Optimization for lexical information transmission shapes systems of phonological contrast

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For many possible phonological contrast pairs, one member of the contrast is typologically 'marked', that is, less common cross-linguistically. As an example, phoneme inventories are more likely to include /k/ but not /g/, than /g/ without /k/. Recent work shows further that when marked members of contrast pairs are nonetheless present in an inventory, they tend to occur in fewer word-types than the unmarked member (Everett 2018). Finally, for many such pairs, the marked member has been shown experimentally to be relatively more articulatorily effortful, and/or perceptually more confusable. These observations have formed the basis for the hypothesis that greater articulatory or perceptual difficulty makes marked contrasts more likely to be reduced or merged with other sounds over time, leading to relative under-representation within a lexicon and outright loss over time (e.g., Wedel 2012).

But why then do marked members of contrasts exist in a lexicon to begin with? Starting from the observation that speakers tend to hyperarticulate high-information phonetic cues (Wedel et al. 2018), we predict that a marked member of a contrast pair should persist in words in which it contributes more disambiguating information to the listener in conveying word meaning, e.g., when it distinguishes a lexical minimal pair. Conversely, an unmarked member of a phoneme contrast should be able to persist in words even when it contributes little disambiguating information. In this talk I present evidence from a range of languages and phoneme contrasts that indeed, marked members of phoneme contrast pairs carry a higher relative functional load in the lexicon. These results support previous work indicating that the evolution of phoneme inventories is strongly influenced by the role that phoneme contrasts play in disambiguating lexical items.

References: • Everett, C. 2018. The global dispreference for posterior voiced obstruents: a quantitative assessment of word list data. *Language.* • Wedel, A. 2012. Lexical contrast maintenance and the organization of sublexical contrast systems. *Language and Cognition* 4(4). 319–355. • Wedel, A., N. Nelson & R. Sharp. 2018. The phonetic specificity of contrastive hyperarticulation in natural speech. *Journal of Memory and Language* 100. 61–88.