Constraining the use of composite case categories

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1   Introduction

A common idea going back to Jakobson (1936), is that traditional case categories like nominative and genitive are not atomic, but should be defined as bundles of features. Table 1 lays out the influential version of this idea proposed by Bierwisch (1967) for German.

Case	Features
N	[-oblique, -governed]
G	[+oblique, -governed]
D	[+oblique, +governed]
A	[-oblique, +governed]

Table 1: Bierwisch's decomposition of the German cases

- Such decompositions allow us to define natural classes of cases in terms of shared feature values, and thus also to give principled descriptions of certain patterns of syncretism.

- So we can account for the fact that the neuter singular form *das* is both nominative and accusative by assuming it is simply [-oblique], underspecified for [±governed].

This is a powerful and attractive notion and has figured prominently in many analyses, not just of case.

☞ However, I will argue in this talk that if we expect such decomposition to lead to deeper insights about how language works, it will need to be more heavily constrained.

☞ This applies in particular to the assumption of composite cases, as the possibilities for abuse are more acute with case than with many other morphological categories.

The talk will proceed as follows:

Section 2 will take data from Old English as a staring point and review the motivation for the decomposition of case categories.

Section 3 will then look at why and how the use of decomposition should be constrained.

Section 4 develops a properly constrained analysis of the German case system, highlighting the sorts of complications that arise.

Section 5 concludes.

I'll give away a bit of the conclusion right at the start:

⇒ If we're really careful about how we use it and what it means, decomposition can lead to important insights.

⇒ At the same time, it's not a magic bullet, and some aspects of the analyses we're led to will be disappointing. At least in some instances, we'll do well to consider alternatives.

2   Why decomposition?

Decomposition of morphological categories is proposed in order to deal with certain patterns of syncretism. Old English presents some nice examples of syncretism which can help us understand this. Consider first the indicative paradigm of the verb *fremman* 'do' in Table 2.[1]

		pr	pt
s	1	fremme	*fremede*
	2	fremest	fremedest
	3	fremeþ	*fremede*
p	1	**fremmaþ**	**fremedon**
	2	**fremmaþ**	**fremedon**
	3	**fremmaþ**	**fremedon**

Table 2: OE *fremman* 'do', indicative forms

The structure of the syncretisms we see here is straightforward:

☞ OE verbs inflect for agreement with 3 persons and 2 numbers, but the person distinctions are neutralized in the plural.

This can be modelled easily in terms of plural endings which are underspecified for person:[2]

• There are forms specified for particular persons, but both of them are restricted to the singular. They only forms available for the plural are underspecified for person, hence the syncretism arises.

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[1]Henceforth I will use the following abbreviations: OE – Old English; 1, 2, 3 – 1st, 2nd, 3rd person; N, G, D, A – nominative, genitive, dative, accusative; m, f, n – masculine, feminine, neuter; s, p – singular, plural; pr, pt – present, past.

[2]Things are set up here under the assumption that past tense will be spelled out separately, since it appears with most weak verbs as a clearly segmentable -*d*- suffix before the agreement ending. Particular values for tense can, however, affect the choice of agreement ending, being part of the local context. These assumptions do not affect the analysis in any relevant way.

[3 s] / [pr] __	↔	-eþ
[2 s]	↔	-est
[s]	↔	-e
[p] / [pt] __	↔	-on
[p] /	↔	-aþ

Table 3: Underspecified OE agreement rules

- Similarly the syncretism of [1/3 s pt] arises because the special [3 s] form -*eþ* is restricted to the [pr], while the [2 s] form -*est* is underspecified for tense and thus can also appear in the [pt]. Elsewhere, the underspecified singular form -*e* applies.

- This simple analysis is possible because the syncretic cells of the paradigm constitute natural classes (all plurals) or elsewhere environments (not 2nd person).

When we look at case, things get more difficult. OE distinguished four cases: N, G, D, A.[3] Consider first the unmarked demonstrative in Table 4.

	m	f	n	p
N	sē	sēo	þæt	þā
G	þæs	**þǣre**	þæs	þāra
D	þǣm	**þǣre**	þǣm	þǣm
A	þone	þā	þæt	þā

Table 4: OE demonstrative

☞ N and A are syncretic in the both the neuter and the plural, and G and D are syncretic in the feminine.

☞ It's possible to handle these in terms of underspecification and default forms. E.g. for what we find in feminines and neuters we can propose the rules in Table 5.[4]

[f N]	↔	sēo
[f A]	↔	þā
[f]	↔	þǣre
[n G]	↔	þæs
[n D]	↔	þǣm
[n]	↔	þæt

Table 5: Rules for feminines and neuters

The general pattern is that, in any given gender/number combination, we have some number of forms which are specified for distinct cases (e.g. *sēo* and *þā*), and then one default or elsewhere form (e.g. *þǣre*), which is underspecified for case and shows up everywhere else.

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[3]OE actually had a fifth case, the instrumental, which I will leave aside here for simplicity's sake.

[4]There are some interesting patterns of gender and number syncretism here – e.g. the form *þǣm* occurs in all datives but the feminine singular, and thus should probably be underspecified for gender and number – but we'll concentrate here on case.

⇒ So this is just like our analysis of the past [s ind] forms of the verb, where the 2nd person has a dedicated marker, and there's a default that shows up in the 1st and 3rd.

There are two important things to note about this type of analysis:

1. It predicts that there will only ever be one form in any given sub-paradigm that is syncretic – the default form.

   ☞ The four cases have nothing in common with each other, so the only natural class that can be defined among them is the elsewhere.

   ☞ We thus shouldn't find any instances where, say, N and A share one form, while G and D share a second form.

2. It **doesn't** predict any patterns in which cases should be syncretic with each other.

   ☞ In the neuter, N and A are syncretic not due to any properties of N and A, but just because there don't happen to be any forms specified for [n A] or [n N].

   ☞ The case categories that are syncretic are unified only as elsewheres – so syncretism should occur between any two cases just as often as any other two cases.

In fact, if we look beyond the demonstratives, both of these predictions are disconfirmed. Consider examples of some of the main noun declensions in the language in Table 6:[5]

		m -a	n -a	f -$\bar{o}$	m -n	m -i	m -u
s	N	**dæg**	**scip**	giefu	hunta	**wine**	**sunu**
	G	dæges	scipes	*giefe*	*huntan*	wines	suna
	D	dæge	scipe	*giefe*	*huntan*	wine	suna
	A	**dæg**	**scip**	*giefe*	*huntan*	**wine**	**sunu**
p	N	**dagas**	**scipu**	**giefa**	**huntan**	**wine**	**suna**
	G	daga	scipa	giefa	huntena	wina	suna
	D	dagum	scipum	giefum	huntum	winum	sunum
	A	**dagas**	**scipu**	**giefa**	**huntan**	**wine**	**suna**

Table 6: OE Noun declensions

The singular of the masculine u-stems like *sunu* immediately challenges the first point:

☞ N and A are syncretized in -u, while G and D are syncretized in -a, i.e. we have two distinct syncretisms in one sub-paradigm, a pattern that cannot be described in terms of an elsewhere form.

☞ We could take -u to be the default, specified only [s]. But then what specification would we give to -a? [s G] would get the genitive right, but would predict a -u in the dative. We would thus need to posit a second -a, specified [sg D].

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[5]The headings abbreviate the traditional names of the nominal inflection classes: masculine a-stems, neuter a-stems, feminine $\bar{o}$-stems etc. The example nouns are *dæg* 'day', *scip* 'ship', *giefu* 'gift', *hunta* 'hunter', *wine* 'friend' and *sunu* 'son'.

☞ Of course, if we take -*a* to be the default ending, we face the same problem in getting -*u* to show up in both N and A.[6]

Regarding the second point aove, we find that a small number of specific syncretisms crop up over and over. There are 12 sub-paradigms to consider – singular and plural in 6 inflection classes. Given 4 cases, there are 6 possible patterns of syncretism involving 2 cases. How frequently the 6 pairs of cases are syncretic in the 12 paradigms is strikingly unequal:

$$
\begin{array}{ll}
\text{N-A} & \mathbf{10}/12 \\
\text{G-A} & \mathbf{4}/12 \\
\text{G-D} & \mathbf{3}/12 \\
\text{D-A} & \mathbf{3}/12 \\
\text{N-G} & \mathbf{2}/12 \\
\text{N-D} & \mathbf{1}/12 \\
\end{array}
$$

We can arguably split these up into three groups:

1. Nominative-accusative syncretism is pervasive, exceptionless in the plural and in neuter singulars and common elsewhere.[7]

2. Syncretism between the nominative and either genitive or accusative is vanishingly rare, and there is reason to interpret the 3 examples where it does occur as accidental.[8]

3. Syncretisms among the three non-nominative cases are somewhere in the middle – not the norm, but also not so rare as to seem completely accidental.

⇒ Thus the prediction of random patterns of syncretism is disconfirmed. There is something systematic going on here, at least in the instances of N-A.

An analysis of OE case morphology along the lines suggested in Table 5 is thus unsatisfying.

☞ What we need is a way to unify morphological categories that don't seem to share any characteristic features – e.g. to define N-A as a natural class to the exlusion of G-D.

☞ As things stand, there is simply no way to state this. The four cases are just monolithic morphological categories – distinct and indivisible features or values for a single attribute (presumably case).

This is where decomposition comes in. Let us assume for the moment the system Bierwisch proposed for the German cases, repeated here as Table 7.

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[6]There is some reason to think that -*a* is the general default form for the masculine *u*-stem nouns, given its distribution. It is thus plausibly underspecified for case and number. We could then assume that -*u* is simply specified [s]/[*u*-stem]__, and that there is an impoverishment rule which deletes [s] in *u*-stem singular genitives and datives. But this just shifts the problem from the insertion contexts to the impoverishment rule, which would have to have a disjunctive specification – i.e. either genitive or dative.

[7]This holds not just for these 6 noun declensions, but for the language as a whole.

[8]The form of the nominative varies widely from one inflection class to another, but the genitive and dative tend to have characteristic forms. E.g. in the plural, the genitive always ends in -*a*, the dative in -*um*. Those instances where the nominative is syncretic with either the genitive or the dative are just those where the nominative ending happens to be the same as the characteristic genitive or dative ending.

Case	Features
N	[-oblique, -governed]
G	[+oblique, -governed]
D	[+oblique, +governed]
A	[-oblique, +governed]

Table 7: Bierwisch's decomposition (repeated)

- Rather than four case categories, there are two binary case features. The four traditional cases correspond to the four possible combinations of values for these features.

- We can define natural classes of case categories in terms of values for one of the two features. N and A are the [-oblique] cases, A and D the [+governed] etc.

- This in turn lets us express case syncretism in terms of underspecification. A form like *þæt*, which is syncretic for N and A, is simply [n, -oblique], with no specification for [±governed], while *þǣre* is [f, +oblique]

This is an idea with a great deal of potential. E.g. it can solve both problems for the analysis of OE so far:

☞ It gives us a straightforward way of creating natural classes of cases beyond just the elsewhere category.

  - This means we can handle multiple syncretisms in one environment, like the singular of *sunu*.

  - The cases where the form *sunu* appears can be characterized as [-oblique], while those where *suna* appears are [+oblique].

☞ And the way decomposition works puts constraints on possible systems: patterns of syncretism arise in large part because of how the system of features is set up, not just by stipulation or how particular forms are specified.

  - E.g., there is no way to express N-D syncretism under Bierwisch's decomposition except as the elsewhere, because the two categories differ on both features.

  - So we can model the fact that OE has only one instance of such a syncretism in the declensions we've looked at, with what certainly looks like the default form for the relevant class (*-e* in the m *i*-stems).

Decomposition is also at least potentially less powerful than other formal mechanisms which could be used to handle the same kinds of syncretisms.

- For example we could directly stipulate connections between morphological categories which do not constitute natural classes using Rules of Referral (henceforth RRs. See Zwicky 1985, Stump 1993, 2001).

- However, Rules of Referral are extremely powerful – having feature-rewriting ability – thus it is often assumed that they should be avoided (Noyer 1998, Wunderlich 2004).

- Decomposition does not involve any additional formal devices in the theory. It just revises the inventory of morphological features. So to the extent that it allows us to avoid RRs, it means an overall increase in the restrictiveness of our theory.

As a result, a great deal of work on case morphology has assumed some sort of internal structure for the determination of case categories (see e.g. Calabrese 1996, Halle 1997, Halle and Vaux 1997, Wunderlich 2003, Müller 2004, Müller and Trommer 2006).

3 Grounding and constraining decomposition

Nonetheless, some serious issues arise when we use decomposition to model case syncretism. I want to address two of them here, which are closely related:

1. The freedom to arbitrarily redefine categories itself needs to be constrained. Otherwise it could 'derive' just as many patterns of syncretism as RRs.

2. It remains largely unclear how the component features proposed for morphological case categories interface with the syntax and semantics.

Let's flesh out each of these in turn.

1. We wanted to capture the fact that OE has a recurrent pattern of N-A syncretism.

   - We didn't want to say that the recurrence is an accident, but we also didn't want to stipulate it by brute force, say with a RR.

   - So instead, we broke down N into [-oblique, -governed] and A into [-oblique, +governed] and said, "Aha! N and A are both [-oblique]. That's why they're syncretic so often!"

   - Then we chose values for the other two cases so that the lack of syncretism between G and A and between N and D falls into place.

   Such a proposal is tidy, but the claims it makes as it stands are rather weak.

   ☞ The feature [-oblique] is only there to handle the syncretism between N and A. Proposing that N and A are both [-oblique] is doing little more than saying that they are sometimes syncretic.

   As long as positing a new feature has no further consequences, we can do so wherever we find syncretism, thus 'explaining' it. This takes away any ability we have to make predictions about what patterns of syncretism will be possible or likely.

   ☞ There's nothing to stop us from proposing a different system, where A and G share a feature in common, say [-agentive], and where N and D are [+superior], or even [-foo]. Formally, this is no different from Bierwisch's system for German.

    ☞ But there is typological evidence that things like N-D syncretism are uncommon in the languages of the world (see Baerman et al. 2005).

If we want our theory of grammar to make predictions, rather than just being a tool for concise description, we need to constrain decomposition of case and other morphological categories. We need some motivation beyond syncretism for the features we propose.

2. When people have worked on breaking down traditional case categories into bundles of features, they've mostly been concerned with the morpho-phonological side of things:

- The main goal has been to describe and account for the distribution of forms across case categories and attendant patterns of syncretism.
- The component features proposed have been given labels suggestive of semantic or syntactic notions, but the details of how they interact with those areas of grammar have rarely been explored, let alone specified.[9]

On the other hand, syntacticians and even morphologists worrying about morpho-syntactic case-assignment typically have **not** used decomposition.

- They talk about conditions for the assignment or licensing of N, A or G, not [+governed] or [-oblique].[10]

In fact it's rarely made clear how these feature bundles are supposed to relate to how case is actually assigned on the basis of syntactic structure. I can think of two reasonable options:[11]

a. First, monolithic case categories like A are assigned to DPs on a syntactic basis. Then these are translated by the morphology into bundles like [+governed, -oblique], which in turn determine the actual forms that show up.
b. The features which determine the morpho-phonological forms and patterns of syncretism are just exactly those features assigned to DPs on the basis of their status in the syntax.

The idea that I will pursue here is that we can tackle issues 1 and 2 together.

    ☞ If we get the relationship between case categories and the syntax right, this will serve to appropriately constrain the inventory of features that we can propose.

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[9]See e.g. Calabrese (1996), Halle (1997), Halle and Vaux (1997), Müller (2004) and the papers in Müller and Trommer (2006).

[10]Relevant works here include Zaenen et al. (1985), Chomsky (1986), Burzio (1986), Yip et al. (1987), Marantz (1991), Bittner and Hale (1996), Woolford (2003), Sigurðsson (2006), Legate (2008). Important exceptions are Kiparsky (1997, 2001), Wunderlich (1997, 2003)

[11]These are worded carefully so as to compatible both with case-assignment within the narrow syntax (see Legate 2008, for a recent defense), and with case-assignment in the morphology on the basis of the output of syntax (Marantz 1991, McFadden 2004, to appear)

To do so, I will assume option b above – that there is only one set of case categories or features, relevant to both morpho-syntax and morpho-phonology.

- Option a effectively insulates our claims about case realization from the rest of the grammar and makes them difficult to constrain. Again, positing a feature to describe syncretism would have no further consequences and thus remain essentially descriptive.

- Option b, on the other hand, takes the decomposed case features seriously and makes the strong claim that they are what is relevant for all aspects of morphological case.

- It is thus the more restrictive hypothesis, implying that our proposals for dealing with syncretism in case-realization will be constrained by our proposals for rules of case-assignment and vice versa.

In fact, if we think about decomposition of other morphological categories, the equivalent of option b is clearly what is assumed.

☞ If we break down 1st person inclusive as [+speaker, +hearer], we're claiming that a given DP is both [+speaker] and [+hearer] at the syntactic and semantic level.

☞ No one would assume that that a monolithic syntactic/semantic category [inclusive] is translated into [+speaker, +hearer] solely for the morphology.

So the strategy is quite simple, and fairly obvious:

- Whenever we posit a feature for morpho-phonological purposes, we have to make sure that we provide independent justification for it on independent grounds.

- With categories like person and number this requirement is relatively easy to meet, because they have relatively clear semantic associations.

- With case, matters are more difficult, because case categories (in particular the structural ones) usually do not have consistent semantics. Instead, support has to come from the case-assignment rules.

- I.e. to back up our use of a feature like [+oblique] for syncretism, we have to formulate the rule(s) according to which [+oblique] is actually assigned to DPs.

This sounds straightforward, and I assume that most morphologist who have decomposed case categories have done so with the intention that the morpho-syntactic details would eventually be worked out. But this turns out to be a significant challenge.

☞ Case categories are often assigned in a range of contexts which are not easily unified. E.g. in OE or German G is typically assigned to DPs within DPs, but it is also assigned to the objects of certain specific verbs and prepositions.

☞ Given two cases which are found to be syncretic, we need to then go one step further and find a way to unify all of the environments where either one of them is assigned.

☞ The result is that we are sometimes forced to make difficult choices – we must either posit a questionable syntactic connection or leave a particular pattern of syncretism as accidental.

In what follows I'll demonstrate the sorts of issues that arise by attempting an analysis of the German case system. The results will be mixed.

- In some areas the insistence on an explicit syntactic motivation for the features will lead to more a insightful anaylsis than we get from just looking at syncretism.

- In others areas the analysis we're led to is decidedly less attractive than would be possible if we dropped this constraint.

- Still, this exercise is extremely useful in that it highlights what we should be prepared to deal with if we want to decompose case categories and thus facilitates comparison with other strategies for dealing with syncretism.

4   The case of German

German has a 4 case system very similar to that in OE, with the exception that the marking on nouns themselves is severely limited.[12] I will thus concentrate here on the definite article in Table 8 and the personal pronouns in Table 9.[13]

	m	f	n	p
N	der	**die**	**das**	**die**
G	des	*der*	des	der
D	dem	*der*	dem	den
A	den	**die**	**das**	**die**

Table 8: German definite determiners

- As in OE, the central instance of syncretism is between N and A, but it German it is even more widespread. It affectings **all** 3rd person forms in the language which are not masculine singular (and even some which are).

- We also have an instance of G/D syncretism in the feminine singular.

- And we have D/A syncretism in the 1st and 2nd person plural pronouns.

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[12]For some recent discussion of the case-marking on the nouns and of the complications in the distribution of marking across the DP in German see Spencer (2003).

[13]The forms I give as G are the ones used, at least in the standard written language, with verbs that assign G to their objects. With prepositions that assign G, special forms like *meinetwegen* are used. Of course the most common use of the genitive is for possessors and other arguments of DPs, but the possessive pronouns used for this have a rather different syntactic distribution than the genitive forms DPs and thus must be treated differently.

	1	2	3			1	2	3
			s				**p**	
N	ich	du	er	**sie**	**es**	wir	ihr	**sie**
G	meiner	deiner	seiner	ihrer	seiner	unser	euerer	ihrer
D	mir	dir	ihm	ihr	ihm	*uns*	*euch*	ihnen
A	mich	dich	ihn	**sie**	**es**	*uns*	*euch*	**sie**

Table 9: German personal pronouns

4.1   Syncretism meets syntactic alternation in the structural pair

Our approach yields the most pleasing results with the pervasive N/A syncretism. This is because, crucially, N and A are also the most important point of overlap with the system of case assignment.

- The kind of case-system found in German is standardly called nominative-accusative, precisely because these two cases are central.

- They are termed the structural cases, because (for the most part) they are assigned to DPs based in a transparent way on where they appear in the syntactic structure, not based on semantics or listed properties of specific lexical items.

Now, N and A are not just the elements of a central contrast. What matters for us is that they also commonly alternate based on alternations in the syntax:

- The A direct object of an active sentence like *den Kuchen* 'the cake' in 1a becomes N in the passive, as in 1b.

    (1)   a.   Der   Jürgen hat **den**   Kuchen gegessen.
              the:N J.   has the:A cake   eaten
              'Jürgen ate the cake.'
          b.   **Der**   Kuchen ist vom   Jürgen gegessen worden.
              The:N cake   is by-the:D J.   eaten   become
              'The cake was eaten by Jürgen.'

- And the N subject *der Klaus* in 2a changes to A when its clause is embedded under a causative verb, as in 2b.

    (2)   a.   **Der**   Klaus schreibt den Aufsatz.
              the:N K.   writes   the article
              'Klaus is writing the article.'
          b.   Ich lasse **den**   Klaus den Aufsatz schreiben.
              I:N let   the:A K.   the article   write
              'I'm having/letting Klaus write the article.'

Note that similar systematic alternations involving either the G or the D with one of the structural cases are not attested. E.g. the D in a sentence like 3a remains D, both under passivization, as in 3b and under a causative, as in 3c:

(3)   a. Ich habe **dem** Jürgen   geholfen.
          I   have the:D J.   helped

          'I helped Jürgen.'

      b. **Dem/*Der**   Jürgen ist   viel   geholfen worden.
          The:D/*The:N J. is   much   helped become

          'Jürgen has been helped a lot.'

      c. Ich lasse **dem/*den**   Jürgen viel   geholfen werden.
          I   let   the:D/*the:A   much   helped become

          'I let/have Jürgen get helped a lot.'

Let's consider what this actually means:

⇒ N and A are related to each other not only morpho-phonologically in being commonly syncretic, but also morpho-syntactically, in that they alternate with each other in clearly related syntactic contexts.

⇒ This means that, whatever it is that distinguishes the two from each other, it should be relatively simple and closely tied to the distinctions in the syntactic structures of the examples above.

⇒ G and D are distinguished more clearly from the two structural cases, both in the lower incidence of syncretism and in the absence of alternations.

So what is it that distinguishes N from A, and how does assignment of N and A actually work in the language? What I'll propose is informally this:

(4)   If a DP hasn't gotten a non-structural case, it gets A if there's another structural DP in a higher local position, and N otherwise.

 • This is just a version of the insight that the structural accusative is a dependent case, assigned only when another noun phrase of the right type is around.[14]

In order to distinguish N and A, I adopt the feature [+inferior] on accusatives, reflecting the fact that they are below another structural DP as laid out in 4.[15] We can then cast 4 a bit more formally as a rule to assign that feature:[16]

(5)   Assign [+inferior] to a DP_i iff there is a local, c-commanding DP_j and neither DP_i nor DP_j bears a non-structural case feature.

N and A will differ in terms of this feature and nothing else. Thus N-A syncretism can be expressed in terms of underspecification for or impoverishment of [+inferior].

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[14]See e.g. Burzio (1986), Yip et al. (1987), Marantz (1991), Bittner and Hale (1996), Wunderlich (2003), Sigurðsson (2006), Zwart (to appear) for other versions of this idea.

[15]This is transparently related to Wunderlich's [+hr] "there is a higher role" and to Halle's [±superior].

[16]Of course, we need to make precise the relevant locality relationship and where and when exactly 4 applies. See McFadden (2004, ch. 6), McFadden (to appear) for proposals.

4.2 Adding the obliques

Things get more complicated when we turn to G and D. We can start with the hypothesis that they are distinguished from N and A by a feature we can call [+oblique]. This would be the "non-structural case feature" that rule 5 is sensitive to.

☞ Crucially, support for such a feature again comes from both the morpho-phonology and from the morpho-syntax.

On the morpho-phonological side, as can be seen in Table 8 above, there is a single form *der* for both G and D in the feminine singular.

- So we can say that the insertion rule for this form is specified [+oblique] to keep it out of the N and A, but underspecified for whatever feature disinguishes G from D.[17]

- Even in all of the contexts where G and D don't happen to be syncretic with each other, we can use the [+oblique] feature to account for the fact that, for the most part, neither is syncretic with with N or A.

On the morpho-syntactic side, we find important commonalities in syntactic distribution. E.g., both G and D appear on the objects of prepositions, with the choice between the two dependent on the identity of P itself:

dative: *aus* 'out of', *bei* 'near, at', *mit* 'with', *nach* 'after', *von* 'from, of', *zu* 'to'. . .

genitive: *(an)statt* 'instead of', *trotz* 'in spite of', *während* 'during', *wegen* 'because of'. . .

So we can propose the following rule (again stated informally):

(6) Assign [+oblique] to the complement of P

Some Ps will then lexically assign an additional feature that distinguishes G from D:[18]

(7) Assign [+genitive] to the complement of P, where P ∈ {*(an)statt, während, wegen*. . .}

Now, there are two important things to note about the use of the feature [+genitive] that distinguish my account from many others:

1. I am proposing a specific feature [+/-genitive] whose purpose is solely to distinguish G from D. It is **not** the same feature that is used to distinguish N from A the way that Bierwisch (1967)'s [+/-governed] is or Halle and Vaux (1997)'s [+/-superior] is.

   ☞ This is a direct result of the idea that our case features need to do double-duty: the alternation between G and D has nothing to do syntactically with that between N and A, so using the same feature to handle both is dubious.

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[17]We could potentially also identify *ihr* as a [+oblique] form, appearing as the D s f pronoun and as a component of the G *ihrer*. The *-er* would then directly spell out the feature that distinguishes G from D.

[18]Rules similar to 6 and 7 can be written for verbs which assign D and G to their objects.

☞ Using [+genitive] also avoids one of the imperfections of other accounts: if N and G are both [-governed] or [+superior], we predict syncretisms between them to be possible, but in German there are none.

☞ In other words, I am insisting that the features we assume must be independently motivated, here at the expense of assuming a larger number of features than the mininum which are logically necessary to derive the attested distinctions.

2. Just as the assignment of [+inferior] derives a markedness asymmetry between nominative and accusative, so the assignment of [+genitive] does for dative and genitive.

☞ Specifically, the genitive is more marked than the dative, having an additional actively assigned feature.

If this is correct, we might expect to see dative forms emerging under certain circumstances as the unmarked alternant in place of the genitive. Indeed we do:

- In many forms of the language – including most colloquial spoken forms – the G in general is moribund, and fails to show up outside of certain fixed expressions.

- Some prepositions, like *trotz*, only optionally assign G, even in formal registers that strictly retain the G with *während*, *wegen* and others.

- Crucially, whenever G fails to be assigned by one of the Ps, it is always D that shows up in its place – never N or A.

(8) a.   trotz   des   schlechten Wetters   (Formal)
          despite the:G bad   weather:G
     b.   trotz   dem   schlechten Wetter   (Formal or colloquial)
          despite the:D bad   weather
(9) a.   wegen   des   schlechten Wetters   (Formal)
          because-of the:G bad   weather:G
     b.   wegen   dem   schlechten Wetter   (Colloquial)
          because-of the:D bad   weather
     c. * wegen   das   schlechte Wetter
          because-of the:N/A bad   weather

Now, if genitive DPs are specified [+oblique, +genitive], as argued here, the loss of the genitive specification will directly turn them into datives. The dative emerges because it is the unmarked option within the obliques.

4.3   Dealing with the D/A constellation

What remain are a complex of relationships between A and D. This is where things get difficult and decomposition complicates matters as much as it helps. Here's what we find:

- Morpho-phonologically, D and A are syncretic in the 1st and 2nd person plural pronouns *uns* and *euch*.

- Morpho-syntactically, D and A alternate on the objects of a number of local prepositions depending on whether the relevant entity is in motion (A in 10a) or at rest (D in 10b) relative to the object of the preposition:

  (10) a. Dirk rennt in die   Bibliothek hinein.
            Dirk runs in the:A library   in
            'Dirk is running into the library.'
        b. Dirk rennt in der   Bibliothek herum.
            Dirk runs in the:D library   around
            'Dirk is running around in the library.'

- And several other prepositions always mark their objects A: *durch* 'through', *für* 'for', *gegen* 'against', *ohne* 'without'. . .

Of course, this is consistent with our general expectations: we have morphological syncretism and syntactic alternations involving the same pair of cases. However, an analysis that gets the details right turns out to be quite difficult.

☞ Thus far, we've argued that A is [+inferior], while D is [+oblique]. So the two don't share any features in common which would render them a natural class for syncretism or for the syntactic alternation.

So how do we get them to pattern together? As I see it, we have the following choices:

1. What A and D have in common is [+inferior].

   - Unambiguously D exponents will be [+oblique, +inferior], while A and syncretic exponents will be [+inferior].
   - We have to rewrite all rules like 6 to assign [+oblique, +inferior] instead of [+oblique]. Or we propose some sort of 'enrichment' rule that always inserts [+inferior] in the context of [+oblique].
   - With the alternating Ps we'd get D as the default, because of our assumption that Ps always assign [+oblique]. A would appear when [+oblique] is impoverished somehow due to motion semantics.

   This gets things essentially right, but that second bullet point is ugly:

   ☞ Individually changing all rules that assign [+oblique] to assign [+inferior, +oblique] misses a generalization. The alternative feature adding rule gets the generalization at the cost of adding a new, extremely powerful rule-type.[19]

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[19]Of course there are any number of other formal means we could use to ensure that [+oblique] DPs also end up [+inferior]. E.g. we could adopt a feature-geometric analysis along the lines of Harley and Ritter (2002) and propose that [+oblique] is a dependent of [+inferior]. The point is that any such solution will require us to supplement our arsenal of formal mechanisms.

2. What A and D have in common is [+oblique].

  - I.e. A is actually an oblique case too. Unambiguously A exponents will be specified [+oblique, +inferior], while D and syncretic exponents will be [+oblique].

  - We have to rewrite all rules like 5 to assign [+inferior, +oblique], or we propose an 'enrichment' rule to always add [+oblique] in the context of [+inferior].

  - With the alternating Ps we'd still get D as the default, A appearing when an extra [+inferior] is assigned somehow due to motion semantics.

This is even worse:

  ☞ The second bullet has the same problems – either we miss generalizations or we undermine the restrictivenss of our theory.

  ☞ On top of this, analyzing the A as the marked member of the pair doesn't seem right, and saying that A they're [+oblique] would require a significant revision to our understanding of the structural case system.

3. What A and D have in common is a new feature – call it [+da].

  ☞ This would be more complicated than either of the two preceding possibilities, since we now have to handle special assignment of [+da] to DPs in both dative and accusative contexts, rather than just one or the other.

  ☞ It also involves increasing the inventory of case features to the point that we have as many features as we had original case categories.

4. A and D are only syncretic in elsewhere forms.

  - A is still just [+inferior], D just [+oblique], but *uns* and *euch* can appear in both because they are completely underspecified for case.

  - This means that the forms *wir* and *ihr* have to specified for features that let them take precedence over *uns* and *euch* in the N.

  - Ps like *durch* lexically assign [+inferior] **and** trigger impoverishment of [+oblique]; alternating Ps like *in* only do this in connection with movement semantics.

This looks like a good idea at first, but the second and third bullet points again cause problems:

  ☞ It's not immediately clear what features specifically N forms like *wir* and *ihr* could refer to. As we'll see in a bit, there's actually some reason to take the N as the failure of case-assignment and lack of case features.[20]

  ☞ We've clearly given up on a decomposition account of the alternating prepositions. Lexically assigning one feature while impoverishing another is no different from saying that *in* assigns two completely unrelated cases in its two uses.

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[20]See McFadden (2007) for discussion of related issues in dealing with the weak adjective inflection.

None of these possibilities is particularly appealing when we get into the details. It's useful though to consider them though against the main alternative:

5. The A/D connections are accidental.

   - There are two instances each of *uns* and *euch*, one specified [+oblique] to appear in D contexts and one [+inferior] for the A contexts.

   - Ps like ***durch*** lexically assign [+inferior] **and** trigger impoverishment of [+oblique]; alternating Ps like *in* only do this in connection with movement semantics.

   This is of course always our last resort. It amounts to giving up on an insightful analysis.

4.4   The relevance of default case

Now there's one more topic to look at which brings out a strength of the decomposition analysis.

☞ German, like most (all?) languages with a case system, has a **default case**, a case category that shows up when normal mechanisms of case-assignment fail.

Depending on the language, this often happens with citation forms, vocatives and various other non-sentential utterances (Schütze 2001, Progovac 2006). The context where it can perhaps most clearly be observed, though, is left-dislocation:

(11)   a.   Den/?Der Hans, den   mag ich nicht.
             the:A/N   Hans, him:A like I   not
             'Hans, I don't like him.'
       b.   Der/*Dem Hans, mit dem   spreche ich nicht mehr.
             the:N/*D Hans with him:D speak   I   not   more
             'Hans, I don't speak with him anymore.' (German)

- Left-dislocated elements are often assigned the case of the associated resumptive DP in the following clause, presumably by some sort of concord, as in 11a.

- This concord frequently fails, however, under various language-specific circumstances. In German, e.g., it is blocked if the resumptive DP is embedded in a PP, as in 11b.

- In this situation, the left-dislocated DP reverts to the default case, which in German is the nominative.

The theory we're working on so far actually derives the default status of the nominative quite nicely. It simply falls out of the way the system is constructed:

☞ Rule 5 above, which distinguishes N and A, only assigns [+inferior] to accusatives, but does nothing to nominatives. The other two features [+oblique] and [+genitive] don't mark the nominative either.

☞ N is thus simply the absence of any case features, as shown in Table 10 (which assumes option 1 above as the solution to the A-D problem). It's what we get when the three other features fail to be assigned.

Case	Features
N	[ ]
G	[+oblique, +inferior, +genitive]
D	[+oblique, +inferior]
A	[+inferior]

Table 10: Feature specification of the German case categories

We thus predict in a very simple way that the nominative will be the result whenever case-assignment fails for any reason – including standard subjects of finite clauses.

5   Conclusion

In this talk, I've explored some of the issues related to the identification of morphological categories, case in particular.

☞ I've outlined an approach to case categories that posits a direct connection between the morpho-syntax and the morpho-phonology.

☞ The result is sometimes a less concise description than logically possible, but one which is more constrained and arguably allows better explanation of patterns of syncretism.

Still, my intention here has not been so much to argue for a decomposition approach to syncretism, as to highlight the consequences of adopting such an approach.

• Decomposition has been widely assumed in work on case, resulting in some impressively simple accounts of complex patterns of syncretism in case realization.

• However, this simplicity can be misleading if the full complexity must be reintroduced to connect the posited features to principles of case-assignment.

• A great deal of work has to be done in order to properly handle both sides. As we saw with the N/A alternations in German, there is no guarantee that the end result will be as simple and elegant as we might hope.

It is this broader view of decomposition which we must keep in mind when comparing it with other approaches to syncretism.

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