

How much abstraction is too much?

The case of gemination

Holger Mitterer

Department of Cognitive Science
University of Malta

Many languages distinguish short and long consonants, or singletons and geminates. Most current proposals on how to phonologically represent geminates share one assumption: The difference between singletons and geminates is relatively uniform for all consonants in a given language. Perception of geminates would then be based on the recognition of a given consonant plus the recognition of a gemination feature or timing unit. It was tested whether this is feasible in Maltese. A production study showed that cues for gemination differ strongly between consonants. For oral stops and fricatives, duration is the strongest cue, with little variation in how strong a segment is produced (measured as voicing leak in voiceless segments). However, for the glottal stop and /h/, different allophones are used for singletons and geminates. A singleton glottal stop mostly surfaces as glottalization while the geminate is mostly produced as a stop. For /h/, the singleton is produced as breathiness on the vowel while the geminate is produced as a back fricative (/x/ or /χ/). A perception study showed that these secondary cues for glottal consonants are quite strong and influence perception not only when consonant duration is ambiguous but also—and in contrast to earlier studies—when the consonant has a typical duration for a singleton or geminate, while, for oral consonants, duration has more leverage. This indicates that geminates may take on irreducible properties and may become segments in their own right, to some extent independent of the respective singletons.