

## Features and Their Physical Exponents in Signed and Spoken Languages

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It is widely acknowledged that features have two roles: (i) their primary role is linguistic (as an instrument of thought), and (ii) their secondary role is one of externalisation, in which features are mapped onto patterns in the physical signal via the transmission-reception facilities. With respect to (i), it is assumed that features are minimal contrastive units and have the function of expressing lexical contrasts. As for (ii), on the other hand, the nature of the signal differs according to the type of transmission-reception facility involved. In spoken languages, the type of signal employed is auditory-acoustic: in order to produce a given speech signal, the shape of the vocal tract is manipulated by the speech organs such as the lips, tongue and glottis. On the other hand, the signal type employed in signed languages is visual: the signal is formed by articulators such as the hands, facial features, and the upper body. In the case of spoken languages, speakers produce a speech signal (i.e., an utterance) by using their speech organs (articulators) in whichever way they think fit in order to realise a particular speech production (acoustic) target. (Note that there is often more than one way of using the articulators to produce a given acoustic pattern.) By contrast, in the case of signed languages, signers must use the fixed articulators to produce the intended visual signal (i.e., there is no alternative way of using the articulators to produce a particular visual pattern). On this basis, the grammar of spoken languages need not refer specifically to articulation, whereas signed language grammars must include information about articulation.

During the last 40 years, however, researchers who refer only to articulation-based features have shown that similar hierarchical structures involving features are relevant to both spoken and signed languages (Sandler 1989, 2012, 2013, 2014; van der Hulst 1993, 1994; references therein). Given that it is doubtful whether information about articulation should be included in the grammar of spoken languages, we need to compare articulation-based features in signed languages with acoustics-based features (rather than articulation-based features) in spoken languages. To this end, I present a comparative study of acoustics-based features in spoken languages versus articulation-based features in signed languages. As an alternative to the standard phonological features traditionally used to describe spoken languages, I employ the elements of Element Theory (Bacley 2011) because they are linked to the acoustic signal rather than to articulation. This talk will investigate whether there may be any linguistically significant similarities between acoustics-based features in spoken languages and articulation-based features in signed languages.