

## Towards a typology of phase heads: subordinating D

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### 0. Introduction

The talk focusses on attributive suffixes in German, traditionally described as case, gender and number agreement (CGN) between an attributive adjective or participle and the nominal head:

| 1. Adjectives   | Present Participles   | Past Participles   |
|---|---|--|
| ein dick-er Mann<br><i>a fat-CGN man</i><br>'a fat man'<br>(nominative) | einem sich sehend-en Mann<br><i>a himself seeing-CGN man</i><br>'a man who is seeing himself'<br>(dative) | einen gegessen-en Kuchen<br><i>an eaten-CGN cake</i><br>'a cake that has been eaten'<br>(accusative) |

CGN suffixes do not resemble the paradigms of most nouns.<sup>1</sup> They occur in all prenominal attributive constructions<sup>2</sup> and relative pronouns end in CGN, too.<sup>3</sup>

Table I: Strong prenominal (PR), postnominal (PO) and nominal (N) suffixes compared <sup>4</sup>

|     | Masc, Sg<br>PR / PO / N<br>(e.g. <i>Mann</i> , 'man') | Fem, Sg<br>PR / PO / N<br>(e.g. <i>Frau</i> , 'woman') | Neuter, Sg<br>PR / PO / N<br>(e.g. <i>Kind</i> , 'child') | Plural<br>PR / PO / N |
|-----|---|--|---|-----------------------|
| Nom | -r/ -r/ -Ø  | -e/ -(i)e/ -Ø  | -s/ -(a)s/ -Ø   | -e/ -(i)e/ various    |
| Gen | -n/ -n/ -es   | -r/ -r/ -Ø   | -n/ -n/ -s  | -r/ -r/ various       |
| Dat | -m/ -m/ -e (or -Ø)                                    | -r/ -r/ -Ø   | -m/ -m/ -Ø  | -n/ -n/ various       |
| Acc | -n/ -n/ -Ø  | -e/ -(i)e/ -Ø  | -s/ -(a)s/ -Ø   | -e/ -(i)e/ various    |

I will argue in Part I that CGN had better not be analyzed as [case], [gender] and [number]. Rather, Part II will argue, CGN constitutes phase heads that implement attribution in German.

### Part I: The problem with CGN

CGN can attach to virtually any category in German, such as adjectives, participles, (relative) pronouns - and, surprisingly, to at least some nouns and prepositions, too:

<sup>1</sup> The only phonological material that attributive constructions and most nouns share are the suffixes *-er* and *-en*. However, these affixes are maximally ubiquitous in German: not only do they surface in the paradigms of all inflecting word classes, they also function as derivational suffixes (cf. Eschenlohr 97). Compare this to, e.g., Latin, where the adjectival and nominal paradigms are so similar that grammars often lumped the two word classes together (cf. Law 2003: 59).

<sup>2</sup> Attributive PPs, post-nominal adjectives and genitive NPs do not show CGN inflection and I will not discuss them here. However, they can be incorporated into the system in a different way, cf. Struckmeier 2007a.

<sup>3</sup> There are different phonetic realizations (in parentheses) depending on whether CGN receives stress or not.

<sup>4</sup> The prenominal examples are from the strong paradigm. As far as I can see, nothing hinges on this for the analysis.

|   |   |   |  |
|---|---|---|--|
| 2.a) klasse-s <sub>n</sub> Auto,<br><i>class<sub>N</sub>-CGN car</i><br>'a snazzy car'<br>(nouns should not inflect for gender!) <sup>5</sup> | klasse-r <sub>m</sub> Typ<br><i>class<sub>N</sub>-CGN guy</i><br>'a cool guy' | 2.b) zu-e Tür<br><i>top-CGN door</i><br>'a closed door' | bei-e Tür<br><i>by-CGN door</i><br>'a closed door' |
|---|---|---|--|

(prepositions should not inflect at all!)

Historically, German undergoes changes that eliminate inflection suffixes (like many other Germanic languages, cf. Harbert 2007), e.g. the so-called "Kasusschwund" (case loss): in an increasing number of syntactic contexts and registers, nouns are used without their case inflection, which was formerly obligatory (cf. Gallmann 96). CGN, on the other hand, is still obligatory:

|                   |                       |                      |
|-------------------|-----------------------|----------------------|
| 3. *der dick Mann | *der sich sehend Mann | *der gegessen Kuchen |
|-------------------|-----------------------|----------------------|

How do older analyses accommodate CGN?

For present participles, Toman (86) proposes the following analysis:

|                                  |  |
|----------------------------------|--|
| 4. Ein [sich seh-end-er] Mann    | [[IP=AP PRO [VP sich <sub>Acc</sub> seh-v-] end]-er] Mann <sub>N</sub> |
| <i>a himself see-ing-CGN man</i> |  |
| 'a man who is seeing himself'    |  |

• VP: Present participles project the full argument structure, including accusative objects. Hence, they should be classified as verbs (adjectives do not assign [Acc] in German).

• I<sup>0</sup>: The aspectual suffix of present participles can be accommodated in the I<sup>0</sup> position.

• SpecIP: Given Burzio's generalization, present participles project a subject, which also binds the anaphor in the object position.<sup>6</sup>

However, the analysis cannot be extended to:

• passive participles: PRO cannot be merged as a sister of V, and

• relative clauses: PRO cannot be used in finite clauses.

Attributes, in this view, are a rather *arbitrary list* of unrelated constructions. CGN as the *unifying* morphological marker is *not* discussed by Toman: For him, IP is simply marked [+N] (=AP) and can thus be suffixed with the "nominal" CGN suffixes.

*But*, of course, IPs are nothing like APs in German!<sup>7</sup>

<sup>5</sup> As a matter of fact, probably no Germanic language ever inflected nouns for gender (Harbert 2007:93). CGN, however, is so undiscerning in its selectional requirements that Wiese (96) compares it to clitics.

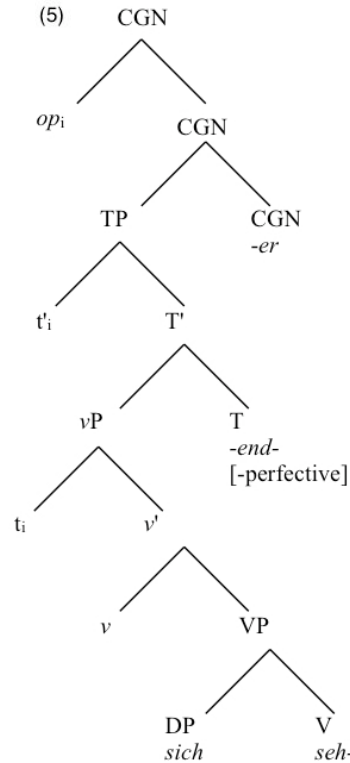
<sup>6</sup> Cf. Fanselow 86, Toman 86, 87, Drijkoningen 87 for similar proposals. Note that the anaphor cannot be bound by the modified noun, as this would yield an *i-within-i* configuration. Note also that there are a couple of technical problems with Toman's PRO analysis which we need not go into here (but cf. Wunderlich 87, Struckmeier 2007a for details).

<sup>7</sup> This means, of course, that the "hybrid" status of present Participles is unresolved (cf., e.g. Wunderlich 87 on this point). It is rather telling that Toman's own representations of attributive participles do not include CGN at all.

**Part II: CGN as a unified head**

Following Toman, I will assume that participial attributes project a TP (his IP). The following properties differ from older analyses:

- CGN is represented as a *phase head* which takes the TP as its complement, see (5).
- CGN itself is *not* case, gender and number.<sup>8</sup>
- CGN is an overt manifestation of features which *identify* an argument from the embedded structure: CGN agrees with *the identified element's case, gender and number* features.<sup>9</sup>
- The EPP of CGN raises the matching XP to its specifier (maximizing *Agree*).
- The raised element is a covert relative operator *op*.
- *op* is identified with the modified N, just as an overt relative operator would be under standard assumptions.<sup>10</sup>
- However, according to the very same standard assumptions, *op* needs to license its Case - but how, given that TP is  $\varphi$ -defective?



<sup>8</sup> In order not to exoticize the construction, it should not be considered a (relativized) personal pronoun or relative pronoun, as these only rarely occur prenominaly (Keenan 85: 148f.).

<sup>9</sup> Note that a T probe *identifies* its nominative goal by *its* person and number feature - even though the features are uninterpretable on T itself. CGN functions similarly (but does not assign a case to the raised operator).

<sup>10</sup> Cf., e.g. Chomsky 81, 82, Aoun & Li 2003, Authier & Reed 2005. Alternative conceptions, e.g. the raising analysis proposed by Kayne 94, Bianchi 2000 are not discussed here: As Borsley (97, 2001), Aoun & Li (2003) and Authier & Reed (2005) point out, not all relative constructions seem equally amenable to a raising analysis. German attributive constructions show no sign of the reconstruction effects that substantiate Kayne's analysis (for some constructions) and pattern firmly with the type of relative construction that the raising analysis does *not* seem to explain very elegantly.

Assumption: *op* is defective  
*op*, in German, can never occur in finite relative clauses. Given that participles and adjectives lack [person], I assume that *op* lacks [person], too: As a defective element, *op* cannot serve as a goal for symmetrical *Agree* and is excluded from  $\varphi$ -complete contexts.

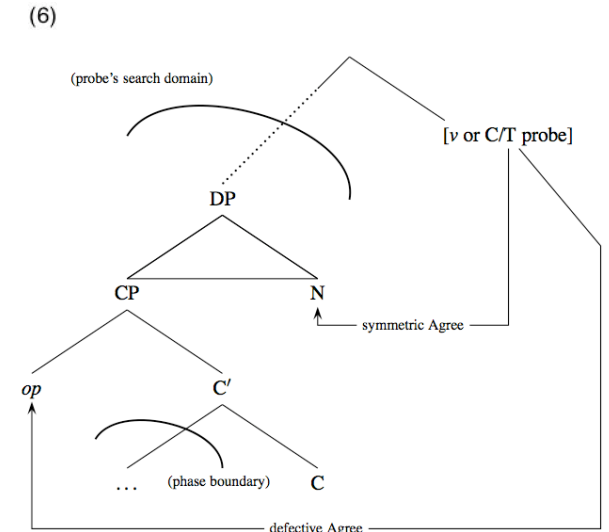
*op* raises to the *edge* of the attributive phase (Chomsky 2001a). According to standard assumptions, this position is visible to the probe that also licenses N's case (Chomsky 2000):

- Given that *op* is *defective*, its case feature is licensed but the probe is *not* deleted (defective *Agree*, cf. Chomsky 2000: 5).

- The probe then licenses N's Case *symmetrically*.

(6) captures the following facts:

- Pre-nominal attributive structures (adjectives and participles) only occur *inside* DP: Only inside DP is *op* both *visible for the probe*, and the *probe can be licensed by symmetric Agree* with N.
- Invariably, *the highest argument must be relativized* in prenominal structures, i.e. move to the edge of the phase for Case.<sup>11</sup>



If any other phrase blocks the edge, the highest argument remains below the phase boundary. The *Phase Impenetrability Condition* makes it invisible to the probe and *the structure fails for Case reasons*.<sup>12</sup>

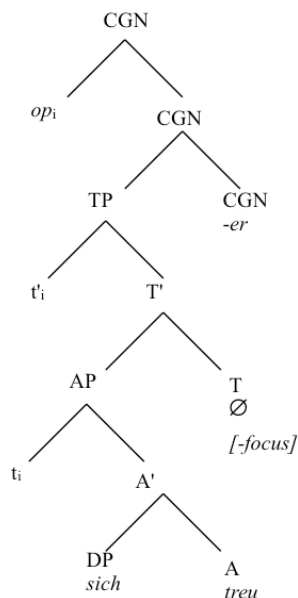
<sup>11</sup> In this way, part of the accessibility hierarchy (cf. e.g. Comrie 81) can be explained - and maybe more of it, given the right parametrization of Case-licensing functional heads.

<sup>12</sup> Cf. Chomsky 2001a. Note that German, as a general rule, does not allow multiple specifiers of CP (cf. Chomsky 2001a, 2001b): the characteristic V2 word order and extraction restrictions are commonly explained by this assumption.

**II.1. Generalizing the analysis to all attributive constructions**

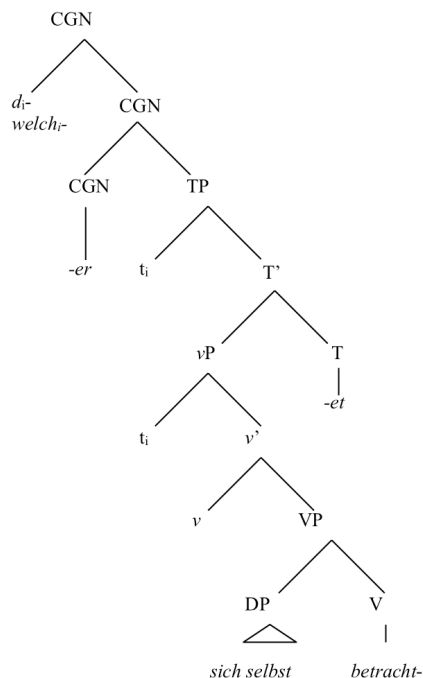
Adjectival attributes can be given a similar representation, and the same restrictions for relativization apply.<sup>13</sup> Relative pronouns in post-nominal relative clauses consist of an initial operator *d-* (or *welch-*) and CGN.<sup>14</sup>

7. Adjectives lack overt T



der sich treu-e Mann  
*the himself loyal-CGN man*  
 'the man who is loyal to himself'

8. Relative Clauses take the overt operator *d-* or *welch-*



der Mann, der/welcher sich selbst betrachtet  
*the man who himself watches*  
 'the man who watches himself'

<sup>13</sup> Adjectives do not show the aspectual suffixes of participles. However, arguments of attributive adjectives *scramble* (see III.1. below). Ever since Lenerz (77), it is widely assumed that scrambling in German is driven by information structure. Most analyses claim that scrambling targets functional layers above vP. Proposals range from projections of Agr (cf. Meinunger 2000) or T (cf. Struckmeier 2007b) to specialized projections (cf. e.g. Molnarfi 2002). Given the undiscerning selection of CGN, the difference is probably irrelevant here.

<sup>14</sup> Linearization of CGN vis-a-vis TP/*d-/welch-* is determined on PF, forced by the operator's morphologically bound status.

In the relative clause, every argument's case can be licensed by V, v or C/T. Thus,

- in relative clauses, *any* argument or adjunct can be relativized: No argument has to license its case defectively in SpecCP, as T is  $\varphi$ -complete.
- CGN in relative clauses need *not* "agree" with the head noun in case:<sup>15</sup> Different probes license the operator (inside the relative clause) and the modified N (from outside DP).

Thus, most differences between pre- and postnominal attributive constructions follow from the presence or absence of a  $\varphi$ -complete T. Structurally, all constructions are unified.

**II.2 Future applications**

CGN-type analyses can be used in cross-linguistic comparisons: In German, CGN identifies the relativizee. What would an attributive head without identification look like?

9. al-raġul-u -llaġi raʔā-hu ʔamsi  
*the-man-NOM REL<sub>Sg,M</sub> saw<sub>3Sg,M</sub>-him yesterday*  
 'the man who he saw yesterday',  
 'the man who saw him yesterday' or:  
 (Joost Kremers, p.c.)

In this Standard Arabic construction, the relative marker's features signal that the embedded clause is an attribute to the N *man*. However, the structure is ambiguous: REL does *not* identify the relativizee: both the *pro* subject and the object *hu* could be interpreted as 'relativized'.

In this way, CGN heads could be used to create a typology of attributive constructions (cf. Kremers & Struckmeier 2007). Variation is located (once again) in a phase head's feature composition - a desirable outcome given the current aims of minimalist syntax.

**Part III: Consequences of the analysis**

If indeed attributive structure are sentential, we should expect to find *more* sentential properties replicated in them than just argument structure and binding configurations.

**III.1. Scrambling in the AP (cf. Struckmeier & Gonzalez 2005)**

Scrambling has extensively been discussed for the so-called *Mittelfeld* ('middle field') of the German sentence (i.e. the TP). Argument DPs and adjuncts line up in various orders. The rearranging of these constituents is subject to the following restrictions:

<sup>15</sup> Prenominal *ops* do not "agree" with N in the technical sense, either: the same probe licenses both N's and *op*'s Case!

- a) Focussed material *remains to the right* of adverbials (*Don't scramble focus!*, Lenerz '77).  
 b) Pronouns *must scramble to the left*, unless they are focussed (*Wackernagel-Position*)  
 c) Scrambled *indefinites* are *generic*, *unscrambled indefinites* are *specific* (Diesing '92).

If pre-nominal attributes are 'sentential', can the same regularities be replicated?

- (10) Q: Der Mann, der WEM hilft?  
*the man, who WHOM helps*  
 "the man who is helping WHO?" (i.e. *dative object is focussed*)
- (11) A1: Der immer einer FRAU helfende Mann  
*the always a WOMAN helping man*  
 "the man who is always helping a WOMAN" (a: *Adv > Foc is fine*)
- (12) A2: ??Der einer FRAU immer helfende Mann  
*the a WOMAN always helping man*  
 "the man who is always helping a woman" (a: *Foc > Adv is awkward*)
- (13) A4: der immer IHM helfende Mann  
*the always HIM helping man*  
 "the man who is always helping HIM" (b: *Adv > Foc-Pron is fine*)
- (14) A5: \*der immer ihm HELFende Mann  
*the always him HELPing man*  
 "the man who is always HELPing him" (b: *\*Adv > unstressed pron*)
- (15) A6: der ihm immer HELFende Mann  
*the him always helping man*  
 "the man who is always helping him" (b: *unstressed pron > Adv*)
- (16) der [<sub>DP</sub> einem Feuerwehrmann] [<sub>Adv</sub> immer] helfende Mann  
*the a firefighter-DAT always helping man*  
 "the man who is always helping a firefighter" (c: *the man is helping any firefighter*)
- (17) der [<sub>Adv</sub> immer] [<sub>DP</sub> einem Feuerwehrmann] helfende Mann  
*the always a firefighter-DAT helping man*  
 "the man who is always helping a firefighter" (c: *man is helping specific firefighter*)

In sum, information structure-driven scrambling in the 'middle field' is, by and large, *replicated in attributive constructions*. What about properties relating to the phase head itself?

### III.2. Verum focus

Accenting the C head of a sentence stresses that the sentence is *true*, so-called *verum focus*:

- (18) Peter HAT geschlafen. Er sagt, DASS Peter schläft.  
*Peter has slept. he says that Peter sleeps*  
 'It is definitely true that Peter slept' 'He says that Peter is definitely sleeping'

Accenting CGN signals that the intended referent positively has the feature attributed to it:

- (19) Ich rede nicht über den Mann, der nicht schläft, sondern den Mann, DER schläft.  
*I talk not about the man who not sleeps but the man who sleeps*  
 'I am not talking about the man who doesn't sleep, but about the man who does sleep.'

Thus, accenting CGN has interesting parallels to stressing C. It seems, that CGN is both:

- a C-like head: it can be the locus of *verum focus* and it embeds TPs.
- and a D-like head: CGN has 'pronominal' morphophonology and ties into DP projections.

How can these properties be accounted for, i.e. how does CGN relate to C?

### III.3. On the category of CGN

CGN morphosyntactically mirrors the sentential CP but ties into the individual-referential DP. Thus, we should expect it to be related to both of these categories. This seems feasible:

- CGN allows to syntactically merge TP structures into matrix DPs, much as subordinating C heads merge TPs into matrix sentences.
- In both cases, *autonomous reference* by the embedded TP *is waived*.
- The proposition expressed by the TP is used to *restrict the matrix* context.
- For CGN, this matrix context is the DP that the attributive construction modifies. Accordingly, CGN might be considered a *subordinating D*, relating it at the same time to both *subordinating C* and (*matrix*) *D*, cf. (20):

(20)

|                | C/T system                      | D system      |  |
|----------------|---------------------------------|---------------|--|
| matrix:        | head=<br>V <sub>fin</sub>       | head =<br>Det | Uninterpretable features project the referential XP: Case for DP, φ for CP |
| subordinating: | head= subordinating conjunction | head=<br>CGN  | Re-mapping elements head the projection                                    |

### Summary

The analysis argues for the following points:

- All complex attributive structures in German receive a *common* representation, i.e. they constitute *predications embedded by a CGN phase head* with probe features.
- The analysis explains why CGN is *unaffected by case loss*: as a (functional) *element with D-like properties*, it is expectable that CGN should retain its paradigm.
- No "hybrid" categorial status for participles: *participles can be Vs and can project vPs attributively*, too: CGN is available for *all* predications.
- *Relative clauses are not 'headless' anymore*: CGN is the head of all attributive CGN<sup>max</sup>.
- *Most differences* between pre- and postnominal attributive constructions (e.g. the set of relativizable arguments) can be *reduced to the presence or absence of a -complete T head*.
- Other well-known properties of sentential constructions in German (such as *information structure-related scrambling*, *verum focus* etc.) are *replicated* in attributive constructions as well - with much further research needed!

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