

Irish initial mutation: total or partial eclipse?

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In this study, we examine the phonetic properties of the mutated consonants of Irish, focusing on the initial mutation process eclipsis.

Like all the Celtic languages, Irish has a system of initial mutations that modify the initial segments of words. There have been very few experimental studies examining these initial mutations, and we therefore know very little about the phonetic properties of mutated consonants or their processing by listeners. For example, is the [g] of *leis an gcasúr* [gasu:r] 'with the hammer', a consonant arising from the initial mutation eclipsis, acoustically different from the [g] in *gasúr* 'child', a consonant present in the base form of the word *gasúr* [gasu:r] 'child'? Does the [g] of *leis an gcasúr* 'with the hammer' retain any properties of the /k/ of the base form of the word (*casúr* [kasu:r])? Is the eclips{e|is} total or partial? Studies of similar processes in other languages (e.g., French liaison, German word-final devoicing) find evidence for "incomplete neutralization."

Seven young, native speakers of Connemara Irish performed two tasks: a card game task designed to elicit spontaneous, uncontrolled speech, followed by a reading task. We found very different patterns of eclipsis for read speech and uncontrolled speech. Participants systematically produced initial mutations (which are marked in the orthography) in read speech. In the card game task, however, we observe a great variability in the realization of the initial mutations, with only one speaker producing a pattern approaching that predicted by the traditional grammar.

Duration analyses of the initial consonants of the critical items (all stops) in the reading task offer some evidence that eclipsed consonants may retain some of the characteristics of their voiceless counterparts: they have slightly (but significantly) longer VOTs than base consonants, as well as longer total consonant durations. Additional analyses are planned (e.g., spectral moments and relative intensity of the stop burst).

It is possible that the observed durational differences reflect a real difference between eclipsed and base consonants. Other explanations, however, need to be considered. Initial mutations may be part of a speaking style that is more formal and less familiar, and so the observed differences in duration may reflect careful pronunciation or hyperarticulation. The durational differences may also be due in part to an effect of orthography, since Irish mutations are systematically represented in the orthography with a digraph or trigraph (e.g., <gc> ~ [g] in *leis an gcasúr* [gasu:r]).