What is weak? And what is weaker?: Underspecified lexicon of /h/ and coronals
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This study examines whether /h/ is underspecified and thus has a weak lexicon. /h/ is compared with coronals which have already been argued to be underspecified (Lahiri, & Reetz, 2002). Evidence from phonological patterning shows that both coronals and /h/ have weak status and /h/ appears to be weaker than coronals (Keating, 1988; Lipski, 1984; Maddiesson, 1984; Pulleyblank, 1988). We tested it experimentally, conducting a primed lexical decision task, following Featurally Underspecified Lexicon (FUL) model (Lahiri, & Reetz, 2002). FUL assumes place feature [coronal] is underspecified, while [labial] or [velar] is fully specified. 43 undergraduates and graduates at UWM participated in the study. They all speak Korean as their native language. Participants heard an auditory prime followed immediately by a visually presented target stimulus. They were instructed to judge whether the visual target was a word or a non-word. Reaction time as well as accuracy were measured by E-Prime.

There are three experimental conditions in this study: /h/, /t/, and /p/ conditions. In /h/ condition, listeners were expected to react faster to 결혼식/kjʌlhonʂik/ ('wedding') after they heard semantically related acoustic prime 하객/hakek/ ('guest') as compared to an unrelated control word 마술/masul/ ('magic') based on the principle of semantic priming. Crucially, we include a non-word variant, *사객[sakɛk] differing only in one place feature. Even though *사객 is a non-word, it should prime responses to visual target word 결혼식/kjʌlhonʂik/ 'wedding', just as strongly as do 하객/hakek/ 'guest'. This is predicted because initial [s] in the speech signal does not mismatch with initial /h/ in the lexical entry, which is underspecified for place. Both 하객/hakek/ 'guest' and *사객[sakɛk] will reveal fast reaction times. Similarly, in /t/ condition, non-word variants should prime the target words as the words with the initial [t] do, because /t/ is assumed to be underspecified. On the other hand, in the control condition /p/, when initial [p] in 바람/param/ ('wind') is provided as the target acoustic prime, the non-word variant *다람[taram] should not prime the semantically related word 태풍[tʰepʰun] ('storm'). This is because /p/ is fully specified for place in lexical entries. The place feature [coronal] from the signal [t] mismatches with the place [labial] of /p/. Thus, activation from 바람/param/ ('wind') should show fast reaction times while activation from *다람[taram] should reveal slow reaction times.

The results, surprisingly, show that non-word variants did not significantly prime the target words, suggesting that /h/ and /t/ are not underspecified for place in Korean. Moreover, the control condition offered the evidence that labial /p/ may in fact be underspecified for place in Korean. The results from both language data and the experiment imply that the effects of underspecification might differ from languages—underspecification might not work in the same way across languages.
References: