

Binary features or elements/categories: phonology and morphosyntax

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In the debate between syntax and phonology (and why they would be different), a role of considerable potential interest is played by morphology, on which we focus in the second half of the talk, addressing the issue of binary features vs. elements/categories.

Syntax/Semantics. Syntactic categories are conceived as positively specifying a content. For instance, D asserts the quantificational/deictic anchoring of a predicative content, yielding a referential interpretation (Higginbotham 1985). Features like [+def] and [-def] are formally possible, but theoretically irrelevant. Semantically, English *a(n)* is not -definite, it is an existential quantifier (or an existentially closed free variable). A possible exception is the popular treatment of 3P(erson) as non-person (Benveniste 1966) which specifically requires a binary conception of Person features. Person will be our morphosyntactic case study, after we review the phonological side of the issue.

Phonology. The most widespread phonological and morphological frameworks (based on Halle's work) use binary features. One thing that has never been clarified is why syntax would be the domain of a categorial system – while morphology and phonology would be associated with a binary system (why not vice versa?). This makes it particularly interesting to note that in Government Phonology, as in syntax, primitives are categorial, i.e. elements (Kaye, Lowenstamm & Vergnaud 1985). Elements are single-valued units which are either present in a segment or absent from it. As such, elements can only refer to the presence of a phonological property (not to its absence) and only participate in privative oppositions in Trubetzkoyan sense. In binary feature theory, [\pm Feature] can refer to both privative and equipollent oppositions, since the negative value can either refer to some property and characterize natural classes (as in the case of [\pm sonorant], [\pm anterior]) or refer to the absence of some property (e.g. [\pm nasal], [\pm lateral]). In the notion of element, monovalency goes together with autonomous phonetic interpretation (although the former does not necessarily imply the latter). By autonomous interpretability, each phonological prime has its own phonetic identity that can manifest in isolation from other features.

We take the view that monovalent feature systems allow significantly simpler representation of phonological processes in various respects. An example of this concerns the account of height harmony systems, such as the one of Pasiego Spanish in (1), that are accounted for in terms of complexity agreement instead of feature spreading (Harris & Lindsey 1995). In (1), general conditions regulating Licensing do not allow for unstressed nuclei an elemental content more complex than the content of the stressed nucleus; hence the decomposition [A, I] \rightarrow [I], [A, U] \rightarrow [U], i.e. the raising of unstressed mid vowels.

(1) bebér beberé bibirí:s ‘drink (INF / FUTURE 1SG / FUTURE 2PL)’
 komér komeré kumirí:s ‘eat’ (INF / FUTURE 1SG / FUTURE 2PL)’

Much in the same terms, non-harmonic vowel reduction in its twofold outcome of raising/lowering (whereby nuclei can contain only one element) and centralization (whereby nuclei can only contain the neutral vowel) is explained as an effect of decomposition due to the prosodic weakness of unstressed position. In this account, seemingly independent phenomena are attributed to a same process of loss of segmental content. Elements also allow a simple representation of consonant lenition, whose typical trajectories are expressed in terms of progressive loss of elements. (2) refers to the lenition phenomenon of Tuscan ‘Gorgia’. In Element Theory, the different outcomes (spirantization, debuccalization, deletion) can be explained as progressive steps of decomposition, instead of the result of arbitrary change in feature value.

(2) t > θ > h > Ø

In general, Elements theory, within a Government Phonology approach, can explain the connection often observable between segmental phenomena and the prosodic organization of utterances.

Morphology. In morphology, the binary features side of the potential opposition corresponds to the widely adopted model of Distributed Morphology (DM, Halle & Marantz 1993). It has been consistently argued that the existence of just four persons (1 Exclusive, 1 Inclusive, 2 and 3) depends on the existence of two binary Person features. According to Bobaljik (2008) the Persons are defined

as in (3a). Another popular system is (3b) (cf. Harbour 2016).

(3)	1 Excl	(a)	+speaker, -hearer	(b)	+speaker, -participant
	1 Incl		+speaker, +hearer		+speaker, +participant
	2		-speaker, +hearer		-speaker, +participant
	3		-speaker, -hearer		-speaker, -participant

We see a few problems with (3). First, it would seem safe to assume that features are predicates partitioning some logical space (see below) and their denotatum lies at the intersection of the various predicates. However, the construal of 1 Incl as (+speaker, +hearer) in (3a) requires the feature set to define a set of individuals, not a set of properties of a single individual. Something similar holds of the characterization of 1 Excl as (+speaker, -participant) in (3b). As the intersection of the two sets is void, the desired interpretation require set union. Crucially, what the relevant interpretation is, is decided post hoc. Another problem is that in order to define an elementary notion of speaker (1 Excl) we need to invoke at least one negative specification. Redundancy is addressed by privative systems with underspecification (not discussed here for reasons of space). However, the issue is deeper, as emerges from the especially clear discussion by Harbour (2016). In order to get 1 Excl, i.e. reference to the Speaker, we need to partition the Person lattice by means of the \pm speaker, \pm participant features. Therefore, the conceptual system includes the primitive content SPEAKER, but the grammar contains only an indirect representation of the speaker, as a partition of the Person space.

Before we get to the alternative, we must mention that in languages which have only three persons, 1 Incl is syncretic with 1 Excl, as in English *we* – while 1 Incl is never syncretic with 2 (Zwicky 1977). Noyer (1997) argues that this pattern of syncretisms is due to the interaction of the feature matrix with the Person hierarchy in (4) – essentially to the effect that Person x cannot lack specialized lexicalization (be impoverished, technically) if Person $x+n$ has specialized lexicalization. Harbour (2016) argues that a more principled solution can be found if instead of conceiving features as first-order predicate, one considers them as functions mapping lattices into lattices. Crucially, extrinsic order is involved anyway, in the order of application of the functions.

(4) $1 > 2 > 3$

Monovalent features for morphology. The simplest characterization of 1 Excl and 2 is to identify them with the conceptual primitives SPEAKER and HEARER themselves. Less straightforwardly, 1 Incl is defined by the union of HEARER and SPEAKER denotation. Note that this kind of conjunctive interpretation is found in the substantive lexicon – for instance in collectives such as *cutlery* ('knives & forks & spoons'). In other words, SPEAKER, HEARER are treated as lexical contents, as in (5).

(5) 1excl: SPEAKER 2: HEARER 1incl: SPEAKER \wedge HEARER

Under (5), we cannot characterizes 3 as the non-person. However, this seems the wrong way to put the question. In DPs, which are 3 for agreement purposes, reference is achieved through a system of Ds, in other words through (in)definiteness, quantification, deixis. In turn, the often observed lexical coincidence between 3P pronouns and Ds (e.g. in French) is explained if we assume that the so-called 3P reference is (in)definiteness, deixis, etc., in other words D, as in (6). Needless to say, the lexical coincidence between Determiners and 3P pronouns is coincidental under the negative characterization of the latter in terms of lack of participant properties.

(6) 3: D

We have no special insight to offer on the issue of 1 Excl/1 Incl syncretism. We note however that (4) corresponds to the independently needed syntactic hierarchy for Differential Subject/object Marking, Inverse Agreement etc. (i.e. the D-hierarchy, Kiparsky 2008).

General concerns. One of the aims of the DM discussion of Person is arguing in favour of the conclusion that Person reference is governed by UG. Our proposal does not necessarily strike a blow against UG, if we keep in mind the view of UG emerging from Hauser et al (2002). In this conception, there is no contradictions between holding a language-specific view of the Faculty of Language (FL) in the Narrow sense, and accepting that considerable chunks of FL in the Broad sense are recruited from general cognition or processing optimization. In present terms, Person is governed by the conceptual UG component (FLB).