

Perceptual learning and allophonic variation in liquids

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Numerous studies have shown that listeners can adapt to idiosyncratic pronunciations through lexically-guided perceptual learning. For instance, an ambiguous sound between [s] and [f] (^s/_f) will be learned as /s/ if heard in words such as *platypus*, but as /f/ in words such as *giraffe*. This learning generalises, so that listeners hear [nai^s/_f] as *nice* or *knife* depending on the exposure condition (*platypu^s/_f* vs. *gira^s/_f*). Previous research focused on contrasts that differ only in local cues, such as plosives and fricatives. We investigated here whether perceptual learning also occurs for contrasts that differ in nonlocal cues (distributed over the syllable), such as the /l/-/r/ contrast in Dutch (implemented as [l] vs. [r] in the Western part of the Netherlands). Listeners were exposed to an ambiguous [l̥/r̥] in Dutch words ending in either /r/ or /l/. The ambiguous sound was created by morphing [ɹ̥] and [l̥] syllables to capture the contrast's distributed nature. A subsequent test phase revealed a significant difference in /r/-responses to a [ɹ̥]-[l̥] continuum between the groups that learned to interpret the ambiguous sound as either /r/ or /l/. We then went on to test whether learning generalises over allophonic differences. If so, exposure should influence the perception of another implementation of the contrast: that with a trilled /r/ ([ɹ̄]-[l̄]), tested in both post- and pre-vocalic position (pre-vocalic approximants are not attested in Dutch). Preliminary results show that training effects reduce when different allophones are used during test, suggesting that the learning effect has an allophonic basis.