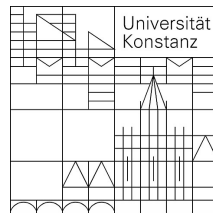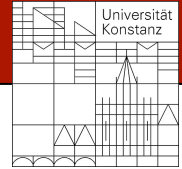# Morphological cumulation through phonological fusion?
PERSON separate from NUMBER

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ALT 8, Berkeley, 23-26 July 2009

The category of Person

▸ Of all inflectional categories, PERSON - the grammaticalisation of speech-act roles: speaker, addressee, neither-speaker-nor-addressee, to only mention the crosslinguistically most common three-way contrast - is more likely to be expressed cumulatively than any others.

▸ On a worldwide scale, for all inflectional categories, both verbal and nominal, it is far more common to be expressed separatively than cumulatively. It is in fact one family, Indo-European, which contributes the lion's share of cumulation for all <u>other</u> categories.

▸ The obvious question is: Why is PERSON special?
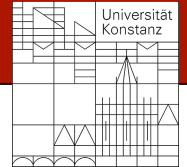
Person and Number

▸ The inflectional category most likely to be cumulated with PERSON is NUMBER.

▸ There is in fact a question here whether it is really NUMBER, strictly speaking, which is the category we are dealing with here.

▸ Especially with 1st and 2nd PERSON, the quantificational category concerned is more appropriately assumed to be ASSOCIATIVE.

▸ Also, depending on the formal structure of the paradigmatic system concerned, the quantificational contrast may more appropriately be conceived of as one of Augmented vs. Minimum reference.

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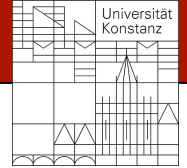
Person and Number

▸ In all variations of this quantificational theme, `PRS` must be seen as conceptually independent of the quantificational category: there are two dimensions for independent variation, and it is only a matter of form whether these two dimensions are expressed separately or jointly. (And there is other morphosyntactic evidence strongly supporting this conclusion.)

▸ Concepts or meanings as such, thus, cannot be held responsible for the unusual proneness of `PRS` and `NMB` (or Association or Augmentation) to cumulation.

▸ It would seem that this question continues to be wide open.

Cumulation through fusion

▸ It is often assumed that morphological cumulation is brought about diachronically through phonological fusion: sandhi processes of various kinds obscure and eventually obliterate morpheme boundaries separating two or more syntagmatically co-occurring exponents.

▸ With fusion assumed to be virtually the only mechanism transforming separation into cumulation, separate terms have sometimes been found redundant: hence, the popular term "fusional" morphology instead of "cumulative" morphology.
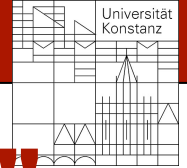
Conditions for "morphological fusion"

▸ To be a bit more specific about this diachronic scenario, it would need four conditions for such transformations to be successful:

– the frequent, if not regular, syntagmatic co-occurrence of exponents;

– the adjacency of these co-occurring exponents - for you don't get fused at a distance;

– active processes of irreversably fusional phonology;

– phonological forms of the exponents concerned which render them, and the boundaries between them, vulnerable to active processes of fusional phonology.

Fusion > cumulation

▶ Now, perhaps the exponents of PERSON and NUMBER or other quantificational categories are unusual insofar as they are proner than all others to meet these conditions for phonological fusion.

▶ This explanation would seem a bit implausible; but can it be tested and falsified? We cannot really claim to have done this; but we think we can demonstrate, if only inferentially, that the phonological fusion scenario is a non-starter, or, not to be too harsh, rather an also-ran.

Fusion > cumulation

▶ The only variable that we have indeed tested for is *adjacency.*

▶ And the argument is indirect: *What we find about the adjacency and non-adjacency of* PERSON *and* NUMBER *(or, as the case may be, association or augmentation) cannot be plausibly squared with what one would expect on a phonological fusion scenario.*

Investigating bound Person markers

▸ What we examined are <u>bound</u> exponents of PRS, affixed or cliticised to verbs, nouns, or adpositions, which are <u>separate</u> from exponents of NMB (ASSOCIATION or AUGMENTATION).

▸ For present purposes we only included information on separation and cumulation in the case of independent pronouns as a control.

▸ For bound as well as independent pronouns, separation is the clear minority pattern across languages, with cumulation much more common; and our (convenience) sample of languages is therefore comparatively small, currently approaching a hundred.
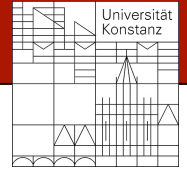
Investigating bound Person markers

▸ Not all bound PERSONS will perforce show the same separative or cumulative behaviour: we therefore coded 1st (exclusive and inclusive), 2nd, 3rd PERSONS individually, in case they were not all separative.

▸ Likewise, NUMBERS have to be kept distinct too, since, for example, dual may be separate from PERSONS, while plural is cumulated.

▸ Furthermore, not all series of bound PRS markers need to show the same behaviour: subject PRS may be different from object PRS, or from possessor PRS; PRS in the indicative mood may be different from PRS in the imperative; and similar differences may obtain between tenses or moods.

Investigating bound Person markers

‣ A further analytic decision was: *What is a* PERSON *marker*?

‣ We took a liberal stance and included combined, morphologically unsegmentable markers of two persons, like '1st PERSON acting on 2nd PERSON'; they would be separative when not including number marking for either person involved.

‣ Perhaps more controversially, direct and inverse markers (as in the Algonquian languages) were also included: they are a sort of combined markers for two persons, in connection with a referential hierarchy also providing information about the syntactic-semantic relations of the persons combined. (They are thus wholly different from passive markers, which have no inherent person dimension.)

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Cases of separation vs. cumulation

▸ The most difficult decision of all was to decide when we are dealing with separation and when with cumulation.

▸ Needless to say, expecially in cases where fusion is in the middle of its work, clearcut decisions are unviable.

▸ Reference grammars often do not provide neat morphological segmentations even when they would seem obvious; but do-it-yourself analyses of languages the typologist does not know well are fraught with risks.

▸ Our tendency was to only accept as separative the really clear cases, where grammarian and typologist would find themselves in comfortable agreement.
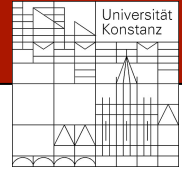
Separative vs. cumulative = agglutinative vs. fusional

▶ (Sensitive) cumulative and (insensitive) separatist exponents are the hallmarks of flective and agglutinative languages, respectively.

▶ When looking at particular morphological exponents in particular word forms the parameters of flectional and agglutinative languages can be taken advantage of in deciding whether a particular word form shows cumulation or separation

  – zero exponence of unmarked members

  – syncretism

  – the presence of inflection classes

Exemplars

▶ Also, we were not always as thorough as would perhaps be desirable and selected a clear case as an <u>exemplar</u> and did not worry over all these less clear cases in the same language. The exemplars in our survey often are bound PRS markers representing (agreeing with, cross-referencing) intransitive subjects.

▶ But we won't bore you any further with our methodological troubles. Here is what we (think we) were looking for and what we (think we) found.

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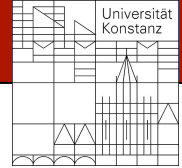
Adjacency and order of PRS and NMB

▶ With adjacency as the only variable tested for, what <u>could</u> we have found concerning bound PRSs separate from NMB (ASSOCIATION, AUGMENTATION)? These four patterns:

I. a. ... -PRS-NMB- ...   b. ... -NMB-PRS- ...

II. a. ... -PRS- ... -NMB- ...   b. ... -NMB- ... -PRS- ...

▶ PRS and NMB <u>adjacent</u>, in whichever position relative to their base or host, with PRS preceding (Ia) or following (Ib) NMB.

▶ Or PRS and NMB <u>non-adjacent</u>, in whichever position relative to their base or host, again with PRS either preceding (IIa) or following (IIb) NMB.

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Results

▶ The (b) patterns are exceedingly rare. With far more than chance frequency, bound PERSON precedes bound NUMBER, whether the two are adjacent or non-adjacent.

	PRS > NMB	NMB > PRS	sum
adjacent	48　58%	6　100%	54
non-adjacent	35　42%	0　0%	35
sum	83　93%	6　7%	89

Counterexamples

▸ Baale (Nilo-Saharan, Surmic; Yigezu & Dimmendaal 1998:302 in Siewierska 2004:24)

PRS/NMB	SG	PL
1	kV-...-a	kV-...-ta
2	V-...-u	V-...-tu
3	V-...-a	V-...-iδa

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Explanation

▸ We will not here attempt an explanation. We would only like to point to the exceptional behaviour of bound person also with regard to the suffixing/encliticising preference: differing from most and perhaps all other bound inflectional categories, including number (ASSOCIATION, AUGMENTATION), bound PERSON is also frequently prefixing/procliticising.

▸ Perhaps the typical grammaticalisation history of bound person helps to account for these somewhat unusual positional proclivities: bound person markers typically derive from resumptive pronouns in topic-comment constructions, and such resumptive pronouns will tend to come earlier rather than later in the comment part.

Adjacency of PRS and NMB

▸ That bound PRS and NMB tend to be adjacent rather than non-adjacent does not only hold for our (no doubt imperfect) sample of <u>individual</u> languages: it also holds at the level of <u>families</u>.

▸ That is to say, if one member of a family has PRS(s) separate from NMB(s) and the respective exponents are adjacent, the probability is high that other members of the same family will also have adjacent separative PRS(s) and NMB(s). (Which sort of accounts for our somewhat unbalanced sample.) Although differences, as brought about by changes, are possible, families are remarkably homogeneous in this respect.

Time-stability

‣ We cannot be very specific about the time-depth of many of the families in our survey, and we may sometimes be comparing incomparables insofar as time-depths differ considerably for individual families.

‣ Nonetheless, we would like to tentatively conclude that in the clear predominance of adjacency over non-adjacency of bound person and number markers we have found a pattern that is remarkably time-stable.

‣ Once a bound separative PERSON marker finds itself adjacent to a NUMBER marker, this state of affairs is likely to continue unaltered.

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What does this mean?

‣ Here our reasoning becomes inferential.

‣ If phonological fusion mere the main agent in transforming separation into cumulation, we would not expect so much adjacency – which is after all <u>the</u> license to fuse – with separation of PRS from NMB.

‣ It should instead be <u>non</u>-adjacency, where the crucial condition for fusion is <u>not</u> met, which is conducive to separation.

‣ Something must be wrong, therefore, with the fusion scenario; it does, at any rate, <u>not</u> account for the cumulation preference of bound PRS.

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What does this mean?

▶ If we find so many instances of bound PRS and NMB markers which appear to have remained unfused over some possibly considerable time even though they <u>could</u> have fused, co-occurring regularly and being adjacent, the fault might also lie with the other preconditions for fusion:

- the existence of active processes of irreversably fusional phonology in the families concerned, and

- phonological shapes of the markers concerned which would render the boundaries between them vulnerable to such phonological processes.

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▸ Systematically testing for this variable would be an instructive project. There are indications that phonological processes in some families (e.g., Australian) are less fusional than in others (e.g., Germanic or Indo-European in general). Still, given our present state of knowledge (or rather ignorance), we cannot confidently conclude that PRS markers adjacent to NMB markers have remained separate because active fusional phonologies are lacking in precisely these languages or families.

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Conclusions

▸ If adjacency is not as conducive to fusion as could have been expected, and if phonologies cannot be invoked as convincingly accounting for the difference between fusing and non-fusing languages or families, the final inferential conclusion would be that phonological fusion simply is <u>not</u> the main, or at any rate not the only, force driving a scenario of morphological separation turning into cumulation.

▸ For bound PRS and NMB, keener to cumulate than any other pair of categories, potent other mechanisms must exist effectuating cumulation.

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▶ One explanation is that this is to be attributed to the historical origins of phonologically or morphologically bound person markers in independent pronouns, where PRS would be already cumulated with NMB (ASSOCIATION, AUGMENTATION). This explanation is unsatisfactory

– because independent person forms themselves can be separative relative to number and vice versa

– because the phonological and morphological processes attendant upon the grammaticalisation of such source forms are not guaranteed to be structure-preserving.

▶ And since independent PRS forms are far more frequently cumulated with NMB marking than being separative, this inclination itself would call for an explanation.

▶ We would suggest that <u>morphological reanalysis</u>, typically triggered by zero forms in paradigms, is an important mechanism of change from separation and cumulation, and sometimes the other way round.

▶ But for present purposes we must leave it at that: phonological fusion has traditionally been overestimated and morphological reanalysis been underestimated as instrumental in creating cumulative morphology.

▶ Needless to add, this paper is a plea to terminologically distinguish between "cumulation" and "fusion" in morphological typology.

Thank you for your attention