

Testing “Message-Oriented” Phonology in the Signed Modality

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Message-Oriented Phonology (MOP; see Hall et al. 2016, 2018, but also Ohala 1981, Lindblom 1990, and Bybee 2001 for earlier underpinnings) situates language as part of a communication system. Generally speaking, MOP claims that the existence of many phonological patterns can be explained as the result of trade-offs between the likelihood of accurate transmission of particular messages (e.g., morphemes, words) and the amount of effort that would be involved in producing them.

One overarching prediction of MOP, then, is that the particular words that a message is in competition with will govern the type and extent of phonetic variability that occurs in their production, and hence in the long term, what phonological patterns will arise. This competition can take multiple forms: the overall number and type of competitors across the entire lexicon of a language (neighbourhood density; e.g., Scarborough 2013), the simple existence of so-called ‘minimal pair’ competitors in the lexicon (e.g., Baese-Berk & Goldrick 2009), or the contextual presence of such competitors within a particular communicative situation (e.g., Buz et al. 2016). In general, MOP predicts that the most lexically informative parts of words will tend to be preserved and/or enhanced, while the least lexically informative parts of words will tend to be lost or reduced.

If this general approach to phonology is correct, it makes the very clear prediction that analogous phonological patterns should in fact be found in signed languages, and specifically be similar to the patterns in spoken languages to the extent that sign language lexicons and contexts are similar. Others have similarly recognized that signed languages provide an excellent means of understanding the very nature of phonological structure (e.g., Sandler et al. 2011); MOP extends this line of reasoning to predict that the various patterns *within* a phonological system are also consequences of the system’s being used for communicative purposes (cf. Börstell et al. 2016).

In this presentation, I will review some of the specific predictions that MOP makes for phonological structures and illustrate how they might be extended to the signed modality. In the course of the discussion, I will introduce some of the tools we have been developing at UBC to help facilitate such testing, including the concept of *Visible Amplitude* to measure the average amount of movement across frames in a video (Tkachman et al. 2019) and *Sign Language Phonetic Annotator-Analyzer*, software to facilitate the phonetic transcription of signed languages (Hall et al. 2017; Lo & Hall 2019).

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