-**es** klug-**en** Student-**en**]
the dream many(-CAS) intelligent-CAS student-CAS
'the dream of many a intelligent student'

¹¹ The specific n-suffix of Dative plural is neglected in the following discussion focussing the Genitive Condition.

Expression (35 a) is ungrammatical in spite of the clear Genitive suffix *-s*, since the Suffix Condition (27) is neglected: the nominal word-form *Schülers* cannot be specified for Case, since the Genitive phrase lacks an adjectivally inflected word-form that could trigger Case specificity of the nominal head.

The expressions (35 g, h, j, k) are ungrammatical, because they only contain word-forms with *n*-suffixes, which are not sufficiently specified for Genitive.

The grammatical examples show that for the syntax, it plays no role whether it is the noun, or the quantifying article *manch*, that bears the *s*-suffix. The grammatical examples all satisfy not only the Genitive Condition (34), but also the Underspecification Condition (27) and the Suffix Corollary (28). This is not a mere accident. As I mentioned above, the Genitive Condition presupposes the Underspecification Principle and the Suffix Corollary.

While nouns are lexically determined for whether they have an *s*- or an *n*-suffix, many articles have both *s*- and *n*-suffixes. German is not stable in this respect. The fact that the incompletely specified suffix *-n* can be chosen at all – apparently in spite of the Specificity Principle (24) –, has to be explained diachronically: the suffix *-s* of inflection paradigm (11) is slowly disappearing from use, i.e., many German speakers only have the suffix *-n* at their disposal. The normative grammars have stated rules that in part are difficult to substantiate synchronically or diachronically. To give an example: the Genitive form of the demonstrative determiner *jener* is considered to be correct with the suffix *-s* only, whereas the Genitive form of the indefinite determiner *jeder* may bear both the suffix *-s* and the suffix *-n*:

- (36) a. am Ersten [_{GenP} jen-**es** Monat-**s**]
on-the first [_{GenP} that-CAS month-CAS]
'on the first of that month'
- b. § am Ersten [_{GenP} jen-**en** Monat-**s**]
on-the first that-CAS month-CAS
'on the first of that month'
- c. am Ersten [_{GenP} jed-**es** Monat-**s**]
on-the first each-CAS month-CAS
'on the first of each month'
- d. am Ersten [_{GenP} jed-**en** Monat-**s**]
on-the first each-CAS month-CAS
'on the first of each month'

Examples with suffix *-r* are given in (37):

- (37) a. * der Traum [_{GenP} manch Schülerin]
the dream many schoolgirl
'the dream of many a schoolgirl'
- b. der Traum [_{GenP} manch klug-**er** Schülerin]
the dream many intelligent-CAS schoolgirl
'the dream of many an intelligent schoolgirl'
- c. der Traum [_{GenP} manch-**er** klug-**en** Schülerin]
the dream many-CAS intelligent-CAS schoolgirl
'the dream of many an intelligent schoolgirl'

Where the Genitive Condition cannot be met, so-called 'substitutive' constructions must be chosen. Such substitutive constructions, however, do not stand in strict complementary dis-

tribution with the respective Genitive constructions, i.e. the substitutive constructions expand to contexts where the Genitive construction is still available. Whether the Genitive construction or a substitutive construction is selected in such contexts is mainly a matter of style.

In the following, I will discuss the different Genitive constructions and the corresponding substitutive constructions.

1. German has two possessive Genitive constructions within the DP. In one, the Genitive phrase follows the noun of the matrix DP (cf. (38)); in the other, the Genitive phrase precedes the noun (cf. (39)).

The postponed possessive Genitive (cf. (38 a–d)) can be substituted by a PP with *von* (cf. (38 e–g)). This construction is comparable to the English *of*-insertion. Given the Genitive Condition (34) and the Suffix Corollary (28), the substitutive *von*-construction is the only option where the Genitive DP contains neither an inflected article nor an inflected adjective; cf. (38 g) in contrast to (38 c–d). Beyond that, the *von*-construction expands to contexts where the Genitive construction would be available; cf. (38 f) in contrast to (38 b). However, in Standard German, there is one context where the substitutive construction with *von* is next to impossible – where the noun in the genitive DP is accompanied by the definite article; cf. (38 e) in contrast to (38 a):¹²

- (38) a. die Verarbeitung [_{GenP} d-**es** Holz-**es**]
the treatment the-CAS wood-CAS
'the treatment of the wood'
- b. die Verarbeitung [_{GenP} tropisch-**en** Holz-**es**]
the treatment tropical-CAS wood-CAS
'the treatment of tropical wood'
- c. * die Verarbeitung [_{GenP} Holz-**es**]
the treatment wood-CAS
'the treatment of wood'
- d. * die Verarbeitung [_{GenP} Holz]
the treatment wood
'the treatment of wood'
- e. % die Verarbeitung [_{PP} von [_{DatP} d-**em** Holz]]
the treatment of the-CAS wood
'the treatment of the wood'
- f. die Verarbeitung [_{PP} von [_{DatP} tropisch-**em** Holz]]
the treatment of tropical-CAS wood
'the treatment of tropical wood'
- g. die Verarbeitung [_{PP} von [_{DatP} Holz]]
the treatment of wood
'the treatment of wood'

2. The prenominal possessive Genitive¹³ (39 a–c) can be substituted by the 'possessive Dative' construction, i.e. a Dative phrase followed by a possessive pronoun¹⁴ (cf. (39 d–e)). In addition, the constructions discussed in (38) can be used:

¹² The %-sign marks expressions that are grammatically correct but stylistically strange.

¹³ As for prenominal Genitive phrases, a lot of complications need to be taken into account: i) prenominal Genitive phrases (except proper nouns) are stylistically marked (cf. (39 a); Lindauer 1995); ii) a filter

- (39) a. % [GenP *d-es französisch-en König-s*] neue Kleider
the-CAS french-CAS King-CAS new clothes
 ‘the French king’s new clothes’
- b. * [GenP [GenP *Frankreich-s*] *König-s*] neue Kleider
France-CAS King-CAS new clothes
 ‘France’s king’s new clothes’
- c. ?? [GenP *des König-s von Frankreich*] neue Kleider
the-CAS King-CAS of France new clothes
 ‘the king of France’s new clothes’
- d. § [[DatP *d-em französisch-en König*] *seine*] neuen Kleider
the-CAS French-CAS king his new clothes
 ‘the French king’s new clothes’
- e. § [[DatP *d-em König von Frankreich*] *seine*] neuen Kleider
the-CAS king of France his new clothes
 ‘the king of France’s new clothes’

3. The partitive Genitive (cf. (40 a–b)) can be substituted by a construction that is classified as appositive by German grammars (cf. (40 c–d)). In this construction, the partitive phrase agrees with the matrix DP with respect to Case. As is to be expected, the substitutive construction is obligatory if the partitive phrase consists only in a single noun, cf. (40 d) in contrast to (40 b):

- (40) a. mit [DatP *einem Glas*] [GenP *kühl-en Wasser-s*]
 with a glass cool-CAS water-CAS
 ‘with a glass of cool water’
- b. * mit [DatP *einem Glas*] [GenP *Wasser-s*]
 with [DatP a glass water-CAS]
 ‘with a glass of water’
- c. mit [DatP *ein-em Glas*] [DatP *kühl-em Wasser*]
 with a-CAS glass cool-CAS water
 ‘with a glass of cool water’
- d. mit [DatP *ein-em Glas*] [DatP *Wasser*]
 with a-CAS glass water
 ‘with a glass of water’

The constructions discussed in (40) can be substituted by a third construction involving DPs underspecified with respect to Case (cf. section 6). This construction becomes the only option where the matrix DP is itself a Genitive and the partitive DP contains no inflected adjective; cf. (41 d) in contrast to (41 b):

[_{DP1} [_{DP2} Genitive] Genitive]] is to be observed (cf. (39 b); Gallmann 1990); iii) prenominal Genitive phrases underlie an adjacency condition (N° of the Genitiv phrase may not be separated from the NP (or AgrP) of the matrix DP; see (39 c)); iv) contrary to common nouns, proper names can bear a Genitive suffix even if the Genitive phrase lacks an inflected adjective or article (e.g. *Frankreichs König*, ‘France’s king’); v) the popular construction Dative + possessive pronoun is not accepted by the normative grammarians (cf. (39 d, e)).

14 For the internal structure of this construction cf. Lindauer (this volume).

- (41) a. der Genuss [_{GenP} ein-**es** Glas-**es** [_{GenP} kühl-**en** Wasser-**s**]]
 the consumption a-CAS glass-CAS cool-CAS water-CAS
 ‘the consumption of a glass of cool water’
- b. * der Genuss [_{GenP} ein-**es** Glas-**es** [_{GenP} Wasser-**s**]]
 the consumption a-CAS glass-CAS water-CAS
 ‘the consumption of a glass of water’
- c. ? der Genuss [_{GenP} ein-**es** Glas-**es** [_{UnderP} kühl-**es** Wasser]]
 the consumption a-CAS Glass-CAS cool-CAS water
 ‘the consumption of a glass of cool water’
- d. der Genuss [_{GenP} ein-**es** Glas-**es** [_{UnderP} Wasser]]
 the consumption a-CAS glass-CAS water
 ‘the consumption of a glass of water’

4. Genitive objects of verbs (42 a–c) can be substituted by constructions with different verbs taking PP complements (cf. (42 d–e)). Note the ungrammaticality of (42 b–c) in contrast to (42 d):

- (42) a. Er enthielt sich [_{GenP} jeglich-**en** Widerstand-**s**]
 He renounced himself any-CAS resistance-CAS
 ‘He renounced any resistance’
- b. * Er enthielt sich [_{GenP} Widerstand-**s**]
 He renounced himself resistance-CAS
 ‘He renounced any resistance’
- c. * Er enthielt sich [_{GenP} Widerstand]
 He renounced himself resistance
 ‘He renounced any resistance’
- d. Er verzichtete [_{PP} auf [_{AccP} jeglich-**en** Widerstand]]
 He renounced on any-CAS resistance
 ‘He renounced any resistance’
- e. Er verzichtete [_{PP} auf [_{AccP} Widerstand]]
 He renounced on resistance
 ‘He renounced his resistance’

5. Genitive DPs which are governed by prepositions (cf. (43 a–d)) can be substituted by Dative DPs (cf. (43 e, g)) or PPs with *von* (cf. (43 f, h)). The construction with *von* is cognate to the *von*-insertion in (38 e–g):

- (43) a. während [_{GenP} drei-**er** Tage]
 in-the-course three-CAS days
 ‘in the course of three days’
- b. außerhalb [_{GenP} größer-**er** Dörfer]
 out-of larger-CAS villages
 ‘out of rather large villages’
- c. * während [_{GenP} vier Tage]¹⁵
 in-the-course four days
 ‘in the course of four days’

¹⁵ In contrast to the numeral *drei* (‘three’), the numeral *vier* (‘four’) has no suffixed Case forms.

- d. * außerhalb [_{GenP} Dörfer]
out-of villages
'out of villages'
- e. § während [_{DatP} drei Tage-**n**]
in-the-course three days-CAS
'in the course of three days'
- f. außerhalb [_{PP} von [_{DatP} größer-**en** Dörfer-**n**]]
out of larger-CAS villages-CAS
'out of rather large villages'
- g. während [_{DatP} vier Tage-**n**]
in-the-course four days-CAS
'in the course of four days'
- h. außerhalb [_{PP} von [_{DatP} Dörfer-**n**]]
out of villages-CAS
'out of villages'

6. Appositive DPs usually agree with their host DP. As is to be expected, Genitive DPs have Genitive appositions (cf. (44 a)). However, if the appositive DP contains neither an inflected article nor an inflected adjective, a substitutive construction must be chosen, namely a DP that is underspecified with respect to Case; cf. (44 c) in contrast to (44 b):

- (44) a. die Pläne [_{GenP} J. Risch-**s**, [_{GenP} *unser-es* *Architekt-en*]]
the plans J. Risch-CAS, *our-CAS architect-CAS*
'the plans of J. Risch, our architect'
- b. * die Pläne [_{GenP} J. Risch-**s**, [_{GenP} *Architekt-en*]]
the plans J. Risch-CAS, *Architect-CAS*
'the plans of J. Risch, architect'
- c. die Pläne [_{GenP} J. Risch-**s**, [_{UnderP} *Architekt*]]
the plans J. Risch-CAS, *architect*
'the plans of J. Risch, architect'

Case-underspecified DPs are discussed further in section 6.

4.3 Considerations about the Underspecification Condition

Certainly, the Suffix Condition (27) and the Genitive Condition (34) have no elementary status in the grammar. For a deeper understanding of these conditions, the following assumptions and considerations might be helpful.

1. Nominal expressions consist at least in two layers: an NP (in the narrow sense) and a functional layer, usually named DP following Abney (1987).

2. In German, articles (determiners) are situated in the specifier position of DP, not in the functional head D° (Gallmann 1996). The assumption that D° is consistently null in German makes German resemble Slavic rather than Romance, English, or Scandinavian, under most current analyses.

3. Adjectives also occupy specifier positions. These positions may be analysed in different ways, e.g. as the specifiers of iterated NP-layers (cf. Haider 1993) or as the specifiers of functional layers between NP and DP (cf. for example Giusti 1991). Further, the possibility

of multiple Specs of a single projection has to be taken into consideration (cf. Chomsky 1995: 356).

4. The N° head moves from its base position to the D° position. In German, heads occupied by common nouns (appellatives) move covertly, i.e. after spell-out, while heads with article-less proper names move before spell-out (Gallmann 1997; for other languages Longobardi 1995).

Chomsky (1995) proposes that covert movement affects only the features of a given item. Under this approach, we must assume that only a feature bundle including Case and phi-features is moved out of a nominal head occupied by a common noun.

5. As it will be discussed in section 5, the lexicon and the morphology provide both specified and underspecified Case forms for nouns. In German, the underspecified forms are the default selection for the syntax, i.e. for the numeration in the sense of Chomsky (1995).

Unlike nouns, the specified forms of adjectives and articles must be seen as the default selection if used within a DP. The use of suffixed forms underspecified for Case is a marked option, available only in some constructions (see section 6). Non-specified and therefore suffix-less forms of adjectives are unusual in present-day German (with the exception of those lexemes that generally have no inflected forms (cf. (8) and (9)). As for articles of the *kein* type (13), the contexts in which the specified and non-specified forms occur are strictly defined (cf. (14)), contrary to the *manch* type, where specified and specified forms can be selected rather freely (cf. (15)).

6. DPs that are arguments (including complements of prepositions) are specified for Case (as for non-arguments coindexed with other DPs cf. section 6). In these contexts, however, the NP within the DP can be underspecified with respect to Case; it is specified for Case only if this is required by independent factors (see below).

DPs consisting solely of items that are completely unspecified with respect to Case are precluded; a DP must contain at least one item designated for Case. This is the reason why suffix-less forms of *kein* (cf. (13)) cannot be combined with an empty N° position, cf. (14), repeated here:

- (14) a. * Anna liest *kein* Buch, und Zoe liest auch *kein*
Anna reads *no* book, and Zoe reads also *no*
- b. Anna liest *kein* Buch, und Zoe liest auch *kein-s*
Anna reads *no* book, and Zoe reads also *no-CAS*
- Both: ‘Ann is not reading a book, and neither is Zoe’

7. Case and phi-features of adjective and article phrases in the respective Spec positions are checked under Spec-head agreement with the N° head (or its feature bundle) as it moves to D° . This requires that in DPs with inflected adjectives or articles, the N° head is specified with respect to Case. This explains why underspecified noun forms are ungrammatical in DPs with inflected adjectives or articles. The Specificity Principle (24) effectively requires the noun form inserted in N° to be maximally specified.

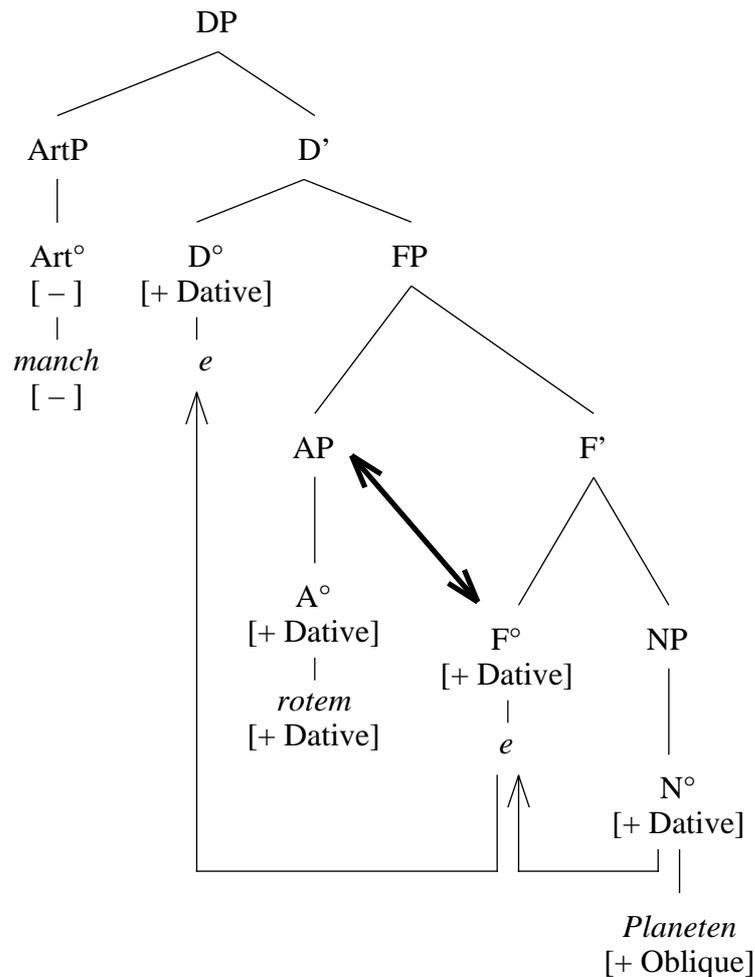
The features of the noun itself are checked in D° , the noun (or its feature bundle) being adjoined to D° (head-head agreement).

There is no long-distance percolation in the DP; feature percolation is restricted to the local relation between the head and the maximal projection of one and the same XP.

Example (45) illustrates these proposals. The inflected adjective *rotem* ('red') triggers the inflection of the noun *Planet* (oblique form *Planeten*):

- (45) a. auf manch rot-**em** Planet-**en**
 on many red-CAS planet-CAS
 'on many a red planet'
- b. * auf manch rot-**em** Planet
 on many red-CAS planet
 'on many a red planet'

(46) (= (45 a))

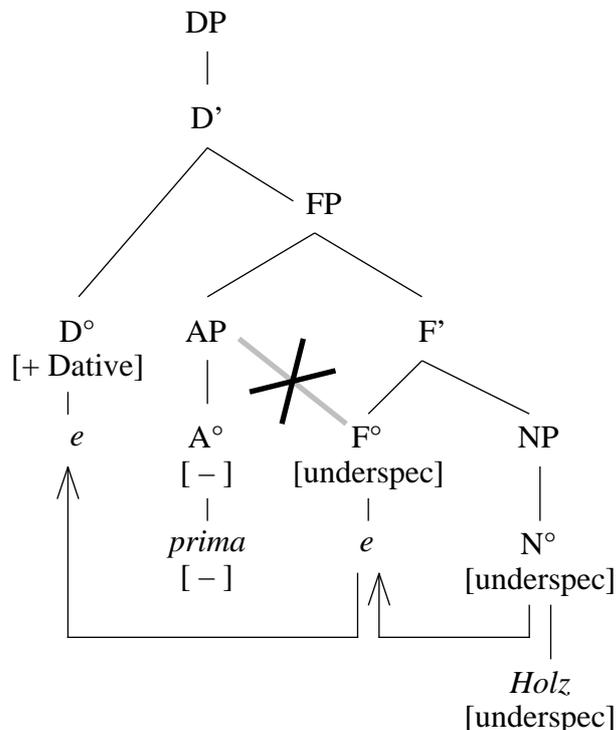


I am assuming here that the adjective occupies the spec position of some functional layer FP (or AgrP) between the NP layer and the DP layer (see point 3). The head F° checks the Case (and the phi-features) of its specifier via Spec-head agreement. This is only possible if F° itself is specified for Case. And this in turn is guaranteed only by the head N° moving to D° via F° . The noun inserted in N° must be maximally specified with respect to the features of N° . The underspecified form *Planet* cannot be chosen (45 b) since a more specific form exists: the oblique form *Planeten*.

In (47), the layers beneath the DP are underspecified with respect to Case, since there is no item within the DP triggering Case specification. Therefore, in accordance with the Suffix Corollary (28), the noun cannot bear a Case suffix (cf. (47 b):

- (47) a. aus [DatP prima Holz]
 of excellent wood
 ‘made of excellent wood’
- b. * aus [DatP prima Holz-**e**]
 of excellent wood-CAS
 ‘made of excellent wood’

(48) (= (47 a))



5 Case underspecification in the Lexicon and in the Morphology

5.1 A preceding remark

In the following section I discuss the interplay between the morphology and the lexicon with respect to the inflection of nouns. In this connection, I will presuppose that lexical items are inserted into syntax with all features needed during the syntactic process, including Case features, as in Chomsky (1995: 236) and Wunderlich and Fabri (1996). In such an approach, it seems plausible to me that lexical items are inserted completely fashioned at the beginning of the syntactic derivation, i.e. that there is no postsyntactic inflectional morphology. The argumentation in the preceding sections and in section 6, however, does not depend on this assumption, it is also compatible with approaches that assume postsyntactic inflectional processes.

The assumption that word-forms are inserted into syntax completely fashioned should not be confused with the distinction of specified and underspecified word-forms discussed above: completely fashioned word-forms can be specified or underspecified with respect to a certain feature.

5.2 Inflected nouns in the lexicon and the morphology

In section 4, I repeatedly presupposed that the Lexicon and the Morphology of German provide word-forms both specified and underspecified with respect to Case:

- (20) **H2:** In the lexicon and in the morphology, a distinction should be made between items that are specified with respect to Case and items that are underspecified with respect to Case.

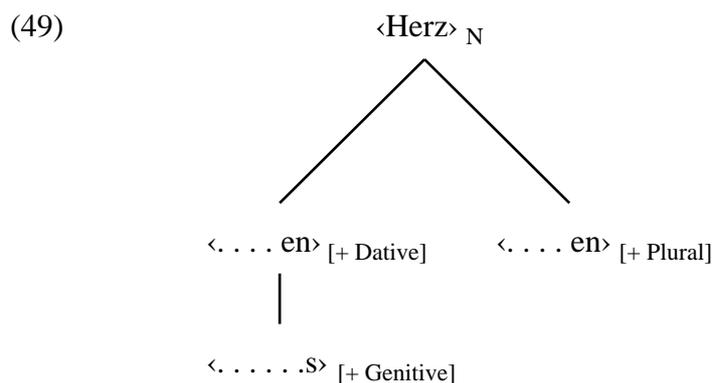
In the following section, I want to take a closer look at this hypothesis, concentrating on the inflection of nouns. In this connection, the distinction between syntactic words (word-forms) and lexemes is crucial.

a) A *syntactic word* (or *word-form*) is a complete morphological unit with certain phonological, syntactic and semantic features that can occupy the head position of an appropriate phrase (Gallmann 1990: 15).

b) A *lexeme* is a paradigm of syntactic words which differ from each other only with respect to certain phonological and/or syntactic features.

In spite of the suggestive assonance, *lexemes* as a whole must be distinguished from *lexically stored units* (= listemes in the sense of Di Sciullo and Williams 1988). The greater part of the particular word-forms of a lexeme have a virtual state only, i.e., they are formed in the morphological component by general rules when required. In the mental lexicon, only the key forms are stored (for a given lexeme: one key form at least).

Consider now the way the key forms of lexemes are stored. One possibility is that the lexicon allows for connected storage of key forms. Alternatively, if this possibility is denied, then the correlations between the key forms of a particular lexeme can be established only in the morphological component. However, models that allow for connected storage seem to be more plausible; in particular, I consider the approach of Wunderlich and Fabri (1996) to be very promising. Wunderlich and Fabri (1996) assume that the mental lexicon offers the possibility of paradigmatic storage. They assume in addition that the paradigms are minimal, in the sense that they avoid (representational) redundancy. Thus, the shared phonological (or graphematical) features of the word-forms of a paradigm are stored once only, as the following example (for *written* German *Herz*, ‘heart’) illustrates:



In such cases, Wunderlich and Fabri (1996: 255) speak of default inheritance trees. They assume that such trees have the following properties: “(i) The base is the underlying representation of the lexical item. [...] (ii) Each additional, not generally predictable form constitutes a subpath of the tree. The subnodes are maximally underspecified and the information added at the nodes gets preference, so that it either enlarges or substitutes the information of the dominating node [...]. All other information of the base is inherited by the subnodes.” The structure of the trees is determined by the feature system of a given language, particularly by the binary oppositions and the hierarchical relations between the oppositions. Thus, in the

example given above, one can see among other things that in German plural is functionally marked with respect to singular.

The word-form at the top of the tree (49) is underspecified with respect to Case. In appropriate phrase structures, this form can be inserted directly (see above, Suffix Corollary (28)):¹⁶

- (50) die Spannung zwischen [DatP *Herz* und Verstand]
 the tension between *heart* and reason
 ‘the tension between heart and reason’

However, if the Dative phrase contains adjectivally inflected word-forms, the specific Dative form has to be chosen (Specificity Principle, cf. (24)):

- (51) die Spannung zwischen [DatP d-**em** *Herz-en* und d-**em** Verstand]
 the tension between the-CAS *heart-CAS* and the-CAS reason
 ‘the tension between the heart and the reason’

The example *Herz* (heart) given above is not typical for German insofar as most minimal paradigms in the nominal domain of the vocabulary have a less complex structure (cf. the traditional paradigms (2), section 2.1 above). For nouns of the so-called weak declension class (i.e. Paradigm 3 in (2), illustrated there by *Planet*), paradigms of the following type are sufficient (*Prinz* = ‘prince’):¹⁷

- (52)
-

In the following example, the form underspecified for Case at the top of the tree is used:

- (53) ein Geschenk für [AccP *Prinz* Adalbert]
 a present for *prince* Adalbert
 ‘a present for prince Adalbert’

In phrases with adjectivally inflected word-forms, a more specific form has to be used. However, neither the lexicon nor the morphology provide specific Genitive, Dative or Accusative forms for nouns of the *Prinz* type. In this respect, then, the inflectional paradigm (2) needs to be amended, as in (49):

¹⁶ Lexically stored expressions as *von Herzen (kommen)*, *zu Herzen (gehen)* remind a former phase of German, where the Underspecification Condition (27) not yet existed.

¹⁷ Under the approach of Wurzel (1994), this paradigm may be considered as too redundant, since an Oblique form with suffix *-en* always entails a plural form with the same suffix (exception *Herr* (‘Mister’): *des, dem, den Herrn* (Oblique singular), but *die Herren* (plural)). However, the instability of the Oblique suffix in popular language on the one hand, the stability of the plural suffix on the other hand suggest that the suffixes are stored independently. Thus, even German speakers using expressions as *des Bär*, *dem Bär* (instead of *des Bären, dem Bären*; *Bär* = ‘bear’) do not hesitate to form the plural with the suffix *-en*: *die Bären*. For the instability of the Case suffix *-en* see also Gallmann (1990).

| | | |
|------|-------------------------------|--|
| (54) | | Paradigm 3 |
| | underspecified [+ oblique] | (der) Prinz (d...) Prinz- en |

Therefore, in accordance with the Specificity Principle (24), the oblique form is inserted in Genitive, Dative and Accusative phrases with agreeing adjectives or articles:

- (55) ein Geschenk für [_{AccP} den *Prinz-en* Adalbert]
 a present for the-CAS *prince-CAS* Adalbert
 ‘a present for the prince Adalbert’

If masculine nouns lack a lexically stored oblique form in the singular, a default rule of the morphological component comes into play. It states that there is a Genitive form available ending with *-es* or *-s* (*Wald* = ‘forest’):

- (56) Wald → Waldes [_{Gen}]

Since there is also an optional Dative form available, the German default paradigm for masculine and neuter nouns in (2) must be split into two sub-paradigms:

| | | |
|------|------------------------------|------------------------------------|
| (57) | | Paradigm 2 a |
| | (underspecified) Genitive | (d...) Wald des Wald- es |

| | | |
|------|--|--|
| (58) | | Paradigm 2 b |
| | (underspecified) Dative Genitive | (d...) Wald (dem) Wald- e (des) Wald- es |

From the viewpoint of the lexicon, many nouns represent 1-word paradigms only, e.g.:

- (59) <Flasche> _N
 ‘bottle’

Consequently, the inflection paradigm (2) has to be corrected also with respect to the nouns of the *Flasche* type:

| | | |
|------|------------------|----------------|
| (60) | | Paradigm 1 |
| | (underspecified) | (d...) Flasche |

Thus, for a feminine noun such as *Flasche*, there is no need for the information that there are no particular Case forms in the singular to be stored in the lexicon.

The word-forms of a given paradigm listed in the lexicon never bear particular inflection class features, e.g. [+ weak declension] (Wunderlich 1996); hence there is no need to assume such features. The interplay between (i) the phonological (graphematic), syntactic and semantic properties of the stored minimal paradigm, and (ii) the general morphological rules, suffices to generate appropriate new word-forms. This means that the morphological rules are to be thought of as the paradigm structure rules of Wurzel (1984, 1994). The following slightly simplified examples (for *written* language) may illustrate this approach (on the German example, see Köpcke 1996: 168).

Latin:

- (61) Nominative *-us* & Genitive *-us* → Dative *-ui*
 Example: *tribus* [Nom] & *tribus* [Gen] → *tribui* [Dat]
 (*tribus* = ‘tribe’)

German:

- (62) Word final *-e* & [– fem, – neuter] & [+ anim] → Oblique *-en*
 Example: *Rabe* [– fem, – neuter, + anim, – Obl] → (des) *Raben* [..., + Obl]
 (*Rabe* = ‘raven’)

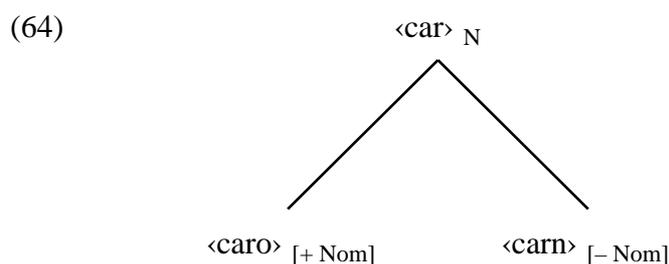
It is not the case that the mental lexicon provides both specified and underspecified Case forms for use in the syntax of all languages. The language-specific options are connected with the differentiation of word-based and stem-based inflection.

a) With word-based inflection as in German, the underspecified word-form at the top of the inheritance tree can directly be used in appropriate phrases; see (50), (53). Case-specific word-forms, if required, are taken from the lexicon (see (52)) or are generated in the morphological component of the grammar (see (56)).

b) With stem-based inflection as in Latin, the lexicon contains no nominal forms underspecified for Case that can directly be used in the syntax; the lexicon and the morphological component deliver Case-specific word-forms only (ordering: Nominative, Genitive, Dative, Accusative, Ablative):

- (63) a. urb-s, urb-is, urb-i, urb-em, urb-e
 b. civ-is, civ-is, civ-i, civ-em, civ-e
 c. clad-es, clad-is, clad-i, clad-em, clad-e
 d. caro, carn-is, carn-i, carn-em, carn-e
 (*urbs* = ‘city’; *civis* = ‘citizen’; *clades* = ‘damage’; *caro* = ‘flesh’)

In accordance with the approach of Wunderlich and Fabri (1996), it is to be assumed that the paradigm (63 d) is lexically based on an inheritance tree as (64) (given for written language again):¹⁸

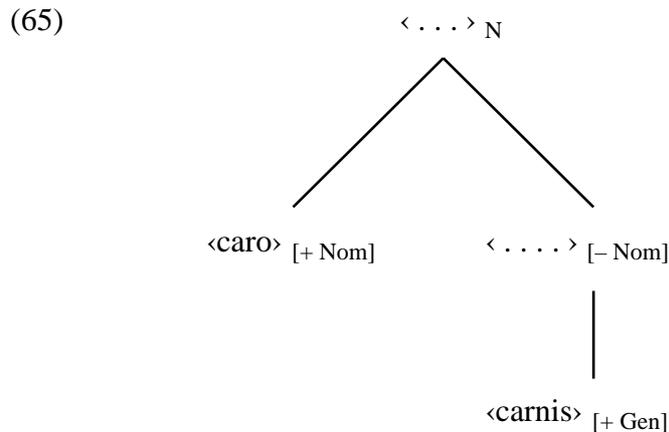


The other Case forms can be generated from the oblique stem <carn> by morphological rules: *carnis* (Genitive), *carnem* (Accusative) etc.

If, however, we presuppose – in opposition to Wunderlich and Fabri – that the mental lexicon contains no stems but only complete word-forms which can be used directly in syntax, we must assume that the lexically stored paradigm that lies behind (63 d) is composed of the Nominative form and additionally of one complete oblique form (the traditional grammars assume this to be the Genitive form). The positions marked < . . . > in (65) are then not stored

¹⁸ I am presupposing here that in Latin – in opposition to German – the Nominative is positively specified. The primary Case opposition in Latin is therefore [± Nominative], in German, however, [± Oblique].

in the lexicon, but can only be reconstructed indirectly on the base of the Nominative form and Genitive form in the morphological component:



The other Case forms can be generated by morphological rules from the reconstructed oblique stem form <carn>: *carnis* (Genitive), *carnem* (Accusative) etc. This type of storage is more redundant than the one described in (64), thus departing from Wunderlich and Fabri's maximal underspecification approach.

It may be that both types of storage need to be taken into account. Phenomena observable in compounding point partly to storage type (64), partly to type (65).

In N-N compounds, the non-head (in non-final position) differs from the head with respect to Case: non-heads never have Case features (Gallmann 1998). There are several methods to gain units without Case features for composition:

a) The underspecified stem is used, e.g. in the following German examples (*Tag* = 'day'):

- (66) Tag → [Tag]falter; [Tag]blatt; [tag]hell
 day → [day]butterfly; [day]paper; [day]light
 (Tagfalter = 'butterfly'; Tagblatt = 'daily paper'; taghell = 'as light as day')

b) A particular form applicable only in composition is generated. Such forms are characterized by certain suffixes, known as *Fugenelemente* (lit. 'interstice elements'). In German, the suffixes *-[e]s* and *-e* are typical:

- (67) a. [Tag-**es**]licht; [tag-**es**]hell
 [day-SUF]light; [day-SUF]light
 (Tageslicht = 'daylight', tageshell = 'as light as day')
- b. [Tag-**e**]buch; [Tag-**e**]blatt
 [day-SUF]book; [day-SUF]paper
 (Tagebuch = 'diary'; Tageblatt = 'daily paper')

The status of these suffixes is made unclear by the fact that they in part descend from Case suffixes, primarily Genitive suffixes. However, the examples in (68) demonstrate that purely synchronically, they need to be distinguished from Case suffixes, since feminine nouns (proper names excepted) do not take Genitive suffixes:

- (68) [Zeitung-**s**]leser; [Wahrheit-**s**]wert; [Elektrizität-**s**]werk
 [newspaper-SUF] reader; [truth-SUF] value; [electricity-SUF] plant
 (Zeitungleser = 'newspaper reader'; Wahrheitswert = 'truth value'; Elektrizitätswerk = 'power station')

Cf. also Latin (69) – the suffix *-i* (with short vowel) is not identical with any Case suffix:

- (69) [carn-**i**]vorus
 [flesh-**SUF**] eating
 ‘carnivore’

c) The pure stem is used. In German, formations like (70) suggest this procedure:

- (70) Sprache → [Sprach]wissenschaft
 language → [language] science
 (Sprache = ‘language’; Sprachwissenschaft = ‘linguistics’)

If *Sprach-* were to be interpreted as stem, we would be obliged to assume a (pseudo-)suffix in the complete word-form *Sprache*.¹⁹

Method a) is to be expected in languages with word-based inflection, methods b) and c) in languages with stem-based inflection. Method c) goes well with paradigm type (64) of Wunderlich and Fabri (1996), whereas method b) is more compatible with the alternative paradigm type (65). In this context, it is remarkable that German displays not only method a), but also methods b) and c). Probably, we must assume a residue originating in an earlier stage of the language where stem-based inflection still prevailed in nominal inflection. One can therefore risk a prediction: in German (and also in other German languages with word-based inflection), the use of ‘interstice suffixes’ will decrease.

As a result, hypothesis (20) can be formulated more precisely as follows:

- (71) **H2.1:** As for items stored in the mental lexicon, a distinction is to be made between items that are specified with respect to Case and items that are underspecified with respect to Case.
- (72) **H2.2:** As for items generated in the morphological component of grammar, a distinction is to be made between items that are specified with respect to Case and items that are underspecified with respect to Case.

6 Case underspecification with DPs

Underspecification with respect to Case can also be found with DPs, i.e. with phrases:

- (73) **H3:** In a particular language, a DP can be specified or underspecified with respect to Case.

Evidence for (67) comes from facts concerning agreement between DPs in various predicative and appositive constructions.

In the preceding sections, I have presupposed that DPs as a whole are specified with respect to Case. With regard to argument DPs (including complements of prepositions), this assumption seems to be correct (cf. also (23)):

- (74) a. * ein Haus aus [_{DatP} Holz-**e**, [_{DatP} dies-**em** universell-**en** Baustoff]]
 a house of wood-CAS, this-CAS universal-CAS building material
 ‘a house made of wood, this universal building material’

¹⁹ One wonders what would be the semantic or grammatical contribution of this suffix *-e*, especially in cases as [Kirche] versus [Kirchturm] (literally: ‘church’, ‘church-tower’). Therefore, the possibility of truncation rules (as in Aronoff 1976) must be taken into consideration.

- b. ein Haus aus [_{DatP} Holz, [_{DatP} dies-**em** universell-**en** Baustoff]]
 a house of wood, this-CAS universal-CAS building material
 ‘a house made of wood, this universal building material’

In (74 b), the appositive phrase *diesem universellen Baustoff* takes its Case from the DP it is adjoined to (the form *diesem* is unambiguously Dative). That means that the DP as a whole is to be regarded as a Dative phrase, although the word-form located in the nominal head of DP is visibly underspecified for Case. (In accordance with suffix condition (27), the specific Dative form *Holze* is excluded; see (74 a) and (29).)

But other DPs can be underspecified with respect to Case. In German, this can be shown for some types of non-argument DPs, i.e. those that are coindexed with (and c-commanded by) other DPs. In this context, the following condition can be stated:

(75) Substitution for Case agreement I:

A non-argument DP₂ that is coindexed with a DP₁ (under c-command) can take its Case from the DP₁ or be underspecified with respect to Case.

The Suffix Corollary (28) predicts that in such DPs, not only the noun forms, but also the adjective forms and the article forms will be underspecified with respect to Case, i.e. that they will have the form traditionally labelled Nominative. The effects of (75) are illustrated in (76)–(81). In the a-examples, the DP₂ is specified with respect to Case, in the b-examples, the DP₂ is underspecified.

- (76) a. Lass [_{AccP} mich] [_{AccP} dein-**en** Freund] sein
 Let me *your-CAS friend* be
 b. Lass [_{AccP} mich] [_{UnderP} dein Freund] sein
 Let me *your friend* be
 Both: ‘Let me be your friend’
- (77) a. mit [_{DatP} B. Blum, [_{DatP} Technisch-**em** Direktor]]
 with B. Blum, *technical-CAS director*
 b. mit [_{DatP} B. Blum, [_{UnderP} Technisch-**er** Direktor]]
 with B. Blum, *technical-CAS director*
 Both: ‘with B. Blum, technical director’
- (78) a. mit [_{DatP} B. Blum, [_{DatP} d-**em** Technisch-**en** Direktor]]
 with B. Blum, *the-CAS technical-CAS director*
 b. * mit [_{DatP} B. Blum, [_{UnterP} d-**er** Technisch-**e** Direktor]]
 with B. Blum, *the-CAS technical-CAS director*
 Both: ‘with B. Blum, technical director’
- (79) a. ? der Vorschlag [_{GenP} d-**es** Direktor-**s**, [_{GenP} B. Blum-**s**]]
 the proposal the-CAS director-CAS, *B. Blum-CAS*
 b. der Vorschlag [_{GenP} d-**es** Direktors, [_{UnderP} Bernhard Blum]]
 the proposal the-CAS director-CAS, *B. Blum*
 Both: ‘the proposal of the director, Bernhard Blum’

- (80) a. mit [_{DatP} ein-**em** Paar [_{DatP} *braun-en Schuhe-n*]]
with a-CAS pair *brown-CAS shoes-CAS*
- b. mit [_{DatP} ein-**em** Paar [_{UnderP} *braun-e Schuhe*]]²⁰
with a-CAS pair *brown-CAS shoes*
- Both: ‘with a pair of brown shoes’
- (81) a. die Verhaftung [_{GenP} d-**es** General-**s**] [als [_{GenP} *bekannt-en Drahtzieher-s* der Revolution]]
the arrest the-CAS general-CAS as *notorious-CAS wire-puller-CAS* the-CAS revolution
- b. die Verhaftung [_{GenP} d-**es** General-**s**] [als [_{UnderP} *bekannt-er Drahtzieher* der Revolution]]
the arrest the-CAS general-CAS as *notorious-CAS wire-puller* the-CAS revolution
- Both: ‘the arrest of the general as notorious wire-puller of the revolution’

Underspecification with respect to Case is excluded for the most part if the DP contains the definite article *der, die, das* (= ‘the’; Dative forms: *dem, der, dem*); cf. (78). On the other hand, Case underspecification is frequently found in DPs containing no article, but only qualifying adjectives. Based on such observations, the following hierarchy can be stated:

- (82) Use of adjectives and articles in DPs underspecified with respect to Case:

definite article *der, die, das* > articles and pronouns of the *kein* type > other articles and pronouns > qualifying adjectives

(From left to right: increasing frequency of use in phrases underspecified with respect to Case.)

Presumably, this hierarchy relates to the storage of inflection forms of high frequency in the lexicon. I suppose that such forms are stored in the lexicon even if this is not necessary from a systematic viewpoint. This is plausible particularly for articles. The inflection forms of qualifying adjectives, however, are not frequent and therefore are not stored in the lexicon, but formed *ad hoc* in the morphological component of grammar.

If these considerations are correct, it can be concluded that hierarchy (82) is the result of a strategy that avoids the use of the morphological component of grammar. In contexts where lexically stored underspecified word-forms are allowed, they are preferred to specified word-forms that must be formed morphologically.

The following variant of (75) is not admitted by the normative grammarians:

- (83) Substitution for Case agreement II:

A non-argument DP₂ that is coindexed with an oblique DP₁ (under c-command) can take its Case from the DP₁ or have the Case feature [+ oblique].

The effects of (83) are illustrated in (83)–(85). We can see here an instance of reduced specificity with respect to Case. In German, the Oblique in this sense is characterized by an m-suffix on the definite and the indefinite article and an m-suffix or an n-suffix elsewhere (masculine and neuter form only). These forms resemble the specified Dative forms (cf. para-

²⁰ There is a third variant with the Genitive available: *ein Paar brauner Schuhe*; cf. (40).

digms (5), (6), (11)). This raises the question of whether the Case hierarchy as stated in (16) is correct.

- (84) § Das lässt sich am besten am Beispiel [_{GenP} Brasiliens, [_{ObIP} *d-em größt-en Land* des Subkontinents]], zeigen (Duden IX 1997: 76)
 ... Brasil-CAS, *the-CAS largest-CAS country* the-CAS subcontinent-CAS ...
 ‘This can best be shown at the example of Brasil, the largest country of the subcontinent’

Constructions with *als* (‘as’):

- (85) a. § die Verhaftung [_{GenP} d-es General-s] [_{als} [_{ObIP} *d-em Drahtzieher* der Revolution]]
 the arrest the-CAS general-CAS as *the-CAS wire-puller* the-CAS revolution
 ‘the arrest of the general as the wire-puller of the revolution’
- b. § die Verhaftung [_{GenP} d-es General-s] [_{als} [_{ObIP} *bekannt-em* Drahtzieher der Revolution]]
 the arrest the-CAS general-CAS as *notorious-CAS wire-puller* the-CAS revolution
 ‘the arrest of the general as notorious wire-puller of the revolution’
- c. § die Verhaftung [_{GenP} d-es General-s] [_{als} [_{ObIP} *bekannt-en* Drahtzieher der Revolution]]
 the arrest the-CAS general-CAS as *notorious-CAS wire-puller* the-CAS revolution
 ‘the arrest of the general as notorious wire-puller of the revolution’

(Pseudo-)partitive phrases are particularly variable. The following examples show a Genitive phrase (86 a), a Dative phrase with Case agreement (86 b), an Oblique Phrase with reduced Case agreement (86 c), and a phrase underspecified with respect to Case (86 d):

- (86) a. mit [_{DatP} ein-em Glas [_{GenP} *kalt-en Wasser-s*]]
 with a-CAS *kalt-CAS Wasser-CAS*
- b. mit [_{DatP} ein-em Glas [_{DatP} *kalt-em Wasser*]]
 with a-CAS *kalt-CAS Wasser*
- c. § mit [_{DatP} ein-em Glas [_{ObIP} *kalt-en Wasser*]]
 with a-CAS *kalt-CAS Wasser*
- d. mit [_{DatP} ein-em Glas [_{UnderP} *kalt-es Wasser*]]
 with a-CAS *kalt-CAS Wasser*

All: ‘with a glass of cold water’

The data presented in this section raise questions about the assumption (common to the Government-Binding model and its ‘minimalist’ successor) that every DP is specified with respect to Case. The claim made here is that a DP as a whole can be underspecified with respect to Case in certain syntactic contexts – at least at spell-out. The assumption that all DPs have a Case feature can be made compatible only with additional assumptions, e.g. that the DPs identified here as Case-underspecified receive Case after spell-out – perhaps temporarily only. Alternatively, it seems that the traditional assumption must be relativized.

7 Conclusion and open questions

I have shown that in all components of grammar, i.e. in the lexicon, the morphology and the syntax, a distinction has to be made between items that are specified with respect to Case and items that are underspecified in this respect (hypothesis (1)). In syntax, this distinction can be observed both at the level of heads and the level of phrases.

Some questions have been left open. So for instance, I did not decide in which format minimal paradigms might be stored in the lexicon (cf. (64) versus (65)). Further, the UG base of the Genitive Condition (34) is not yet clear. And finally, it is still unclear whether all DPs are specified with respect to Case. Perhaps this assumption is only correct with respect to arguments (including complements of prepositions).

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