**On the nature of phonological primes**

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Taking for granted that phonological segments (phonemes, allophones) are not the smallest units in phonology, i.e. that there are smaller primes, this paper compares several proposals for systems of such primes in an attempt to clarify some of the issues that are involved. As such this paper is largely 'theoretical' and meant to stimulate discussion.

Firstly, I will focus on the issue of whether primes are binary or unary features. Unary features have been proposed in various models. Some models claim that no feature is unary (this is the classical Jakobsonian view, also adopted in SPE), other models hold that only some features are unary (many feature-geometry proposals), whereas still other models claim that all features are unary (dependency phonology [1], government phonology [2]). To evaluate the difference between these approaches, we first need to cut through a substantial amount of superficial terminological or notational differences. Then, we can look at the real differences, which fall in two categories. On the one hand, there are differences at the level of the classes of segments for which there is a feature. A perceived notable difference between most binary systems and most unary systems is that the latter do not have features such as 'high' and 'ATR'. However, no so-called AIU model limits its inventory of primes to only three members. I will show that a simple extension of a unary AIU system with an element 'ATR' delivers a natural expression of the class of high vowels as well. Also, most AIU system employ a notion of dependency which allows each element to be dominant or dependent which, as I will show, can be used to allow each element to have two different (albeit related) phonetic correlates. Another perceived difference concerns the apparent conflation of 'back' and 'round' into one element (|U|). I will show that here too the different status as dominant or dependent unit allows for an elegant account of the relevant properties. On the other hand, there is the matter of regarding features as unary or binary. Binary systems embody the claim that for each class of segments for which there is a prime, a second prime ('the other value') also exists for the complementary class. Unary systems make no such claim. That the phonologies of languages are very reluctant to acknowledge both complementary classes (e.g. round and non-round segments) has been widely acknowledged in binary systems by invoking the notation of radical underspecification [3] and one way of characterizing unary systems is by saying that they radicalize radical underspecification. For each feature one value is banned from the phonology completely. If radical underspecification has any empirical support, the correct methodological move is to explore its radicalized version, which is the unary feature approach [4].

The element |U| also invites a discussion concerning the acoustic and articulatory correlates of primes which will be the second major issue that I would like to discuss. I will support the view that phonological features must have both types of correlates [5], but I will suggest that whereas acoustic properties take precedence for vowels, articulatory correlates do the same for consonants. Finally, if time permits it, I will suggest that there is no reason to suppose that phonological features are 'innate'. General principles of categorization together with the fact that phonology is based on contrast are sufficient to account for the emergence of features. The common phonetic substance (I spoken or signed languages [6]), shared by our species, is sufficient to explain the emergence of recurrent categories and relations.

References

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