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Sociolinguistic Aspects of Approximants

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5.1. Introduction

In this chapter, we consider the sociolinguistic aspects of the production and perception of approximants. Our aim is to review and discuss factors such as dialectal variation, social class, gender, ethnicity, multilingualism, and language contact. Specifically, we focus on laterals and rhotics as the locus of most sociolinguistic variation in approximants. We consider many kinds of rhotics (including some non-approximant rhotics) to provide a holistic account of variation in these sound classes. Rhotics and laterals are articulatorily complex, requiring multiple lingual, and sometimes labial, gestures for production. For this reason, there are many axes along which approximant production, and therefore also perception, can vary.

We first consider two ways in which approximants can vary, stemming from articulatory variation. We consider variation according to syllable position, which has been adapted and amplified by different sociolinguistic groups to become part of the structure of different varieties (§5.2). Then, we consider how articulatory change in laterals and rhotics, through loss of lateralization or rhoticity, is realized differently by different social groups (§5.3). In §5.4 we explore how the variation stemming from articulation differences is used stylistically in the construction of different identities ("third-wave" approaches to variation).

Finally, we examine the impact of individual bilingualism and society-wide language contact on the production and perception of laterals and rhotics (§5.5).

5.2. Positional Variation in Laterals and Rhotics

Lateral production differs according to prosodic position, with laterals in syllable onsets produced with a more raised and fronted tongue body ("light/clear"), and laterals in syllable codas produced with a more retracted and lowered tongue body ("dark") (Narayanan & Alwan, 1997; Sproat & Fujimura, 1993). This "intrinsic" prosodic variation is reported across languages and is "presumably universal" (Recasens, 2012, p. 369). Some languages and dialects, however, go beyond what can be expected from intrinsic positional variation and develop allophonic rules for clearness/darkness in laterals, referred to as "extrinsic" variation (Recasens, 2012, p. 370). Dialects of British English appear to display some extreme extrinsic variation, leading to large allophonic differences in the realization of laterals. This variation has been the subject of numerous sociolinguistic investigations comparing across dialects and across social groups within regions.

Southern British English is typically reported as having clear laterals in syllable onsets and much darker laterals in syllable codas (e.g., Wells, 1982, p. 370). Other dialects, such as Newcastle, are reported to have very clear onset laterals and near-clear laterals in codas (Carter & Local, 2007). Manchester and Leeds, on the other hand, seem to have very dark laterals in codas and dark laterals in onsets (Carter & Local, 2007; Turton, 2017). In Manchester, lateral variation is stratified by social class with middle-class speakers having greater positional allophony (Turton & Baranowski, 2021). In an acoustic study comparing across different dialects of English spoken in England, Kirkham et al. (2020) show that English dialects can be divided into three broad categories: (1) dialects such as Southern

British English, which maintain clearness/darkness allophony; (2) dialects with intermediate/dark laterals in onsets and darker codas, such as Bristol, Liverpool (Kirkham et al., 2019), and York; and (3) dialects with dark laterals in all syllable positions and minimal onset/coda differences (e.g., Leeds, Sheffield). Kirkham et al.'s (2020) data came exclusively from young, highly educated participants and might differ from those reported in other studies.

In Scotland and Ireland there are similar large geographical differences in the realization of English laterals. For example, laterals in the Republic of Ireland are generally clear in all positions (Hickey, 2007, p. 146), though some younger speakers in Dublin use darker coda laterals (Hickey, 2010, p. 321). In Northern Ireland, McCafferty (2007, p. 126) reports a complex interaction of social and geographical factors. For example, Catholics in Belfast use dark laterals, while Protestants use clearer laterals. In Coleraine, working-class male speakers use dark laterals, whereas middle-class speakers and female working-class speakers use clearer laterals. In Welsh English, Penhallurick (2007, p. 162) reports clear laterals in all syllable positions in the south of Wales but dark laterals in all positions in the north of Wales. In Scotland there is also substantial variation according to geography, social class, and historical language contact. For example, (white) Glasgow English and Glaswegian Scots typically have dark or vocalized laterals (Stuart-Smith et al., 2007), while laterals in the Scottish Highlands and Islands are clear in all positions (Shuken, 1984, p. 159). English laterals in the UK and Ireland seems to show extreme geographical and social variation, but such dialectal variation also exists in other languages. For example, Majorcan Catalan has overall darker laterals than the clearer laterals in Valencian Catalan (Recasens & Espinosa, 2005). For variation in Welsh and Scottish Gaelic, see §5.5 below.

Within specific regions, different social groups exploit the sociolinguistic variation possible in lateral positional allophony. This has been particularly studied in relation to ethnicity in the UK and the larger English-speaking world. For example, coda clear /l/ is reported as a feature of Indian English and British Indian English (Sharma, 2011), Singapore Malay English (Sim, 2019), and British Asian English spoken by people from Pakistani heritage communities (Heselwood & McChrystal, 2000; Kirkham, 2017; Kirkham & Wormald, 2015; Kirkham & Zara, 2023; Stuart-Smith et al., 2011). For example, Kirkham (2017) demonstrates that L1 English-speaking young people from a Pakistani heritage background have extremely clear coda laterals in Sheffield, where laterals are typically dark in the white British English dialect. Stuart-Smith et al. (2011) show that lateral clearness/darkness in the British Pakistani population is mediated by both local dialect and individual speaker networks (see Figure 10 in Stuart-Smith et al., 2011, p. 54. Sharma (2011) also nuances the socio-stylistic deployment of lateral variants in Indian English speech. She demonstrates that "Anwar," who was born and raised in London to Indian-born parents, uses clearer laterals as part of an Indian English repertoire when speaking to an Indian interviewer, a Sri Lankan maid, and British Asian school friends.

Rhotics are also subject to some positional variation. In American and British English, they are generally relatively dark in syllable-initial position, and relatively clear in syllable-final position (Carter & Local, 2007). Investigating the liquid system in Northern England, Northern Ireland, and Scotland, Carter (1999) found that for liquids in initial position, the non-rhotic varieties in England had either clear laterals and dark rhotics (North East), or dark laterals and clear rhotics (North West). This systematic difference between laterals and rhotics is referred to as "liquid polarity." In the rhotic varieties in Northern Ireland and Scotland, initial rhotics were darker than initial laterals, and final rhotics were clearer than both initial

rhotics and final laterals. Also in Scotland, Stuart-Smith et al. (2015) found that older men who spoke a vernacular form of Glasgow English displayed a similar effect of clearer /r/ than /l/ in word-final position as found by Carter, with F2 lowering over time for /l/. They report that this change for /l/ is happening alongside another well-documented effect of Scottish word-final /r/-weakening (see §5.3), such that liquid polarity is increasing over time for this dialect.

In a study looking at Hebrew rhotics, Cohen and Ben-David (2016) found that the age of acquisition of uvular fricatives varied with position, with children acquiring coda /r/ first, followed by intervocalic /r/, then initial /r/. This pattern was not influenced by caregiver productions, but it did correlate with the degree of variation, such that coda /r/, which has the fewest allophones, was acquired earliest. This led the authors to conclude that since word-final position displays the most phonemic consistency in Hebrew /r/ in relation to the other positions, it is phoneme consistency that is important in acquisition. Equally interesting, however, are cases that reveal a lack of structure. For example, Scobbie et al. (2009) found that individual speakers of Standard Dutch have different systems of onset-coda /r/ allophony, with a great deal of phonetic and articulatory variation between the speakers in their sample. This points to a lack of systemic, population-level onset-coda positional allophony for Dutch /r/ (Sebregts, 2015). Rhotics are also relatively likely to undergo diachronic change, with coda /r/ variation in English particularly well-researched. We discuss change over time in both laterals and rhotics in the next section.

5.3. Processes of Delateralization and Derhoticization

As well as the substantial sociolinguistic literature on variation in lateral/rhotic production described above, much attention has been paid to socially conditioned processes by which laterals and rhotics lose either lateralization, or aspects of rhoticity. In this section, we first consider two delateralization processes, before turning to loss of rhoticity. First, we discuss a process extensively studied in Spanish dialectology and sociolinguistics known as *yeísmo*, which refers to the merger, or near merger, of the palatal lateral /ʎ/ and palatal fricative/approximant /j/ to [j̟] (Rost Bagudanch, 2017). For example, the words *pollo* "chicken" and *poyo* "stone bench" are both produced as [poj̟o]. *Yeísmo* is thought to have been imported to Latin America by Andalusian colonizers in early modern times (Kania, 2010). It is now found in all Spanish-American varieties except those in highland Bolivia, Peru, and Ecuador (Penny, 2000, p. 147). Similarly, in Peninsular Spanish, *yeísmo* is widespread, but the palatal lateral is typically retained in varieties where there is contact with a regional language with a phonemic palatal lateral (Beristain, 2021, p. 704; see also Section 5.5).

There is also considerable variation in *yeísmo* along social dimensions such as age, gender, and social class. In Spain, *yeísmo* is now associated with urban settings, especially Madrid and cities across northern Spain. It is also more common in the speech of younger people, and working/middle-class speakers (Kania, 2010, p.223; Penny, 2000, p. 132). *Yeísmo* is also reported to be more common among female speakers and is seen as a marker of prestige among people in rural parts of Spain (Rost Bagudanch, 2017, p. 174). In Latin America, there are similar social constraints on the extent of the merger. For example, *yeísmo* is more common among younger speakers in Bogatá, Colombia (Espejo Olaya, 2013), and it is associated with young, female, urban speakers from working/middle-class backgrounds in Peru (Heros Diez Canseco, 2001, p. 86).

Another process by which laterals lose their laterality is referred to as "l-vocalization." Lateral production typically involves tongue tip and tongue dorsum gestures. In vocalized productions, the magnitude of the tongue tip gesture is reduced such that the lateral sounds like a back rounded vowel, or labial-velar approximant. Diachronically, l-vocalization seems to be relatively commonly documented in Indo-European at least. For example, in Polish orthographic "ł" is almost universally pronounced as [w] (e.g., in *mały* [mawɨ] "small"), where laterals are retained in other Slavic languages (e.g., Ukrainian *малий* [malɪj]). In Polish, lateral productions are only retained in some eastern and southern dialects, as well as conservative theatrical Polish (Kraska-Szlenk et al., 2018).

In Polish, l-vocalization occurrs in syllable onsets and word-initially as well as codas (e.g., in the name of the city *Łódź* [wut͡ɕ]). In Swiss German, vocalization can occur in syllable onsets, but not word-initially, as in *glauben* [g̊u̯ɔu̯b̥ə] "believe" (Leemann et al., 2014, p. 193). Leemann et al.'s (2014) work across Switzerland indicates that vocalization is a change in progress in many regions, apart from the larger cities of Basel and Zürich. In Scots and English, l-vocalization affects syllable codas. For example, Scots /al/, /ul/, and /ol/ vocalized in the early fifteenth century (Macafee & Aitkin, 2003). Even for speakers who do not typically vocalize, a common Scots/vernacular Scottish English insult is *ba**w**bag*, produced with a vocalized lateral (instead of *ball* + *bag*). Traditional l-vocalization is realized in the contemporary Scots of working-class speakers (Stuart-Smith et al., 2006). Interestingly, young working-class Glaswegian Scots speakers also use l-vocalization, which is typical of many UK English varieties including urban Southern British English, for example pre-consonantally as in *milk* [mɪok] (Cole, 2022; Hardcastle & William, 1989; Johnson & Britain, 2007; Przedlacka, 2001). The adoption of non-local variants such as preconsonantal l-

vocalization is partly due to engagement with the (at the time) popular TV show based in South East England, *EastEnders*, where actors use these variants (Stuart-Smith et al., 2013).

L-vocalization is widely reported in other varieties of English around the world, for example in New Zealand and Australia (Horvath & Horvath, 2001), the US (Durian, 2008; Fix, 2014; Hall-Lew & Fix, 2012), and Hong Kong (Wee, 2008). In Singapore, the multi-ethnic context means that multiple syllable-coda lateral variants are available for sociolinguistic use. These include vocalized and dark laterals, and sometimes lateral deletion after back vowels, especially among the ethnically Chinese population (Deterding, 2007, p. 20). Sim (2021) demonstrates that Malay Singaporean caregivers deploy all these variants in child-directed speech. Specifically, mothers use more Malay-influenced lighter laterals in informal contexts with their children. In formal contexts, mothers use darker coda laterals (associated with standards such as British English) and more vocalized laterals (associated with local Singapore English).

Rhotics are also susceptible to weakening over time, with word-final /r/ in many English varieties exhibiting lenition in different ways, including smaller magnitude of the tongue-tip gesture, shorter duration, and higher F3 (Bermúdez-Otero, 2011). Rhotics display perhaps even more sociolinguistic variation than laterals, with Labov (1972, p. 169) observing in his influential work on variation in New York City that /r/ is “extraordinarily sensitive to any measure of social or stylistic stratification” (p. 00). Labov visited New York department stores with varying levels of prestige, eliciting the phrase “fourth floor” from store workers by enquiring about the location of a particular department located on that floor. His most significant finding was that the proportion of informants who used postvocalic /r/ in these short interactions was directly related to the prestige of the department store. Nowadays, a higher rate of rhoticity in American English is broadly associated with higher

social evaluation, with lower rhoticity seen as the lower prestige form. Becker (2014) observes that a change towards increased use of rhoticity in American English is nearly complete, with New England and New York City simply slower to adopt it.

In contemporary England, however, rhoticity is seen as indicating traditional or rural ways of life (Dann et al., 2022; Ryan et al., 2022), or is even a source of ridicule (Barras, 2011). The loss of rhoticity in England is still taking place in the few locations where it remains, particularly in the North West (Barras, 2018; Heselwood, 2009; Nance et al., 2023; Turton & Lennon, 2023) and South West (Blaxter et al., 2019; Malarski, 2017; Piercy, 2012). In Latin American and Afro-Hispanic varieties of Spanish, coda /r/ is more often deleted by speakers who are lower on the socio-economic scale (Alba, 1990; Guy, 2014), indicating that /r/-deletion also has a class dimension in languages other than English.

Social stratification of /r/ is also evident in Scotland, where the strong rhoticity present in Standard Scottish English is associated with higher socio-economic status, and weaker rhoticity is stigmatized (Jauriberry, 2021; Lawson et al., 2014, 2018; Lennon et al., 2015). Variable rhoticity in Scotland has been very well researched, particularly in relation to the sociophonetics, articulation, and perception of phonetically weakened postvocalic /r/, which is found primarily in central Scotland. This realization manifests as a pharyngealized variant with a delayed, post-voicing tip-up gesture (Lawson et al., 2018) and is known as "derhoticized /r/" (Stuart-Smith, 2007). Derhoticization in Scotland is not generally thought to be due to direct contact with non-rhotic speakers from England, as Dickson and Hall-Lew (2017) claim may be the case for some speakers in Edinburgh. Instead, it is more likely to be a process of phonetic erosion over time with community-internal driving forces, with a very gradual rate of change (Lawson et al., 2014; Lawson & Stuart-Smith, 2021). Although this section mainly considers derhoticization, it is important to note that the opposite scenario is

also possible. For example, Mielke (2015) demonstrates increasing tongue bunching and retroflexion in Quebec French vowels resulting in increased audible rhoticity.

Lennon (2024) found that when perceiving derhoticized /r/, experience with the linguistic environment has a large effect on one's ability to use phonetic detail to make decisions about phonological categories. In experiments testing listeners' ability to discriminate between minimal pairs such as *hut* and *hurt*, listeners with little exposure to Glaswegian with phonetically weak rhoticity did not perceive it as /r/, instead interpreting the vocalic segment in words such as *hurt* as a plain vowel. In contrast, Glaswegian listeners were highly sensitive to difference between the stimuli, even though these listeners were almost universally middle-class speakers of Standard Scottish English who themselves produced strong /r/ variants. Most interesting was a group of listeners who had lived in Glasgow for a short time but were raised in England who over-reported the presence of /r/ in the phonetically weakened Glasgow /r/ stimuli. Their pattern of perceptual hypercorrection indicates instability in recently-learned phonetic detail.

5.4. Third-Wave Approaches

The work discussed above has mainly employed a quantitative variationist approach and then inferred social meaning by correlating approximant variants with different social groups. Other studies have instead taken a "third-wave" approach to style and variation and consider how particular variants are used to create social meaning in interaction (Eckert, 2012). For example, Sharma (2021) describes how second-generation British Asians selectively deploy features associated with Indian English, such as clear laterals. British Asians use clear laterals (among other features) to demonstrate affiliation to their roots, but also status in the new transnational hierarchy. Similarly, in the multi-ethnic and multilingual

setting of Singapore, Sim (2023) demonstrates that certain coda lateral variants have their origins in different ethnic groups (clear /l/ from Malay, vocalized /l/ from Chinese). As variation in Singapore becomes associated with social meaning, however, clear /l/ is becoming stigmatized, and vocalized and dark laterals are becoming part of emerging local standards.

Pratt (2020) describes how darker laterals are part of a locally enregistered style, "tech," which involves working in theatre production in a California high school. She argues that darker laterals are part of a socially specific articulatory setting in this community of practice. Similarly, Hadodo (2023) describes how Istanbul Greek speakers draw on their multilingual and multicultural backgrounds to develop an enregistered variety of Greek. When participants perform Istanbul Greek, they use, among other features, velarized laterals, which are not typical of Standard Modern Greek. Performance and maintenance of a lateral variant was also found in the study conducted by Al-Wer and Al-Qahtani (2016), who show that while a sound change is ongoing from [ɮˁ] to [ðˁ] in the Arabic dialects of Tihāmat Qaḥtān, Saudi Arabia, some speakers hypercorrect and produce laterals where they would not etymologically be expected.

Becker (2009) reports that speakers in New York City's Lower East Side make use of micro-variation in rhoticity as a resource to indicate a sense of place, increasing their non-rhoticity when interviews turned to neighbourhood topics. Interestingly, Dickson and Hall-Lew (2017) note that working-class male speakers in Edinburgh show a striking similarity to Becker's findings, in that they also index local authenticity through an increase of non-rhoticity. This perception of increased authenticity through /r/ variation was also noted by MacFarlane and Stuart-Smith (2012), who reported that a working-class identity was in fact a prestige variety for many speakers in Glasgow. In a study looking at Santomean Portuguese,

Bouchard (2023) writes that speakers raised on the island of São Tomé only become aware of their increased use of a "strong /r/" when in contact with Portuguese speakers of non-Santomean origin. Similar to the use of non-rhoticity in New York and Scotland, Santomeans increasingly use strong /r/ as a way to mark their national identity, despite its negative perception among non-Santomeans and some Santomeans alike. Similarly, Ribbens-Klein (2017) reports that speakers indexed a sense of place in the South Cape region of South Africa in their use of the locally marked uvular [ʀ] in Afrikaans, in contrast to the standard alveolar trill [r]. Finally, Rafat (2010) shows that female Tehrani Persian speakers do not prefer the prestige form of coda trilled [r], even though both men and women use it in (formal) reading tasks.

5.5. Language Contact and Multilingualism

Laterals have proved to be extremely fertile ground for studies of bilingualism and language contact. This is perhaps due to the (relatively) straightforward acoustic and auditory correlates of lightness/darkness. Also, the interaction between prosodic position and lateral variation leads easily to questions about bilingual phonological systems. For example, researchers working in bilingualism have for some time been investigating whether bilinguals share one phonological system between languages or develop two separate systems. Khattab (2002, 2011) uses data from Arabic–English bilingual children's laterals to demonstrate that children aged 5–10 do develop separate language-specific allophonic patterns for laterals, but their clear laterals differ from monolinguals, indicating separate but interacting language systems in bilinguals. Similarly, Kirkham and McCarthy (2021) found that Sylheti–English bilingual children produced positional allophony in English, but their English laterals were clearer than English monolingual children in all positions, indicating cross-linguistic

influence. The opposite scenario is investigated by Solon (2017), who considers L2 Spanish laterals produced by L1 English speakers. Solon demonstrates that as university-level Spanish experience increases, L2 Spanish speakers' laterals become clearer and closer to Spanish L1 norms. In Yami, an indigenous language of Taiwan, there is allophonic variation between an alveolar lateral [l] and a palatalized [lʲ]. Similar to the results in Solon (2017), Lai and Gooden (2023) show gradient phonetic differences in allophony realization based on language experience and use. Kasstan (2019) also demonstrates variability in lateral palatalization in Francoprovençal, an endangered Romance language. This work uses laterals as a case study for demonstrating that speakers in a highly endangered language context are able to manipulate stylistic variation: traditional palatalization to [j] is maintained in formal elicitation tasks, but rarely produced in casual speech. Results are also mediated by dialect and speaker acquisition mode.

In Scottish Gaelic, there are three phonemic laterals /l̪ʲ, l, l̪ˠ/ (Nance & Ó Maolalaigh, 2021), which allows for interesting investigation of bilingualism and language contact, since almost all Gaelic speakers are also bilingual in English, a language with only /l/. For example, Nance (2014, 2015) shows that while overall Gaelic-speakers do produce three laterals, this is not the case among all speakers, especially younger speakers from Glasgow who acquired Gaelic through the school system. Some young Gaelic speakers also displayed delateralization in their palatalized lateral category (i.e., /l̪ʲ/ produced as [j], similar to *yeísmo*) (Nance, 2014, 2020). Nance and Kirkham (2024) instead investigated how Gaelic-dominant bilinguals produce their large Gaelic lateral system and English /l/ with positional allophony. Acoustic and ultrasound tongue imaging data indicate that Gaelic-dominant bilinguals develop new strategies for lateral production in English rather than reuse laterals from Gaelic.

Acoustic gradience between lateral categories is demonstrated in numerous other studies in bilingual and language contact settings. For example, van Hofwegen (2010) uses gradient acoustic methods to show gradual convergence of African-American Language to General American English. Acoustic measures allow investigation of how fine-grained phonetic detail is deployed for social-indexical reasons by speakers. For example, in Welsh and Welsh English, laterals are reportedly dark in the north of Wales (see §5.2). However, Morris (2017) shows that female speakers in a Welsh-dominant community make the greatest differences between Welsh and English. He argues this is for the socio-indexical reason of sounding more "Welsh." Studies of the Catalan–Spanish bilingual context also demonstrate socially conditioned variation in lateral production. Simonet (2010) describes the language contact setting of Majorca, where early bilinguals show convergence between Catalan (dark) laterals and Spanish (light) laterals. He argues that the young female speakers who have merged laterals across their two languages are specifically avoiding a Catalan accent. In Barcelonan Spanish, speakers with less exposure to Spanish use darker laterals (Davidson, 2022).

As well as gradient lightness/darkness variation in language contact settings, there is substantial evidence of delateralization, and also resistance to delateralization, due to language contact and multilingualism. For example, Sim and Post (2024) investigated the development of children acquiring English in Singapore. Children in their study typically acquire the light onset laterals of their ethnically Malay caregivers. Also, those children with a more ethnically Chinese peer network are more likely to produce l-less coda laterals. As described above, *yeísmo* is usually less widespread in bilingual Spanish-speaking communities, for example in the Andes and in Galicia. Beristain (2021) investigated *yeísmo* in the Basque Country, both in Spanish and in Basque, finding little evidence of *yeísmo*

spreading to Basque. Interestingly, sequential bilinguals appear to transfer the contrast from Basque into Spanish and do not produce Spanish *yeísmo*, although there is a lot of individual variation in the results. Similarly, O'Rourke (2020) finds that Quechua–Spanish bilinguals in Ecuador produce the /l/~/ʎ/ contrast in both languages, but women show a greater tendency towards delateralization, suggesting adoption of this ongoing sound change in Spanish.

In a study investigating Italian–Tyrolean bilingualism in South Tyrol in Northern Italy, Spreafico and Vietti (2013) found that simultaneous bilinguals presented distinct articulatory patterns in their rhotics in the two languages when producing words beginning with a /CrV/ sequence. Auditory analysis showed that these speakers used exclusively uvular approximants when speaking Tyrolean, and a mixture of uvular and apical rhotics in Italian; one possible explanation is that phonemic categories learned in childhood have a strong influence on what listeners hear later in life (Best, 1994; Flege, 1995). This effect may also account for the well-known difficulty that L1 Japanese listeners experience when learning to produce and perceive English /r/ and /l/ as separate phonemes, because Japanese has only a single liquid category, canonically realized as alveolar taps or flaps (Nagamine, 2023; Masuda, 2016). These effects are not always deterministic of production, however. Nance et al. (2016) demonstrate that rhotic productions among advanced L2 users of Scottish Gaelic are to some extent determined by L1 background, but also by speaker motivation and accent aim in Gaelic.

5.6. Conclusion and Future Directions

In this chapter we have reviewed a range of approaches to sociolinguistic variation in approximants. Throughout, we have highlighted the complex nature of approximant production, which leads to fertile ground for exploitation of different dimensions for

sociolinguistic purposes. Similarly, approximants are susceptible to change along different articulatory dimensions, such as loss of laterality or gestural reduction leading to weakening of audible rhoticity. These aspects to production, and therefore also perception, mean that there is ample future work in this area. Specifically, relatively little is known about the relationship between perception and production of sociolinguistic changes in both rhotics and laterals. At the same time, articulatory imaging techniques such as ultrasound and electromagnetic articulography (see Chapter 1 of this volume) continue to improve in terms of ease of usability and practicality for use outside the lab. These techniques can provide insights into the origins of perceptible differences in production, or the origins of sound changes. Similarly, greater computational power and skillsets in our field are leading to greater exploitation of larger datasets. In this dimension we hope to see greater research into more varied bilingual and multilingual populations, especially speakers of non-Indo-European languages, which are so far under-represented in research in this area.

References

Alba, O. (1990). *Variación fonética y diversidad social en el español dominicano de Santiago*. Pontificia Universidad Catolica Madre y Maestra.

Al-Wer, E., & Al-Qahtani, K. (2016). Lateral fricative ḍād in Tihāmat Qaḥtān: A quantitative sociolinguistic investigation. In S. Davis & U. Soltan (Eds.), *Perspectives on Arabic linguistics XXVII: Papers from the Annual Symposium on Arabic Linguistics, Bloomington, Indiana, 2013* (pp. 151–69). John Benjamins Publishing Company.

Barras, W. (2011). *Sociophonology of rhoticity and* r*-sandhi in East Lancashire English* [Unpublished doctoral dissertation]. University of Edinburgh.

(2018). Residual rhoticity and emergent *r*-sandhi in the North West and South West of England: Different approaches to hiatus-resolution? In N. Braber & S. Jansen (Eds.), *Sociolinguistics in England* (pp. 363–92). Palgrave Macmillan. https://doi.org/10.1057/978-1-137-56288-3_14.

Becker, K. (2009). /R/ and the construction of place identity on New York City's Lower East Side. *Journal of Sociolinguistics*, *13*(5), 634–58. http://doi.org/10.1111/j.1467-9841.2009.00426.x.

(2014). (r) we there yet? The change to rhoticity in New York City English. *Language Variation and Change*, *26*(2), 141–68. http://doi.org/10.1017/S0954394514000064.

Beristain, A. (2021). Type of early bilingualism effect on the delateralization of /ʎ/ in Basque and Spanish. *Linguistic Approaches to Bilingualism*, *11*(5), 700–38. http://doi.org/10.1075/lab.19082.ber.

Bermúdez-Otero, R. (2011). Cyclicity. In M. van Oostendorp, C.J. Ewen, E. Hume, & K. Rice (Eds.), *The Blackwell companion to phonology* (Vol. 4, pp. 2019–48). Wiley-Blackwell. https://doi.org/10.1002/9781444335262.wbctp0085.

Best, C.T. (1994). The emergence of native-language phonological influences in infants: A perceptual assimilation model. In J.C. Goodman & H.C. Nusbaum (Eds.), *The development of speech perception: The transition from speech sounds to spoken words* (pp. 233–77). MIT Press. https://doi.org/10.7551/mitpress/2387.003.0011.

Blaxter, T., Beeching, K., Coates, R., Murphy, J., & Robinson, E. (2019). Each person does it their way: Rhoticity variation and the community grammar. *Language Variation and Change*, *31*(1), 91–117. http://doi.org/10.1017/S0954394519000048.

Bouchard, M.-E. (2023). “We have that strong R, you know”: The enregisterment of a distinctive use of rhotics in Santomean Portuguese. *International Journal of the Sociology of Language*, *2023*(279), 233–57. http://doi.org/10.1515/ijsl-2021-0099.

Carter, P. (1999). *Abstractness in phonology and extrinsic phonetic interpretation: The case of liquids in English*. In J.J. Ohala, Y. Hasegawa, M. Ohala, D. Granville, & A.C. Bailey (Eds.), *Proceedings of the 14th International Congress of Phonetic Sciences* (pp. 105–8). Regents of the University of California. https://www.internationalphoneticassociation.org/icphs-proceedings/ICPhS1999/papers/p14_0105.pdf.

Carter, P., & Local, J. (2007). F2 variation in Newcastle and Leeds English liquid systems. *Journal of the International Phonetic Association*, *37*(2), 183–99. http://doi.org/10.1017/S0025100307002939.

Cohen, E.-G., & Ben-David, A. (2016). The role of allophony and frequency in the acquisition of the Hebrew rhotic. *Clinical Linguistics & Phonetics*, *30*(2), 101–18. https://doi.org/10.3109/02699206.2015.1115555.

Cole, A. (2022). Cockney moved east: The dialect of the first generation of East Londoners raised in Essex. *Dialectologia et Geolinguistica*, *30*(1), 91–114. https://doi.org/10.1515/dialect-2022-0005.

Dann, H., Ryan, S.D., & Drummond, R. (2022). Social meaning in archival interaction: A mixed-methods analysis of variation in rhoticity and past tense BE in Oldham. *English Language & Linguistics*, *26*(4), 861–87. http://doi.org/10.1017/S1360674322000119.

Davidson, J. (2022). On Catalan as a minority language: The case of Catalan laterals in Barcelonan Spanish. *Journal of Sociolinguistics*, *26*(3), 362–85. http://doi.org/10.1111/josl.12545.

Deterding, D. (2007). *Singapore English*. Edinburgh University Press.

Dickson, V., & Hall-Lew, L. (2017). Class, gender, and rhoticity: The social stratification of non-prevocalic /r/ in Edinburgh speech. *Journal of English Linguistics*, *45*(3), 229–59. http://doi.org/10.1177/0075424217718024.

Durian, D. (2008). The vocalization of /l/ in urban blue collar Columbus, OH African American Vernacular English: A quantitative sociophonetic analysis. *Ohio State University Working Papers in Linguistics*, *58*, 30–51.

Eckert, P. (2012). Three waves of variation study: The emergence of meaning in the study of sociolinguistic variation. *Annual Review of Anthropology*, *41*, 87–100. http://doi.org/10.1146/annurev-anthro-092611-145828.

Espejo Olaya, M.B. (2013). Estado del yeísmo en Colombia. In R. Gómez & I.M. Martos (Eds.), *Variación yeísta en el mundo hispánico* (pp. 227–36). Iberoamericana Vervuert. https://doi.org/10.31819/9783954870691-010.

Fix, S. (2014). AAE as a bounded ethnolinguistic resource for white women with African American ties. *Language & Communication*, *35*, 55–74. https://doi.org/10.1016/j.langcom.2013.11.004.

Flege, J. (1995). Second language speech learning: Theory, findings, and problems. In W. Strange (Ed.), *Speech perception and linguistic experience: Issues in cross-language research* (pp. 233–77). York Press.

Guy, G.R. (2014). Variation and change in Latin American Spanish and Portuguese. In P. Amaral & A.M. Carvalho (Eds.), *Portuguese–Spanish interfaces: Diachrony, synchrony, and contact* (pp. 443–64). John Benjamins Publishing Company. https://doi.org/10.1075/ihll.1.22guy.

Hadodo, M.J. (2023). *Hellenes* and *Romans*: Oppositional characterological figures and the enregisterment of Istanbul Greek. *Journal of Sociolinguistics*, *27*(5), 486–505. https://doi.org/10.1111/josl.12608.

Hall-Lew, L., & Fix, S. (2012). Perceptual coding reliability of (L)-vocalization in casual speech data. *Lingua*, *122*(7), 794–809. https://doi.org/10.1016/j.lingua.2011.12.005.

Hardcastle, W., & William, B. (1989). Articulatory and perceptual factors in /l/ vocalisations in English. *Journal of the International Phonetic Association*, *15*(2), 3–17. http://doi.org/10.1017/S0025100300002930.

Heros Diez Canseco, S. de los. (2001). *Discurso, identidad y género en el castellano peruano*. Pontificia Universidad Católica del Perú.

Heselwood, B. (2009). Rhoticity without F3: Lowpass filtering, F1–F2 relations and the perception of rhoticity in “north-force,” “start” and “nurse” words. *Leeds Working Papers in Linguistics & Phonetics*, *14*, 49–64. https://www.latl.leeds.ac.uk/wp-content/uploads/sites/49/2019/05/Heselwood_2009.pdf.

Heselwood, B., & McChrystal, L. (2000). Gender, accent features and voicing in Panjabi–English bilingual children. *Leeds Working Papers in Linguistics and Phonetics*, *8*, 45–70. https://www.latl.leeds.ac.uk/wp-content/uploads/sites/49/2019/05/Heselwood_2000.pdf.

Hickey, R. (2007). Southern Irish English. In D. Britain (Ed.), *Language in the British Isles* (pp. 135–52). Cambridge University Press. https://doi.org/10.1017/CBO9780511620782.009.

(2010). *Irish English: History and present-day forms*. Cambridge University Press.

Horvath, B.M., & Horvath, R.J. (2001). A multilocality study of a sound change in progress: The case of /l/ vocalization in New Zealand and Australian English. *Language Variation and Change*, *13*(1), 37–57. http://doi.org/10.1017/S0954394501131029.

Jauriberry, T. (2021). Variation and change of middle-class /r/ in Standard Scottish English. *Lingua*, *256*, Article 103059. http://doi.org/10.1016/j.lingua.2021.103059.

Johnson, W., & Britain, D. (2007). L-vocalisation as a natural phenomenon: Explorations in sociophonology. *Language Sciences*, *29*(2–3), 294–315. http://doi.org/10.1016/j.langsci.2006.12.022.

Kania, S. (2010). Documenting *yeísmo* in medieval and colonial Spanish texts. *Romance Philology*, *64*(2), 223–34.

Kasstan, J. (2019). Emergent sociolinguistic variation in severe language endangerment. *Language in Society*, *48*(5), 685-720. http://doi.org/10.1017/S0047404519000472.

Khattab, G. (2002). /L/ production in English–Arabic bilingual speakers. *International Journal of Bilingualism*, *6*(3), 335–53. http://doi.org/10.1177/13670069020060030701.

(2011). Acquisition of Lebanese Arabic and Yorkshire English /l/ by bilingual and monolingual children: A comparative spectrographic study. In Z.M. Hassan & B. Heselwood (Eds.), *Instrumental studies in Arabic phonetics* (pp. 325–54). John Benjamins Publishing Company. https://doi.org/10.1075/cilt.319.15kha.

Kirkham, S. (2017). Ethnicity and phonetic variation in Sheffield English liquids. *Journal of the International Phonetic Association*, *47*(1), 17–35. http://doi.org/10.1017/S0025100316000268.

Kirkham, S., & McCarthy, K.M. (2021). Acquiring allophonic structure and phonetic detail in a bilingual community: The production of laterals by Sylheti–English bilingual children. *International Journal of Bilingualism*, *25*(3), 531–47. http://doi.org/10.1177/1367006920947180.

Kirkham, S., Nance, C., Littlewood, B., Lightfoot, K., & Groarke, E. (2019). Dialect variation in formant dynamics: The acoustics of lateral and vowel sequences in Manchester and Liverpool English. *Journal of the Acoustical Society of America*, *145*, 784–94. http://doi.org/10.1121/1.5089886.

Kirkham, S., Turton, D., & Leemann, A. (2020). A typology of laterals in twelve English dialects. *Journal of the Acoustical Society of America*, *147*(1), EL72–6. http://doi.org/10.1121/10.0001587.

Kirkham, S., & Wormald, J. (2015). Acoustic and articulatory variation in British Asian English liquids. In Scottish Consortium for ICPhS 2015 (Ed.), *Proceedings of the 18th International Congress of the Phonetic Sciences*. University of Glasgow. https://www.internationalphoneticassociation.org/icphs-proceedings/ICPhS2015/Papers/ICPHS0640.pdf.

Kirkham, S., & Zara, M. (2023). Intergenerational transmission of laterals in Punjabi–English heritage bilinguals. In R. Rao (Ed.), *The phonetics and phonology of heritage languages* (pp. 129–46). Cambridge University Press. https://doi.org/10.1017/9781108966986.007.

Kraska-Szlenk, I., Żygis, M., & Jaskuła, M. (2018). Acoustic study of ł-vocalisation in Polish. In B. Czaplicki, B. Łukaszewicz, & M. Opalinska (Eds.), *Phonology, fieldwork and generalizations* (pp. 239–57). Peter Lang. https://doi.org/10.3726/b13351.

Labov, W. (1972). The social stratification of English in New York City (Washington, DC, 1966), 320–2; W. Labov. *Sociolinguistic Patterns*.

Lai, L.-F., & Gooden, S. (2023). Sociophonetic variation in the alveolar lateral in Yami. *Asia-Pacific Language Variation*, *9*(2), 196–241. http://doi.org/10.1075/aplv.20003.lai.

Lawson, E., Scobbie, J.M., & Stuart-Smith, J. (2014). A socio-articulatory study of Scottish rhoticity. In R. Lawson (Ed). *Sociolinguistics in Scotland* (pp. 53–78). Palgrave Macmillan. https://doi.org/10.1057/9781137034717_4.

Lawson, E., & Stuart-Smith, J. (2021). Lenition and fortition of /r/ in utterance-final position, an ultrasound tongue imaging study of lingual gesture timing in spontaneous speech. *Journal of Phonetics*, *86*, Article 101053. http://doi.org/10.1016/j.wocn.2021.101053.

Lawson, E., Stuart-Smith, J., & Scobbie, J.M. (2018). The role of gesture delay in coda /r/ weakening: An articulatory, auditory and acoustic study. *Journal of the Acoustical Society of America*, *143*(3), 1646–57. http://doi.org/10.1121/1.5027833.

Leemann, A., Kolly, M.-J., Werlen, I., Britain, D., & Studer-Joho, D. (2014). The diffusion of /l/-vocalization in Swiss German. *Language Variation and Change*, *26*(2), 191–218. http://doi.org/10.1017/S0954394514000076.

Lennon, R. (2024). Perception of ambiguous rhoticity in Glasgow. *Journal of Phonetics*, *104*, Article 101312. https://doi.org/10.1016/j.wocn.2024.101312.

Lennon, R., Smith, R., & Stuart-Smith, J. (2015). An acoustic investigation of postvocalic /r/ variants in two sociolects of Glaswegian. In Scottish Consortium for ICPhS 2015 (Ed.), *Proceedings of the 18th International Congress of Phonetic Sciences*. University of Glasgow. https://www.internationalphoneticassociation.org/icphs-proceedings/ICPhS2015/Papers/ICPHS1019.pdf.

Macafee, C., & Aitkin, A.J. (2003). The phonology of Older Scots. In J. Corbett, D. McClure, & J. Stuart-Smith (Eds.), *The Edinburgh companion to Scots* (pp. 138–69). Edinburgh University Press.

MacFarlane, A., & Stuart-Smith, J. (2012). "One of them sounds sort of Glasgow Uni-ish": Social judgements and fine phonetic variation in Glasgow. *Lingua*, *122*(7), 764–78. http://doi.org/10.1016/j.lingua.2012.01.007.

Malarski, K. (2017). *Loss of rhoticity in the South-West of England* [Unpublished doctoral dissertation]. University of Agder.

Masuda, H. (2016). Misperception patterns of American English consonants by Japanese listeners in reverberant and noisy environments. *Speech Communication*, *79*, 74–87. http://doi.org/10.1016/j.specom.2016.02.007.

McCafferty, K. (2007). Northern Irish English. In D. Britain (Ed.), *Language in the British Isles* (pp. 122–35). Cambridge University Press. https://doi.org/10.1017/CBO9780511620782.008.

Mielke, J. (2015). An ultrasound study of Canadian French rhotic vowels with polar smoothing spline comparisons. *Journal of the Acoustical Society of America*, *137*(5), 2858–69. http://doi.org/10.1121/1.4919346.

Morris, J. (2017). Sociophonetic variation in a long-term language contact situation: /L/-darkening in Welsh–English bilingual speech. *Journal of Sociolinguistics*, *21*(2), 183–207. http://doi.org/10.1111/josl.12231.

Nagamine, T. (2023). *Dynamic tongue movements in L1 Japanese and L2 English liquids*. In R. Skarnitzl and J. Volín (Eds.), *Proceedings of the 20th International Congress of Phonetic Sciences* (pp. 2442–6). International Phonetic Association. https://www.internationalphoneticassociation.org/icphs-proceedings/ICPhS2023/full_papers/198.pdf.

Nance, C. (2014). Phonetic variation in Scottish Gaelic laterals. *Journal of Phonetics*, *47*, 1–17. http://doi.org/10.1016/j.wocn.2014.07.005.

(2015). "New" Scottish Gaelic speakers in Glasgow: A phonetic study of language revitalisation. *Language in Society*, *44*(4), 553–79. http://doi.org/10.1017/S0047404515000408.

(2020). Bilingual language exposure and the peer group: Acquiring phonetics and phonology in Gaelic Medium Education. *International Journal of Bilingualism*, *24*(2), 360–75. http://doi.org/10.1177/1367006919826872.

Nance, C., Dewhurst, M., Fairclough, L., Forster, P., Kirkham, S., Nagamine, T., Turton, D., & Wang, D. (2023). Acoustic and articulatory characteristics of rhoticity in the North-West of England. In R. Skarnitzl and J. Volín (Eds.), *Proceedings of the 20th International Congress of Phonetic Sciences* (pp. 3572–6). International Phonetic Association. https://www.internationalphoneticassociation.org/icphs-proceedings/ICPhS2023/full_papers/217.pdf.

Nance, C., & Kirkham, S. (2024). Producing a smaller sound system: Acoustics and articulation of the subset scenario in Gaelic–English bilinguals. *Bilingualism: Language and Cognition*, *27*(4), 572–84. https://doi.org/10.1017/S1366728923000688.

Nance, C., McLeod, W., O'Rourke, B., & Dunmore, S. (2016). Identity, accent aim, and motivation in second language users: New Scottish Gaelic speakers' use of phonetic variation. *Journal of Sociolinguistics*, *20*(2), 164–91. http://doi.org/10.1111/josl.12173.

Nance, C., & Ó Maolalaigh, R. (2021). Scottish Gaelic. *Journal of the International Phonetic Association*, *51*(2), 261–75. http://doi.org/10.1017/S002510031900015X.

Narayanan, S., & Alwan, A. (1997). Towards articulatory-acoustic models for liquid approximants based on MRI and EPG data. Part I. The laterals. *Journal of the Acoustical Society of America*, *101*(2), 1064–77. http://doi.org/10.1121/1.418030.

O'Rourke, E. (2020). Phonological processes in flux: Variation in palatal lateral production in the Ecuadorian Amazon. In S. Fafulas (Ed.), *Amazonian Spanish: Language contact and evolution* (pp. 224–58). John Benjamins Publishing Company. https://doi.org/10.1075/ihll.23.09oro.

Penhallurick, R. (2007). English in Wales. In D. Britain (Ed.), *Language in the British Isles* (pp. 152–71). Cambridge University Press. https://doi.org/10.1017/CBO9780511620782.010.

Penny, R. (2000). *Variation and change in Spanish*. Cambridge University Press. http://doi.org/10.1017/CBO9781139164566.

Piercy, C. (2012). A transatlantic cross-dialectal comparison of non-prevocalic /r/. *University of Pennsylvania Working Papers in Linguistics*, *18*(2), 77–86.

Pratt, T. (2020). Embodying “tech”: Articulatory setting, phonetic variation, and social meaning. *Journal of Sociolinguistics*, *24*(3), 328–49. http://doi.org/10.1111/josl.12369.

Przedlacka, J. (2001). Estuary English and RP: Some recent findings. *Studia Anglica Posnaniensia*, *36*, 35–50.

Rafat, Y. (2010). A socio-phonetic investigation of rhotics in Persian. *Iranian Studies*, *43*(5), 667–82. http://doi.org/10.1080/00210862.2010.518030.

Recasens, D. (2012). A cross-language acoustic study of initial and final allophones of /l/. *Speech Communication*, *54*(3), 368–83. http://doi.org/10.1016/j.specom.2011.10.001.

Recasens, D., & Espinosa, A. (2005). Articulatory, positional and coarticulatory characteristics for clear /l/ and dark /l/: Evidence from two Catalan dialects. *Journal of the International Phonetic Association*, *35*(1), 1–25. http://doi.org/10.1017/S0025100305001878.

Ribbens-Klein, Y. (2017). Locality, belonging and the social meanings of Afrikaans rhotic variation in the South Cape: From patterns of frequency towards moments of meaning. *Multilingual Margins: A Journal of Multilingualism from the Periphery*, *4*(1), 7–26.

Rost Bagudanch, A. (2017). Variation and phonological change: The case of *yeísmo* in Spanish. *Folia Linguistica*, *51*(1), 169–206. http://doi.org/10.1515/flin-2017-0005.

Ryan, S.D., Dann, H., & Drummond, R. (2022). “Really this girl ought to be going to something better”: Rhoticity and social meaning in oral history data. *Language in Society*, *52*(3), 459–83. https://doi.org/10.1017/S0047404522000215.

Scobbie, J.M., Sebregts, K., & Stuart-Smith, J. (2009). Dutch rhotic allophony, coda weakening, and the phonetics-phonology interface. *QMU Speech Science Research Centre Working Paper (QMU, Edinburgh)*, *18*, 3–24.

Sebregts, K. (2015). *The sociophonetics and phonology of Dutch r*. LOT.

Sharma, D. (2011). Style repertoire and social change in British Asian English. *Journal of Sociolinguistics*, *15*(4), 464–92. http://doi.org/10.1111/j.1467-9841.2011.00503.x.

(2021). Social class across borders: Transnational elites in British ideological space. *Journal of Sociolinguistics*, *25*(5), 682–702. http://doi.org/10.1111/josl.12520.

Shuken, C. (1984). Highland and Island English. In P. Trudgill (Ed.), *Language in the British Isles* (pp. 152–67). Cambridge University Press.

Sim, J.H. (2019). “But you don’t sound Malay!”: Language dominance and variation in the accents of English–Malay bilinguals in Singapore. *English World-Wide*, *40*(1), 82–112. https://doi.org/10.1075/eww.00023.sim.

(2021). Sociophonetic variation in English /l/ in the child-directed speech of English–Malay bilinguals. *Journal of Phonetics*, *88*, Article 101084. http://doi.org/10.1016/j.wocn.2021.101084.

(2023). Negotiating social meanings in a plural society: Social perceptions of variants of /l/ in Singapore English. *Language in Society*, *52*(4), 617–44. http://doi.org/10.1017/S0047404522000173.

Sim, J.H., & Post, B. (2024). Influence of caregiver input and language experience on the production of coda laterals by English–Malay bilingual preschoolers in multi-accent Singapore. *Journal of Child Language*, *51*(6), 1290–1315. https://doi.org/10.1017/S0305000923000375.

Simonet, M. (2010). Dark and clear laterals in Catalan and Spanish: Interaction of phonetic categories in early bilinguals. *Journal of Phonetics*, *38*(4), 663–78. http://doi.org/10.1016/j.wocn.2010.10.002.

Solon, M. (2017). Do learners lighten up? Phonetic and allophonic acquisition of Spanish /l/ by English-speaking learners. *Studies in Second Language Acquisition*, *39*(4), 801–32. http://doi.org/10.1017/S0272263116000279.

Spreafico, L., & Vietti, A. (2013). On rhotics in a bilingual community: A preliminary UTI research. In L. Spreafico & A. Vietti (Eds.), *Rhotics: New data and perspectives* (pp. 57–77). Bozen-Bolzano University Press.

Sproat, R., & Fujimura, O. (1993). Allophonic variation in English /l/ and its implications for phonetic implementation. *Journal of Phonetics*, *21*(3), 291–311. http://doi.org/10.1016/S0095-4470(19)31340-3.

Stuart-Smith, J. (2007). A sociophonetic investigation of postvocalic /r/ in Glaswegian adolescents. In J. Trouvain & W.J. Barry (Eds.), *Proceedings of the 16th International Congress of Phonetic Sciences* (pp. 1449–52). Universität des Saarlandes. http://www.icphs2007.de/conference/Papers/1307/1307.pdf.

Stuart-Smith, J., Lennon, R., Macdonald, R., Robertson, D., Sóskuthy, M., José, B., & Evers, L. (2015). A dynamic acoustic view of real-time change in word-final liquids in spontaneous Glaswegian. In Scottish Consortium for ICPhS 2015 (Ed.), *Proceedings*

of the 18th International Congress of Phonetic Sciences. University of Glasgow. https://www.internationalphoneticassociation.org/icphs-proceedings/ICPhS2015/Papers/ICPHS1028.pdf.

Stuart-Smith, J., Pryce, G., Timmins, C., & Gunter, B. (2013). Television can also be a factor in language change: Evidence from an urban dialect. *Language*, *89*(3), 501–36. http://doi.org/10.1353/lan.2013.0041.

Stuart-Smith, J., Timmins, C., & Alam, F. (2011). Hybridity and ethnic accents: A sociophonetic analysis of "Glaswasian." In F. Gregersen, J. Parrot, & P. Quist (Eds.), *Language variation: European perspectives III: Selected papers from the 5th International Conference on Language Variation in Europe (ICLaVE 5), Copenhagen, June 2009* (pp. 43–59). John Benjamins Publishing Company. https://doi.org/10.1075/silv.7.04stu.

Stuart-Smith, J., Timmins, C., & Tweedie, F. (2006). Conservation and innovation in a traditional dialect: L-vocalization in Glaswegian. *English World-Wide*, *27*(1), 71–87. http://doi.org/10.1075/eww.27.1.05stu.

(2007). "Talkin' Jockney"? Variation and change in Glaswegian accent. *Journal of Sociolinguistics*, *11*(2), 221–60. http://doi.org/10.1111/j.1467-9841.2007.00319.x.

Turton, D. (2017). Categorical or gradient? An ultrasound investigation of /l/-darkening and vocalization in varieties of English. *Laboratory Phonology*, *8*(1), Article 13. http://doi.org/10.5334/labphon.35.

Turton, D., & Baranowski, M. (2021). The sociolinguistics of /l/ in Manchester. *Linguistics Vanguard*, *7*(1). http://doi.org/10.1515/lingvan-2020-0074.

Turton, D., & Lennon, R. (2023). An acoustic analysis of rhoticity in Lancashire, England. *Journal of Phonetics*, *101*, Article 101280. https://doi.org/10.1016/j.wocn.2023.101280.

van Hofwegen, J. (2010). Apparent-time evolution of /l/ in one African American community. *Language Variation and Change*, *22*(3), 373–96. http://doi.org/10.1017/S0954394510000141.

Wee, L. (2008). Phonological patterns in the Englishes of Singapore and Hong Kong. *World Englishes*, *27*(3–4), 480–501. http://doi.org/10.1111/j.1467-971X.2008.00580.x.

Wells, J.C. (1982). *Accents of English* (Vol. 2). Cambridge University Press. http://doi.org/10.1017/CBO9780511611759.