Phonological Typology with Contrastive Hierarchies

Phonological databases—notably the Stanford Phonology Archive (Crothers et al. 1979), UPSID (Maddieson 1984; Maddieson & Precoda 1990), P-base (Mielke 2008)—include inventories of hundreds of languages, and are easily accessible for use in surveys. However, the qualities that make them easy to use also significantly limit their reliability: they provide a single (sometimes misleading) symbol for every phoneme, with no information about phonetic variation or phonological behaviour. Though the problems inherent in such databases are well known (Simpson 1999), there have been no real alternatives.

We propose that designating inventories with contrastive features—e.g., [high] and [round], or [back] and [low]—can represent them in typologically more informative ways. If phonological representations are limited to contrastive features (Hall 2007), then relevant information is limited to two kinds: patterns of activity and phonetic variation. Extracting this kind of information from primary sources takes more effort than simple inventories, but falls well short of an in-depth analysis, and is more amenable to the sort of limited categories that large databases require.

We will illustrate this approach by looking at the 72 three-vowel inventories (with and without length contrast) in PHOIBLE (Moran, McCloy & Wright 2014), an online database that incorporates the databases named above. We will show that the 46 inventories with /i,a,u/ are not all the same, typologically; conversely, we will argue that other inventories, such as /i,ɑ,u/, /ɪ,a,ʊ/, /ɪ,ɐ,ʊ/, /i,a,ə/, are not different from some designated /i,a,u/. Representing them with contrastive features gives a more illuminating typology.