

The form and content of distinctive features in linguistics
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(presenting work done in collaboration with Elizabeth Cowper of the University of Toronto)

What is the nature of distinctive features in linguistics? The most restrictive view would be:

Hypothesis 1: *There is a universal set of privative features, with consistent substantive content, all of which are active in all languages.*

Under this hypothesis, features should not be subject to variation or change, a prediction that has been counterexemplified in both morphosyntax and phonology. For example, Cowper & Hall (2013) argue that the diachronic development of the English modals involved the introduction of an interpretable formal feature [Modality] to the English Infl system. Before the change, modal meanings were explicitly expressed only by the lexical semantics of certain verbs and other elements; after it, the expression of modality in the modal auxiliaries had specific morphosyntactic consequences, and its absence was semantically contrastive. In phonology, the case against universally active substantive features is easily made by comparing signed and spoken languages: either different modalities use different features, or else the phonetic content of features must vary drastically. This leads us to:

Hypothesis 2: *There is a universal set of privative features, with consistent substantive content, of which each language uses a subset.*

If this hypothesis is correct, then we should expect that languages may differ as to what semantic or phonetic contrasts they represent in formal morphosyntactic or phonological features, but that languages that formalize the same contrasts should formalize them in the same way. This, however, also seems to be false. For example, in tongue root harmony systems, either advanced or retracted may be the active value (Casali 2003). In aspect systems, events may be characterized by a feature that states lack (Cowper 2005) or vice versa (Clarke 2013). If different members of the same opposition may be featurally encoded in different languages, then perhaps we should consider:

Hypothesis 3: *There is a universal set of binary oppositions, with consistent substantive content. Each language uses a subset of these, and selects one pole of each opposition to encode in a privative feature; the opposing value is unmarked.*

Under this view, some languages have privative [ATR] and others have privative [RTR]; some languages have privative [Event] and others [State]; and so on—but each language marks only one pole of any given opposition. However, there are good arguments that it is possible for both poles to be marked in the same language. For example, Harbour (2011) shows that an elegant account of number and noun class in Kiowa requires binary features [\pm singular], [\pm augmented], and [\pm group]; each of these may crucially be positive, negative, or unspecified on a given syntactic head. In phonology, Breton has a three-way contrast among (1) voiced obstruents that trigger regressive assimilatory voicing, (2) voiced obstruents that undergo progressive assimilatory devoicing, and (3) voiceless obstruents; Krämer (2000) argues that this is best accounted for with positive, negative, and unspecified values of binary [\pm voice].

However, arguments of this sort are rarely completely decisive. Hall (2009) and Iosad (2012) have shown that the facts of Breton can be accounted for with privative features. Harley & Ritter (2002) use the marked privative features [Speaker] and [Addressee], along with a default interpretation of [Participant] as [Addressee], to account for pronoun systems with an inclusive-exclusive distinction. And a privative account of Kiowa number would certainly also be possible, given enough features and complex enough realization rules. A theory that places an extremely high cost on the use of binary features can resort to a wide range of formal tools to avoid using them. That said, we pursue for the moment the possibility that Harbour and Krämer are right about Kiowa and Breton, but retain Harbour's assumption that privative features are more restrictive than binary features and should thus be preferred when possible. This leaves us with:

Hypothesis 4: *There is a universal set of features, all of which have two possible values. Each language chooses a) whether or not to use the feature at all, and b) whether one or both poles of the opposition are active in the grammar.*

Effectively, then, the language learner must not only figure out which formal features figure in the (phonological or morphosyntactic) grammar, but also must determine, for each feature, whether it is privative or binary.

How does the learner do this? Following Trubetzkoy (1939), Jakobson (1949), and Dresher (2009) (among many others), we assume that learners are innately predisposed to look for contrast in the linguistic input—that is, to identify which of the many differences in the surface forms of utterances have grammatically relevant correlates. In many cases, the correlation will be between a substantive phonetic or semantic property and a grammatical one: e.g., discovering that the presence or absence of vocal fold vibration can signal the difference between one word and another, or that noun phrases with plural referents trigger a particular form of agreement. However, it is the correlation, rather than the substance, that is crucial. For example, a learner acquiring Nupe must discover that, among the phones realized as [a], there is one that triggers palatalization of a preceding consonant, one that triggers labialization, and one that triggers neither, and that these different phonological behaviours can mark lexical differences just as different phonetic forms can (Hyman 1970). Similarly, a learner acquiring French must learn that nouns belong to classes that have no clear and consistent semantic import, but which determine the forms of determiners and adjectives in construction with them.

If features are the grammatical manifestation of systematic contrasts, and if systematic contrasts are identified by the language learner based on correlated patterns, then it must be asked (but not answered here) whether any value is added by the positing of a universal set of features. This line of thinking leads to a view of features that has much in common with the view of UG taken by Hauser et al. (2002), who claim that the narrow faculty of language consists only of recursion. Just as Merge—the operation that permits the construction of recursive structures—is the only language-specific mechanism required to account for the highly complex structures found in human language, then analogously, the search for systematic contrast is the only mechanism required to account for the abstract building blocks that make up those mental structures: the formal features of grammatical systems.

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