

**Palatalisation and velarisation in Scottish Gaelic sonorants,
and the implications for sound change**
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In this paper I will describe a series of studies investigating palatalisation and velarisation in Scottish Gaelic sonorants, and the implications for models of sound change (Nance & Kirkham 2020, Nance & Kirkham forthcoming, Kirkham & Nance under review). Scottish Gaelic is an endangered Celtic language of Scotland with a large and unusual sonorant system contrasting palatalised, plain, and velarised laterals, nasals and rhotics i.e. /ɬ ɭ ɭ̥ ɳ ɳ̥ n ɳ̥̥ r̥ r r̥̥/.

Here I present acoustic and ultrasound tongue imaging data from 12 Gaelic L1 speakers from the Outer Hebrides. Study 1 explores the acoustics of the contrasts in laterals and nasals, Study 2 focusses on the detail of rhotic production in terms of articulation and acoustics, and Study 3 explores the acoustic and articulatory distinctiveness of each phoneme category using machine learning.

Overall, these studies show that 1) this very large and unusual system is produced by speakers, 2) when perhaps we would predict sound change, that is not always the case. In the Discussion I explore some of the ways in which speakers are maintaining this system despite the pressures from Gaelic's endangered status, and the unusual nature of the sonorant system, which might lead to sound change in other contexts. I consider both sociolinguistic as well as articulatory and perceptual explanations.

Nance, Claire & Sam Kirkham. 2020. The acoustics of three-way lateral and nasal palatalisation contrasts in Scottish Gaelic. *Journal of the Acoustical Society of America* 147(4), 2858–2872.

Nance, Claire & Sam Kirkham. Forthcoming 2022. Phonetic typology and articulatory constraints: The realisation of secondary articulations in Scottish Gaelic rhotics. *Language*.

Kirkham, Sam & Claire Nance. Under review. Supervised classification of acoustic and articulatory dynamics in palatalisation contrasts. *Journal of Phonetics*.