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BOOK OF ABSTRACTS

Plenaries

Modelling sociolinguistic cognition with existing systems

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The third wave of variation studies has relied heavily on the concept of indexicality, a set of culturally defined connections between linguistic and other social structures which allow speakers and listeners to invoke and alter social context (Eckert 2008, Ochs 1992, Silverstein 1976). Work on indexicality has focused on the interactional and cultural levels of analysis, but the young field of sociolinguistic cognition has begun to explore the individual-level cognitive structures and processes which underlie indexical practices (see, e.g. Levon & Fox 2014, Loudermilk 2013).

In Campbell-Kibler (2016), I argued that no specialized sociolinguistic monitor is required to account for variation-related behavior. Instead, the observed patterns can be accounted for by systems of person perception, self-regulation, linguistic grammar, habit formation, and general reasoning, all cognitive structures amply motivated by work outside of sociolinguistics. Assuming that the grammar includes the ability to incorporate nonlinguistic context, as in current exemplar models (e.g. Johnson 2006, Sumner et al 2014) and that person perception and self-regulation are able to observe at least some linguistic behavior, these systems are capable of accounting for the sociolinguistic behavior we have observed.

In this talk I will explore two key points for this approach. First, despite these systems being distinct and independently motivated, they presumably all depend on links between linguistic and social structures in order to do sociolinguistic work. To what extent are such links shared across systems and to what extent are they distinct? Preliminary work suggests that they may be distinct, meaning that each system learns and stores its own set of linguistic-social pairings, allowing for disconnect across behaviors.

Second, these systems appear to be made up of multiple processes working at differing levels of deliberative access, leading to proposed models that include a divide between implicit and explicit elements (Evans 2008). Likewise, previous work in variation as well as in language attitudes, language ideologies, and language regard have shown that sociolinguistic structures used in different tasks are multiplex and at times contradictory, necessitating divisions such as overt vs. covert attitudes (Kristiansen 2009). Both literatures suggest that sociolinguistic links differ across processes with variable levels of deliberative awareness and control, raising questions of how precisely to capture this dimension in the proposed approach.

Calibrate to innovate: variation and change between childhood and adolescence

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In order to become integrated members of their speech communities, young speakers face a number of sociolinguistic challenges. One task is that they must tune their use of variable forms in line with sociolinguistic rules of the broader speech community. At the same time, they must also identify which variables are in a state of ongoing change and become the leaders. Children must therefore conform to some norms by becoming adept at adult-like patterns of style shifting, whilst overstepping others by developing into the leaders of change. In other words, children must learn and obey the rules, but also break them. Over the course of this development, children undergo 'vernacular reorganisation' (Labov, 2001) where they move away from the parent-oriented models of early childhood, shift towards the peer-oriented models of adolescence, and finally settle on their relatively stable adult systems.

In this talk I present an examination of vernacular reorganisation as it plays out in real time. The data come from Hastings, a coastal town in southeast England part of the larger Southern British English (SBE) dialect region. The sample consists of 13 speakers, and targets a key phase in development – childhood to adolescence. The speakers were initially interviewed aged 9-11, and then again 4 years later, aged 13-15. A further corpus in the form of an age stratified adult corpus of speech from the same community forms a baseline for comparison.

In order to investigate how young speakers cope with the various, potentially competing, sociolinguistic demands, I present analyses across four different features:

- GOOSE-fronting: a socially unmarked change in progress
- TH-fronting: a rapidly shifting stigmatised change in progress
- T-glottaling: a steadily shifting stigmatised change in progress
- /s/-realisation: a stable but gendered variable feature

Comparison of these features across real and apparent time reveals how patterns observable in the wider community affect the ease at which young speakers calibrate their variable use. Moreover, how the ease of this calibration affects when, and to what extent, the developing speakers innovate within their own systems. Observing vernacular reorganisation from the perspective of both real and apparent time sheds light on the mechanism of change, while comparison across multiple features types affords a glimpse into the 'why' of vernacular reorganisation: what motivates young speakers to shift in the ways that they do?

Urban contact dialects: A comparative view

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Multilingualism acts as a motor of linguistic developments, so multilingual communities can afford us a privileged view onto ongoing tendencies of language variation and change. A particularly interesting outcome of multilingual dynamics are urban contact dialects, which I understand as "urban vernaculars that emerged in contexts of migration-based linguistic diversity among locally born young people, marking their speakers as belonging to a multiethnic peer group" (Wiese, *to appear*).

These dialects benefit from both the dynamics of urban language contact and of youth, as a particularly innovative speaker group, making them a rich domain for research into language variation and change. Accordingly, there has been a high interest in such contact dialects across a diverse range of countries and local settings.

For two large geographical regions in particular, these phenomena have received a lot of attention from contact-linguistic and sociolinguistic perspectives: Western Europe and Subsaharan Africa. In my talk, I integrate these two research threads in a comparative discussion. I show how such an integrative approach can shed a light on the interaction of local settings with societal mono- vs. multilingual habitus, and its differential outcomes at structural and sociolinguistic levels.

Talks

A [ʃ]triking change in Manchester English

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Here we present a large-scale investigation of a sound change in progress in Manchester English (McrE): the retraction of /s/ in words such as *street* and *student*, hereafter (str) and (stj), which results in a more [ʃ]-like realisation.

Despite the fact that s-retraction is well-studied in American English (e.g. Durian 2007, Gylfadottir 2015, Wilbanks 2017), it is comparatively under-researched in British varieties as work on this variable has been relatively small-scale (Sollgan 2013, Nichols & Bailey 2018) or employed methodologies relying on impressionistic coding (Bass 2009). Though a recent cross-dialectal study by Stuart-Smith et al. (2018) has, to some extent, remedied this for (str), retraction in (stj) has not yet been subject to extensive sociophonetic analysis.

This study uses sociolinguistic-interview data from 131 speakers of McrE, balanced for age, gender and socio-economic status, making this the largest study of s-retraction in a single British English speech community. Centre of gravity values were extracted from the middle portion of every sibilant, including canonical pre-vocalic /s/ and /ʃ/ as baselines for comparison, resulting in more than 80,000 tokens that were then subject to linear mixed-effects regression analysis.

The results reveal a number of interesting predictors of variation in sibilant production. Most pertinently, we find evidence of apparent-time change such that /s/ has become more [ʃ]-like across the approximately 80-year time period covered in the sample (see Figure 1). Hierarchical cluster analysis identifies a group of younger speakers who exhibit considerable overlap between (str) and canonical pre-vocalic /ʃ/ (see Figure 2). This suggests that the change is particularly advanced in this community. We also find evidence that s-retraction has taken on some social significance: a significant effect of social class reveals that upper middle class speakers exhibit a highly conservative non-retracted [s]. Importantly, in providing the first quantitative evidence of retraction in (stj) in apparent time, we also find that (str) and (stj) are changing in parallel.

The causes of s-retraction have long been debated (see e.g. Shapiro 1995, Lawrence 2000, Baker et al. 2011, Stevens & Harrington 2016), with competing theories disagreeing over the role of /ɹ/ in triggering this process. The outcome of the present study, namely that the /ɹ/-less (stj) environment is changing in parallel with (str), casts doubt on claims that this is driven by non-local assimilation with /ɹ/. Rather, affrication in /tɹ/ and /tj/ clusters seems to be the more likely explanation; ongoing analysis is further probing the relationship between t-affrication and the realisation of preceding sibilants.

Community-level change in /s/ and /ʃ/ (which can also be seen in Figure 1) also highlights that s-retraction cannot be analysed in absolute terms but must be interpreted with respect to the wider fricative space, which is expanding over time in this community and warrants further research itself.

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Figure 1: Normalised centre of gravity by date of birth (points reflect speaker means).

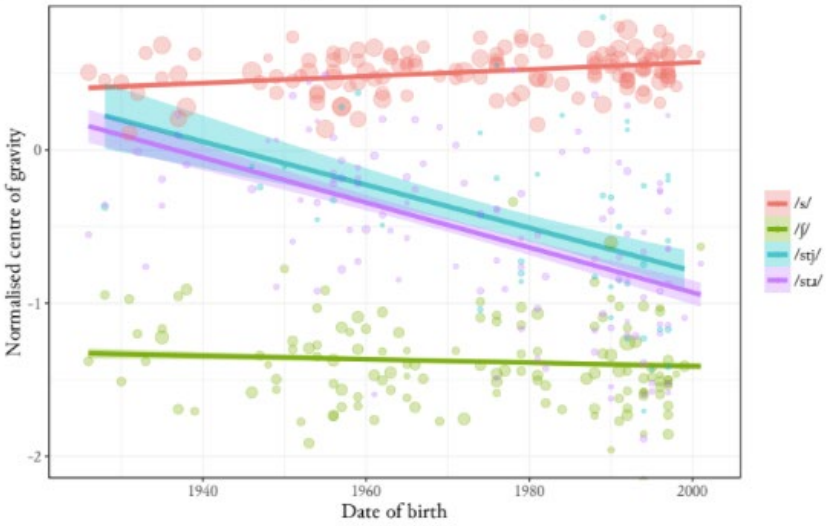
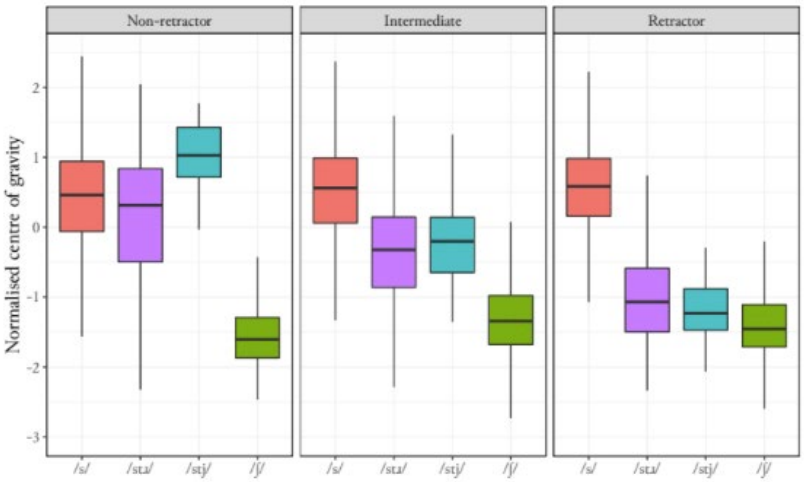


Figure 2: Retractor groups identified by hierarchical cluster analysis.



The role of identity and mobility in reconciling individual and community change: Insight from a combined panel and trend study

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Longitudinal studies investigating language change have been the mainstay of variationist sociolinguistics since its inception. Since Labov's seminal apparent-time study on Martha's Vineyard (Labov 1963) and Blondeau and Sankoff's ground-breaking real-time study on Montreal French (Sankoff and Blondeau 2007), a wealth of research has sought to reconcile the sometimes conflicting findings between panel and trend studies (Sankoff 2006). Recently, a crucial conundrum has emerged: if individuals, post-adolescence, do not retain their early- acquired grammars, then change may be proceeding more quickly or more slowly than the apparent-time study suggests (Wagner and Buchstaller 2017; Sankoff 2018).

This paper explores this issue through a combined real-time panel study and apparent-time trend study of Swabian, an Alemannic dialect spoken in southwestern Germany. Two communities were selected for this research: the large urban metropolis of Stuttgart and the semi-rural town of Schwäbisch Gmünd. Twenty participants, initially interviewed in 1982 and then re-interviewed in 2017, comprise the panel component, and 107 participants, stratified for age, sex, and education, comprise the trend component. Thirty-two linguistic variables (15 phonological, 15 morphosyntactic, and two lexical) and six social factors (speaker community, age, sex, education, local orientation, and mobility) were selected in order to ensure a comprehensive investigation of variation and change across multiple levels of the grammar. Both trend and panel methodologies were used to support a quantitative and qualitative comparison between community-wide generational change and individual lifespan change.

A token-based Dialect Density Measure (DDM) was developed (Van Hofwegen and Wolfram 2010) to quantify the concentration of dialect variants in each speaker's repertoire. The results show an average DDM in 1982 for the 20 panel speakers at 43% (n=12,714), declining in 2017 to 27% (n=29,161), a decrease of 16% over 35 years. Moreover, there is a significant difference by community, with speakers from the semi-rural town of Schwäbisch Gmünd retaining more dialect variants than those from the urban centre of Stuttgart (see Figure 1a), an effect that is more prominent for the men than the women (see Figure 1b). The trend study supports these findings, yet with convergence of the two communities in the youngest generation (see Figure 2). As expected, there are significant differences between the variables based on stigma/prestige, salience, and frequency (see Figure 3 on frequency).

Research has shown that mobility and identity construction are pivotal factors in dialect performance and language change (Blommaert 2014; Britain 2016; Coupland 2001; Johnstone 2011; Schilling-Estes 2004). The results of the multivariate analyses show that, over time, speakers with high orientation retain more dialect variants, while those with high mobility lose more variants, an effect that eclipses all other factors. The findings further reveal that some Swabian women are strategically holding on to their dialect, signalling their identity and reinforcing Heim 'home' and Heimat 'homeland' in the face of intensifying mobility, education, and standardisation pressures. The results of this study offer new insight into the interplay between lifespan and community change and the vital role that dialect identity and mobility play in the strategic indexical choices that speakers make.

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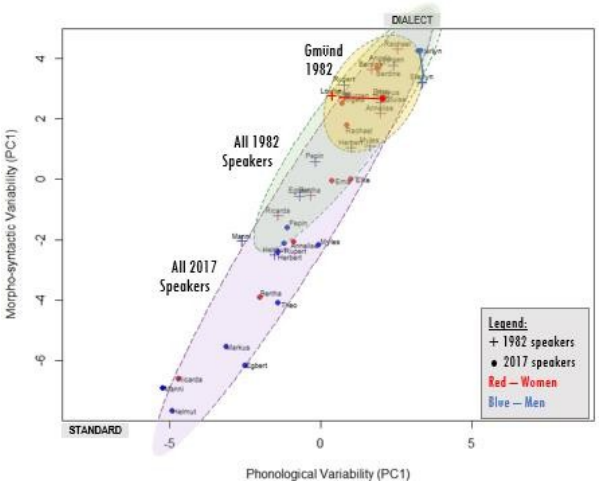

Figure 1a. Dialect Density for 20 Swabian Panel Study participants recorded in 1982 and 2017. Using Principal Components Analysis (PCA), this plot depicts dialect change between 1982 and 2017, PC1 for the phonological variables on the horizontal axis (accounting for 69% of the variability) and PC1 for the morphosyntactic variables on the vertical axis (accounting for 78% of the variability). The upper right corner approximates 100% usage of all dialect variants, while the lower left corner verges toward 100% usage of standard German variants. Crosses represent the speaker’s dialect density in 1982, and dots indicate their dialect density in 2017. The three ellipses, drawn to show two standard deviations from the mean of the group, highlight three groups of speakers: the upper ellipse surrounds the speakers from Gmünd in 1982; the middle ellipse encircles all speakers in 1982; and, the largest ellipse encloses all the speakers in 2017.

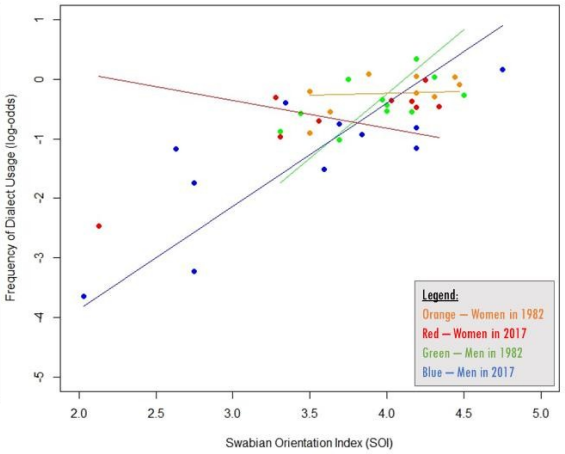

Figure 1b. Dialect Density for Panel Speakers based on Swabian Orientation. This plot shows the predicted probabilities of speaking dialect across the two recording years based on speaker sex and Swabian orientation. The sharper slope for the men shows that level of orientation is a significant factor for the men, but not for the women.

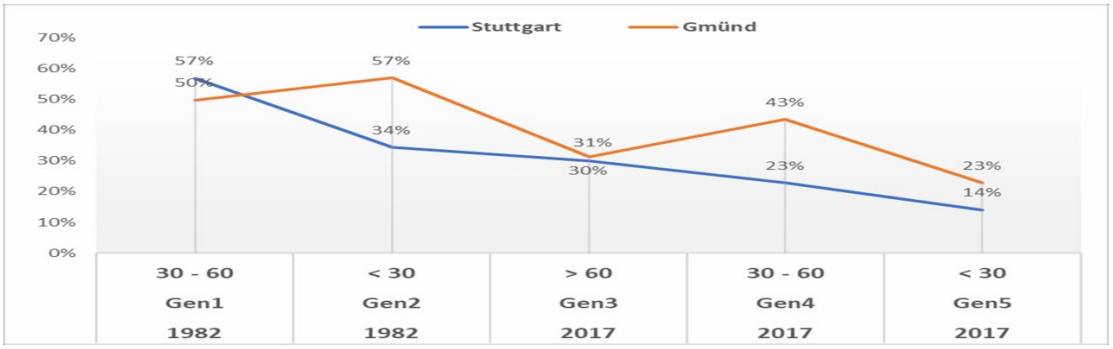

Figure 2. Dialect Density for 107 Swabian Trend Study participants recorded in 1982 and 2017. Covering five generations (based on birth year and recording year) and two communities, blue represents the urban centre of Stuttgart and orange the semi-rural town of Schwäbisch Gmünd. Both communities show significant attrition.

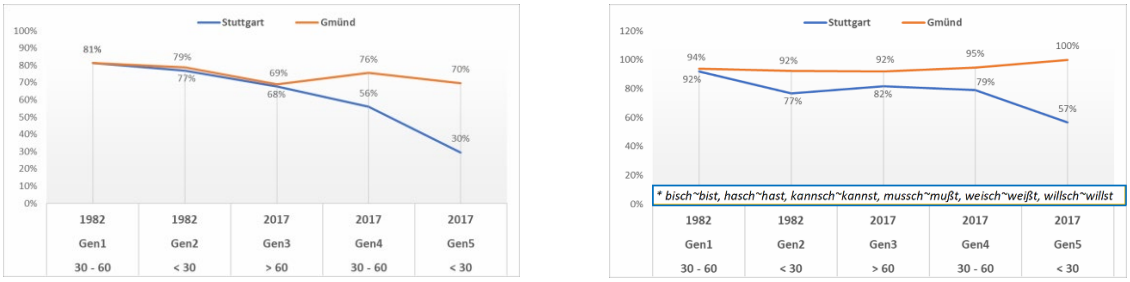

Figure 3. Swabian Palatalisation of -st in syllable-code position for 107 Trend Study participants recorded in 1982 and 2017. Left panel: palatalisation for all occurrences of syllable-code -st in the corpus (n=19,057); Right panel: palatalisation of syllable code-st for six high frequency verbs in the corpus (n=1,410), reflecting the impact that word frequency plays in the retention of dialect variants. Both analyses show significantly greater attrition in the urban centre of Stuttgart than in the mid-sized town of Schwäbisch Gmünd.

Phonetic stability across time: Linguistic enclaves in Switzerland

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The present paper shows results of a study on two historically related but geographically separated Highest-Alemannic dialects of Swiss German. Between the 12th and 14th centuries, speakers of Valais German (southwestern Switzerland) emigrated to the Grisons (southeastern Switzerland), forming so-called *Sprachinseln* (enclaves) of Valais German in a Romansh- speaking area (cf. Zinsli 2002; Waibel 2013). One of these enclaves, Obersaxen, still exists today. The sociolinguistic situation in the enclave has changed substantially in the past decades: incoming germanisation of the Romansh-speaking area as well as a flourishing tourism industry (Collenberg 2016) have led Obersaxen's inhabitants to increasingly converse with speakers of mostly Eastern Swiss German origins – while the dialect speakers of Valais Swiss German (southwestern Switzerland) have not seen a linguistic influx of such magnitude. In the present contribution, we study how these related, but geographically distant communities have changed linguistically over the past decades. We expect that increased contact to other Swiss German varieties in the enclave has led to dialect levelling on a number of linguistic levels.

Data for this study was gathered via an online-questionnaire, using crowdsourcing methods to reach out to speakers living in these remote regions. Translation and sentence completion tasks were used to test ten variables situated in the phonological, morphological, syntactic and lexical domains. To examine how the two dialects have developed over time, we took a real-time approach: the responses of 300+ participants were compared to the most recent large-scale description of Swiss German dialects, the *Sprachatlas der deutschen Schweiz* (SDS), which largely reflects the linguistic situation around 1900.

Results suggest stability on the phonetic level and somewhat more flux in the morphosyntactic and especially the lexical domain – a general trend of linguistic change which has been reported previously for German-speaking Switzerland (cf. Christen 1988). The unrounding of Middle High German (MHG) /y/ to /i/, for example, is still consistently prevalent in both regions. Similarly, palatalization of MHG /s/ *to /ʃ/*, e.g. /ʃi:/ 'they', has remained stable. The other phonetic variables examined show a similar pattern – thus the two dialects appear to still sound very similar despite having been geographically separated for 800 years. Morphosyntax and lexicon, however, exhibit substantial change. Our findings reveal clear tendencies towards adoption of supralocal variants. For example, the positioning of auxiliary and participle of 'to be' in subordinated clauses has remained stable in the Valais but has been reversed in Obersaxen; it has assimilated to the positioning found in Eastern dialects of Swiss German. In terms of the lexicon, the variant *Aichen* 'butter' is currently being replaced by the more general variant *Butter* in the canton of Valais. In Obersaxen, however, *Aichen* was replaced centuries ago. We discuss historic and sociodemographic factors (such as increased mobility, tourism and age) that may explain these patterns. Contact and convergence towards another German variety is rather unique for a German *Sprachinsel*.

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Intersections between race, place, and gender in the production of /s/

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Articulation of /s/ has been linked with gender identity in both production (e.g., Podesva & Van Hofwegen 2016, Hazenberg 2012) and perception studies (e.g., Strand 1999), with women producing a fronter /s/ than men, and a fronter /s/ being perceptually linked with femininity. However, this research has been conducted in largely White speech communities, and it remains an open question whether the same gendered patterns exist among People of Color. We explore /s/ variation in two African-American (AA) communities: Rochester, NY, an urban community in which AAs form a significant portion of the population; and Bakersfield, CA, a non-urban community in which AAs form a small minority.

Examining balanced samples of 12 AA Bakersfieldians and 24 AA Rochesterians, we explore the social effects on /s/ Center of Gravity (COG). COG, a spectral measure, corresponds to frontness of articulation, such that a fronter /s/ results in a higher acoustic frequency and thus a higher COG.

We construct mixed effects linear regression models across 37272 /s/ tokens within and across the Rochester and Bakersfield samples. Results show that among Bakersfield AAs, there is no statistically significant gender difference for /s/ COG, a surprising finding in light of previous research. AA male Bakersfieldians, exhibit a much higher COG than male speakers in previous studies, exhibiting values on par with AA females in Bakersfield. Additionally, while a gender pattern exists in Rochester—such that AA female Rochesterians exhibit significantly higher COG values than AA male Rochesterians ($p<0.0001$, $t=5.316$)— the gender difference is not as wide as what has been found in previous community studies of /s/ production. Specifically, AA male Rochesterians' COG is not as low as male speakers in previous studies, and AA female Rochesterians' COG is not as high as female speakers in previous studies.

Situated within ethnographic context, the results suggest that patterns linking phonetic variables and gendered identities are specific to the communities under analysis, and may be influenced by different sociohistorical dynamics and constructions of race and place. While a backed articulation of /s/ has been linked with maleness and masculinity in multiple studies, it has also been linked to country identity in previous work in the California Central Valley (Podesva & Van Hofwegen 2016). Given the history of racial tensions in Bakersfield, it is possible that Bakersfield AA men avoid using a feature that is ideologically linked to countryness among White speakers in the region. However, in urban Rochester, a gender difference is likely driven by gendered personae like the Hood Kid and the Mobile Black Professional, which aren't as relevant or salient in Bakersfield. In Rochester, these personae are ideologically linked with masculinity and femininity respectively, and also pattern with /s/ frontness, such that Hood Kids exhibit some of the backest /s/ means in the sample and Mobile Black Professionals exhibit some of the frontest. These findings illuminate the influence of race, place, and locally relevant social distinctions on the phonetic articulation of gender.

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'BE LIKE' quotatives in other languages: pragmatic borrowings or independent developments?

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The recent rapid emergence in different languages of new 'similarity' quotatives such as English BE LIKE raises a question that has not yet been resolved: are these innovations separate, independent developments, or are they pragmatic borrowings from English (Buchstaller 2014)? We argue here that for Paris French, at least, the new similarity quotative *genre*, as in (1), is an independent development.

(1) on dirait des gamins genre "non j'ai pas deux ans" (*you'd say they were children like "no I'm not two years old"*)

We analyse all quotatives used in spontaneous conversation by 60 12-19 year olds from multi-ethnic Paris suburbs and by 16 speakers aged 60 – 88 from the CFPP, 'The Corpus of Spoken Parisian French' (Branka et al 2012). The young speakers use a more diverse range of forms, including *genre*, though *genre* accounts for only 2.6 per cent of their total quotatives. We assume therefore that it is in the early stages of emergence. We explore the development of the new quotative by analysing all uses of the lexical item *genre*, both quotative and non-quotative, in the speech of the 60 12-19 year olds and in the speech of 8 generations of *CFPP* speakers (including the 16 mentioned above). In both corpora *genre* is multifunctional, occurring as a noun (with a preceding determiner), preposition, adverbial, discourse marker, discourse particle and quotative.

Speakers born between 1920 and 1969 use *genre* only as a noun and a preposition, with the broad meaning 'type' (examples 2 and 3).

(2) non mais ça se voit pas en fait c'est <rires> (.) ils sont physiquement c'est **le méme genre de** physique et tout (*no but that doesn't show actually it's* <laughter> *they're physically it's the same kind of physique and everything*)
(3) pour moi riche c'est d'acheter des trucs **genre** Dior Chanel et tout enfin les grandes marques (*in my opinion to be rich is to buy stuff like Dior Chanel and everything the big names*)

As a preposition there is no determiner, indicating the beginning of syntactic flexibility; with a following infinitival complement *genre* hedges what is said, indicating some early semantic weakening (4).

(4) nous on s'intéresse beaucoup au quartier parce que nous on est on est **du genre à à à à chercher la compagnie à avoir** tu vois à s'mettre au courant (*we're very interested in the neighbourhood because we're we're the kind to search out the company to keep you see to find out what's going on*)

Only speakers born after 1970 use *genre* with new syntactic functions – as an adverbial, discourse marker and discourse particle. The quotative function does not emerge until the lexical item has acquired this greater syntactic flexibility. Importantly, at this point *genre* in each of its syntactic roles can have a quotative function (5-7).

(5) noun *genre* with quotative function:
je sais pas c'était trop cramé (.) mais rien que du fait que (.) les publications c'était **du genre** (.) " ouais tu m(e) manques" ouais nanana (.) nanana (.) nanana" (*I don't know it was too obvious (.) but just because of (.) the publications it was like [lit. 'it was of the type'] "yeah I miss you" yeah blah blah*)
(6) preposition *genre* with quotative function:
il y a quelqu'un de la cité nanana direct elles sont là à prendre des grands airs **genre** " ah tu viens de la cité ah d'accord" <imitation> (*when someone comes from an estate blah blah*

automatically they are there giving themselves fancy airs like "ah you come from the cité ah allright")

(7) discourse marker *genre* with quotative function:

c'est encore l'époque où les gens ils voyaient un noir ils sont choqués **genre** "oh (.) un noir ?" <with mimesis> (*it's still the time when people saw a black person they were shocked like "oh (.) a black person?" <with mimesis>*)

Our analysis does not, therefore, support the widespread view that quotative *genre* derives from the discourse marker *genre* (although there is an indirect link, since once established as a discourse marker this becomes the most frequent role for the lexical item *genre*, increasing its use with the meaning of 'approximation' or 'similarity'). Instead, the analysis fits with de Smet's proposals (2016) for the emergence of linguistic innovations, with quotative *genre* emerging through a series of minimal deviations from convention.

A multivariate analysis using mixed-effects logistic regression in Rbrul found that the 'classic' factors of content of the quote and mimesis favour the use of quotative *genre*, indicating that it enters the quotative system in the same way as similarity quotatives in other languages. Thus although French *genre* is an independent development rather than a calque on English BE LIKE, borrowing could be involved at the level of discourse style, with young speakers now choosing to dramatically enact their internal experience by directly quoting their inner thoughts, using a quotative with the sense of similarity or approximation to do so. We conclude by considering the social characteristics of those speakers in our corpus who use quotative *genre* in this way.

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The Effect of Priming on Accent Attitudes: An Investigation of their Affective and Cognitive Bases

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In this talk, I will present my study on the formation of accent attitudes. According to the tripartite model (Fazio, 2009; Eagly and Chaiken, 1998), attitudes are formed from cognition/beliefs, affect/feelings, and behaviours towards an attitude object. My study focused on the impact of cognition and affect on accent attitudes. The cognitive influence was regarded as the social cognition or beliefs/norms about accents that consciously or unconsciously guide or are imposed upon individual accent evaluations (e.g. Giles et al., 1974). This cognitive influence was tested against that of positive, negative, and neutral affective prime stimuli (images taken from Lang, Bradley, and Cuthbert, 2008) on attitudes toward three British English vocal samples, performed by one speaker: Received Pronunciation (RP), Birmingham English, and (standard) Edinburgh English. According to previous research, RP generally occupies the highest evaluative ranks, Edinburgh English the middle, and Birmingham English the lowest (e.g. Bishop, Coupland, and Garrett, 2005; Giles, 1970).

Research questions:

1) Can accent attitudes toward RP, standard Edinburgh English, and Birmingham English be affectively primed?
2) Does affective priming influence the attitudes toward the three varieties in the same way?
3) How does affective priming relate to the roles that cognition and affect play in the formation of the attitudes toward the three varieties?

The study was distributed as an online survey. The participants were 68 undergraduate students from the University of York, who were born and raised in the United Kingdom. Only one participant from Birmingham and none from Edinburgh completed the study. One of three prime-stimuli images – positive (beach), negative (man vomiting), and neutral (rolling pin) valences – appeared before each of the nine target stimuli: three accent recordings and six neutral images (e.g. zipper), which distracted the participants' attention away from the recordings. The accent evaluation was conducted on eight personality-trait scales, split between the semantic categories of 'solidarity' and 'status', based on prior studies (e.g. Bishop, Coupland, and Garrett, 2005; Cargile et al., 1994).

The results showed that accent attitudes can be affectively primed, but statistically significant differences between negatively and positively primed attitudes were only found for the non- standard variety, Birmingham English, and not for the standard ones, RP and Edinburgh. A connection was thus drawn between standardness and attitudinal cognition, and non- standardness and attitudinal affect. Differently put, the statistically successful affective priming of the non-standard Birmingham variety points to affectively-formed attitudes toward non- standard accents, while the statistically unsuccessful priming of the two standard varieties suggests a more cognitive basis for attitudes toward standard accents. For the Birmingham variety, a further distinction was made between the two trait dimensions: whereas the solidarity dimension was significantly primed, the status dimension showed a non-significant priming tendency, which relates solidarity to affect, and status to cognition.

The talk will close with the study's development plans, which will not have materialised by September. The researcher aims to utilise both affective and cognitive priming stimuli, in the form of indirect written messages about accent attitudes, which will be presented before the target stimuli, namely, fourteen English-accent recordings.

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The Evolution of a Vernacular: Insights into the Motivations for Linguistic Change through Longitudinal Case Study Research

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This paper examines the evolution of a vernacular through a 30-year longitudinal case study of an African American resident of the rural village of Springville, Texas. In doing so, it demonstrates how case studies can provide unique insights into the acquisition and later development of a vernacular and also unique perspectives on issues such as transmission vs. diffusion, style shifting, and vernacular maintenance vs. lifespan changes. At the same time, it reveals many of the perils of the case study approach, such as apparent changes in the vernacular caused by the effects of gaps in communication, small numbers of tokens at various points in the study, and the relationship between the subject of the case study and the larger population.

The data for this study come from recordings with "Brandy," born in 1982, who is one of 16 participants in the Springville panel study. Brandy was first recorded in 1988 when she was six years old and she has been recorded 49 times in almost every year since then (sometimes several times in one year). These recordings are in a variety of interview contexts (individual, peer group, site study, and recordings in which she was the fieldworker) and with a wide range of interlocutors (44 including the two fieldworkers) of different ages and ethnicities (white, Latino, African American). The time depth of the study captures significant changes in Brandy's speech as she acquired urban African American Vernacular English (AAVE) features such as invariant habitual be and preterite had; as existing AAVE features expanded in her speech, such as copula absence and zero 3rd singular; and as she adapted quotative be like into her existing AAVE grammar when it diffused in to Springville. Because of the large number of tokens for these features (e.g., 1142 3rd singular -s; 2429 copula; 344 invariant habitual be) and because we have documented Brandy's personal history through various life changes from 1988-2018 as she matured from a young girl into a woman with three children, we are also able to examine broader linguistic issues such as age grading, the adolescent peak, and lifespan change. Despite her life changes, there is remarkable stability over time in her post-adolescent speech for features that have been suggested by others as age graded, such as invariant be, preterite had, zero 3rd singular, and zero copula. The analysis shows that fluctuations in the use of these features from year to year and even interview to interview can be attributed to factors such as the time gap between interviews that can create the impression of age grading.

The study of Brandy's vernacular demonstrates that if an individual is representative and the database from that individual is sufficiently large, a case study can provide a microcosm of the linguistic evolution of the population as a whole. The added value of a case study is that it can provide insights into the motivations for change that studies of a population cannot.

Age-based dynamics of the perception-production link

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Studies have shown that low-level perceptions of sound changes in progress can be shaped by listener characteristics (Hay et al. 2005; Fridland & Kendall 2012; Drager 2011). However, socially conditioned patterns in production are not always reflected in the same social differences in perception. Age-based patterns that indicate change in progress amongst speakers do not necessarily arise as perceptual differences amongst age-stratified listeners (Kettig & Winter 2017). This paper examines how listeners of various ages within one U.S. community in Chicago both produce and perceive vowels implicated in the Northern Cities Chain Shift (NCS). Findings suggest that perception is conditioned by the age relation between a listener and a perceived speaker, and by dynamics of a sound change in a local context.

52 Chicagoans from the same neighborhood area, spanning ages 20-79, completed a sociolinguistic interview, word-list reading task, and phoneme categorization task. The categorization task assessed listeners' perceptual boundaries between NCS-implicated vowels. Participants completed word choice trials to categorize auditory stimuli, resynthesized from read minimal pairs produced by a 30-year-old white male from the North (Labov et al. 2006). Two 8-step phonetic continua (e.g. bat-bet and had-head) were created for each of five adjacent vowel pairs involved in the NCS rotation (LOT—TRAP; TRAP—DRESS; DRESS —STRUT; STRUT—THOUGHT; THOUGHT— LOT). Listeners responded to all stimuli twice, in pseudo-randomized order. Logistic mixed effects models were fit on responses for each phoneme pair, assessing the effect of listener age on categorization. Midpoint F1/F2 values from word list productions of the same five vowel classes were Lobanov normalized and assessed via linear mixed effects models.

In word list productions, TRAP and LOT showed reversals of the NCS across apparent time, while THOUGHT showed advancement of the NCS (all $p<0.05$). In categorization, however, significant age differences emerged in the opposite direction than those in production — younger speakers show significantly more NCS-like perceptual boundaries than older speakers for the TRAP—DRESS and LOT—TRAP continua (higher and fronter boundaries, respectively, both $p<0.01$), just those features for which they are reversing the NCS in production.

The age pattern in perception suggests that categorization relies on the relation between a listener's and perceived speaker's positionality with respect to the community-wide change, rather than mirroring age- based production differences. Younger listeners, hearing a speaker who is older than themselves, expect more NCS-shifted boundaries, while older listeners, hearing a speaker younger than themselves, expect less NCS-shifted boundaries. That these expectations in fact overshoot one another may be conditioned by listeners' ideologies of who is likely to use the NCS. Despite or even related to their own retreat from these features in production, younger listeners expect especially NCS-shifted vowels from an older speaker. Results suggest that sociolinguistic perception is not simply a reflection of an individual's static social position within a community, from which matched production and perceptual patterns are derived. Instead, a listener's own positionality, and ideas about others in their community, can condition their sociolinguistic expectations.

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Quantifying potential: Non-canonical word order through a variationist perspective

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The principle of accountability (Labov 1972), whereby all instances of a variable and not just those of interest are analysed, is rightly one of the main tenets of variationist sociolinguistics. In practice, however, the full envelope of variation can difficult to circumscribe, especially for morphosyntactic and discourse-pragmatic features. What is the best procedure to follow in cases when every sentence could potentially contain an overt variant, but generally has an unrealised form? How do we handle situations where separate but partly related features are all potential variants? It is of course possible to focus on the functions of a single variant rather than what could be there, but this is not suitable in cases where the ultimate aim is to compare rates of use across social categories and across different varieties.

This paper aims to suggest ways to resolve these issues by examining five types of non- canonical word order (Birner and Ward 1998):

1) Left dislocation: *Chester, he comes over several times a year twice*
2) Right dislocation: *cos I remember we used to be able to buy it from Shaws, this hoop.*
3) Focus Fronting: *Early sixties it started, yeah.*
4) Inversion: *all they ever speak, really, is Welsh.*
5) Clefting: *Oh golly, I was in hospital for- I think it was about a couple of weeks, I think, they kept me in.*

Non-canonical word order is a good test case as certain variables are perceived to be more frequent in some varieties than others (e.g. right dislocation in the North of England (Durham 2011) and Wales (Penhallurick 2007), fronting in Yiddish English (Prince 1981)), but without a clear method to compare rates across varieties it is difficult to confirm whether these perceptions are accurate, as well as whether findings related to age, sex and other social factors in one variety are unique or shared across varieties.

Previous researchers have dealt with the issues in various ways: some have coded every sentence (but on a restricted data set), some have done their analysis using the numbers of overt tokens per 1000 or 10,000 words, yet others have focused on the functions of the variants.

By examining the tokens of all five variables (as well as the unrealised forms) in a 370,000 word corpus of interviews from Cardiff stratified by age and sex, this paper will compare the various methods and offer suggestions of how best to deal with such types data in language variation and change research, as well as demonstrate which methods are most suited to cross-variety comparisons. It will also discuss why analyses of the interaction between perceived and actual frequency of features can further our understanding of sociolinguistic processes more generally.

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Performing "correct" Hebrew: Stylistic variation in reading tasks

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Standard language ideologies about Hebrew are quite different from those typically observed in well-studied Anglophone contexts. Rather than conforming to prestigious speech norms of a social elite, the prescriptively correct variety of Hebrew prioritizes faithfulness to earlier attested forms of the language (Morag 1990, Mor 2016). As a result, socially prestigious and prescribed features are often at odds (Yaeger-Dror 1988, Gafter 2016), and even highly-educated Hebrew speakers typically use forms that are considered "incorrect" (Ravid 1995). Myhill (2004) argues that for Hebrew speakers, the notion of "correct Hebrew" is divorced from social prestige, as it is assumed that no one speaks "correctly". This paper demonstrates, however, that some prescribed features that do not occur in spontaneous speech are nonetheless an important part of Hebrew speakers' stylistic repertoires, as they are an expected community norm in reading styles.

This paper draws on a corpus of sociolinguistic interviews of 21 Hebrew speakers (ages 23-64) from the greater Tel Aviv area, contrasting a reading passage with spontaneous speech. The linguistic variables examined in this study are frequent clitics found in virtually any Hebrew passage: (ha), 'the', and (ve), 'and'. In speech they are realized as [ha] and [ve] respectively, but prescriptive rules dictate a complicated set of morpho-phonological alternations (based on Biblical Hebrew): for (ha), alternation between [ha]~[he] was originally phonologically conditioned, but loss of historic vowel contrasts has rendered [he] lexically determined for Modern Hebrew speakers. (ve) has prescribed variants that are lexically determined (e.g. [va]), and others that are generalized phonologically (e.g. [u], which occurs before labials). Due to the ambiguous nature of Hebrew orthography, which lacks explicit vowels and other phonological cues, the alternations in (ha) and (ve) are not reflected in spelling. Therefore, use of the prescribed variants in reading is not prompted by orthographic cues, but rather, reflects style-shifting.

In the read speech data, all participants used the prescribed [u] variant of (ve) before labials, whereas, in spontaneous speech, all but one speaker had no [ve]~[u] alternation. Thus, prescribed features do play an important role in stylistic variation. However, speakers do not simply shift to "correct Hebrew" when reading: in contrast to phonologically-conditioned variants, lexically-determined variants showed far more variation in the reading passage (with 57% use of [va] and only 19% use of [he]). It appears, therefore, that speakers have more difficulty acquiring prescribed patterns of variation that are not governed by phonological environment, due to the limited use of these variants in everyday contexts.

While traditional accounts of stylistic variation interpret read and spontaneous speech along a unidimensional stylistic scale, such as standardness or "attention paid to speech" (Labov 1972), the findings in this study suggest that Hebrew speakers have a specialized reading register, which recruits a set of stylistic resources separate from those of spontaneous speech. This phenomenon highlights the nature of reading as a distinctive part of speakers' stylistic repertoire, and as a form of performance that cannot be accounted for as simply a result of an increase in formality or attention.

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Regional or Regionless? Investigating RP with privately educated speakers in the North East and South East

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This study tests the long-standing claim that Received Pronunciation (RP) does not have regional features and is the same across England (Wells 1982a; Trudgill 2002; Figure 1a) by investigating the FOOT-STRUT and TRAP-BATH distinctions based on social and linguistic factors in speakers from different areas. It was found that the classic model can be applied to some but not all variables, see Figure 1b.

In order to avoid the circularity that comes from predefining who RP speakers are, I took 10 speakers who can otherwise be defined as upper-middle class, namely have all been privately educated, particularly relevant in the study of RP due to reports of the accent originating in public schools (Trudgill, 2002; Jones, 1917). Sociolinguistic interviews, wordlists and minimal pair tasks were recorded and transcribed, and formant (normalised (Lobanov) midpoint, Herz) and duration measurements taken using FAVE (Rosenfelder et al., 2014). All statistical tests were linear mixed effects models.

The FOOT-STRUT distinction (characterised by F1) is significant across both regions (figure 2a). However, the TRAP-BATH distinction shows regional variation (figure 2b). Speakers educated in the South East show the expected split, difference in F2. Speakers educated in the North East show what appears to be a simplified split. The best predictor of variation in their BATH vowels is following sequence structure; the presence of one or more syllables after the vowel (intercept = +344Hz) causes a fronter, more TRAP-like vowel in words such as *castle*, *laughing*, *examples*. This could imply a rule-conditioned split. Historically the pre-fricative lengthening that created the BATH lexical set did not complete lexical diffusionWells (1982b) and older descriptions of imply change has already occurred in the BATH set: older speakers have the PALM vowel before all voiceless fricatives (e.g. plastic Wells 1982b; Fudge 1976) whereas now even a southern speaker with the split has a TRAP vowel in these. Therefore, the southern TRAP-BATH distinction is likely controlled by a complex rule system. The effect of following sequence seen in the BATH vowels of speakers educated in the North East could be a case of further change via rule simplification as seen in Philadelphia /æ/-tensing, found in out of state children by Payne (1980) and in the systematic shift discussed by Labov et al. (2016) and Sneller (2018). A suggested rule that the speakers educated in the North East could be following is shown in example 1, or generalised in 2.

Duration was also used to investigate the TRAP-BATH split. The BATH vowel is the product of prefricative lengthening (Wells, 1982b); it would be expected that BATH vowels would be longer than TRAP vowels. However, across all speakers the duration of the BATH vowel is far closer to the TRAP than the PALM vowels (figure 3). These results may suggest that the split is now based more on vowel quality than duration.

This study has demonstrated that the classic model of variation (figure 1a), which would predict that regional differences would reduce up the socio-economic spectrum cannot be applied to all variables equally. The North-South difference, as measured by the FOOT-STRUT split is lost lower down the social spectrum, than as measured with the TRAP-BATH distinction; illustrated in Figure 1b.

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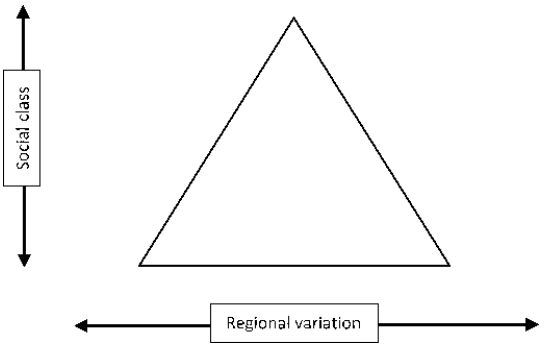


Figure 1a. Relationship between social and regional accents in England (adapted from Wells (1982a), also reported byWard (1929) from Daniel Jones).

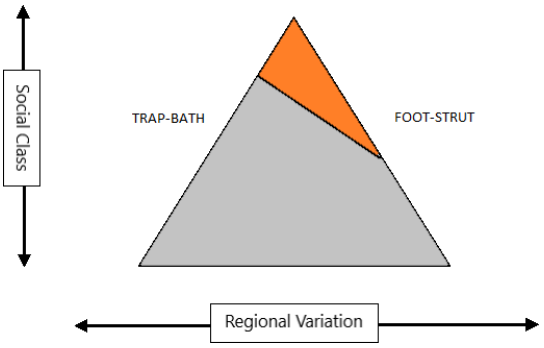
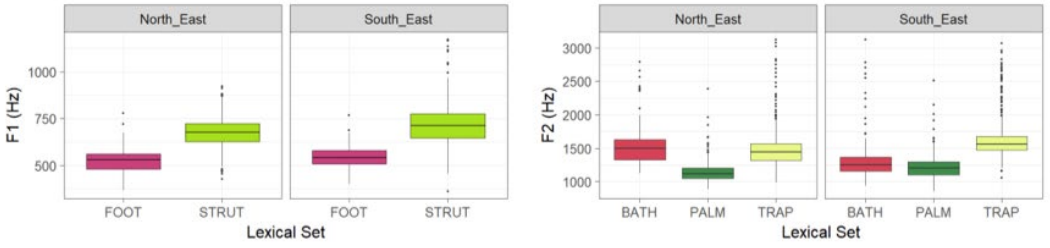


Figure 1b. Relationship between social and regional accents in England.



(a) F1 of the FOOT and STRUT lexical sets, by School Region

(b) F2 of the TRAP, BATH, and PALM lexical sets, by School Region

Figure 2

(1) /æ/ → [ɑ] / /f, v, s, z, n/, syllable boundary

(2) $\begin{bmatrix} +\text{low} \\ +\text{front} \\ -\text{long} \end{bmatrix} \rightarrow \begin{bmatrix} +\text{low} \\ +\text{back} \\ +\text{long} \end{bmatrix} / \begin{Bmatrix} \text{\_fricatives\$} \\ \text{\_nasal\$} \end{Bmatrix}$

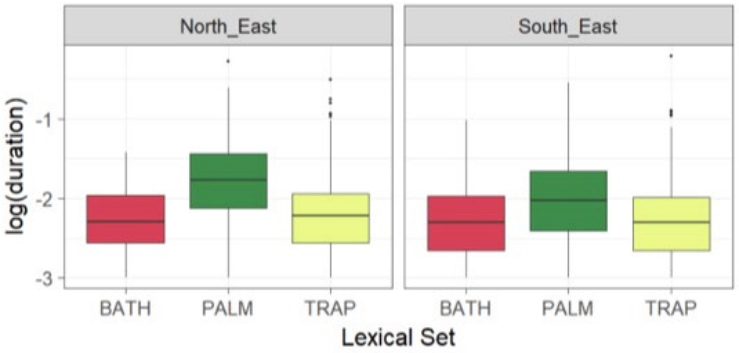


Figure 3: Duration of the TRAP, BATH, and PALM lexical sets

***Ey, wait, wait, Gully!* Style, Stance and the Social Meaning of Attention Signals in East London**

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Recent style-based accounts of Discourse Pragmatic (henceforth DP) variation have demonstrated the potential for such features to acquire social indexical meaning (e.g., Moore & Podesva, 2009). However, in comparison to other linguistic variables, DP features remain underexamined and third- wave perspectives on the topic are limited.

In this paper, I take this empirical gap as a point of departure to analyse the distribution, function and social meaning of an underexamined DP feature which I refer to as the 'attention signals' – those features such as *hey* and *oi* which fulfil the explicit function of eliciting the attention of an individual (Norrick, 2009). Data come from just over 35 hours of self-recordings of 25 adolescents (aged 11-16) collected during a year-long blended ethnography of an East London Youth group. In total, 822 tokens of the attention signals were identified and extracted from the dataset.

By exploring the variable system of attention signals in the speech of the adolescents, I identify an innovative feature – the signal *ey*. Distributional and statistical analyses of this feature show that it is significantly associated with a particular Community of Practice: the self-defined and exclusively male crew, the 'Gully' ($p<0.01$). Further analyses of the types of discourse in which ey occurs in reveals that, in comparison to other more 'typical' attention signals (i.e., *hey*, *oi*, noun phrases), the feature is significantly associated with the interactional contexts of commands and insults ($p<0.05$). Interpreting this pattern, I examine the discourse junctures at which ey occurs to suggest that this attention signal is most frequently used by speakers to deploy a 'dominant' stance. Within this group, this feature is particularly useful as an interpersonal device, where it is used to manage out-group boundaries and establish a hierarchal system within the in-group. I then go onto argue that the function and distribution of this feature has become linked to the Gully identity through a process of stance accretion (Du Bois, 2002).

Concluding, I link the use of *ey* to analyses of other linguistic features in the dataset and in East London (e.g., the *man* pronoun and TH-stopping), before exploring the relevance of the 'gully' in relation to language, ethnicity and masculinity in East London, using data gathered from the offline and online blended ethnography to support my interpretations. As such, this study contributes to a growing body of variationist research on DP features, whilst examining the relevance of style on language variation in East London.

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When intuitions (don't) fail: Sociosyntax in the analysis of Scots

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In the examination of non-standard morphosyntactic forms such as those in (1), a perennial problem for sociolinguists is that the 'linguistic features of interest are of such low frequency that quantitative studies are not feasible' (Labov 1996:78).

1)	a. Aye the floor *needs renewed*.	(needs +ed)
	b. Ken, and if you *div* mess up, which you will.	(*div* for *do*)
	c. The windows *didna* have *nae* glass in them.	(negative concord)

An obvious solution to this problem is to adopt methodologies from syntax, specifically acceptability judgment data gleaned from speaker intuition. However, sociolinguists have been generally reluctant to adopt such a technique, perhaps due to the repeated observation that speakers may 'agree that a certain form is completely unacceptable, yet use it themselves freely in every-day speech' (Labov 1996: 78).

In this paper we present a new digital resource which employs both sociolinguistic methodologies in spoken data and intuitions captured through acceptability judgments in the analysis of non-standard morphosyntactic forms. By having access to both these data types from the same speakers, we have the opportunity to assess the reliability of the judgment data as measured against spontaneous speech.

The data come from the Scots Syntax Atlas which maps syntactic structure across time and space in 140 locations across Scotland. We gathered speakers' intuitions through an acceptability judgment questionnaire (e.g. Schütze 1996, Barbiers & Bennis 2007), carried out with over 500 speakers across 200 data points. In addition, we collected spontaneous spoken data through sociolinguistic interviews (Labov 1966) between pairs of speakers in each location, c.300 hours in total.

In this analysis, we target the three non-standard morphosyntactic forms in (1), which are said to be differentiated both geographically and socially: the needs +ed form (1a), the auxiliary verb *div* (1b) and negative concord (1c). For each of these morphosyntactic structures, we first map the results from the acceptability judgment data. We then turn to the corpus of spoken data to test whether the patterns of acceptability from the judgment data map on to production data. Our results show that the reliability of judgments is variable- dependent. The needs +ed form (1a) is accepted in most varieties across Scotland and also appears in a diverse range of dialects in the spoken data. The auxiliary *div* (1b) is much more geographically circumscribed in the elicited data, and so too it is in the spoken data, appearing in the north east and the borders only. The results for negative concord (1c) are much more mixed in the judgment data, with no clear pattern of acceptability. However, there are clear geographic and socially distributed patterns of use that arise from the spoken data, suggesting that 'intuitions fail' (Labov 1996) with this particular variable.

We discuss these results in the light of constraints on a speaker's ability to tap intuitions about non-standard morphosyntactic forms, specifically how both social and linguistic pressures may operate in governing the reliability of judgment data.

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Language contact situation between Israeli Sign Language and Kfar Qassem Sign Language: A case of code-switching or borrowing?

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Contact between multiple sign languages is an increasing phenomenon nowadays, as a result of globalization, increased mobility and changes in communication styles (e.g., social media). Despite the increase in contact situations, few studies have documented the impact of language contact on language change in sign languages (e.g., Adam, 2012; Yoel, 2007). As shown by Adam (2012), in situations where two sign languages come into contact, code-switching is common among bilingual signers. In some cases, code-switching can lead to lexical borrowing, in which the lexical item becomes a permanent part of the recipient language. For this reason, some linguists describe code-switching and borrowing as existing on a continuum (Heath 1989; Romaine 1989; Myers-Scotton 1992). In this study, we look at the unique situation of language contact in Israel, where the younger generation of deaf signers living in a town in the north of Israel, Kfar Qassem, are exposed to two sign languages: the local sign language, Kfar Qassem Sign Language (KQSL) and the sign language used by the majority of signers across Israel, Israeli Sign Language (ISL).

KQSL emerged in an Arab town in the Triangle area of Northern Israel around 90 years ago, when a high number of deaf children were born into the community and there was a need to communicate using a visual modality. This developed into a full language and is now used by around 100 deaf people in a community of roughly 20,000 (Kastner et al., 2014). The first generations of KQSL signers did not attend school and so the language remained uninfluenced by the surrounding spoken or signed language used in Israel. However, nowadays the younger signers in Kfar Qassem attend school, interact with the wider Israeli Deaf community and are fully integrated with social media as all young people nowadays. With this change there has been increased contact with ISL, a sign language used by approximately 10,000 deaf people across Israel (Meir & Sandler, 2008). We investigate the language contact situation taking place in this community.

In our preliminary study we recruited 6 deaf bilingual signers, fluent in KQSL as their native sign language and ISL as their second language, from two age groups. The results revealed that roughly 10% of signs produced were examples of switches into ISL. Switches were mostly single signs and most often occurred for nouns (e.g. ‘man’), and verbs (e.g. ‘run’). To our surprise, there was no age effect on the frequency of switching, despite the fact that language contact has increased for the youngest generation. These results taken together seem to suggest that the switching observed may be examples of lexical borrowing, rather than acts of code-switching.

Our presentation investigates this further by comparing our preliminary results to the signing productions of 6 monolingual KQSL signers. Our study will be one of the first to tease apart the differences between code-switching and borrowing in a bilingual sign language community and will offer insights into the future of smaller signing communities such as Kfar Qassem.

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The roles of familiarity and similarity in children's developing accent awareness

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The current categorisation task tests 5-9-year-olds (N=34) in York on their ability to group speakers according to regional accent distinctions. The experiment involves grouping speakers together according to their native, home accent (Yorkshire) vs. one of three other accents (Standard Southern British English (SSBE), North Eastern, Scottish).

The design and analysis of the task aims to address the inconsistent results from previous studies investigating this question, (e.g. Floccia et al., 2009 vs. Jones et al., 2017), by focussing on three key aspects: children's familiarity with the accents, the similarity of the accent features, and the children's individual exposure to regional accent variation in their input. Findings indicate that the interplay of these three factors affects the children's performance. The children are better at grouping together speakers in the Yorkshire vs. SSBE round (average 77%, see figure 1). This is interpreted as being due to both the familiarity of the children with the standard accent, as well as the phonological features themselves being the most phonetically distinctive from their home accent. Furthermore, the children who have regular exposure to regional accent variation are better at accurately grouping the speakers throughout the experiment (see figure 2); this finding highlights the importance of variation in children's input for their developing sociolinguistic awareness.

Following an exemplar model of indexical learning (Foulkes 2010), it is hypothesised that the grouping of speakers by regional accent follows a developmental process. This process starts with the recognition of familiar speakers and the storing of social information in exemplars of their speech. It then progresses to the grouping together of speakers whose exemplars activate similar social information. Overall, therefore, it is anticipated that as children encounter more variation, they are better able to analyse and abstract over this variation appropriately in order to categorise speakers by their accent.

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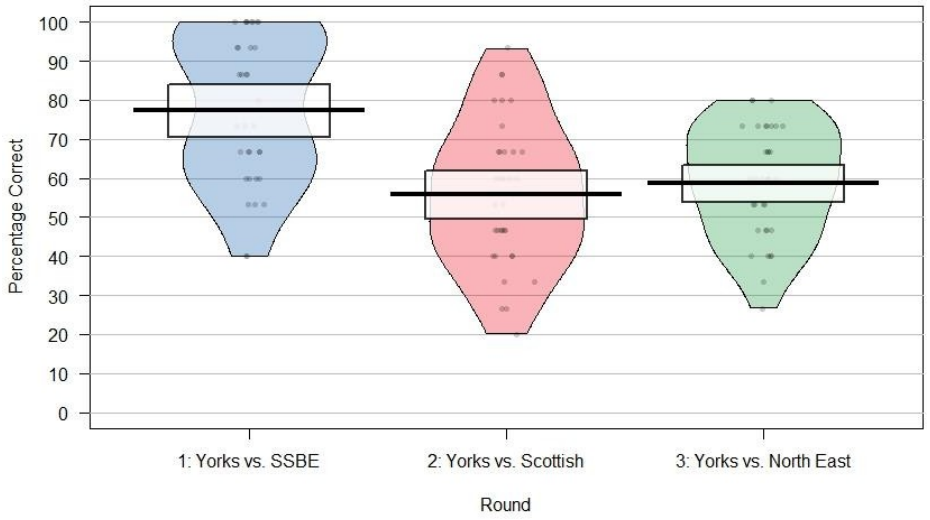

Figure 1. RDI plot: All results across the different rounds of the experiment

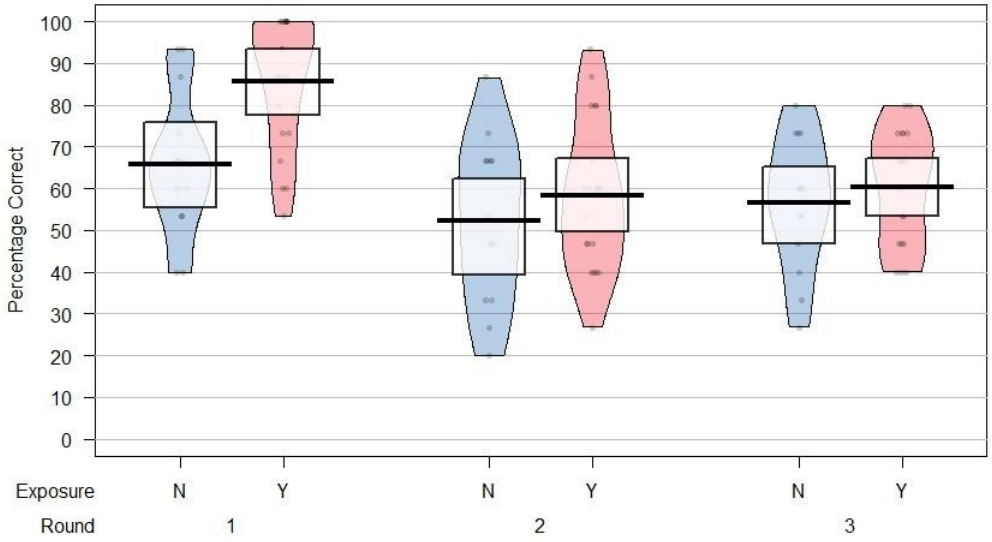

Figure 2. RDI plot: All results across the different rounds of the experiment, divided by exposure. (Y= regular exposure to regional variation, N = no regular exposure to regional variation)

Standardization as sociolinguistic change

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When meeting her friend Johanne at a local town festival, 15 year-old Aja exclaims: '[ˌvɒn ˈcøʌð]' ('hvordan kører det?', what's up?) in the local Bornholmian dialect. Johanne, however, laughingly replies with a 'bonjour', apparently because she believes Aja to be greeting her in French. This incident illustrates several aspects of the dialect situation on the island of Bornholm. Aja grew up on the island of Bornholm, and so did her parents and grandparents. Both her parents and grandparents speak the local dialect and use it in their everyday communication. In Aja's generation, however, local dialect is not used as an unmarked everyday register. Instead, the young people speak standard Danish and only use dialect in very specific contexts and with specific functions, usually highly stylized. The Bornholmian greeting deployed by Aja would be the norm in older generations, but among the 15-year-olds it is a marked choice, which explains why Johanne mistakenly takes the utterance for a French greeting. These changes in the use of the local dialect across the generations are not only a matter of quantity, with young people using less dialect than the older generations, but also a matter of changing functions and social meaning of the dialect. This is why in this paper I will argue that the development cannot be viewed only as linguistic change, but rather as sociolinguistic change (Coupland 2014, 2016).

The example above is taken from a recent study of standardization in three traditional dialect areas (Author fc.). The current paper offers an overview of the results from this study, analyzed within the frame of sociolinguistic change. The three areas are all situated in the geographical periphery of Denmark: Southern Jutland, Northern Jutland and Bornholm. While the areas share many sociological characteristics, the dialect situation and the level of standardization are remarkably different in the three places. In the paper I will argue that in order to understand how and why the linguistic situations have developed the way they have in the three places, the perspective of sociolinguistic change is particularly useful. The point of departure of the argument are quantitative variationist analyses of the use of dialect variables in data collected among three generations in the areas. The quantitative patterns illustrate that in the Southern Jutlandic data all three generations use a high amount of dialect, in the Northern Jutland data the use of dialect has been steadily decreasing through the three generations under study, and on the island of Bornholm data show that while older generations have quite high frequencies of dialect variants, the youngest generation do not use it at all.

Through examples from family interaction, peer interaction in social media, and interview conversations, I will illustrate how geopolitical history, mediatization, and ideology all play a part in how standardization processes develop, and that dialect and standard do not have the same meanings across generations.

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Can you tell by their English if they can speak Welsh? Accent perception in a language contact situation

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It is well known that the widespread acquisition of a new language often results in the creation of a new variety which is heavily influenced by the community's original language (e.g. Dubois & Horvath, 1998). Such substratum effects often remain following a shift to the dominant language and become features of a distinct contact variety (Thomason & Kaufman, 1988). In the case of Welsh English, substratum effects from the Welsh language are notable in communities where there has been historical language shift (Thomas, 1994). In contrast, Welsh remains the dominant community language in many areas, and has been shown to affect the English accent of Welsh-English bilinguals due to cross-linguistic interaction (Paulasto, 2016). Recent work which aimed to disentangle the effects of long-term contact and individual bilingualism found that monolinguals and bilinguals from the same area produced English monophthongs and lexical stress near-identically (Mayr et al., 2017; Mennen et al., under review). However, it is unclear (1) to what extent the English of Welsh-English bilinguals is different from that of monolinguals from the same area and (2) to what extent these differences are perceptible to other speakers of Welsh English. The present paper sought to address these questions across three inter-related studies.

Study 1 comprised an accent perception experiment whereby listeners from four different groups (n=75) were asked to differentiate English monolinguals and Welsh-English bilinguals based on short English speech samples. The results revealed that monolinguals and bilinguals can be identified above chance based on their English accent, but performance was unexceptional, particularly on the monolingual samples (see Figure 1). Correct identification was more likely among listeners from the local area but was unrelated to listeners' ability to speak Welsh.

In Study 2, the same participants' views about differences between the accentual features of monolinguals and bilinguals were examined in structured interviews. The results revealed the specific segmental and suprasegmental features that the listeners considered indicative of monolingual and bilingual speakers' English accents (see Tables 1 and 2) and showed that participants had a clearer notion of the features of a bilingual's English accent than a monolingual's accent.

Finally, in Study 3, the speech samples from Study 1 were analysed phonetically (auditorily and acoustically) in terms of the most commonly mentioned accentual features in Study 2. The results confirmed some of the listeners' claims, such as greater use of trilled realisations of /r/ by bilinguals. However, many of the participants' claims were not borne out.

Together, this research shows that settings in which minority-language features originate from historical language contact and individual bilingualism yield subtle accentual differences in the majority language between monolinguals and bilinguals to which even listeners from the same accent background may not be responsive.

The role of cognitive, input-related and socio-indexical factors will be discussed, as well as the extent to which monolinguals' and bilinguals' English accents constitute distinct varieties.

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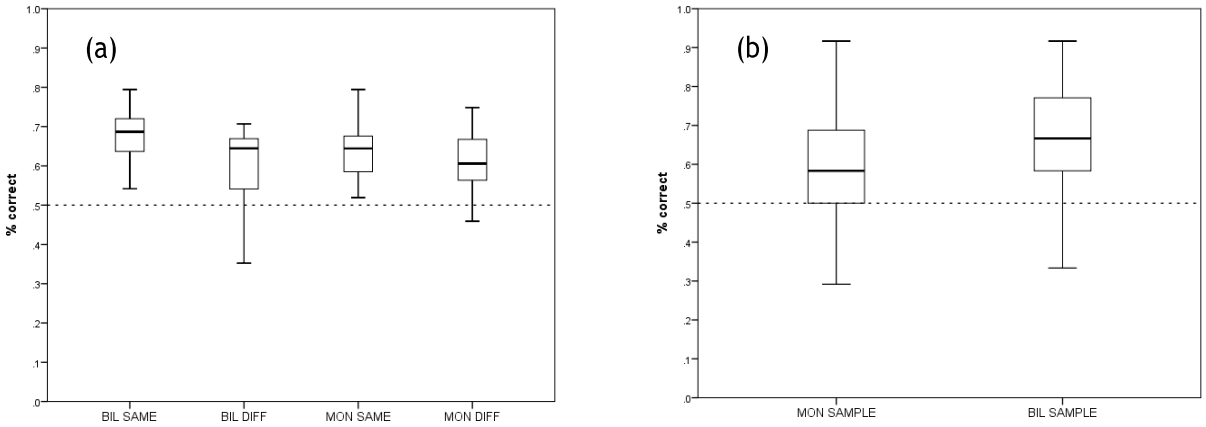

Figure 1. *Percent accuracy by group (a) and sample (b); broken line denotes 50% chance level.*

Table 1: *Perceived features of bilingual speakers' English accent*

Feature mentioned	***Number (%) of participants***	***Example***
vowels	50 (66.67%)	"… those who drew their vowels out more were more likely to be Welsh speakers"
/r/	42 (56%)	"… the Welsh speakers were rolling their 'r's a bit more."
speaking rate	27 (36%)	"… it was a faster rate of speech" "… Welsh speakers speak more slowly"
intonation/ pitch	24 (32%)	"… more of a lilt in the way that they spoke" "... it seems to be more monotonous"
word-final consonants	15 (20%)	"… more enunciating their 't's and 'd's" "... a teethy kind of t"
lexical stress	13 (17.3%)	"… more emphasis on the end of words"
rhythm	6 (8%)	"... different speed between words"
other	6 (8%)	"… pronounces 'h's" "... add in a syllable, so like [ˈhɛlpə]"

Table 2: *Perceived features of monolingual speakers' English accent*

Feature mentioned	***Number (%) of participants***	***Example***
vowels	18 (24%)	"... they tended to hold out vowels for longer"
speaking rate	10 (13.3%)	"... they speak faster"
/r/	6 (8%)	"... they don't have rolled /r/s"
intonation/ pitch	3 (4%)	"... they were going up at the end of a sentence"
t-glottaling	3 (4%)	"... instead of [ðat], they say [ðaʔ]"
lexical stress	2 (2.7%)	"...less emphasis on the end of words"
h-dropping	2 (2.7%)	"... they said 'house' like [aʊs]"
other	2 (2.7%)	"...they say [ˈslipɪn] instead of [ˈslipɪŋ]"

Age-graded patterns in the realisation of (ing): Expanding the window of analysis into middle and old age

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The relationship between community-wide change and patterns of variation and change in the individual speaker is one of the cornerstones of linguistic theories about language change. The variationist enterprise makes clear and testable predictions regarding the use of stable vernacular features (Downes 1998, Labov 2001). But we lack real-time evidence on the age- graded nature of stable variability across the life-span of the individual to fully support these hypotheses. This paper focuses on (ing), a paradigm case for stable variability (Wagner 2012). While apparent time research highlights the "long-term community stability" in the variable nasal realisation (Wagner 2012: 183), only two studies have explored its use in panel data. Both report on pre-adult speakers' sociolectal adjustment within the context of their educational trajectory: during primary and secondary schooling (Wagner 2012) and at the juncture between secondary school and university (Wolfram and van Hofwegen 2010). To date, we know nothing about speakers' malleability in the realisation of the alveolar/velar nasal across later age-specific experiences of the life-course.

Our study explores (ing) in a small panel sample collected 42 year apart in the North East of England (speaker ages 21-32 in 1971 and 63-74 in 2013). We expand on previous panel research in two ways:

1. Focusing on speakers' variable realisation of (ing) between middle adulthood and old age, we move forward the window of analysis of this age-graded feature. Our analysis reveals two fundamentally different trajectories:
    a. the "tail" past retirement (Downes 1998): Three working class individuals illustrate the upward trajectory generally assumed in sociolinguistic theorising, vs.
    b. the continued standardising effect of the sociolinguistic marketplace: Two socio-economic risers exhibit ongoing retrenchment towards the standard.
2. By examining raw frequencies as well as changes in the constraint system governing (ing) in the individual speaker, we comparatively examine the outcomes of different types of heuristics for exploring intra-speaker malleability. While this type of constraint-based analysis of panel data is only in its infancy (Buchstaller et al. 2017), it provides one step towards an understanding of the factors which influence (in)stability in the grammar of the post-adolescent speaker (Bowie and Yaeger-Dror 2015).

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Covariation in Heritage Cantonese in Toronto

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We analyze heritage Cantonese speech to investigate Guy's (2013) hypothesis that innovators in one aspect of a language will also be innovators in other aspects, focusing on a linguistic system during a period of contact-induced variation. We show that the ranking of speakers by rate of use of the innovative variant across variables, cannot be predicted by the same social factors: it is not the case that the same speakers have the highest usage rates for multiple dependent variables (e.g., prodrop, classifier choice, /y/ → /u/ merger in Cantonese). We also examine social factors expected to be relevant for heritage language speakers (e.g., measures of ethnic orientation and proficiency).

Our primary aim is to contribute to the understanding of covariation: previous research on covariation (cf., Guy 2013, Hinskens & Guy 2016, Waters & Tagliamonte 2017) yielded contradictory perspectives on its existence. A second aim is to investigate the degree of coherence in heritage language systems, to address claims from the experimental/acquisitionist literature that variation among heritage speakers is an outcome of incomplete acquisition (cf. Montrul 2012:178) rather than evidence of typical language variation. The more heritage language variability resembles majority language variability, the less this variability can be attributed to attrition.

This analysis builds on previous analysis of six dependent variables (methods detailed in Nagy 2011). Hour-long conversational speech samples were collected from 32 speakers across four generations: Homeland (Hong Kong), immigrants to Toronto (Gen1), children of immigrants (Gen2) and grandchildren of immigrants (Gen3). From transcribed recordings, tokens of each dependent variable were coded and analyzed using regression models that include linguistic and social predictors, and speaker as a random effect (1,000 to 3,000 tokens/variable). The latter constitute a speaker list ranked by rate of use of the innovative form, controlling for the effects of unequal token distributions across contexts. Following Oushiro & Guy (2015), we calculate, pair-wise, correlation coefficients across the ranked speaker lists. In addition, we seek explanatory correlations with measures of ethnic orientation and proficiency. Variants more common in later generations were identified as innovative: increased specialization of the classifier *go3* 個 to singular nouns (Nagy & Lo 2019), a vowel split and a vowel merger (Tse 2019). As a control, correlation with stable variables are also examined: use of overt subjects in prodrop contexts (Nagy et al. 2011), and two additional vowel splits (Tse 2019).

Most intriguingly, we find that only one of the six variables corresponds to our proxy for Cantonese fluency (% of Cantonese vs. English words), see Fig. 1. This /y/–/u/ merger is the only variable undergoing change in both Homeland and Heritage Cantonese. Neither of the morphosyntactic variables, nor the other three phonological variables, correlate to the fluency proxy. These results suggest that, contrary to claims from experimental literature, this heritage-language variation cannot be explained as a reflection of incomplete language acquisition, but rather resembles covariation in majority languages.

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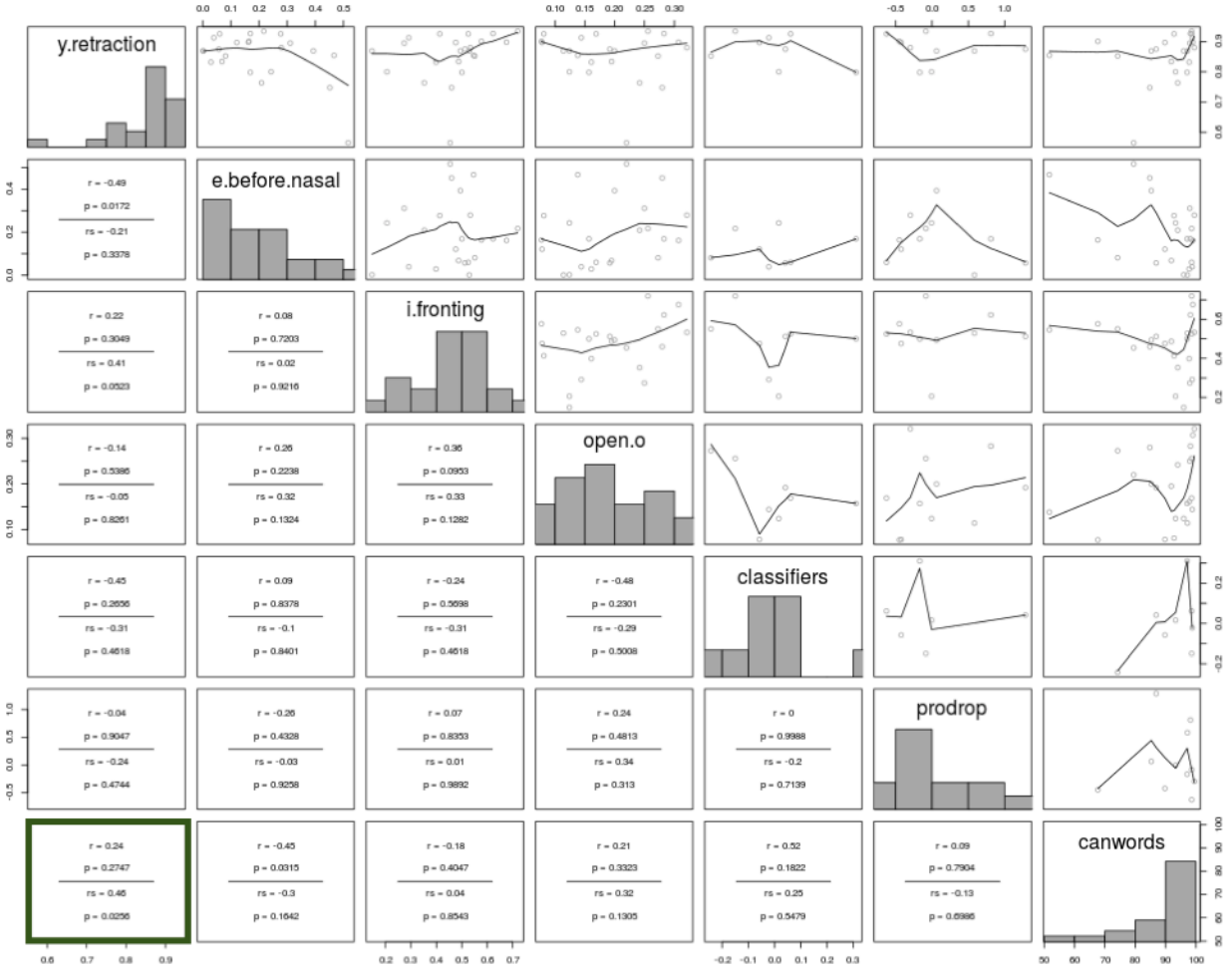

Figure 1: Correlations across variables in Toronto Heritage Cantonese (r = Pearson's r; rs = Spearman's rho).

Articulatory variation and change in a minority endangered language: An ultrasound study of Scottish Gaelic sonorants

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This paper investigates processes of variation and change in a minority endangered language. Due to the intensity of contact with a non-endangered language, structural changes may occur in the endangered language such as a reduction in the number of contrasts and loss of typologically unusual features, especially those not present in the dominant language (Palosaari & Campbell 2011). Such changes may resemble those occurring in non-endangered languages but are likely to occur at a faster rate and in greater number (Jones 1998). While these broad trends are well- documented, less well investigated are the precise mechanisms by which change can occur, especially in terms of articulation.

We consider these issues with reference to Scottish Gaelic sonorant consonants. Gaelic is considered 'definitely endangered' in the UNESCO classification. The language is typologically unusual in having a systematic palatalisation contrast across the consonant inventory. Even more unusual is Gaelic's three-way contrast in laterals, nasals and rhotics, all of which display a phonemic contrast between palatalised, velarised, and plain sonorants (Ladefoged et al. 1998). Our analysis presents the first detailed ultrasound analysis of Gaelic palatalisation and applies the most current sociophonetic methods to the study of language endangerment (see also Bennett et al. 2018 for recent ultrasound work on closely related Irish).

Acoustic and ultrasound data were collected from twelve Gaelic L1, Gaelic-dominant adult speakers from the Isle of Lewis. Data were recorded from a word list containing Gaelic and English lateral, nasal and rhotic consonants. Here we report on the Gaelic laterals and nasals only. We elicited word-initial and word-final tokens in three vowel contexts. Data were recorded using midsagittal ultrasound tongue imaging at ~100 Hz, with synchronised acoustic data. We report acoustic and articulatory data from an analysis of 1633 tokens. We measure acoustic F2-F1 from the lateral steady-state, as well as the articulatory time course of palatalisation at two points in the oral cavity. We use Bayesian linear and generalised-additive mixed models to examine the acoustic and articulatory distinctions in the proposed palatalisation contrasts.

Overall, our results confirm previous acoustic-only work on laterals which observed the robust maintenance of a three-way lateral contrast in Gaelic-dominant speakers (Nance 2014). The results for nasal consonants are more complex. Static acoustic results suggest the system has collapsed to one nasal in high front vowel contexts, and a two-way contrast in back vowel contexts. Ultrasound data mirrors the acoustic results except in the case of word-final palatalised nasals. While the acoustic data on word-final palatalised nasals shows few differences from other nasals in /i/ or /a/ contexts, the ultrasound data suggest a final tongue body fronting gesture not observable in the acoustic results (see also Lawson et al. 2008).

Our results indicate that palatalisation systems are not collapsed in their entirety across contexts in language endangerment situations. Instead, typologically unusual features such as a three-way contrast in laterals can be maintained even in intense contact situations. Our work sheds light on the process of change in endangered languages: we are able to show how gradual fine-grained shifts in articulation can contribute to wider-scale phonological change. In doing so, we advocate the role of articulatory techniques in the study of sound change.

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Acquiring Multicultural London English in West London

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In recent sociolinguistic work there has been a great deal of interest in urban youth vernaculars (e.g. Cheshire & Gardner-Chloros 2018; Drummond 2018; Nortier & Svendsen 2015; Quist & Svendsen 2010). Yet relatively little is known about how these varieties are acquired by children.

The current study compares the speech production of adolescents (16-20) and children (5-7) acquiring Multicultural London English (MLE). Previous research explored MLE in East London and found that that 4-5 year olds in the London borough of Hackney had already acquired the same MLE diphthong system as adolescents in their community (Cheshire et al., 2011). The authors suggested that community multilingualism lead children to orient to peers as their target in language acquisition at an earlier age than would be expected in more monolingual communities (cf. Kerswill & Williams 2000). The current study investigates this finding further by analysing MLE in another multilingual London borough, Ealing (West London). The aim is to see if MLE features are diffusing across London, and to see if young children are already participating in the same variety as the adolescents. If, as suggested by Cheshire et al. (2011), community multilingualism leads children to orient to peers as their target in language acquisition even before age 8, then we would expect the children to have already acquired the same variety as the adolescents.

The variables for the study are the diphthongs FACE, PRICE and GOAT. Changes in the diphthong system have been said to be the most striking feature of MLE (Cheshire et al. 2011). We analyse these variables acoustically, looking at: position in the vowel space (in terms of formant frequencies); and vowel dynamics i.e. how diphthongal or monophthongal the pronunciation is (Kerswill et al. 2008).

Preliminary results indicate that the children do not differ from the adolescents in the positions of the nuclei of FACE, PRICE and GOAT, i.e. they have already acquired the same forms as the adolescents. Similarly, the children match the adolescents in the monophthongization of FACE and GOAT. But the children do not show all the same tendencies as the adolescents. There are gender differences within the adolescent group – e.g. the boys back GOAT, while the girls tend to front it – that are not yet in evidence among the children. Differences between adolescents and children also appear in the vowel dynamics of PRICE, with the children showing a diphthongal realization of PRICE and the adolescents leading in monophthongization of this vowel.

Overall, the findings support Cheshire et al.'s (2011) suggestion that where the speech community is linguistically very diverse, children may orient to peers as their model in language acquisition even before the age of 8. Yet the findings also indicate that while the children seem to show the same vowel system as the adolescents, other sociolinguistic variables are not acquired this early on. We will explore why this might be the case in terms of children's acquisition of sociolinguistic competence.

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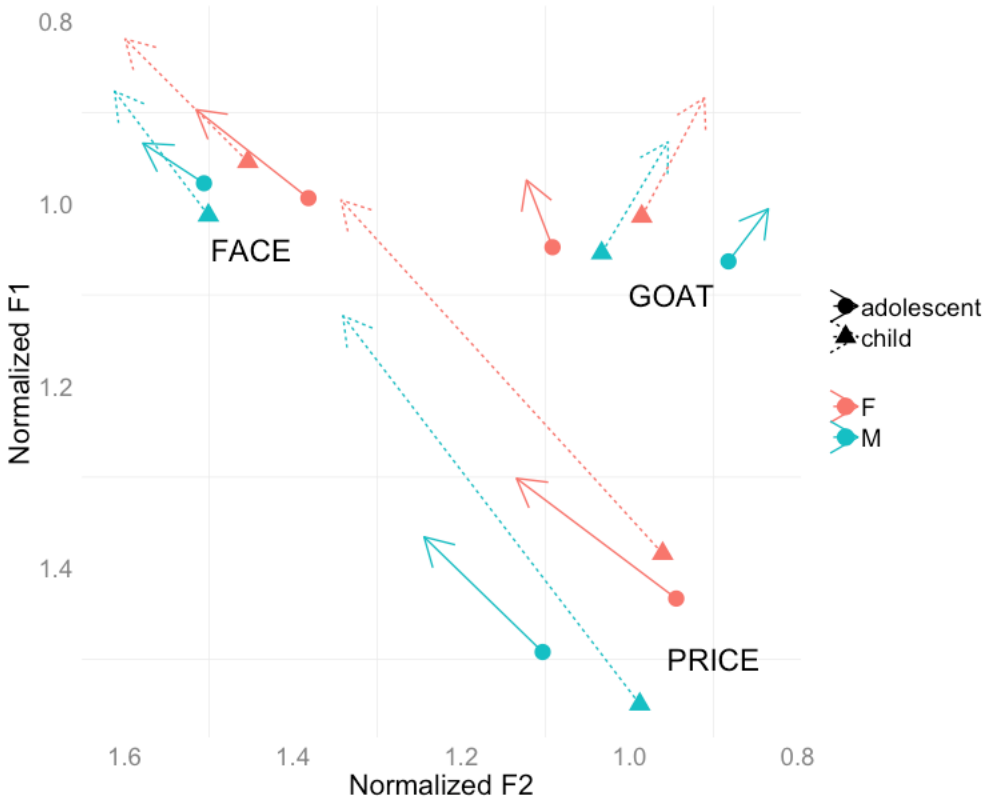

Figure 1. Vowel plot showing mean values for the nucleus and glide of FACE, PRICE and GOAT by age and gender.

Patterns of variation in Indonesian Sign Language: A corpus study of negative and interrogative constructions.

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What is now referred to as Indonesian Sign Language (BISINDO) emerged in Java in the 1950s, if not before, and is used by thousands of deaf people in urban centres across the Indonesian archipelago (Author 2015). Taken as a whole, a series of recent linguistic studies of BISINDO reveal considerable variation within and between these urban centres (Bharoto 2011, Wijaya 2011, Isma 2012, Author 2013, 2015). Meanwhile, socio-historical research points to factors promoting both convergence and divergence between different regional varieties (Author 2019).

This paper presents the findings of analysis currently underway on the grammatical domains of negation and interrogatives in BISINDO. This analysis is based on the Corpus of Indonesian Sign Language Varieties, which includes data from over 130 signers aged 16 to 71 in six cities: Solo (Central Java), Makassar (South Sulawesi), Ambon (Maluku), Padang (West Sumatra), Pontianak (West Kalimantan) and Singaraja (Bali).

Both domains feature complex relations between form and function. Analysis of negative constructions so far has found that the six varieties have a similar but not identical set of negative particles, clitics and suppletives. A single predicate can be negated using different grammatical variants, as demonstrated in 1(a)-1(c), where the modal predicate 'can' is negated using a different variant each time. Grammaticalisation can be observed in this domain, and there is evidence to suggest that Solo BISINDO – and particularly its younger signers – sometimes favours variants that are more morphologically complex (Author 2019).

1(a) Negation with basic clause negator (NEG – predicate order) *Makassar*

mouthing:		tidak	bisa
manual gloss:	**TJ:PRO1**	**TIDAK**	**BISA**
English gloss:	PRO1	NEG	can
translation:	*'I cannot do it.'*		

1(b) Manual negation coextensive with mouthed predicate (simultaneous) *Makassar*

bicara	bisa	tidak-apa-apa
BICARA	**TIDAK**	**TIDAK-APA-APA**
talk	NEG	never mind

'If you cannot speak, it doesn't matter'

1(c) Simultaneous negation with suppletive (TIDAK-BISA) *Solo*

belum bisa (*belum* = neg. completive)
TIDAK-BISA
cannot
'I couldn't yet [ask for a break].'

For the first time, I present quantitative analysis based on the coding of internal and external factors for tokens in each domain – negation and interrogation. The aim is to shine a light on how BISINDO is developing, and prompt questions that are of relevance to the field as a whole, including the identification of negative clitics and the spread of gestures.

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Sex, fights & invariant tags in adolescent narratives of personal experience

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Previous studies have demonstrated how story-tellers strategically employ discourse-pragmatic features such as ken or you know to maintain audience involvement and demarcate narrative events (e.g. Macaulay 1997; Schiffrin 1987). This paper argues that London adolescents exploit the invariant tags innit, yeah, right and ok for similar reasons. Crucially, it demonstrates how close investigation of invariant tags' functionality and placement in complicating action sequences as well as consideration of the story worlds created by story-tellers can account for these tags' high prevalence in males' and virtual absence in females' narratives (see (1) and (2) below).

1) We saw it, yeah. So I just picked it up, yeah. Walked away. Found about hundred pounds in it. Took the money. And left the purse, innit, for the police to find it. Didn't take nothing else. (Rufus)
2) And as I walked down the road. I had my hair up, like I've got it today. And someone grabbed my hair. And as I went to turn around, they pulled me to the floor. And we found out it was four girls and one boy. (Danielle)

The investigation is based on adolescent narratives of personal experience extracted from the Linguistic Innovators Corpus (Kerswill et al. 2007). The quantitative analysis reveals that male adolescents tag finite declaratives almost four times as often as female adolescents. Close examination of every invariant tag (N=208) in its interactional context shows that the male adolescents overwhelmingly use these tags to draw listeners' attention to propositions that escalate the tension before the narrative climax, and that they do so predominantly in narratives of criminal activity or physical contests. Female adolescents only rarely tell narratives of this kind, and unlike male story-tellers, they are not usually the instigators or winners of such contests. Their narratives tend to be about embarrassing or frustrating social encounters where their rare use of invariant tags is concentrated in orientation sequences. Based on these findings, I will propose that – in the data studied here – invariant tags index masculinity and toughness, and that they are exploited by male speakers to maintain narrative face, i.e., to hold listeners' attention until a contest has been resolved in the story-teller's favour.

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The social semiotics of vowel space area

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Recent work in sociolinguistics has characterized vocalic sound change in some varieties of English as vowel space 'reshaping' (Boberg 2011; Pratt, Van Hofwegen & D'Onofrio 2017; Holmes-Elliot & Levon 2017), suggesting that the vowel space itself can be a linguistic variable. Separately, work in phonetics has shown that speakers use an expanded vowel space for at least two registers with conventionalized social meanings: careful speech (e.g. Lindblom 1990), associated with articulateness, and child-directed speech (CDS) (e.g. Dodane & Al-Tamimi 2007), associated with increased speaker engagement or animatedness. This raises questions about the socioindexical potential of the holistic dimensions of the vowel space, particularly in California where vocalic sound change is characterized by horizontal compression (i.e. vowel space decreasing in size) over time (D'Onofrio, Pratt, and Van Hofwegen forthcoming).

The current paper connects these strands of research, examining variation in vowel space area and its social meaning among adolescents in California. Data come from a year-long ethnography at a public high school in the San Francisco Bay Area, where a primary social distinction existed between students who participated in the partying scene and those who didn't. The present analysis investigates the correlation of vowel space with students' (ethnographer-imposed) status as either in the partying scene, on the fringes, or not at all engaged. Because past work shows that speakers use advanced variants of the California Vowel Shift (CVS) to index stereotypical California qualities like 'laid-back' and 'fun' (Pratt & D'Onofrio 2017; Podesva 2011), we might also expect speakers to utilize a smaller vowel space to convey such qualities.

Tokens from twelve vowel classes (LOT, THOUGHT, KIT, DRESS, TRAP, STRUT, TOO, GOOSE, TOE, GOAT, FLEECE and FACE, n=33,815) were extracted from interviews with 36 speakers (19 cis men,17 cis women, aged 16-18). F1 and F2 midpoint measurements were Bark-converted and Nearey-normalized (Nearey 1977), and measures of vowel space area (VSA) and dispersion were calculated (Bradlow, Torretta and Pisoni 1996). Regression models were fit with partying-scene status as s predictor of VSA and dispersion, respectively. Results indicate that students on the 'fringe' of the partying scene have smaller VSA and marginally less dispersed vowel spaces than their peers in the partying scene, and both of these groups have smaller vowel spaces than those who are not in the partying scene whatsoever.

Given the apparent-time trend of vowel space compression in California, these results suggest that vowel space is a semiotic resource for stylistic practice. I argue that the fringe students' smaller vowel spaces could be connected to conveying stereotypical California qualities related to being 'laid-back' and 'fun.' Further, their non-partying peers' larger vowel spaces may be connected to such conventionalized qualities as animatedness and articulateness. I advocate for further exploration of the vowel space as a sociolinguistic variable, and suggest that its social meaning may derive from interacting conventions and ideologies relating to both speech register and regionally-specific sound change.

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Evaluating Lexical Frequency Measures for Sociolinguistic Variation

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Word frequency has been demonstrated to be a robust predictor of sociolinguistic variation, such that frequent words behave differently from infrequent words (Pierrehumbert, 2002; Bybee, 2002). In response, sociolinguists will typically control for a measure of lexical frequency in their analyses of such phenomena. However, the concept of lexical frequency can be captured with a number of different measures, and the appropriate measure to use remains an open question (cf. Hay, 2001; Walker, 2012). The present study investigates the capacity for 3 different measures of frequency to account for variance for two morphophonological variables: TD (e.g. *old* vs. *ol'*) and ING (*working* vs. *workin'*).

11964 tokens of words with an underlying word-final coronal stop (TD), and 5452 tokens of verbs in the present participial or gerundive forms, i.e. with suffixal *-ing* (ING), were collected from a sample of 118 sociolinguistic interviews with white speakers from the Philadelphia Neighborhood Corpus (PNC) (Labov & Rosenfelder, 2011). Each token was manually coded for the variants of TD and ING, as well as morphological and phonological context and speaker demographic information.

Tokens were also coded for three measures of lexical frequency according to the $\text{SUBTLEX}_{\text{US}}$ database (Brysbaert & New, 2009). For Wholeword frequency – typically used in sociolinguistics – each unique orthographic string is assigned a separate frequency value regardless of phonological, morphological, or semantic relations. This means that each of *dog*, *dogs*, *read*, and *reed* receive a different value, while *left* (direction) and *left* (past of *leave*) receive the same value. For Root frequency, the frequency of each item is calculated as the sum of Wholeword frequencies sharing its stem. Finally, Conditional frequency is the proportion of an item's parent Root that is constituted by a particular Wholeword, and represents the frequency of a Wholeword given the Root. These measures are not highly correlated with each other. Mixed-effects logistic regression models controlling for grammatical class and speech rate contained each possible combination of the three measures. Then, nested models were compared for degree of optimisation with the addition of each measure to each model. Relevant statistics for this were Aikaike and Bayesian information criteria, and likelihood ratio tests. For TD, all frequency measures predict TD outcomes as expected, but the data is best captured by Root frequency, in contrast with the findings of Brysbaert and New (2009). This measure significantly improved each model, regardless of what other measures were present. However closer inspection revealed that this effect was only present in monomorphemes and not words with *-ed* suffixes (Figure 1). The case of ING is more complicated. Conditional frequency is correlated with the variable in an unexpected direction, and all measures significantly improve most models by their inclusion. The most significant and consistent in this respect is Wholeword frequency, the effect of which is observed in both gerundive and progressive forms (Figure 2).

Our findings suggest an opportunity for further exploration of our conception of lexical frequency and the role it plays in sociolinguistics. For some phenomena, Wholeword frequency may play a key role, but even in such cases it does not appear to account for all of the data.

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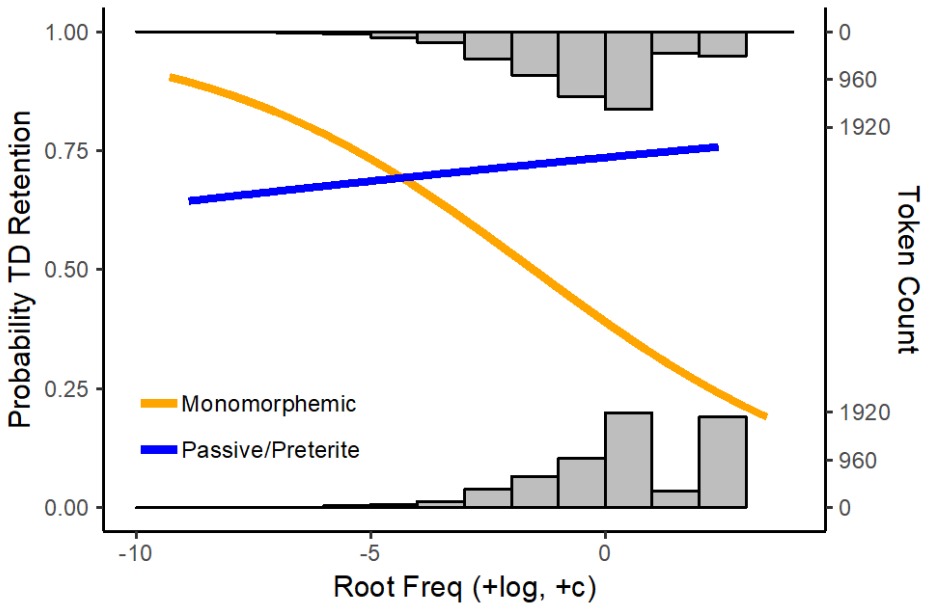

Figure 1. Histograms for TD by Root frequency, log-transformed and centred. Simple logistic Regression curves for each grammatical class.

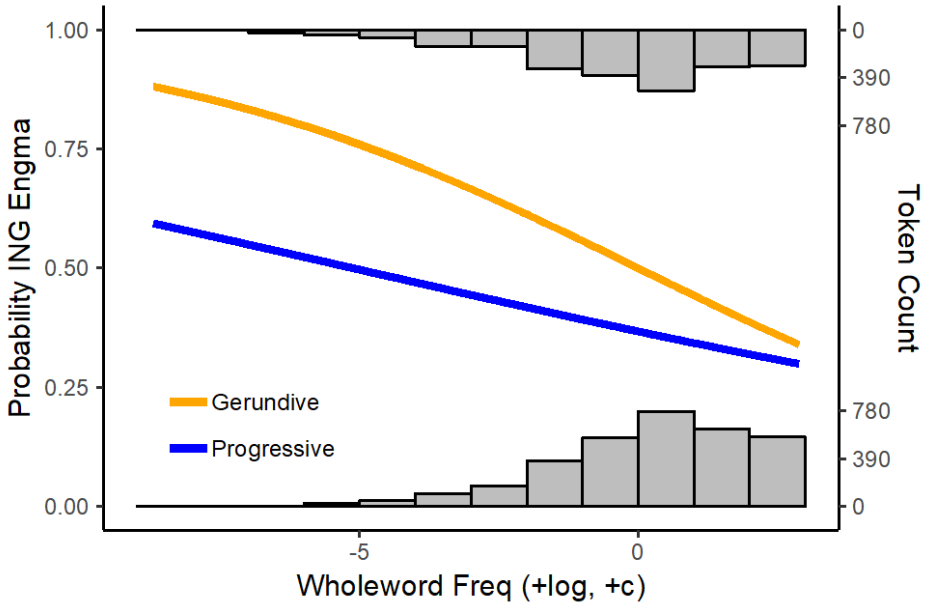

Figure 2. Histograms for ING by Wholeword frequency, log-transformed and centred. Simple logistic regression curves for each grammatical class.

"I just sound Sco[ʔ]ish now!": The acquisition of social and linguistic constraints on glottal replacement by Polish adolescents in Glasgow

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In moving to a new community, migrant speakers need to acquire not only the syntax, phonology and lexis of a new language, but also the sociolinguistic norms of their new environment. A growing body of research details the processes that non-native speakers go through in acquiring the complex patterns of variation found in native speech (e.g. Goldstein 1987; Wolfram et al 2004; Drummond 2010, Adamson & Regan 1991; Regan 1995; Meyerhoff & Schleef 2014). However, the results differ from community to community and across individual speakers. What does the acquisition process look like in Glasgow, Scotland, in a community where the majority of speakers use a variety of English which differs radically from more mainstream varieties?

In this paper I contribute to this research through a two-year long ethnography of Polish adolescents now living in Glasgow, and compare their use to adolescents born in this community. I focus on a widespread vernacular variable in the UK, glottal replacement - the replacement of [t] by [ʔ] as in (1) – which is subject to a range of sociolinguistic constraints in native speech.

1) And you had a thermome[ʔ]er and there was me[ʔ]al to hold i[ʔ] up.

Mixed-effects logistic regression of over 4000 contexts of use demonstrates that the Polish learners' rates of glottal replacement are in line with the very high rates used by the native Glaswegians at over 80%. The learners also replicate a number of constraints, including phonological context and syllable number. However, a number of constraints not found in the native speaker data are evident in the Polish data. For example, the Polish speakers have higher rates of glottal replacement with high frequency words, an effect which is not significant for their Glaswegian peers. I suggest that this arises from lexical diffusion effects in the acquisition of sociolinguistic variation (e.g. Wolfram et al 2004); when phonetic variation is being acquired in an L2, it is initially linked to those lexical items which occur most frequently in the native input. In addition, examination across a range of contexts show that the Polish speakers styleshift in more formal contexts; while native speakers styleshift for other variables, they do not for glottal replacement. I interpret this result as a type of hypercorrection (e.g. Eckman et al 2013), where the Polish group are more 'careful' with their use of glottal replacement than the Glaswegians. This may stem from linguistic insecurity due to their precarious social position in the school and the heightened scrutiny on their language use.

These results show that language learners replicate a number of constraints found in native speech, but also innovate a number of others. These innovations may arise from either social or linguistic pressures on the language system. I discuss how the results inform on the acquisition of variation in a new language, and what this reveals about the sociolinguistic pressures that operate in different communities of use.

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How can dictionary data be used to study language variation?

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The Oxford English Dictionary illustrates the meaning, history, and pronunciation of 600,000 words, past and present, from across the English-speaking world. OED is currently exploring ways in which its wealth of data can be made more accessible to academic researchers. So far, work in this area has concentrated on OED's historical data and its relevance to the digital humanities, but we feel there is also scope for those studying phonetic variation to make use of its pronunciation data.

The intention of this demonstration is to present these possibilities to UKLVC participants and to seek their input about possibilities we may not yet have considered. The data potentially available for research purposes include the following:

- Phonemic transcription in British English for all non-obsolete headwords
- Phonemic transcription in American English for all non-obsolete revised headwords, and many (soon to be all) unrevised headwords
- Phonemic transcription in several (currently 12) World Englishes according to contemporary phonological models for relevant subsets of headwords
- Studio quality human-voice recordings of all the above
- Historical pronunciation transcriptions from Murray's original New English Dictionary (1888-) for headwords whose pronunciation has changed significantly, and for headwords now deemed obsolete

Transcriptions are readily transformable to preferred phonological models (as we presented at BAAP 2018). Other lexicographical features such as part of speech or frequency score could be used to create a subset of data to fit a researcher's particular requirements. We will demonstrate a search tool which allows complex searches using strings from either the headword spelling or the phonetic transcription.

Individuals in the crowd: The joint roles of agency and structure in sound change

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Individual agency and an individual's social structures play a joint role in that speaker's linguistic norms and production. Understanding the relationship between agency and structure remains an important and active problem in social sciences more broadly (e.g. Giddens 1984; Bakewell 2010) and sociolinguistics specifically (e.g., Bucholtz & Hall 2005). In this work, I investigate the joint effects of speaker agency and social structure on the adoption of a local sound change.

The TRAP vowel in Philadelphia is currently undergoing a change from the traditional allophonic split to an incoming nasal split. While most speakers only produce one of these two allophonic systems, some speakers also produce variation between the two allophonic systems; this variation can be understood as an intermediate phase between the old and new TRAP systems (author citation). For more information about the phonology of TRAP in Philadelphia and about speaker classification, we refer the reader to Labov et al. (2016) and (author citation); here I focus primarily on an analysis of the sociolinguistic outliers. Using a combination of large-scale social network analysis and speakers' individual identity, I identify a community-wide pattern of change, demonstrating that the type of middle school and high school that participants attended plays a major role in the adoption of an incoming allophonic split, with local Catholic schools acting as a conservative linguistic force across the city.

A bipartite social network diagram (Dodsworth, 2014), shown in Figure 1, demonstrates the robust influence of school network on linguistic production: the new nasal split dominates the public schools, while the traditional split dominates the open admissions Catholic schools. Crucially, this community-wide network (analysis) also enables a more nuanced analysis of individual speakers. For example, while Justin P. and Christine L. appear on the surface to produce a similar linguistic profile (producing variation between the two allophonic systems), we see that their position within their respective social networks renders them quite different sociolinguistic profiles: while Christine is a leader of linguistic change within her community, Justin is a conservative holdout against the encroaching nasal split. A closer look at Justin and Christine's orientations towards Philadelphia as a city as well as their own aspirations and self identity provides a deeper insight into their variable use of both the old and the new allophonic systems.

By the same token, this network analysis also enables the identification of speakers who are linguistic outliers within their subcommunities: Kevin M. (the only traditional split graduate of a public school), Margaret G. (the only nasal split graduate of an Open Admissions Catholic high school), and Jake S. (whose data is unlike any other speaker in the data set). For each of these speakers, we find that their local orientation and personal aspirations are reflected in their linguistic production.

These findings demonstrate that the factors impacting the shift away from the traditional TRAP system in Philadelphia are best teased apart through a combination of social network analysis and a nuanced examination of individual identity factors.

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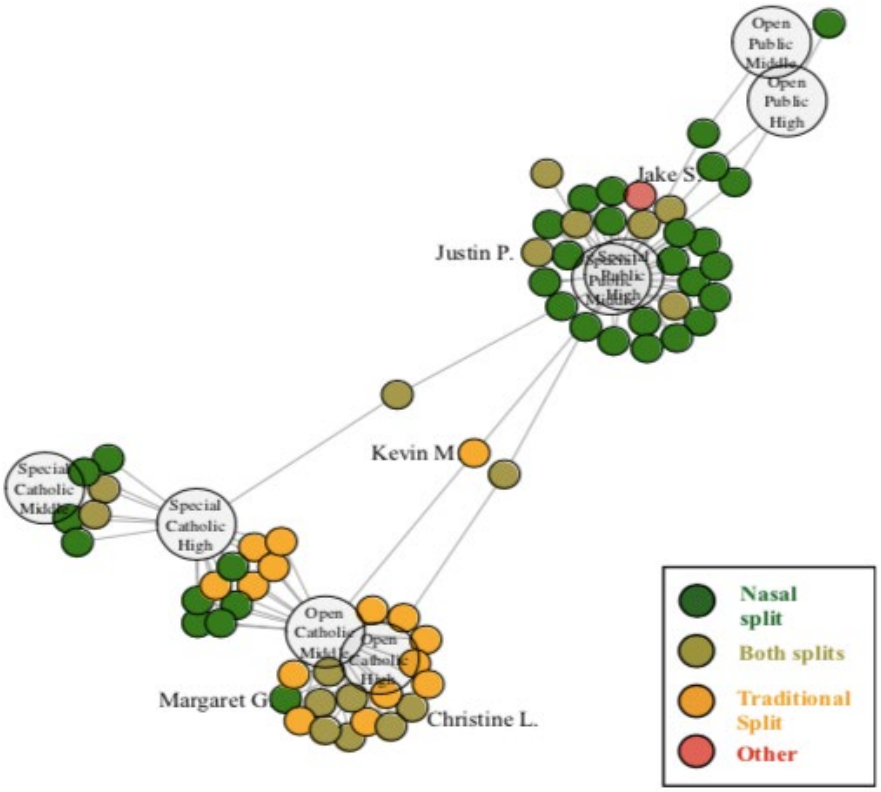

Figure 1: Social network diagram of TRAP production by school network. Each speaker is represented by a colored circle, and is connected to their middle school and high school. Colors represent TRAP production. Schools are broken down into Open Admissions Catholic schools, Special Admissions Catholic Schools, Special Admissions Public Schools, and Open Admission Public schools, following Labov et al. (2016).

Variation in the pronominal ditransitive in British English Twitter messages

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Recent research (Siewierska and Hollmann, 2007; Gerwin, 2013; Y´an˜ez-Bouza and Denison, 2015) uses historical and contemporary corpora to quantify diachronic and spatial distributions of variants of the ditransitive in British English. Each study focuses on ditransitives with two pronominal objects, where internal factors are reduced primarily to the choice of pronoun and verb type. Three variants are attested, a prepositional dative (1a), a double-object (1b) and an alternative double object construction (1c).

(1) Pronominal ditransitive (pDit) types
   a) i dont have it lol <u>someone sent it to me</u> as a joke (PDAT)
   b) not sure why I'm listening to the beach boys album, <u>John lent me it</u> (GTD)
   c) It's a scanner/Printer thing. <u>Someone gave it me</u> but I've not tested it. (TGD)

Corpus evidence reveals the pronominal TGD as the most frequent variant until the 19th century, when the PDAT gained preference. The pronominal GTD, now considered canonical, only emerges in the 20th century. Agreement over the broad geographical distribution of the ditransitive is based primarily on maps drawn from the Survey of English Dialects (SED), but comprehensive frequency data is lacking (Y´an˜ez-Bouza and Denison, 2015, p.248).

The current project uses detailed frequency data drawn from Twitter over a period of about three years to map geographical variation in the pronominal ditranstive according to user-entered location (as opposed to GPS data). This map shows remarkable crossover with the SED maps, demonstrating both the stability of the geographical distribution over time and the amenability of "interactive written discourse" (Ferrara et al., 1991, p.1) to the expression of dialect.

Approximately 27000 data-points reveal a high degree of variation across the UK, at a town-by-town level, that clusters into three distinctly patterning regions: (A) Scotland and North East England; (B) The Midlands and North West England; (C) The South and East England. In the light of these new data, (socio)historical explanations for the observed patterns are briefly considered, such as Gast's (2007) speculation that higher rate of pronominal DOC in the East and North East of England might be explained by Old Norse contact.

By demonstrating such robust variation with mainland Britain, the results further underscore a problematic (though often necessary) tendency to "lump together" linguistically diverse regions and treat them as one entity (Siewierska and Hollmann, 2007, p.97). The results thus have implications for dialect geography and approaches concerning regionally sensitive probabilistic approaches to grammar (Bresnan and Ford, 2010).

Finally, the data reveal sharply contrasting border regions, where the relative frequency in occurrence of each variant changes dramatically over distances of less than 30km. Examples of these border regions include the area between Huddersfield and Wakefield as well as Warrington and Liverpool. The current paper ends with a discussion of the further development of this investigation, focusing on Liverpool and surrounding area. Discussed here are the use of mass-participation grammaticality judgements to dig deeper into underlying structures and augment the social media data.

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Examining chain-shifts through machine prediction

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The principles of chain shifts, especially following Labov (1994), require that vowels be structurally interconnected, so that changes in one vowel cause changes in another vowel. This paper presents predictive modelling by conditional inference tree as a new technique for examining structural interconnections among vowels that are proposed to be participating in a chain shift.

Conditional inference trees have been used periodically in research on language variation and change (e.g., Gordon et al. 2004 and Tagliamonte & Baayen 2012). Software packages build trees by splitting data for a dependent variable on the basis of a predictor variable with the lowest p-value, and then recursively re-splitting each branch until all significant predictors are exhausted.

Besides identifying significant splits in a dataset, conditional inference trees can also be used for machine learning and predictive modelling. Packages create a "forest" by generating multiple trees from random samples of a dataset. They return weighted averages for predictors across all the trees, and these weighted averages provide a model of the data that can be used to make predictions about new datapoints.

I show that this predictive modelling provides a new technique for examining structural relationships among vowels. Models can estimate what the mean F1 and F2 of Vowel A will be on the basis of measurements of Vowel B in a training dataset. Then, in a test dataset, measurements for Vowel B can be used to estimate what the measurements of Vowel A should be. Those estimates can be compared to observed measurements to check the validity of the model.

As a case study of this technique, I examine data from an American English variety which has been identified as undergoing a chain shift referred to as the "Canadian" or "California Vowel Shift" (see Becker et al. fc.). I built a training set of vowel measurements from 63 speakers and a test set from 21 speakers, and used the {partykit} package in R to build trees and predictive models (Hothorn, Hornik & Zeileis 2006; Hothorn & Zeileis 2015).

The models confirm that the vowels are structurally interrelated, consistent with the concept of a chain shift. Furthermore, these structural interrelationships tend to exist between adjacent vowels rather than across the vowel system, suggesting a sequencing of adjustments in the vowel system rather than the entire system moving in lockstep. The models also show that structural interrelationships cannot fully account for observed changes, and that macro-level social factors should be included in models. This shows that the chain shift is indeed a consequence of structural factors, but also a consequence of social factors.

At an immediate level, then, this project sheds new light on a the structural (and social) causes of sound changes in a particular chain shift. More generally, though, it demonstrates predictive modelling as a powerful approach to test claims about relationships among vowels in a chain shift, and provides a useful tool for sociolinguists working from increasingly massive corpora of vowel measurements.

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The fate of the Scottish Vowel Length Rule in contemporary Scottish English

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The Scottish Vowel Length Rule (SVLR) posits that in stressed syllables, certain Scottish English vowels are short except before /r/, voiced fricatives and morpheme boundaries (Aitken, 1981). The SVLR continues a historical process which appears to be receding. The number of SVLR vowels is debated: most agree it doesn't apply to /ɪ ʌ/. Aitken (1981) excludes an additional four of the 19 vowels in his *Table of the Scots Vowels*, concluding that the SVLR applies to all remaining vowels in some dialects, and to some in all dialects. Scobbie et al (1999) argue the SVLR only applies to /i ʉ ai/, though Warren (2018) provides new evidence for more vowels affected in the North-East. Weakening of the SVLR is linked with contact with Anglo-English in Edinburgh (Hewlett et al 1999 & Stuart-Smith 2016).

This study considers the SVLR by vowel, dialect, social factors, and time, from a large-scale analysis of vowel duration from approximately 500 speakers across eight Scottish English corpora, together covering the main dialect areas across Scotland: the Central Belt (Glasgow and Edinburgh), the South/Borders, the North East and the Highlands & Islands. Large-scale acoustic analysis across multiple datasets, also controlling for prosodic factors such as speech rate and phrase position, was carried out using ISCAN (eg McAuliffe et al., 2019). Recordings of both spontaneous and controlled speech from the late 1940s until the mid-2010s in a number of dialects enabled inspection over time and across the lexicon (Rathcke & Stuart-Smith, 2016). In addition, the inclusion of gender and ethnicity allows for investigation of the role of social factors in the maintenance of the SVLR, including the influence of heritage ethnic background (cf. Hewlett et al, 1999; Stuart-Smith et al, 2011).

To date, vowel duration in three corpora (Glasgow, SSE, SCOTS) for each vowel of BIT, STRUT, DRESS, COT, CAT, MATE, GOAT, BOOT and FLEECE has been carried out for stressed monosyllables. Fixed factors of speech rate, utterance position, gender, decade, and a two-way interaction of following context by dialect area were fitted with random factors of speaker and word. All vowels showed highly significant prosodic effects, shortening by speech rate, and lengthening in utterance-final position. No evidence consistent with the SVLR or the Anglo-English Voicing Effect was found for BIT, STRUT, DRESS, COT, or CAT for any dialect area. GOAT and MATE showed some evidence of SVLR for two dialect areas. The patterning for BOOT and FLEECE showed a significant three-way interaction of vowel*dialect area*following context ($p < 0.01$); see Figure 1. As found for all vowels, /i ʉ/ also show a kind of 'anti-Voicing Effect' in that they are much shorter before voiced stops/ nasals/laterals, than before voiceless stops/fricatives. But unlike the other vowels, the SVLR long contexts (voiced fricatives) show some lengthening, extending Scobbie et al (1999)'s observation from read Scottish English to spontaneous dialect speech. /i ʉ/ also show a significant interaction with local speech rate, such that vowels are longer in SVLR 'long' contexts at slower rates, which further suggests that the SVLR can still be regarded as a structural feature for these vowels. In these three corpora, thus far, no evidence has emerged for effects of gender and time on vowel duration.

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Listener sensitivity to localised accent features using the Geographical Association Test (GAT)

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Perceptual dialectology (PD) has for several decades been an important element of sociolinguistic inquiry. PD research has, however, tended to focus on participants' abilities to identify and distinguish between accents as though they were monolithic objects, rather than intersecting constellations of phonetic and phonological features. Relatively little PD work has thus far investigated listeners' indexical associations between specific pronunciations and geographical factors.

The present paper presents findings from an experimental perception task designed to test associations of this type. This task was part of a suite of elicitation techniques deployed for the TUULS project ('The Use and Utility of Localised Speech Forms in Determining Identity: Forensic and Sociophonetic Perspectives'; UK ESRC ES/M010783/1).

TUULS focusses on phonological variation and change in the speech of participants (N=120) from three urban centres in the North East of England: Newcastle, Sunderland and Middlesbrough (i.e. 40 per locality). Our analysis considers accent-internal variation as well as variation among the three accents, and specifically examines the effects of informants' mobility (routinised mobility vs. relative immobility) on their usage of highly-localised pronunciations. Perception tests involving key accent features were subsequently run on a 40-strong subset of the participants (10 per locality).

In this paper we present data gathered using a perception task called the Geographical Association Test (GAT). Over 50 stimuli containing target features of interest were presented aurally to listeners in the form of single-word utterances recorded during the production interviews. Using an on-screen drag-and-drop task, participants indicated on a map of northern England the places with which they would most closely associate a pronunciation. We report on the correlations between the perceptual and the production data, and explore differences across the three localities. We also consider disparities between mobile and non-mobile participants as a measure of the granularity of their knowledge of the geographical distributions of localised forms, and how this knowledge may be dependent upon the (lack of) exposure to and interaction with speakers of other, closely related varieties.

Posters

The role of sociolinguistic salience in speech production and perception

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Sociolinguistic research has established that some phonetic variables undergoing change attract the attention of people in a speech community, while others do not. This phenomenon has been linked to the notion of 'salience' (e.g. Rácz 2013); highly salient variables tend to elicit strong social associations that are uniform across different macro-sociological groups in a community, while less salient features display a weaker but wider range of perceptual variation between groups (Levon & Fox 2014; Schleef 2017). It is not yet known, however, whether this distinction in perception is influenced by individuals' use of particular high-salience and low-salience linguistic variables to create social meaning in their own speech production.

This paper investigates this issue via a production and perception study of /t/-glottalling and GOOSE-fronting in Southern British English. Both features are on the increase in young people's speech in the south-east of England (Fabricius 2000; Holmes-Elliott 2015) but differ in terms of their social salience. /t/-glottalling may be used as a socially meaningful resource in speech production (Kirkham & Moore 2016) and is perceived consistently across different social groups (Schleef 2017), while GOOSE-fronting is not reported to index any social associations. Accordingly, this study investigates how these two variables are used in participants' speech and whether they exhibit diversity in social meanings in both production and perception.

Data were collected from 45 participants aged 16-19 in Hampshire, UK. The production data consist of recordings of the participants completing reading tasks and group discussions. Tokens of /t/ were coded and analysed auditorily and GOOSE was analysed in terms of the F1~F2 Euclidean distance from each speaker's FLEECE vowel, measured at the vowel midpoint. The statistical modelling was conducted using linear and logistic mixed-effects models. Qualitative perception data was elicited using questionnaires and group conversations to evaluate recordings of teenagers from a nearby school, who displayed differing rates of the two variables under study. Results show that /t/-glottalling primarily exhibits socio-indexical variation in production according to macro-sociological variables, whereas GOOSE-fronting additionally varies along locally specific micro-level groups, such as friendship-based communities of practice. The perceptual data show strong social associations for /t/-glottalling, but rare and inconsistent associations for GOOSE-fronting. Based on these results, I argue that salience can influence phonetic features' macro-level indexical meanings, but that these meanings take on a more complex life in the micro context of the local community. In doing so, I also address the issue of defining and operationalising the concept of 'salience' in the study of sociolinguistic meaning.

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"There's a line and Sheffield is in the North": Chesterfield teenagers' perceptions of the North-Midland divide in England.

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The (East) Midlands region of England has been receiving more attention in Sociolinguistics (cf. Braber 2014, 2016; Braber and Robinson 2018; Docherty and Foulkes 1999; Flynn 2012) despite the supposition that it is difficult to locate and "…a 'no-man's land', a victim of the North-South divide" (Wales 2000: 8). Upton (2012) describes the Midlands region as a "transition zone" between northern and southern dialects, and Trudgill (1990: 44 cited in Dyer 2002: 101) states that East Midlands' dialects have "few stereotypical features". Meanwhile, Yorkshire and its various dialects have been analysed across many decades, with the Sheffield dialect alone having been studied for over two hundred years (Stoddart, Upton and Widdowson 1999: 79), with stereotypes of Yorkshire dialects recognised nationally. Drawing on data gathered from perceptual activities, this poster explores how teenage residents of Chesterfield (North East Derbyshire) present their regional identity. Due to Chesterfield's administrative position as part of the East Midlands, Chesterfield teenagers are hypothesised to identify as Midlanders, perhaps having a stronger Midlander identity due to Chesterfield's close proximity to the border with Yorkshire (Braber 2014). However, because of Chesterfield's proximity to Sheffield, South Yorkshire, and being closer in distance to Sheffield than to its county capital, Derby, it is also possible that residents align themselves more with Sheffield and the North (Llamas 2010: 228), especially given the Midlands' relatively lacklustre reputation (Braber 2016) and Yorkshire's stronger cultural prominence (Montgomery 2016). Heat maps show where Chesterfield teens place the Midlands region, with 73% placing Chesterfield in the Midlands and 61% positioning Sheffield in the North. Results from perceptual recognition tasks show that the Sheffield accent is the most identifiable to Chesterfield teenagers through variants of FACE and GOAT vowels. Finally, initial analysis of word list data appears to confirm that Chesterfield teens realise the FACE and GOAT vowels as more standard diphthongs, while previous research has shown that Sheffield locals traditionally realise these vowels as monophthongs [eː] and [ɔː], or, among middle-class females, the then incoming centralised GOAT monophthong [ɵː] (Finnegan 2011), which Watt and Tillotson suggest is a feature that is "becoming typical of an area stretching from Yorkshire almost to the Scottish border" (2001: 296). Chesterfield teenagers appear to deny the existence of these linguistic markers in their own linguistic repertoire, perhaps as a rejection of Sheffield, Yorkshire, and potentially the North as a whole. In sum, despite perceptions of the North being "better" to many of my participants, who largely also consider Sheffield to be part of the North, initial results show that Chesterfield teenagers remain linguistically and ideologically rooted in the Midlands.

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Variation and change in lexical productivity across the lifespan: An interdisciplinary investigation of Swabian and standard German

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This paper advances an innovative cross-disciplinary approach in exploring the extent to which lexical productivity can explain variation and change in speakers' use of dialect features across the lifespan. The corpus consists of 20 panel speakers of Swabian, a high Alemannic dialect spoken in southwestern Germany, recorded in two different communities, Stuttgart and Schwäbisch Gmünd, first in 1982 and again in 2017. Positioned at the intersection of the fields of dialectology (dialect contact and attrition studies), sociolinguistics (variationist lifespan studies), psycholinguistics (lexical frequency distribution studies), and psychology (aging and cognition studies), this interdisciplinary investigation offers an alternative account of the ostensible changes in individual speech patterns across the lifespan which reflect an apparent loss of dialect features.

Analysing lexical productivity in spontaneous speech is "tricky business": it is particularly problematic to deal with the significant number of highly collinear variables and to find a statistical measure that is independent of the length of the text (Baayen 2001). By calculating intra-speaker vocabulary growth trajectories and using generalised additive mixed-effects models, the results show that, rather than lose dialect, speakers gain a vast amount of new knowledge over their lifetime that is not dialect, which exerts a cumulative and competitive influence on their choice of dialect and standard forms (see Figure 1). The findings support language development as a process in which speakers acquire greater awareness of the standard language throughout their lifetime, gained through their participation in various educational, commercial, and public institutions (Eckert 1997; Labov 1964; Sankoff and Laberge 1978), without a concomitant loss of dialect forms.

Myriad studies have shown that language choice is greatly influenced by the speakers' local orientation (e.g., Hoffman and Walker 2010), 'dialect identity' (e.g., Moore and Carter 2015; Schilling-Estes 2004), and changing indexicalities (e.g., Eckert 2008). In Swabia, particularly in the large urban centre of Stuttgart, the prominence of Swabian has changed substantially over the years. The findings indicate a clear trend: the higher the speakers' Swabian orientation, the more dialect features they use; and conversely, the lower the speakers' orientation, the more standard features they employ (see Figure 2).

Swabian orientation influences lexical productivity by reflecting the three classic patterns of individual change (Sankoff 2006): lifespan change, speakers moving in the direction of the overall community change by speaking less dialect and more standard; speaker stability, individuals resisting change and continuing to use a similar amount of dialect; and, retrograde change, speakers moving in the opposite direction of the general community change and speaking more dialect today than they did in 1982 (see Figure 3).

Finally, the results reveal that, contrary to studies which have found low-frequency forms are the first to disappear (e.g., Hay et al. 2015), for these Swabian speakers, it is the low-frequency forms that have become more frequent across their lifespan. This suggests an age of acquisition effect, reflecting the enduring role that dialect plays in the lives of speakers throughout their lifetime.

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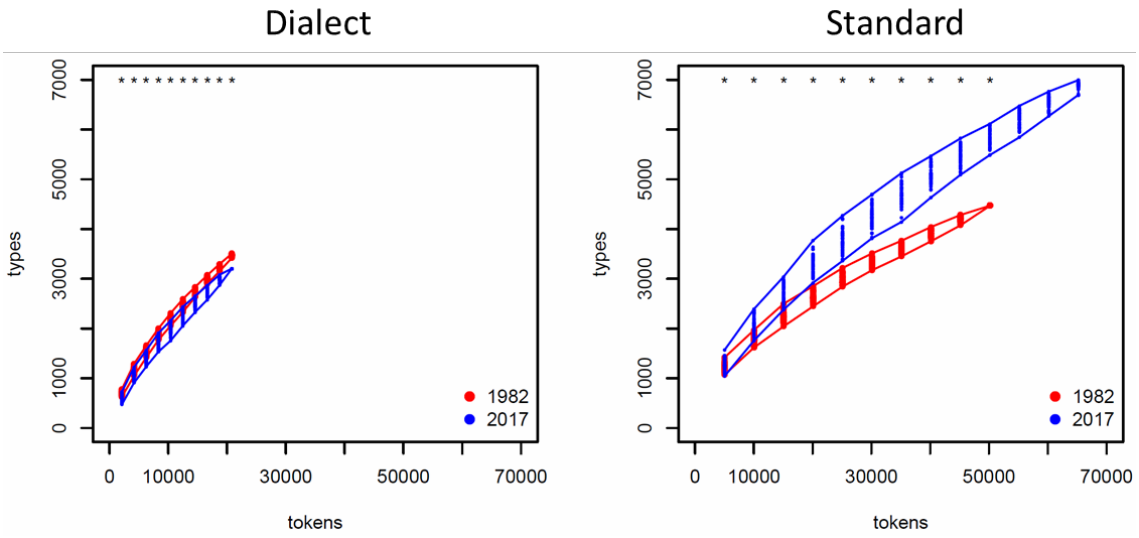

Figure 1. Projected vocabulary size and growth curve (dialect and standard language), using a Monte Carlo partial randomisation technique with 50 permutations and ten equally-spaced measurement points, for 20 Swabian panel speakers over a 35-year lifespan. The left plot shows dialect vocabulary, which has remained fairly constant across the years; the right plot depicts standard vocabulary, which has considerably increased for all speakers in 2017. The asterisks at the top signify that there is a significant difference between the measured intervals as evaluated by a non-parametric Wilcoxon test (p<.05).

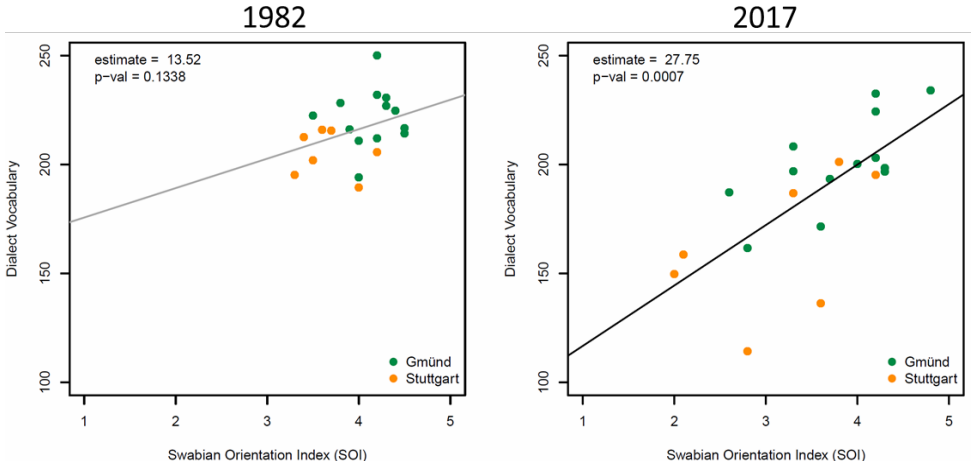

Figure 2. Dialect vocabulary size and Swabian Orientation Index (SOI) for two recording years (1982 and 2017) and two communities (Stuttgart and Schwäbisch Gmünd), measured by mean word types. 1982 shows little difference in dialect vocabulary size between the communities, while 2017 shows a significant change (p=.00007) in dialect vocabulary for all speakers, particularly for those speakers in the urban centre of Stuttgart.

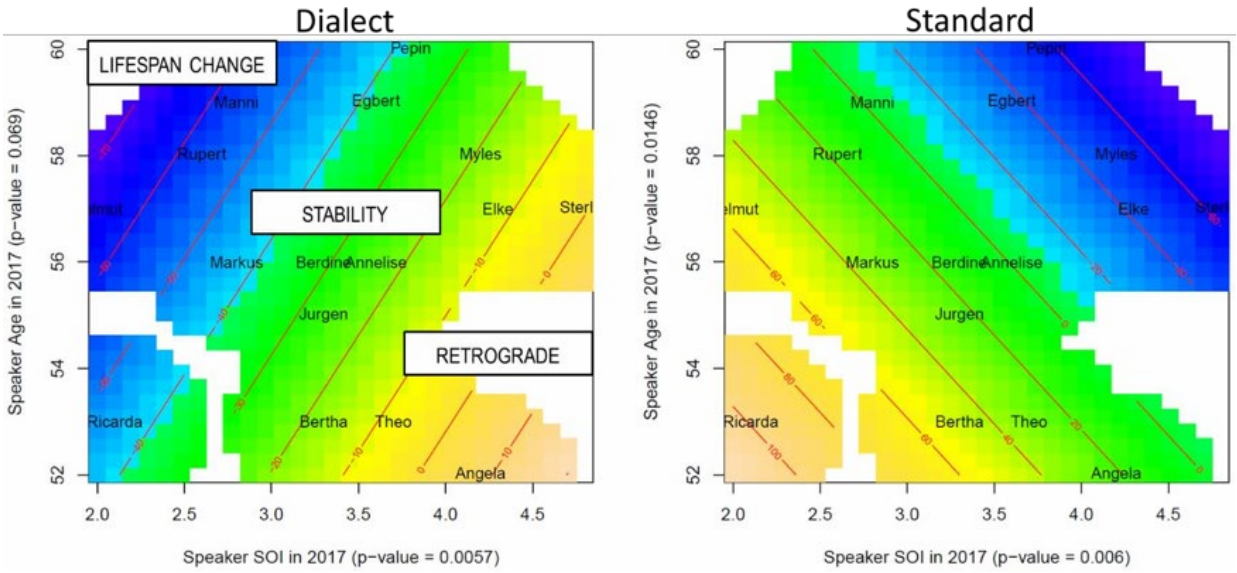

Figure 3. Dialect and standard language vocabulary change between 1982 and 2017 as a function of speaker age and Swabian Orientation Index (SOI) in 2017 (using generalised additive mixed models (GAMMs). Contour lines connect points with the same predicted values, signifying vocabulary change: higher values are shown in darker shades of yellow, lower values in deeper shades of blue, with middle values in shades of green.

The Effect of Precision and Context on Social Perception

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Recent work has unveiled a link between the semantic, pragmatic and social components of the meaning of different forms (McCready 2012, Acton & Potts 2014; Beltrama 2016). We extend this research by asking: what pragmatic factors underlie the ability of *(im)precision*—a phenomenon deeply embedded in pragmatic variation—to index speaker identity?

When using quantity expressions, speakers can be more or less precise (Pinkal 1995, Lasersohn 1999), demonstrating sensitivity to hearers' processing costs and needs when calibrating this choice (Dubois 1987; van der Henst et al. 2002). Recently, Beltrama (2018) showed that variation in precision is socially meaningful: speakers describing events with sharp numbers were rated higher than speakers using round numbers—e.g., "the package came at 9:03 vs. 9:00"—along both *favorable* (e.g. articulate) and *unfavorable* qualities (e.g. pedantic).

This paper addresses two issues. First, how does context affect the perception of precision? While there is consensus that precision is context-sensitive (Kennedy 2007, Burnett 2014), Beltrama's materials include no contextual information. Second, Beltrama's study included only attributes that correlate positively with *high* precision, leaving open the question of whether there are also social meaning traits that positively correlate with *low* precision.

We constructed dialogues in which Person A poses a question and Person B responds with a quantity expression. Participants rated Person B on 10 attributes. 4 attributes include dimensions from Beltrama (2018)—articulate, intelligent, pedantic, uptight (G1); 3 reflect a high degree of expertise on the part of the speaker—knowledgeable, confident, pretentious (G2); 3 reflect the benefit of suppressing details in conversation—helpful, considerate, likable (G3). We predict that G3 attributes, contrary to G1/G2, should show a positive correlation with imprecision. We manipulated the expected relevance of precision in the context via two factors: (i) Stakes: how urgent details are (high stakes vs. low stakes); (ii) Proximity: how close the stated quantity expression is to a target value quantity (high vs. low proximity). We crossed these two factors with the third factor Precision, which manipulates the degree of precision itself via sharp (precise) vs. round (approximate) numbers. 16 items (16 fil.) were crossed in 8 lists with a LSD. 97 subjects were recruited on MTurk and paid $2.

Average ratings are plotted in Fig-1. Mixed-effect models (random intercepts for items/ subjects) show an effect of precision for most G1/G2 attributes, with sharp numbers being associated with higher ratings than round ones, but not for G3 attributes. This confirms the variation in precision is indeed social meaning; however, its social meaning does not seem to contain dimensions that correlate with low precision. No context effect is found, with the exception of Uptight and Knowledgeable, for which the ratings are higher in the low stakes/low proximity condition. This suggests that, in general, relevance may only have a limited effect on the social perception of variation in precision; when a contextual effect is present, however, it suggests an inverse correlation between precision's social salience and pragmatic relevance.

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Sample Item

High Stakes:

Person A sees someone walking on the curb and pulls over to ask for information.

Person A: Excuse me. I'm running on empty and only have gas for **{5 (high proximity) /20 (low proximity)}** miles and my phone is dead. Where is the closest gas station?

Person B: There's one **{4.14 (precise) / 4 (approximate)}** miles down this road.

Low Stakes:

Person A sees someone walking on the curb and pulls over to ask for information.

Person A: Excuse me. I would like to have some food within the next **{5/20}** miles and my phone is dead. Where is the closest restaurant?

Person B: There's one {**4.14 (precise) / 4 (approximate)}** miles down this road.

Model Summary

Main effect of Precision:

Group 1: **Articulate** (β=0.27 p<.01), **Intelligent** (β=0.3, p<.001), **Pedantic** (β=0.34, p<.001), Uptight (β =0.17, p=0.20)

Group 2: Confident (β=0.13, p=.16), **Pretentious** (β=0.52, p<.0001), Knowledgeable (β=0.13, p=.16)

Group 3: Considerate (β =-0.12, p=0.21), Helpful (β =-0.06, p=0.97), Likable (β =-0.12, p=0.19)

Interaction High precision/Low Stakes: **Uptight** (β=0.43, p<05), **Knowledgeable** (β=0.30, p<05)

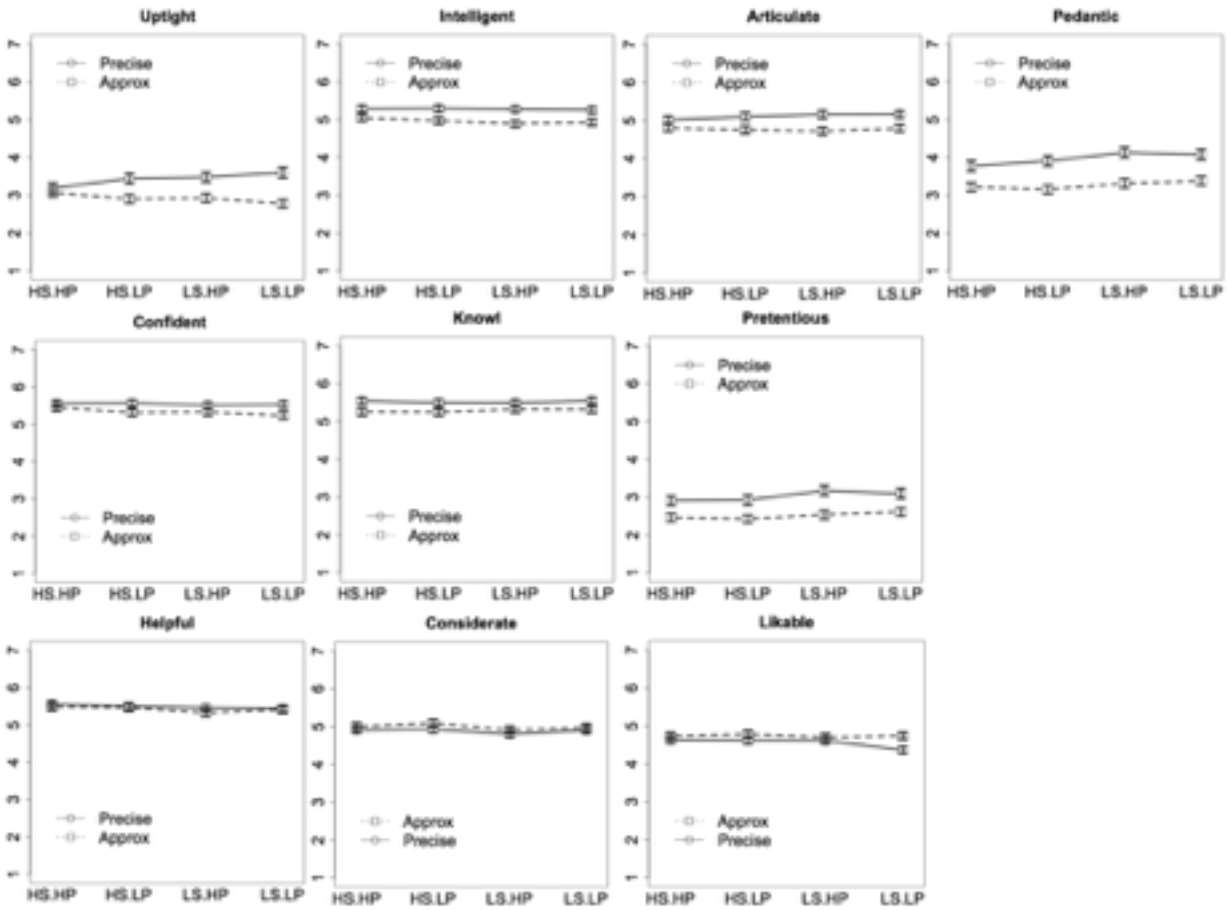

Figure 1. Average ratings. HS=High Stakes; LS= Low States; HP= High Proximity; LP=Low Proximity. Error bars indicate standard error.

Dialect Continuity and Change in Sheffield English

Johanna Blakey
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This poster will introduce a new project based on the newly-created Corpus of Sheffield Usage (CSU).

This CSU utilizes sound recordings held by the University of Sheffield's Special collections: one corpus recorded in the early 1980s, and another in the late 1990s. These corpora were gathered for the purposes of linguistic research, aimed at capturing vernacular speech along with attitudinal commentary about language and place. Both are of sufficient quality to permit fine-grained phonetic analysis, and the later corpus was the basis for Stoddart et al's (1999) chapter on Sheffield English. Ultimately, I plan to add a further 24 contemporary recordings, stratified following the number and age/sex profile of the speakers in the 1990s archive. The resulting CSU will provide a window on the language used in Sheffield over the course of a century, which I will use to investigate continuity and change in real and apparent-time, following others' approaches (e.g. Barnfield and Buchstaller 2010; Sankoff 2018; Blondeau 2013).

The additional contemporary recordings will gather targeted data focusing on locations in the city which have experienced rapid gentrification. These locations will be compared with those that have changed less over time, with the wider aim of assessing how demographic change impacts upon the language people use. I will investigate the extent to which language use in Sheffield is conditioned by social, geographical and/or economic factors, and examine Finnegan's suggestions that speakers in Sheffield use perceptual borders in the city in order to categorize individuals into groups (2011: 158-159). The corpus will be analysed according to contemporary sociolinguistic methods, including acoustic and auditory analysis via forced-alignment. My poster will display my preliminary work on the project, including the results of a pilot study using a sub- sample of the data that examines variation in the GOAT lexical set. Stoddart et al demonstrated that in the 1990's Sheffield speakers of all age groups would orient to [ɔ:], but more traditional speakers might use [ʊə] (1999:74). In the early 21st century Finnegan (2015) showed that middle-class Sheffield speakers orient to the Standard-English realisation [əʊ].

A growing body of research demonstrates that perceptions of place as well as notions of local identity can have an impact on an individual's use of local features as part of their linguistic repertoire (e.g. Llamas 2007; Tagliamonte 2017). My poster will discuss how language and place is important in the CSU, including a qualitative analysis of Sheffield speakers' comments about their attitudes towards Sheffield, which reveal how they orient to place. This will provide an opportunity to explain individual variation, and to explore how place-orientation (Nycz 2018) and local identity are important with regard to linguistic behaviour (e.g. Moore 2011, 2012) and potentially for subsequent linguistic variation within the community.

My poster will thus present a pilot of my methodology, combining both quantitative socio-phonetics and qualitative analysis of stance to provide a nuanced understanding of how speakers use linguistic features to dis/align themselves with Sheffield and how these processes have been shaped diachronically.

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The distribution of the FOOT-STRUT and the BATH-TRAP splits in the East Midlands and their social meaning

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In this paper we conduct a real-time investigation of the phonetic realisation and phonemic status of the FOOT-STRUT and BATH-TRAP vowels in the East Midlands. Splits between these vowel pairs are associated with southern English varieties while the lack of splits for the lexical sets indexes northerness (Wells 1982). However, the East Midlands have been shown to be a transition zone between the north and the south, geographically, linguistically but also in terms of identity construction (see xxxx 2015a, 2015b). Hence, while the previously mentioned linguistic features are strong identity markers in the north and the south, their role in the East Midlands is not clear.

Previous linguistic work has discussed the status of the splits, e.g. Trudgill comments that the FOOT-STRUT split is moving northwards (1986: 51) and the recently collected dialect app data (Leeman et al.) confirm this. The app data also indicate that the BATH-TRAP isogloss remains stable. However, these sources do not provide any detail about changing patterns in the East Midlands, i.e. in the counties of Leicestershire, Nottinghamshire and Derbyshire. Therefore, the following questions are addressed in this paper:

1) What is the status of FOOT-STRUT and BATH-TRAP production and perception in the East Midlands?
2) Do we see a geographical diffusion of the FOOT-STRUT split northwards while the BATH-TRAP isogloss remains the same as Leemann et al. (forthcoming) claim?
3) How does the distribution of these vowels link to social meaning?

The paper draws on two main sources: a) reading passage and minimal pair list data (recorded in 2018) from 60 people in two age groups who had lived in one of the three counties for most of their lives. This provides information about the production and perception of the two splits. b) Acoustic measurements from 24 people in two age groups collected through oral history recordings conducted as part of a British Academy funded project in 2012 were used. Mixed-effects models were used to investigate the apparent time and real-time changes.

The data provide a real-time production and perception perspective on the status of the FOOT-STRUT and BATH-TRAP vowels in the East Midlands. Our results confirm Leemann's et al. findings of the stability of the BATH-TRAP split and the slow expansion northwards of the FOOT-STRUT split which can be explained by differences in indexical order (Silverstein 2003) of the two splits. Overt comments and the commodification of the East Midlands dialect in addition to our results reveal that the lack of a BATH-TRAP split is a third-order indexicality which is enregistered as local identity marker for most speakers in the East Midlands while the lack of the FOOT-STRUT split is less associated with local varieties.

'They were canny good like': Variation and change in the intensifying system of Tyneside teenagers

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This project examines discourse features in Tyneside teenage language, providing new insights into: (1) intensifiers, (2) quotatives, and (3) discourse-pragmatic markers. The research questions revolve around what typifies current Tyneside Teen Talk, by comparing it: (i) synchronically with other age groups in the region; (ii) diachronically with Tyneside English data from other time periods; and (iii) cross-regionally with the teen talk of other English-speaking regions and even other languages. I also aim to discover whether these features suggest an age-grading process or instead demonstrate evidence for ongoing language change in the dialect.

The study analyses speech samples from males and females in three different age groups (12- 15, 16-18, and 19-20). Data for the oldest group is extracted from DECTE (Diachronic Electronic Corpus of Tyneside English; Corrigan et al. 2012). Further recent recordings have been made of semi- structured sociolinguistic interviews with Tyneside speakers from the 12-15 and 16-18 age groups, at schools and other such institutions locally.

The present paper focuses on intensifiers, analysing usage specifically among the 16-18 age group which shows very low frequencies of very and of the local variant canny. The latter is used almost exclusively by the males. This corroborates previous findings on canny suggesting it to be a recent innovation that is still used infrequently (Barnfield and Buchstaller 2010: 272). It also supports Childs's (2016: 250) conclusions that canny might hold covert prestige for male speakers.

Focusing on the subset of boosters (following the model of McManus 2012, based on Quirk et al. 1985 and Paradis 1997), the four most-frequent boosters (really 44%, quite 21%, so 18% and very 8%) account for 91% of all boosters used, with several speakers exhibiting no other variants in their systems during their interviews. There is also considerable variation in the competition between quite and really. These two variants are used with very similar frequencies in the repertoire of male speakers, whereas really alone accounts for more than half of the boosters used by females (gender differences significant at $p < 0.001$, chi-square test) (see Figure 1). By comparing these results with Barnfield and Buchstaller's (2010) diachronic analysis of DECTE, my dataset shows the steep decline in the frequency of very, and the rise of both really and so. It also confirms their conclusion that dead and pure were short-lived innovations, since they are almost non-existent in this newer dataset, with only one speaker ('James') using dead very frequently.

By examining the syntactic position of the modified adjective (see Figure 2), my results show that in attributive contexts, really is the most frequent variant (64% of the instances) while so is used marginally (3%). In predicative contexts, quite and so are used almost at the same frequency (syntactic position differences significant at $p < 0.01$, chi-square test).

These changes in the intensifier system are the focus here alongside changes in the systems of discourse-pragmatic markers and quotatives more broadly so as to offer an original and comprehensive account of recent language change in Tyneside discourse.

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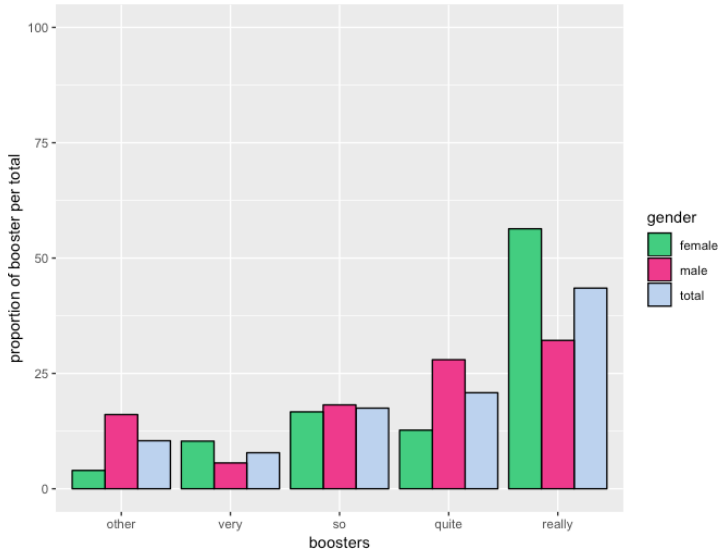

Figure 1. Distribution of the most frequent variants for the booster variable across genders

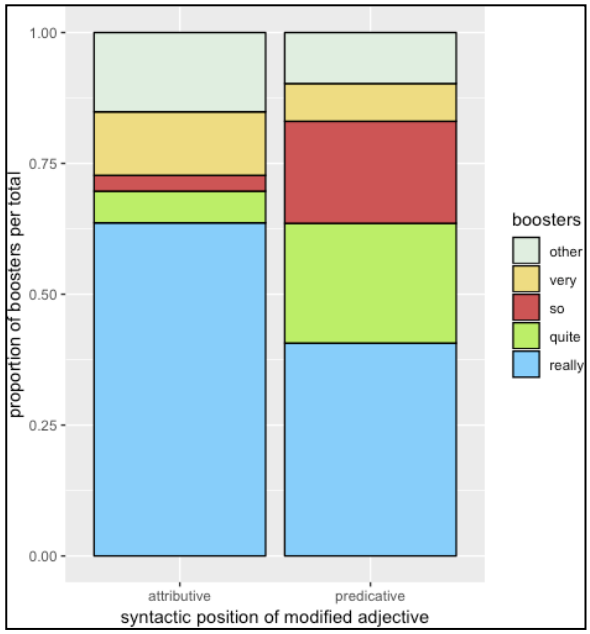

Figure 2. Distribution of variants for the boosting variable across syntactic positions of the modified adjective

The moan/mown long-mid vowel merger in East Anglia: Exploring correlations of GOAT and GOOSE variations

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Northern Suffolk, a sub-zone of linguistic East Anglia, shows resistance to the long-mid vowel mergers undergone in Early Modern English, whereby contrast between the long monophthongs /ɛː, oː/ and the diphthongs /ɛi, ɔu/ was lost (Wells, 1982). Trudgill notes the FACE merger reached completion across all of Suffolk in the 70s, while through lexical transfer tied to working class speakers and exposure to London varieties, the same is true for the corresponding GOAT merger, but only in the south of the county (1978).

With the geographic scope of the GOAT merger uncertain, this paper therefore returns to the earlier assumption that linguistic diffusion between south and north Suffolk would be gradual (Trudgill, 1974). It examines how, why, and to what extent the northern dialect area of Suffolk has resisted this merger, instead preserving the attested GOAT set wherein [ʊu] and [ʌu] represent the contrast between, for example, 'moan' and 'mown', or 'no' and 'know'. It assesses the nature of this merger, its character vis-à-vis ongoing development through phonetic approximation and/or lexical transfer, as well as its systemic motivations (external vs. internal). Furthermore, GOOSE fronting has frequently been noted to occur in southern varieties of British English and is predicted to precede GOAT fronting (Labov, 1994). This paper will therefore also explore the implications for both GOOSE and GOAT fronting in a dialect where the GOAT vowel remains split, and the GOOSE vowel is typically recorded as fronted, as in [ʉ], in traditional forms of the dialect. The picture is also complicated further through overlap between the GOAT set and both the GOOSE and FOOT sets, where GOOSE is diphthongised to [ʊu] and GOAT shortened to [ʊ].

Data from 18 speakers native to Lowestoft (north Suffolk) are taken from phonologically controlled reading passages. The results of acoustic analysis of formant values are normalised using the Labov ANAE method and presented according to gender across three age categories. Statistical analyses using Pillai scores alongside acoustic analysis highlight a change in progress where maintenance of the GOAT distinction is almost categorical for older and middle speakers but lost for younger speakers who have moved towards a more SSBE-like variant. A parallel movement, inversely correlated with age, of GOOSE and GOAT fronting is reported, although those who maintain the ME distinctions of GOAT treat these contrasting phonemes differently with regard to fronting. The results, however, do not necessarily indicate a chain shift for the back vowels in question, but a systematic stabilisation of the back vowels, as young speakers now successfully separate all three overlapping lexical sets, having completed the merger.

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Ripping open the envelope of variation:Stative HAVE (GOT) and auxiliary-/negative-contraction in British English

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This paper concerns variation between the stative possessive markers HAVE and HAVE GOT, e.g. *I have (got) a car*. Variationist analyses of this alternation have typically focused mainly on affirmative contexts of this kind as opposed to negative ones, often because the dialects studied exhibit very little variability under negation. For example, in Canadian English, negated stative possession is nearly always expressed with HAVE plus DO-support (Tagliamonte *et al.* 2010; D'Arcy 2015). However, British English is more variable in this regard. HAVE GOT is used more often, and HAVE can function either as a lexical verb – whereby it resists contraction and takes DO-support – or as an auxiliary that allows contraction and negative-marking on the verb (Denison 1998).

The present study focuses on HAVE (GOT) in negative contexts from a 2.5-million-word sample of conversational speech from the British National Corpus 2014 (Love *et al.* 2017). I examine the extent of the interaction between three domains of variability that traditionally have been treated as distinct linguistic variables and/or constraints in sociolinguistic investigations of these phenomena – namely, stative possession (HAVE vs. HAVE GOT), negation, and contraction. The way in which these phenomena intersect in the grammar limits the range of possible combinations, as shown in Table 1 below.

Instances of stative HAVE (GOT) with these types of negation were extracted from the corpus, yielding 1,000+ tokens for quantitative variationist analysis. The results show that in British English HAVE tends to be negated with DO-support and rarely undergoes contraction itself, thus exhibiting syntactic behaviour of a lexical verb, whereas HAVE GOT is nearly always contracted. The findings allow me to reconcile two observations of subject-type constraints that were found independently for auxiliary-/negative-contraction (McElhinny 1993) and stative possession (Tagliamonte *et al*. 2010) respectively. With my data, I show that the preference for HAVE over HAVE GOT with NP subjects can be explained by appeal to the fact that this is the context in which contraction is phonotactically the most restricted (MacKenzie 2013).

Overall, the results of this research demonstrate how insights gained from separate analyses of single linguistic variables in isolation can be granted an explanation once we consider them as part of a larger system within the grammar, i.e. "ripping open" the envelope of variation beyond its traditional confines.

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Table 1

	Predicate type	**Sentence**	**DO-support**	**Auxilary-/ Negative-contraction**
HAVE	Without negative indefinites	I don't have any money	Yes	n/a
		I've not any money	No	Aux-c
		I haven't any money	No	Neg-c
	Negative indefinites	I have no money	No	No
		I've no money	No	Aux-c
HAVE GOT	Without negative indefinites	I've not got any money	No	Aux-c
		I haven't got any money	No	Neg-c
	Negative indefinites	I have got no money	No	No
		I've got no money	No	Aux-c

Using mobile phone data for sociolinguistic research in the 21st century: the mobile phone effect on /f, θ, ð, s, d, h/

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As mobile phone technology keeps on improving, we may wonder to what extent telephone speech in the 21st century may be usable in sociophonetic analyses, especially in contrast to landline telephone speech. Linguistic analysis has been conducted for years based on recordings of mobile transmitted speech [1, 2, 6], but its primary use pertains to forensic phonetics [4, 8]. Nevertheless, projects such as the TELSURE dialect survey, conducted in 1990's with landline data [10, 11], stand to show that gathering speech over the phone has many potential advantages to offer a sociolinguist, especially regarding vowel variation. Our study presents an analysis of mobile transmitted speech in order to establish the potential usefulness of telephone data gathered with the technology of 2018 with a focus on *consonants*.

It is well known that mobile speech quality supersedes that of landline speech quality [5, 9]. In the context of Denmark, for instance, this is mainly due to significant signal improvements in the Global System for Mobile Communications (GSM) network transmitting the signal with the Adaptive Multi-Rate (AMR) wideband codec [3] and the 4G network. A range of studies (e.g. [2, 7]) have indeed shown that network-related algorithms alter the acoustic signal in noisy as well as quiet environments to facilitate perception rather than being faithful to the acoustic input. However, for the sociolinguist, the problem of this research is that it is unclear how the network codecs affect those parts of the acoustic signal that translate to linguistically meaningful units, such as specific consonants and consonantal features. Furthermore, these studies are done in controlled environments and do not reflect the natural conditions with background noise and significant network traffic met in such conditions

Our study aims to establish whether, and to what extent, voiceless obstruents are affected by the GSM network and the AMR Wideband codecs. We focus on obstruents because these are acoustically most variant in frequencies and intensity and are therefore likely to be affected and mistaken for noise by the network; e.g. aspiration is very easily mistaken for noise and thereby likely to be affected by the transmission, as indeed suggested by [12]. More specifically, we investigate the potential mobile effect on /h, d/ in wordlist data (using the *hood* lexical series) and /h, d/ and /f, θ, ð, s/ in connected speech, as produced by 6 females. The fricatives were included because the improved bandwidth allowed frequencies up until 8000 Hz. The data for both tasks was obtained in 1. a quiet controlled setting, and 2. in a natural non-optimal outdoor setting (not included in studies such as [2, 7]). In both cases, the signal was recorded from a single receiving phone in our phonetics lab. Both phones used in the experiment were smartphones compatible with the 4G network.

The findings indicate a partial or complete deletion of the obstruents in the received signal across the conditions: /h/ and aspiration suffer the most and bursts are generally attenuated in intensity. Similarly, /θ/ and /f/ become less intense and more alike. Even with the most recent technological advances then, sociophoneticians should not use mobile phone data to investigate consonantal variation. However, these findings raise two important points. Firstly, could potential transmission related alterations of the acoustic signal interact with the introduction and transmission of sound changes related to obstruents (such as TH-fronting)? Secondly, to what extent do listeners rely on the context when hearing and interpreting mobile phone transmitted speech, considering the compromised quality of the signal?

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The intersection of /t/ glottaling and /t/ deletion in final consonant clusters

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Numerous studies have investigated (td) deletion in US English dialects: the phonological process through which /t/ or /d/ may be deleted in final consonant clusters C(C)t, C(C)d. This stable sociolinguistic variable has been explored through linguistic and social constraints, with attention to obligatory contour principle violations (Guy & Boberg 1997) and Lexical Phonology (Guy, 1980). Morphological class and following phonetic environment typically strongly constrain reduction; preceding environment does so weakly. Morphological class significantly and consistently affects all American English dialects. This variable has received comparably little attention in the UK, though findings from York (Tagliamonte & Temple, 2005) and Manchester (Baranowski & Turton, 2016) show conflicting results for morphological class (which we report elsewhere).

Intersection of constraints has been explored in some English varieties, e.g. with past marking in Jamaican Creole (Patrick, 1991). In British English dialects (td) intersects with the well-known variable of (t) glottaling:

"kept" /kɛpt/ → [kɛp] = deletion or → [kɛʔ] = with glottal

yet no systematic investigation has been carried out on their intersection Amos et al. (2018). In analysing (td), both Tagliamonte & Temple (2005) and Baranowski & Turton (2016) coded glottal replacement as a variant of retained [t]. However, most research on morpheme-final /t/ glottaling focuses on the following phonetic segment, limiting the preceding context to vowels. When preceding phonetic context is analysed, consonants disfavour glottal replacement (Roberts 2006; Schleef 2013). Temple (2017) noted the difficulty of determining whether a surface glottal is a reflex of /t/, and suggested conducting exploratory analysis by comparing tokens with sequences of glottals.

This paper investigates the intersection between /t/ glottaling and /t/ deletion in final consonant clusters. 1,275 tokens were analysed, excluding final C(C)d clusters, following /t/ and /d/. 36 East Anglian speakers from Colchester, Ipswich and Norwich were stratified by class, sex and age. Data were gathered through sociolinguistic interviews, reading passages and word lists. The linguistic environments investigated are preceding and following phonetic segment, voicing agreement, style and stress (stress on the final cluster and stress on the following phonetic segment). Data were transcribed in ELAN; acoustic analysis with Praat was conducted for critical cases. Results of a mixed- effects Rbrul regression analysis, with speaker as a random effect, show that the above linguistic predictors are significant, except for voicing agreement.

Preceding stops and fricatives favour deletion, whilst preceding nasals and /l/ favour /t/ glottaling. /t/ deletion is also favoured when the following phonetic segment is a nasal, fricative, stop or pause, whereas following vowels and approximants favour /t/ glottaling. Stress plays an important role with more deletion than glottaling in unstressed final clusters. Unstressed following syllables, instead, are more likely to favour /t/ glottaling. Glottal replacement occurred more in words in isolation than in the reading passage or informal speech, where /t/ deletion was preferred. Sex is the only independent variable that reached statistical significance: Ipswich males delete more than women.

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Lexical set membership in contact varieties of English: the re-organisation of BATH and TRAP in Indian English

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In this study we test the BATH–TRAP contrast in a cohort of 50 English-medium educated speakers of Indian English in their early twenties, at the start of their studies at the University of Edinburgh. Until the 1980s, RP pronunciation was influential in India, and descriptions of the elite group of "Educated Indian English" speakers suggest that they had the RP BATH–TRAP contrast, with TRAP as /ae/ and BATH as /a/ (a more centralised version of RP /ɑ:/) (Mesthrie and Bhatt 2008, Nihalani et al 2004).

Since that time the group of English-medium educated, and/or functionally native speakers of English has expanded dramatically. There are studies which show the superstrate derived features spreading among this larger English medium educated group (Sahgal and Agnihotri 1988) and studies which show substrate features spreading among this group (Chand 2010). We hypothesize that the older variants for BATH and TRAP will be closer to /a/ and /ae/ and more contrastive, and the newer variants for both TRAP and BATH will be under pressure from substrates (both Indo-Aryan and Dravidian) to centralise (Wiltshire and Harnsberger 2006).

Furthermore, fronted BATH /ae/ vowels may also occur under the influence of American English which is has been noted for other Asian Englishes (Hansen Edwards 2015, Tan 2016).

The BATH–TRAP variable offers three kinds of information 1) group and individual variation in the realisation of the contrast; 2) variation within the TRAP and BATH sets, and 3) variable assignment of set membership to particular lexemes. It is assumed that NS of a dialect with the contrast will control the set; less is known about functionally native speakers in a contact setting.

Speakers were recorded producing BATH vowels in a diapix task (Baker and Hazan 2009), a word elicitation task, and two reading tasks. Overall the IndE speakers demonstrate a contrast in F2, but this is much less of a contrast than in the SSBE control group, and there is no distinction in duration. For almost half of the individuals there is substantial overlap. Low frequency BATH words are more likely to occupy an individual's TRAP space. Most speakers have a small number of BATH tokens that are even more fronted than their TRAP tokens, and some individuals show considerable "extreme fronting".

Although all speakers were English medium-educated, the use of English in the home had an effect on the contrast between BATH and TRAP in F2 and in duration. We expect that this group of speakers have less exposure to the English accent of English-medium educated parents and in some cases grandparents. Gender also interacted with the F2 contrast, with women displaying more back values for BATH. This could be attributed to women being more attuned to the older prestige norm, but it may also have to do with gender distinctions in course choice. Women in the sample were more typically in the humanities, where they are more likely to have come into contact with exposure to the older prestige norm.

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BATH Variation amongst West Cornwall Schoolchildren: Using perceptions to understand production

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Recent work in sociolinguistics has highlighted the importance of social meaning as a driver of language variation and change. Innovative methodologies in speech perception have allowed researchers to explore the social meanings of individual linguistic features, and provided insight into their patterning in production (e.g. Fridland & Kendall 2012). In order to illustrate the complementary nature of production and perception, this paper presents a study in two parts: first, a speech perception experiment which identifies the BATH vowel as one of the most salient features of west Cornish English, and second, an acoustic analysis of BATH variation amongst early adolescents in west Cornwall.

In west Cornish varieties of English, the BATH vowel is traditionally /æː/ (Wakelin 1975: 115). Results from a perception study designed to test the salience of features in real time suggest that this is one of the most salient features of the variety, and that its salience is directly tied to its duration, with longer variants being most noticeable. In addition, similar research has explored the social meaning of the 'long <a>' in the South-West, and lengthened TRAP has been shown to be perceptually linked to South-Western rural identities, particularly those connected to the concept of the uneducated and unsophisticated 'farmer' (Montgomery & Moore 2018). Variants linked to rurality face particular stigma due to prevalent stereotypes of rural areas as, "backward, conservative, boring, dangerous, threatening, 'uncultured' and uneducated" (Britain 2017: 174).

In order to examine the interaction between the social meaning of 'long <a>' in the South-West and production patterns, I analyse BATH vowels in the speech of forty-two schoolchildren from west Cornwall. Data were collected using two structured elicitation tasks (a series of map tasks and a word list), eliciting 850 BATH tokens. Following an acoustic analysis of the tokens, I examine how the variable is stratified according to the macro-social categories of social class and gender, as well as local orientation, quantified using an identity questionnaire. Results indicate that, in the most monitored style, speakers shift towards the fronted, west Cornish English variant in quality, but away from the longer variants in duration. This suggests that it is the duration of the BATH vowel in Cornwall that attracts stigma, while the fronted quality holds some local prestige.

Overall, this paper demonstrates how different acoustic elements of a variable may carry subtly different meanings, and how speakers may use these creatively to project desired identity traits. In addition, it has been argued that the urban turn in sociolinguistics means that rural varieties, such as those found in Cornwall and the wider South-West of England, have been notably under-researched (Britain 2012). This paper shows how rural adolescents have not simply succumbed to the effects of standardization and, just like their urban counterparts, are innovative in their language use

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An acoustic study of GOOSE-fronting in German-English sequential bilinguals in London, UK

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A key component of second language (L2) acquisition for speakers who acquire their L2 in a naturalistic setting is the development of sociolinguistic competence (Howard et al., 2006), i.e. type 2 variation, the use of L2 variants to index social information, such as age or gender (Adamson & Regan, 1991; Schleef, 2013). However, standard L2 speech acquisition models, such as the Perceptual Assimilation Model (Best, 1995) and the Speech Learning Model (Flege, 1995) do not incorporate L2 acquisition of social variation. The present study investigated the extent to which 13 German-English sequential bilinguals (Table 1) displayed sociolinguistic competence in their English L2 productions of the GOOSE vowel.

Traditionally described as a high back rounded vowel, /u/ in Standard Southern British English (SSBE) is moving forward in the vowel space, a process known as GOOSE-fronting (Deterding, 1997; Hawkins & Midgley, 2005; Strycharczuk & Scobbie, 2017). Generally, for German speakers, /u/ is reported to be a canonical back vowel (Pätzold & Simpson, 1997), phonologically and acoustically distinct from high front rounded /y/. In contrast, SSBE /u/ represents a single phoneme moving progressively towards /y/. This shift, for SSBE speakers, is linked to age and gender (e.g. Harrington et al., 2008), with young females leading the sound change, or, at least, being perceived to do so (Alderton, 2018). In the present study, German-English sequential bilinguals' normalised F2 frequencies (Fabricius et al., 2009) for English /u/ were compared with those of their German /u/ and /y/. Within speakers, the closer the F2 of their English /u/ to German /y/, the more front their GOOSE vowel was considered to be. Based upon these comparisons, we examined whether the German-English sequential bilinguals patterned like SSBE speakers in their English L2 GOOSE productions, thereby indicating sociolinguistic competence in their L2.

A linear mixed effects analysis showed significant effects of age and length of residence (LOR) for both males and females. Female bilinguals with >5 years LOR in London tended to produce English /u/ with higher F2 values, moving English /u/ closer to German /y/ (Figure 1), aligning with previous findings for SSBE female speakers. Male speakers, however, appeared to demonstrate the converse, indicating perhaps that those males who had lived in the UK longer perceived GOOSE-fronting to be female-led, thereby avoiding it. Age was also an important factor, with male and female speakers aged 36-40 years producing an increased F2 compared to both older and younger groups (Figure 2). However, when separated by LOR, female speakers demonstrated an inverse relationship between F2 and age (Figure 3), whereas male speakers' F2 increased as a function of age.

Further research is necessary to understand the effects of variation in the target L2 on L2 acquisition processes. However, our results, at least partially, appear to confirm that bilingual speakers are sensitive to native-like social patterning in their L2 speech. Such findings, unaccounted for by traditional L2 speech acquisition models, indicate a need to further investigate sociolinguistic competence in L2 speech and, potentially, revise traditional models to account for L2 variation.

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		Length of Residence in London, UK		Age			
	N	<5 years	>5 years	26-30	31-35	36-40	41-45
Males	4	2	2	1	0	2	1
Females	9	3	6	2	2	1	4
Total	13	5	8	3	2	3	5

Table 1: Participant background information

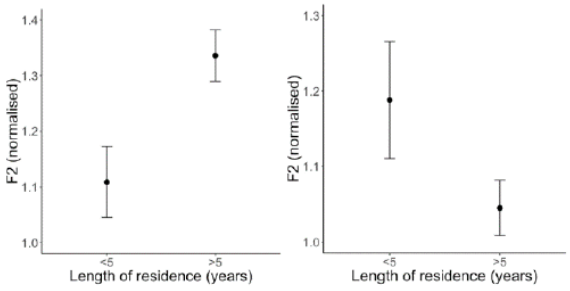

Figure 2: Mean F2 values, averaged across 20%, 50% and 80% timepoints, for English /u/ produced by female (left) and male (right) German-English bilinguals, arranged by length of residence in London, UK.

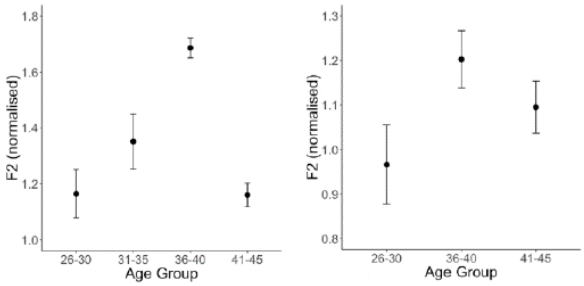

Figure 1: Mean F2 values, averaged across 20%, 50% and 80% timepoints, for English /u/ produced by female (left) and male (right) German-English bilinguals, arranged by age group.

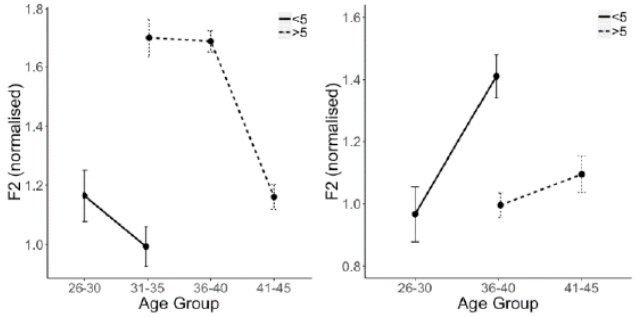

Figure 3: Mean F2 values, averaged across 20%, 50% and 80% timepoints, for English /u/ for female (left) and male (right) German-English bilinguals. The graphs consider the relationship between age group and length of residence in London, UK.

Where trees don't HAVE branches and chairs don't HAVE legs: Variation in Irish English possessive constructions

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Many agree that POSSESSION is a basic concept of human cognition, yet it is one of the most difficult concepts to define. As a conceptual category whose linguistic expression varies considerably from one language to another (Isačenko 1974, Heine 1997, Stassen 2013), a cross- linguistic valid definition of POSSESSION must be semantically-based; coming up with a definition of POSSESSION based on its formal expression in a language such as English would result in difficulties when applying it to a typologically-different language, such as Irish. This problem becomes apparent when we examine a variety of English that has been heavily influenced by Irish, where some of the notions that are typically expressed as predicative possession in Standard English are not available as possessive constructions, but are rather expressed by other formal means. In other words, one cannot define POSSESSION in Irish based on its formal expression in English – and vice versa.

This paper examines these issues in a corpus of traditional Irish English, spoken in the western part of Ireland's County Clare. The language of the West Clare corpus is both conservative in nature as well as heavily influenced by Irish, and shows many non-standard features that can be attributed to the centuries-long contact between Irish and English. One of the most interesting grammatical phenomena observed in the corpus potentially arises from the convergence of the formal encoding of POSSESSION in English and that of Irish: data from the corpus shows that the predicative possessive construction [NP HAVE NP] only features animate entities as subjects, while inanimate subjects are entirely excluded. So while cases such as This chair has four legs or That tree has crows on it are commonly expressed as possessives in Standard English ('inanimate inalienable / alienable possession'; Heine 1997), they are unavailable as such in the West Clare corpus. This observation calls for a reconsideration of what constitutes as POSSESSION in the corpus – especially as we go on to explore the alternative structures used for expressing the so-called notions of 'inanimate possession'.

In view of this apparent animacy constraint one may wonder, then, how these Standard English possessive notions are expressed in the corpus. This paper reports on the formal variation conditioned by this semantic constraint, and describes how constructions involving the verb BE are used in order to express what constructions with HAVE do not. This phenomenon is then examined in light of predicative possessive constructions in Irish, where it has also been observed that animacy has a strong effect on the formal encoding of certain possessive notions (Ó Dochartaigh 1992). This investigation leads to a proposal of a semantic-based definition of the conceptual category of POSSESSION – one that applies to the language of the West Clare corpus, to Standard English and to Irish.

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Language Variation and Change in an Italian Community Abroad

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This talk focuses on the language variation in dialect usage, and change in the Italian migrants settled in the English city of Bedford and born in Montefalcione, a village in Southern Italy.

The term 'dialect' is used here to refer to the many varieties of Italian which, just like the Italian language, originated from spoken Latin.

Our study questions:

- If, and to what extent, Italian dialects spoken by migrants diverge from those that are currently spoken in Italy
- If migrants who return to Italy after some years spent abroad usually adopt more conservative variants as postulated in earlier studies (Alfonzetti 1988)

To this end, the case of the migration from Montefalcione to Bedford and the return from Bedford to Montefalcione was investigated. The analysis was carried out on approximately 20 hours of spoken Italian divided equally between 14 migrants in Bedford (7 of the 1st generation and 7 of the 2nd generation) and 14 returnees living in Montefalcione. Data collection took place between 2017-2018 involving both ethnographic participant observation of hybrid language use and data collection by means of audio recordings.

Interviews were carried out in Italian from November 2015 to February 2016 and from June 2018 to today.

The study aims to compare and contrast two corpora gathered by means of qualitative interviews with 14 speakers for each corpora (4 males and 3 females for the 1st and for the 2nd generation):

- One corpora was gathered in Bedford with 1st and 2nd generation migrants;
- The other was gathered in Montefalcione with return migrants.

A control group, consisting of people who never migrated, was also analyzed.

The comparison was carried out to verify whether the varieties used abroad and those used in the place of origin diverge or converge and, if the former, to establish which linguistic features diverge more than others. The linguistic analysis took into account the following phonological and morphological variables:

- palatalization of /s/ before –p- and –k-,
- sonorization of stop consonants;
- rhotacism of the dental *d* in items as *di* 'of';
- realization as *kj* of the old –pl- sound in items such as *chiove* 'it rains';
- use of the personal pronoun illo;
- use of the local variants of the demonstrative quello 'that' (kwiro, kiro), with particular attention to the maintenance of the semivowel –w- and to the realization of the Latin –ll- which shifts to r in the Montefalcione dialect.

The analysis was done according to the principles of variationist sociolinguistics.

Two external factors were taken in to consideration: inter-generational variation and gender variation. Data on intergenerational variation showed that second generation migrants adopt more Italianized variants while the dialectal variants were lost in intergenerational transmission. With regards to ethnic orientation, the results showed that this external factor is not crucial in linguistic variation.

A sociolinguistic study of "Galloway Irish", a lasting dialect of an isolated area of south west Scotland

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Sociolinguistic research in urban areas shows rapid diffusion of linguistic features across urban areas of the UK. The process is well documented in Glasgow where innovative forms such as dark /l/ show a degree of spread similar to the rest of the UK (Stuart-Smith, Timmins and Tweedie, 2006). More recently relic areas have been shown to provide a window on the past but at the same time they also participate in ongoing wider supralocal changes (Smith and Holmes-Elliott, 2018). Such research sites provide a particularly rich resource for issues surrounding obsolescence and innovation in the progress of linguistic change. In this study I focus on the west of Galloway where the dialect is known as "Galloway Irish".

Descriptive studies (Mather & Speitel (eds.) Language Atlas of Scotland, vol. 3, 1986, Gregg, 1977) have consistently pointed to phonological features in the area such as /l/ as clear in all positions, and /a/ as low backed in its realisation in initial and medial positions, at odds with the central urban areas of Scotland which have a high front articulation. Galloway is an ideal site in which to test the pull of language change from the urban centres. I target the two linguistic variables which are said to be in the process of change: /l/ in initial, medial and final contexts:

1. I was actua/l/y brought up in this street … we /l:/iked p/l:/aying hide and seek a /l:/ot. (middle female)

and /a/ in initial and medial contexts:

2. I like m/ɑ:/ths and l/a/nguage…. They /ɑ:/dd then up a couple o months /ɑ:/fter. (young male)

To what extent is there a change from the traditional clear /l/ towards the more innovative form and backed /a/ towards the more standard variant?

Over 4300 tokens in the speech of 24 community members, stratified for age and gender across a number of speech styles were analysed in SPSS. For /l/, the results showed that dark /l/, a variant that is said to be spreading throughout the UK, including to Glasgow, is extremely rare in these data. Instead, the variation is circumscribed to a clear /l/ and a prolonged or "bladed" /l:/. Moreover, a female led change is in progress towards a clear /l/. For /a/ there was a reduction in the more local variant /ɑ:/, in favour of the shorter /ɑ/ across age, though there was also an interesting preference for a shorter (ă) in specific phonetic environments across all ages. The variant /a / found in more urban areas hardly appears at all although it is now making inroads amongst the younger speakers in this community.

These results indicate that this variety has largely resisted the spread of more supralocal norms, at least with these two variables. I suggest that the geographical and historical context of the area may, in part, explain these findings, adding to the rich tapestry of dialect diversity in Scotland and across the UK.

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A Phonetic analysis of the *which~witch* merger in Edinburgh, Scotland

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The which~witch merger is nearly complete in most English varieties. It has been complete in Southern Standard British English (SSBE) since the 19th century (MacMahon 1999), and is barely maintained in other varieties (Wells 1982; Trudgill 2004). However, the merger is still ongoing in many parts of Scotland (Brato 2007), including Edinburgh (Schüzler 2010; Reiersen 2013). We consider it with respect to social class, and investigate whether it is phonetically abrupt or gradual.

Two studies of /ʍ/~/w/ merger in Edinburgh find Middle Class speakers participating in the merger (Schützler 2010; Dickson 2016). Schützler (2010) attributes this to accommodation to SSBE norms. Dickson (2016) finds Working Class men are also leading in the merger, which seems contradictory. To explore these results further, we compare speakers from two Edinburgh neighbourhoods which are local icons for social class membership: Morningside, (Middle Class) and Leith (Working Class) (Esling, 1978; Johnston, 1984).

Data are drawn from the Edinburgh Speaks corpus, a collection of interviews conducted for student projects at the University of Edinburgh. Interviews with 9 speakers (4 Leith, 5 Morningside) recorded in 2014 were coded for whether etymological /ʍ/ was realised as [ʍ] or [w], and [ʍ] tokens for duration of voicelessness.

The result of the categorical coding is striking: every Leither has less [ʍ] than every Morningsider. Neighbourhood has a significant effect in a mixed effects logistic regression ($\beta = 2.4$, $z = 4.6$). A neighbourhood effect is marginal for proportional [ʍ] voicelessness ($\beta = 0.18$, $t = 1.7$), and there is no significant effect of speakers' overall rate of merger ($\beta = -0.07$, $z = -0.28$). These results suggest that the /ʍ/~/w/ merger is a phonologically abrupt change. The direction of the neighbourhood effect is counter-evidence to Schützler's (2010) hypothesis regarding accommodation to SSBE norms. The fact that it is more advanced in Leith, where there is less Anglo-English contact than Morningside suggests that this is at least in part an endogenously motivated change.

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Dialect variation in dynamic acoustic-articulatory relations

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Articulatory sociophonetic studies have revealed new dimensions of variation that were previously inaccessible using acoustic data. For example, recent research has examined cases where acoustic and articulatory data show different patterns in socially meaningful variation, which has raised questions about the relationship between acoustics and articulation in such contexts. This includes 'covert' sociophonetic variation in tongue shape (Lawson et al. 2011), evidence of contrast in articulation despite a lack of contrast in acoustics (Strycharczuk & Scobbie 2017), and language-specific acoustic-articulatory relations (Kirkham & Nance 2017). However, exactly whether these acoustic-articulatory relations pattern according to language and dialect background is not clear (e.g. Carignan 2019). In this study, we address this by comprehensively examining acoustic-articulatory relations in two dialects of British English: SSBE and West Yorkshire English. A dialectal comparison enables us to examine particular phenomena across different systems, while avoiding some of the difficulties of cross-linguistic research (Foulkes et al., 2010). We particularly focus on the relative contribution of the tongue and the lips, which are known to be involved in the fronting of British English back vowels (Harrington et al. 2011), while also attending to the dynamic nature of acoustic-articulatory relations.

Simultaneous acoustic and electromagnetic articulography (EMA) data were collected from 8 SSBE and 8 West Yorkshire English speakers, aged 18–25. EMA allows us to record detailed movements of the tongue, lips and jaw at high sampling rates (250+ Hz). We focus on the production of back vowels that are at advanced stages of fronting (GOOSE) to those that lag behind to various degrees (FOOT and GOAT) (e.g. Harrington et al. 2011; Docherty 2010; Jansen 2017). We also consider the effect of consonantal context by examining back vowels in fronting (pre-coronal) and non-fronting (pre-lateral) contexts. Vowels were elicited in a carrier phrase 'say X again' in a laboratory environment and we report an analysis of ~4000 vowel tokens. We extracted formant data on F1/F2/F3, as well as tongue dorsum and lip protrusion measurements across the entire duration of each vowel. These dynamic data were then analysed using generalized additive mixed models, which allows to examine the relationships between different acoustic and articulatory variables over the time course of the vowel.

The results suggest that the linear relationship between F2 and tongue backness only holds within certain articulatory regions for back vowels, partly because the contribution of lip rounding co-varies with tongue position (Harrington et al. 2011). This strongly suggests that conceptualisations of vowel production in terms of vocal tract area (Wood 1982), rather than tongue position, better capture articulatory dynamics and their relation to acoustics. Our results also suggest a relationship between vowel stability (i.e. whether or not a vowel is undergoing sound change) and degree of acousticarticulatoryvariability, although we note that this does vary by speaker. We further explore our results with reference to sociophonetic variation and sound change.

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English dental fricative substitutions by Swiss L2 learners

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Anecdotally, it has been observed that Swiss Germans speaking English use a plethora of sounds for the dental fricatives /θ/ and /ð/ [cf.,4]. In the present contribution, we examine the nature of this replacement, i.e. which fricative is substituted with which variant and how replacements behave in terms of their phonological environment. For learners of English, this particular sound is difficult as it is very rare: The World Atlas of Language Structures (WALS) indicates only 40 languages to have dental fricatives [1]. Literature suggests that languages are either '*t+-languages' or '*s+-languages' depending on which sound is used most frequently when substituting. Typical 't*+-languages' are Russian, Polish and Dutch [5, 9]. [7] for instance, found that speakers of languages that articulate [s] further back and/or have a dentalised [t] such as Dutch, are very likely to substitute English [θ] with [t] [3]. '*s+-languages', on the other hand, include German – supposedly including Swiss German as well as Austrian varieties – as they substitute [θ] predominantly with [s] [6].

For this study, we recorded read speech from 45 grammar school students of two different levels at school (first year (23 students) vs. last year (22 students) of grammar school). The data was coded auditorily and acoustically. The prepared English text contained 61 words that included both voiceless and voiced variants in word-initial, medial and final positions (in total 37 different words). All 45 participants had been taught English between three and six years, aged between 14 and 20. Overall, results revealed that the most frequent substitution appeared to be [f] for the voiceless and [d] for the voiced dental fricative – see table 1. Concerning the phonological environment, in word-initial position, the realisation of [d] and [d̪] appeared in (30.3%; 26.2%) but only (10.1%, [d]; 15.3%, [d̪])in word-medial-position. In word-final position, however, [d] and [d̪] are produced in less than 1% of the tokens. In terms of the voiceless counterpart, students achieved a target-like articulation in almost 40% of the cases – table 1. The breakdown into different contexts shows the following replacements word- initially: [th] (17%), [f] (7%) and [s] (6.3%); word-medial position, [th] (16.3%), [s̪] (4.1%), and [f] (3.3%); word-final position [f] (25.7%), [s] (10.5%), [s] (9.5%).

Our findings indicate that students replace a sound uncommon to their phonemic inventory, i.e. Bern Swiss German, with sounds that they know how to produce, and which exists in their inventory [3]. When looking at the overall realisation of dental fricatives, we find that Swiss German learners of English produce predominantly [f] and [t^{h}] or [s] for /θ/. This stands in contrast to a previous study that suggested Swiss German speakers would realise /θ/ as [s] similarly to Germans and Austrians [6]. The voiced counterpart is more frequently realised as [d], [d̪], [f] or [s̪]. Our result largely reflects trends found for Dutch learners of English [3, 8]. Nevertheless, due to the variation of substitutions, Swiss German can be viewed as a *t+ language – or even as an *f+ language in line with [5]'s suggestion for a new category. However, the type of substitution seems to depend on where in the word the target sound occurs what should be further investigated.

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Table 1. Distribution of sound production of /ð/ and /θ/.

Category /ð/	Frequency	Category /θ/	Frequency
d	21.1% (n=398)	θ	38.6 (n=330)
d̪	19.6% (n=370)	θ̪	15.4% (n=132)
ð	13.9% (n=262)	f	12.6% (n=108)
ð̥	12.4% (n=234)	tʰ	11.3% (n=97)
ð̪	11.9% (n=224)	s	6.2% (n=53)
others	6.2% (n=117)	s̪	4% (n=34)
f	4.1% (n=78)	θ̥	3.9% (n=33)
s̪	3.4% (n=65)	affricates	2.9% (n=25)
affricates	2.2% (n=42)	d	1.7% (n=15)
tʰ	1.7% (n=32)	others	1.4% (n=12)
NA	1.3% (n=24)	d̪	1.1% (n=10)
s	1.2% (n=23)	NA	0.7% (n=6)
ɾ	1.1% (n=21)		

Representing grammatical similarity in comparative variationist analysis

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A central goal of comparative linguistics is to determine the extent to which two or more varieties of a language are grammatically 'similar'. While an extensive literature exists for measuring grammatical similarity using surface level linguistic features (e.g. Spruit, Heeringa & Nerbonne 2009), few such techniques and tools are available for variationist modelling of naturalistic production data. What is important from the variationist's point of view is not how often people use particular construction, but how they choose between "alternate ways of saying 'the same' thing" (Labov 1972:188). This talk presents a method for assessing the grammatical similarity between language varieties using analytical tools common to the variationist's toolkit, focusing on the extent to which language users' grammatical choices depend on specific linguistic, social, and/or contextual constraints, and more important, to what extent those constraints influence choices differently across varieties.

In this talk, we discuss the various advantages and disadvantages of common techniques for variationist analysis, namely generalized linear mixed models (GLMMs) and random forests (RFs), and their usefulness for representing cross-varietal similarity when comparing large numbers of varieties. We argue that while existing techniques are capable of capturing differences with respect to individual linguistic constraints, e.g. as interaction effects, they offer limited insight into the relative degree of similarity across systems of constraints in aggregate. What is needed is a more macroscopic perspective for comparing variable grammars a lá the dialectometric methods applied by, e.g., Szmrecsanyi & Kortmann (2009).

As a way of providing such a perspective, we introduce a new method, Variation-based Distance and Similarity Modeling (VADIS) (Szmrecsanyi, Grafmiller & Rosseel In review), which applies distance-based visualization techniques, e.g. neighbornets (Bryant & Moulton 2004) and multidimensional scaling to the outputs of the standard classification algorithms used in variationist analysis. To evaluate cross-varietal similarity, we draw inspiration from comparative sociolinguistics (Tagliamonte 2013), asking: are the same constraints significant across varieties? Do the constraints have similar effect sizes? Is the overall ranking of constraints' explanatory importance similar? We illustrate the method with two case studies comparing syntactic alternations—the English genitive, dative, and particle placement alternations—across regional varieties of English and across genres within a single variety. Results indicate that the grammars regulating variation are fairly similar across the varieties we examined, reflecting part of a solid "common core" Quirk et al. (1985),33] of the grammar of English. Nonetheless, we do find subtle probabilistic differences both between regional varieties as well as between genres. We find that from a global perspective, the varieties under study can be grouped into a rather small number of clusters – for example, there is a split between L1 varieties and indigenized L2 varieties of English. Additionally we find sizable differences across genres in the strength and influence of internal constraints, contrary to received wisdom regarding the independence of stylistic and situational contexts and internal constraints (Labov 2010:265; Tagliamonte et al. 2016). We provide links to the code, data, and custom package created for running the analysis and visualizations in R.

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Regional Variation in Scottish t-glottaling

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T-glottaling is a well-studied variable in UK English and a well-known feature of Scottish varieties. Speaker age, gender, social class, and formality of talk are typical social predictors (e.g., Stuart-Smith 1999; Schleef 2013). Some have posited that the glottal variant may have been innovated in Scotland separately from in Southern England (Schleef 2013; Smith & Holmes-Elliott 2018). To explore the constraints on glottal realization, as well as this polygenetic hypothesis, we consider variation within Scotland. While Stuart-Smith (1999) identified differences within Glasgow according to social class, we consider differences within Scotland according to region and formality.

A database of 17 famous Scottish women, selected based on the public availability of their speech (e.g., YouTube) and with the aim of maximizing regional and socioeconomic diversity, was compiled by a class of 36 university students. Born between 1955 and 1994, the speakers (musicians, politicians, writers, etc.) were classified according to five broad regional groups (greater Edinburgh, greater Glasgow, the Highlands, Dundee/Fife, and Stirling), and three broad social class groups (Established Middle Class, New Middle Class, Working Class; see Dickson & Hall-Lew 2017). Our analysis first provides a model of the constraints on interspeaker variation, which is then interpreted with respect to several fine-grained analyses of individual speakers and speaker subsets.

Groups of coders obtained roughly 10 minutes of continuous speech per speaker. 3,469 tokens were fully coded twice, auditorily. An initial interrater agreement rate of 88% was resolved to 100% through token-by-token consensus between groups of raters. Tokens were coded according to a binary distinction: 'glottal stop' and 'alveolar stop'.[1] Word-final and word-medial contexts were modeled separately.[2] Internal constraints included number of syllables and following phonological environment (consonant, vowel, pause). External constraints included speaker factors (year of birth, class, region) and contextual factors (interlocutor accent, formality).

Results from a best-fit mixed-effects logistic regression model for word-medial /t/ found only phonological context and number of syllables to be significant predictors. The model for word-final /t/ found these same effects, but also effects of region and formality. In particular, Stirling speakers disfavour the glottal variant significantly more than Glaswegians, and are marginally more similar to speakers from Dundee/Fife and the Highlands. Crucially for the polygenetic hypothesis, there is no interaction between region and following phonological context; internal constraints appear to operate in the same way across all five regions. Interestingly, a trend interaction is found between region and formality, one that is likely not significant only because Edinburgh stands apart from the other four regions: there is no effect of formality for word-final contexts (Figure 1), and a trend in the opposite direction for word-medial contexts (Figure 2). Although rates of T-glottaling in Edinburgh are known to be high (Schleef 2013), it is curious why the alveolar variant would not be more frequent in formal contexts. To address this we conduct an intraspeaker analysis on two of the Edinburgh speakers and two of the Glasgow speakers, demonstrating how the 'regional' results are a consequence of differences in social personae.

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[1] 230 additional tokens of 'other' realisations were eliminated.

[2] We also initially coded for 'onset' position (e.g., eighteen; Smith & Holmes-Elliott 2018). Of 157 additional tokens, none were realized as a glottal stop.

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Figure 1. Rates of T-glottaling by speaker region of origin and formality: word-final /t/

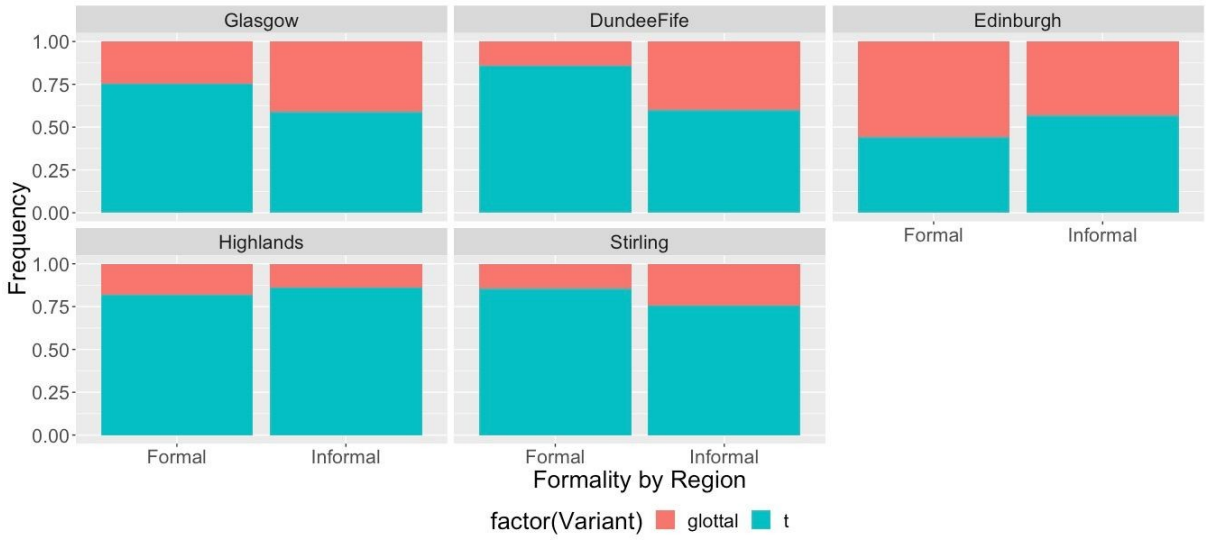

Figure 2. Rates of T-glottaling by speaker region of origin and formality: word-medial /t/

Inferring social meaning from language variation: liminality and gender

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The variationist sociolinguistic enterprise has long been interested in the systematicities of language variation. While tensions between internal (structural) and external (social) factors have been productively explored within the variationist paradigm, there has been relatively little work addressing which factors *drive* change, and which merely *condition* it (e.g. Kristiansen 2011). The role of social meaning in shaping the trajectory of language change is being increasingly recognised, but the degree to which social interpretation of linguistic cues is subconscious (e.g. Campbell-Kibler 2010) complicates the matter from a methodological perspective.

Beyond those variables that are easily articulable to members of a speech community (*stereotypes* in the Labovian sense), inferring social meaning from distribution alone is liable to underestimate the complexity of the social-structural interface. Multivariate analysis identifies factors that constrain variation, but cannot give any insight into the interpretability of those social constraints from the perspective of the speaker or the hearer. Perception studies provide a more socially-oriented analysis of the salience of variation (e.g. Niedzielski 1999, Strand 1999), but this experimental approach relies on already having identified relevant linguistic variables and social factors. By exploring a novel method for teasing apart social and structural variation, this paper presents a first step towards modelling these two types of variation independently, which will allow future research to more closely interrogate the processes by which synchronic variation accrues enough momentum to tip over into diachronic language change (e.g. Weinreich, Labov & Herzog 1968; Meyerhoff & Klaere 2017).

This paper focuses on the linguistic production of people who have crossed a socially reified category boundary and who are invested in presenting an authentic identity once across. A comparison of the linguistic variation in the speech of these 'liminal' people with that observed in members of the broader speech communities on either side of the boundary allows us to not only note where there are linguistic differences with respect to that boundary, but also to see which of these differences carry enough social meaning for liminal speakers to make use of them. This approach is explored with two data sets: one in New Zealand using transsexual participants (considered liminal with respect to gender), and an ongoing pilot project examining regional variation in the UK using actors as professionally liminal performers. The New Zealand project, with its small (n=46) purpose-built corpus of sociolinguistic interviews, finds that young trans men's vowels are sometimes aligned with those of young men and sometimes those of young women. Given that NZE vowels are known to be undergoing change (e.g. Hay, Maclagan & Gordon 2008) and that gender is generally implicated in phonological change (Labov 1990, 2001), it seems that these trans men are highly attuned to which vowels are gendered, and selectively manipulate those variables to present a socially interpretable gendered identity. The UK pilot tests two related questions: Is the liminality construct extendable beyond the narrow scope of gender? And is liminality as productive in differentiating the social from the structural within relatively stable systems?

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Linguistic structure and phonetic detail in the development of new varieties: Children's acquisition of laterals in a London-Bangladeshi community

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New linguistic varieties in multicultural environments are hypothesised to emerge out of contact between the majority language and immigrant heritage languages (Cheshire et al. 2011; McCarthy et al. 2013; Kirkham 2017; Mayr 2018). The locus of this contact is likely to be the second- generation bilingual speaker (Sharma & Sankaran 2011), who contributes to and draws from a rich *feature pool* of variation (Mufwene 2001; Cheshire et al. 2011). Exactly how and in what form bilinguals acquire multilingual features from the pool, however, remains elusive. On the one hand, allophonic relations between sounds might be lost in the process of contact-induced diffusion (Labov 2007), with certain aspects transferred but others modified due to the process of bilingual acquisition. Alternatively, structural relations between sounds could be transferred to the feature pool and used wholesale by the new variety. In this study, we address these two hypotheses by studying the early formation of a new linguistic system by second-generation bilingual children. In particular, we focus on cross-linguistic lateral allophony in a London-Bangladeshi community.

We elicited words containing laterals (~1500 tokens) in three positions (initial/medial/final) from 14 Sylheti-English bilingual children and 16 English monolingual children in London (aged 6–7 years old). We additionally report data from a control group of 4 functionally monolingual Sylheti adults. Measurements of F2−F1 were extracted from lateral steady-states and we fitted linear-mixed effects models to these measurements, with predictors including position (initial/medial/final), language (Sylheti/English) and bilingualism (monolingual/bilingual).

In terms of *positional contrast*, Sylheti children produce robust initial~final contrast in English, but, unlike English monolingual children, show clearest /l/s in word-medial position. Sylheti monolingual adults produce a robust initial~final contrast and medial /l/ patterns with initial /l/, whereas the Sylheti bilingual children produce smaller initial~final contrast and medial /l/ patterns with final /l/. Put together, these results suggest that Sylheti-English children's lateral allophony differs from monolinguals in both languages, but that the bilingual children also show systematic differences between their two languages. If terms of *phonetic detail*, Sylheti bilinguals produce clearer non-final /l/s in English than in Sylheti, and clearer English initial/medial /l/s than English monolinguals.

These results suggest that differences between Sylheti-English bilinguals and English monolinguals not only reside in the relative clearness of laterals, but also in the nature of positional contrast within each language. Our results complicate straightforward predictions concerning how linguistic systems emerge from a feature pool, as some aspects of linguistic structure in bilingual children are not evident in monolinguals of either language. A subsequent analysis reveals relationships between laterals and vowels in each language, which varies between groups. This suggests that while different sound classes may be drawn from the feature pool in different forms (laterals vs vowels), these forms then influence one another when used in tandem, resulting in a novel sound system that cannot be predicted from the input. This has significant implications for understanding how the sound systems of new community varieties develop, motivating a more holistic focus on the relationship between phonological patterning, allophonic structure and phonetic detail.

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Perceptions of North East Scottish Speech: a perceptual dialectological study of intra-regional language attitudes.

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Perceptual dialectology is the study of how 'normal people' – i.e. non-linguists – perceive language variation. The work of Preston in North America, and the continuing adaptation of his methods by several linguists over the last thirty years, has established a baseline methodological approach for exploring the shared language attitudes of speakers, their knowledge and understanding of regional distribution, and the significance of 'folk perceptions' in shaping language variation and change (Preston 1999).

Recent application of this methodology in the U.K. has been limited to research conducted in England (Inoue 1999) and Wales (Williams, Garrett, and Coupland 1996), with particular focus on the East Midlands (Braber 2015), the North of England (Montgomery 2007, Pearce 2009) and the borderlands between Scotland and England (Montgomery 2012). Application of Preston's methodology to Scottish dialect areas has proven even scarcer and, to date, there has been no significant research conducted solely in Scotland. This study uses a modified version of Preston's framework in order to examine the linguistic situation in the North East of Scotland.

The North East of Scotland is an area of significant linguistic interest. Bordered by mountains and sea, the dialect area is somewhat distinct from other dialects of Scots due to its geographic isolation, with the dialect itself often referred to as 'the Doric'. The region's relative linguistic conservatism and its status as a relic area means that the North East dialect has maintained features no longer found elsewhere (Millar 2007). Intra-regional linguistic variation also exists, with a clear historical division perceived between the rural 'fermfolk' and the coastal 'fisherfolk'. However, since the discovery of North Sea oil in the 1970s and the establishment of Aberdeen as the 'Oil Capital of Europe', the demography of this corner of Scotland has been in a considerable state of flux, as mass industry-related immigration and significant social change have shaped the changing identity of the region.

With the utilisation of mental-mapping activities, quantitative survey data, speaker evaluation tasks and qualitative responses, the study is informed by the responses of over 300 North East residents, sampled from two age groups (14-18, and 60+) in order to investigate how perceptions of North East speech may be changing across the generations. Also, by involving speakers native to the North East, as well as those who have moved to the area from elsewhere, the study adds to existing knowledge of how those in the North East perceive the dialect, whether they be a 'broad Doric' speaker or someone relatively new to the region.

Overall results suggest an ongoing negotiation between macro- and micro-regional identities, as well as some evidence of cross-generational shift in local perceptions of speech. Further results indicate: an 'othering' of speakers from certain locations (for reasons which do not seem to be purely linguistic); a mismatch between the concepts of perceptual difference and actual distance; stigmatisation of certain speaker communities (based on the discrepancy between informants' perceptions and their actual linguistic knowledge - as evidenced by speaker identification tasks); a shift in the focus of youngsters' perceptions dependent on their location; and, the increasing salience of the 'Doric' dialect label.

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The Effect of Accent on Judgments of Professional Competence

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Unequal outcomes for individuals from less privileged backgrounds in professional hiring have been widely reported in the UK (Ashley et al. 2015). Although accent is one of the most salient signals of such backgrounds, its role remains under-examined in Britain. Moreover, there has been almost no large-scale survey of accent attitudes in the UK using audio stimuli (cf. Hiraga 2005 vs. studies of named varieties, e.g. Coupland and Bishop 2007). This paper investigates current public perceptions of five accents in England.

A nationwide survey using a verbal guise design was conducted with a representative sample of the population in England (n=848). Participants were asked to evaluate the interview performance of 10 "candidates" for a trainee solicitor position at a corporate law firm in the UK. Stimuli included audio responses to 10 interview questions: 5 requiring legal expertise and 5 focusing on general skills. The candidates were native speakers of 5 regional English accents (2 speakers per accent): Received Pronunciation (RP), Estuary English (EE), Multicultural London English (MLE), General Northern English (GNE), and Leeds English (LE). These accents contrast in several dimensions: region, prestige, localness, age of variety, ethnicity, and class. Participants rated candidates on expertise, likeability, professionalism, and hireability. They also provided their opinions about discrimination in the UK, their motivation to control a prejudiced response, and their linguistic and demographic background.

We find a strong effect of age on the evaluation of the 5 accents (see Figure 1): Older listeners give lower ratings overall and also downgrade the two working-class London accents (EE and MLE), with a significant difference between RP and MLE. RP receives the highest rating across ages except for the youngest respondents, who show a significant reversal in the relative rank of MLE. We reflect on whether this indicates changing national attitudes, age-grading, or age-based differences in willingness to report prejudice. We also briefly note two factors that can potentially override accent bias: degree of accentedness and expert content in an utterance.

The second key finding is an interaction between a listener's social background and their beliefs about discrimination. Accent ratings are significantly affected by a listener's own region and the degree to which they believe that region-based prejudice is prevalent (e.g. non- Northern speakers who believe that region-based prejudice is high give Northern accents higher ratings). Similarly, a listener's class status and the degree to which they believe that class-based prejudice is prevalent affect their accent ratings (e.g. working-class listeners who believe that class-based prejudice is high rate EE, but not MLE, significantly higher). Finally, ratings were generally higher among younger people, especially from lower socioeconomic groups, and people with a higher motivation to control prejudiced responses.

Overall, our findings suggest significant patterns of bias against certain accents in England, particularly MLE, though moderated by factors of age, class, region, perceived discrimination, and motivation to control prejudice. The next project phase assesses the effect of attitudes on hirers' ability to perceive a candidate's competence in a real professional context, to identify direct implications for social mobility.

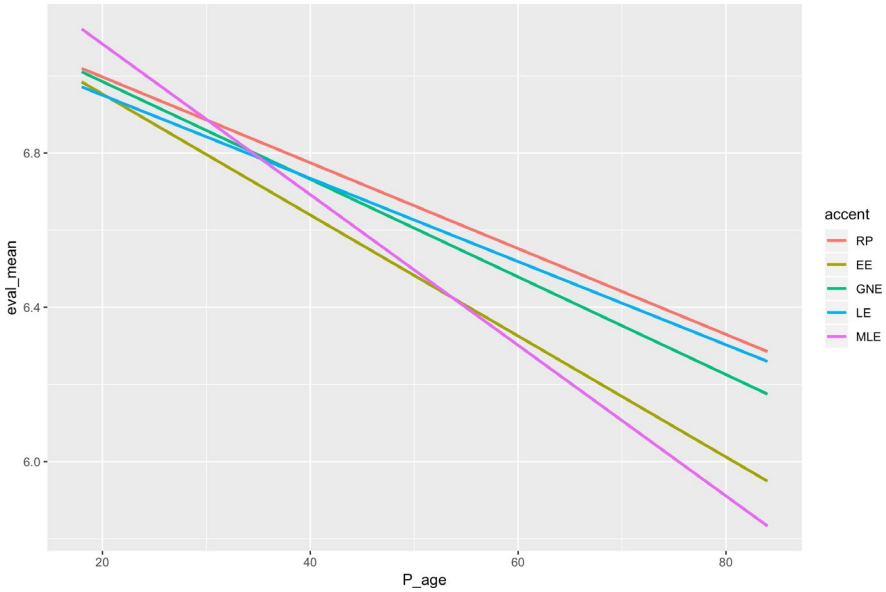

Figure 1. Age and Accent rating (estimated means)

Accents within accents: Voice quality in Merseyside speech

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Liverpool English, spoken in the city of Liverpool and surrounding areas of Merseyside in North West England (Marotta & Barth, 2006), is claimed to have 'ousted' the traditional dialect of the Wirral (Knowles, 1973), an area bordering the city to the west. However, there appear to exist 'different kinds of Merseyside Englishes' (Grant, 2007, p.141) with subtle phonetic differences between them. This has previously been found in Liverpool's border regions to the north and east (West, 2015; Clark and Watson, 2016), as well as the Wirral itself (Newbrook, 1999). The present paper examines potential differences between Liverpool and Wirral speech in terms of voice quality, specifically phonation (i.e. differences in glottal constriction). Liverpool and the Wirral contrast socially and economically, the Wirral being more rural and affluent than Liverpool. Liverpool too, being an urban centre has strong working-class associations, making its character quite distinct from the Wirral. Therefore, voice quality is examined here in relation to geographical and social identities.

Voice quality has been linked to social factors such as gender and class (e.g. Esling, 1978; Stuart-Smith, 1999). In British English varieties, pre-aspiration and breathy voice appear to be more common in the speech of females (e.g. Foulkes & Docherty, 1999; Stuart-Smith, 1999; Foulkes, Docherty & Watt, 2001) than males, whereas pre-glottalisation and creaky voice appear to be more common in the speech of males (Henton & Bladon, 1988; Foulkes & Docherty, 1999; Stuart-Smith, 1999). Rather than being purely physiologically determined, however, voice quality has been found to be used in identity work and stance taking (see Podesva & Callier, 2015 and Levon, 2016).

The principal objective of this research was to explore whether speakers from Liverpool and the Wirral differed in their relative use of pre-glottalisation (or 'glottalization', typically manifest as creaky voice on the preceding vowel, e.g. Roach, 1973; Chong & Garellek, 2018), and pre-aspiration (associated with breathy voice, e.g. Ní Chasaide, 1985). Pre-aspiration involves vocal fold abduction, pre-glottalisation requires adduction. The research examined the use of pre-glottalisation and pre-aspiration by 16 speakers from across the Wirral (n = 7, 4 females and 3 males) and Liverpool (n = 9, 6 females, 3 males). All participants were in the final year of sixth form (aged 17-18) and were tested in their respective high-schools. Words were elicited in a word-list reading task, with target words being monosyllabic and CVC in form. On this basis, all inter-speaker variation was assumed to be geographically and socially determined.

Both voice quality phenomena were explored in terms of their presence or absence at the end of vowels preceding word-final voiceless plosives (/t/ and /k/). This was determined through visual inspection of the waveform and spectrogram: pre-aspiration was identified as aperiodic noise; pre-glottalisation as irregular glottal pulsing. Band-pass filtered zero-crossing rates were also considered (Gordeeva & Scobbie, 2010).

Preliminary investigation of the results suggests that Liverpool speakers demonstrated greater use of pre-aspiration, Wirral speakers pre-glottalisation. The findings indicate that, for Merseyside speakers, geographical identity distinctions could potentially be manifest through differences in voice quality.

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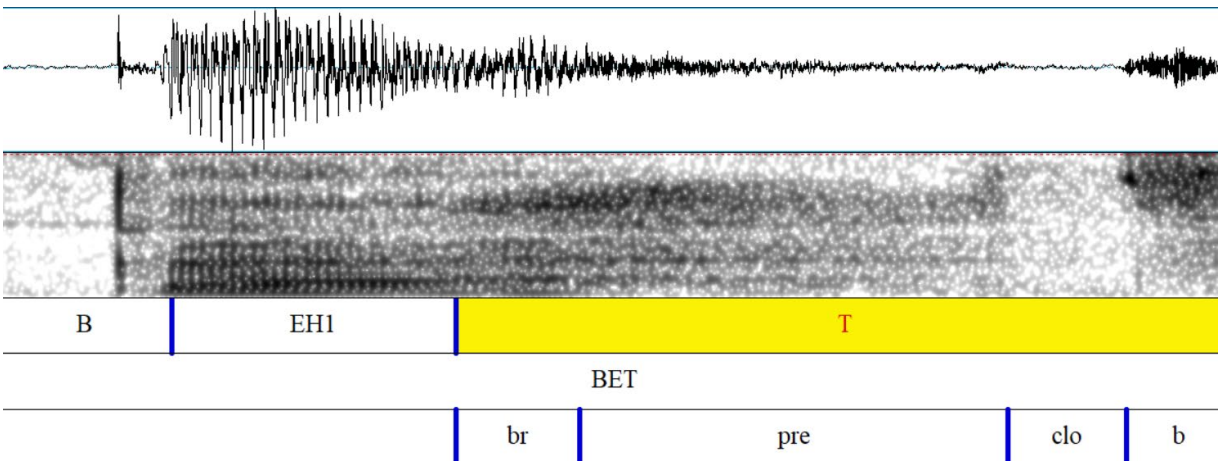

Figure 1. Waveform and spectrogram depicting a pre-aspirated production of the word 'bet' by a Liverpool female. 'br' denotes breathy voice, evident through the appearance of low intensity formants and a sinusoidal waveform structure. 'pre' denotes pre-aspiration, visible as an extended portion of aperiodic glottal friction noise. 'clo' indicates the closure phase for the plosive, whilst 'b' indicates its burst phase.

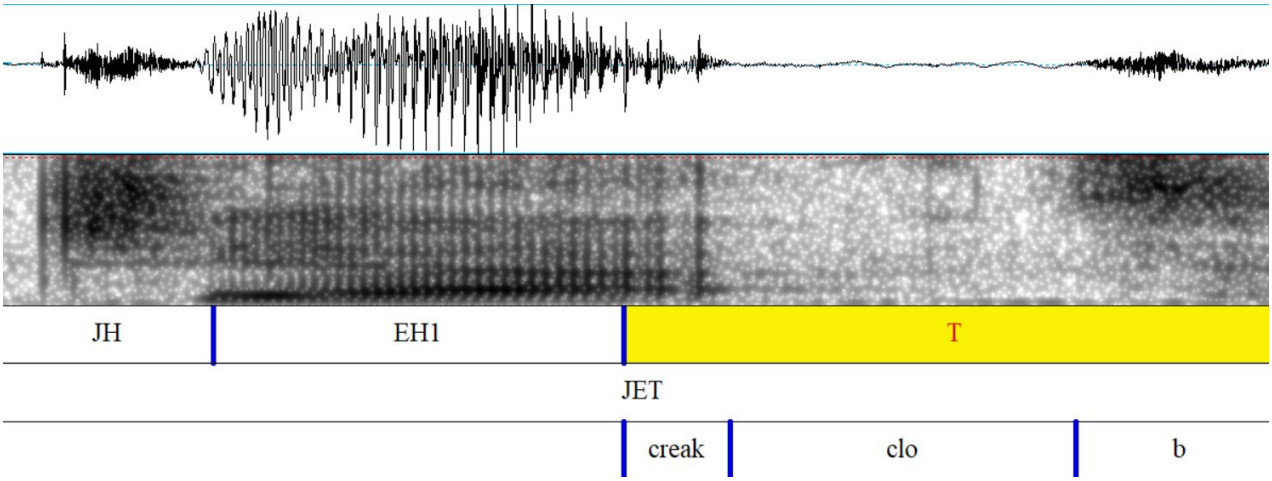

Figure 2. Waveform and spectrogram depicting a pre-glottalised production of the word 'jet' by a Wirral female. 'creak' denotes creaky voice, visible in the waveform and spectrogram as irregular glottal pulsing. As above, ‘clo’ denotes closure, ‘b’ the burst phase of the plosive.

NURSE vowels in Scottish Standard English – still distinct or merged?

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While nearly all dialects on the British Isles have undergone the NURSE merger (Wells, 1982), a process which merged the five Middle English vowels /ɛ, ɪ, ʊ, ɜ, ə/ into the vowel /ɜ/ in prerhotic positions, Scottish Standard English (SSE) is traditionally described as having a three-way distinction in these contexts. This means that for words such as *fir*, *fern* and *fur*, separate vowels are pronounced, namely /ɪ/, /ɛ/, and /ʌ/ (e.g. Jones, 2002; Dyer, 2002). However, the loss of this contrast has for some time been cited as a possible feature of middle-class SSE (Lawson et al. 2018). While there is agreement that the three vowels are unstable in the prerhotic context, less is known about precise mechanisms of variation and merger; for example, some speakers rhyme *fir* and *fur*, showing only one vowel /ʌ/ or /ɪ/, while retaining *fern* as a distinct category (Giegerich, 1992; Trudgill et. al., 2003; Stuart-Smith, 2008). Possible reasons for the observed merger of /ɪ/, /ʌ/, and /ɛ/ in SSE are an assimilation towards RP phonology (see general comments in Aitken 1979), a prestigious pronunciation target promoted in the early twentieth century (Lawson et al. 2013), and coarticulatory pressure exerted by the middle-class speakers' bunched variants of the Scottish postvocalic /r/ (ibid.).

The NURSE merger and social stratification in the realisation of prerhotic vowels in SSE are still understudied. The present investigation aims at filling this gap by analysing the acoustic properties of vowels produced for the (RP) NURSE lexical set by n = 65 SSE speakers from all over Scotland. To this end, 35,000 words of broadcast news and broadcast talks from the Scottish component of the International Corpus of English were analysed in the following way: Automatic phonemic transcriptions were created with WebMAUS (Schiel, 2004), phoneme boundaries were corrected manually and the realisation of /r/ was checked and transcribed using Praat. For all speakers, F1 and F2 for all vowels of the NURSE lexical set (n = 781) as well as for 10 tokens each of the KIT, DRESS and STRUT lexical sets were measured, transformed into Bark and normalized following Lobanov (1971). A Bayesian linear mixed-effects regression model with speaker and word as random intercepts showed that in purely acoustic terms the vowels in fir, fern and fur are not merged but have a distinct F1 and F2. Female speakers are exceptional in showing an incipient merger of fir and fur. However, we do observe that prerhotic items are distinct from the reference categories KIT, DRESS and STRUT in being more centralised, and the data also confirm that *fir* and *fur* are much more strongly drawn towards the centre of the vowel space (and each other) than *fern*, which shows only incipient centralisation. In addition to the global picture based on purely acoustic data, we will look at the relationship between vowel quality and the realisation (or loss) of /r/, and we will also zoom in on individual speakers to learn more about specific patterns underlying the general picture.

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Social meanings of lazy and standard pronunciations in Cantonese

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In the light of the third wave of variation study (Eckert, 2005, 2008, 2012), many sociolinguists have shifted their focus of phonetic variation to "the social meanings that motivate speakers to use one linguistic variant over another" (Podesva et al., 2015, p.60). Studies on linguistic variants of the same variable (Campbell-Kibler, 2009, 2010; Pharao et al., 2014) have shown that social characteristics attributed to a speaker's linguistic choices are influenced by a range of additional information of the speaker revealed to the listeners.

Phonetic variations in Cantonese have undergone various degrees of changes (To et al., 2015; Zee, 1999), with some of which were overwhelmingly replaced by their counterparts. These sound changes have often been seen "as a result of 'laziness'" (To et al., 2015, p.334) therefore are called "lazy pronunciations". The aim of this current study is to compare what social meanings native speakers of Cantonese would attribute to lazy pronunciations and standard pronunciations, using two matched guise perception experiments to evaluate four sound changes: (1) [n-]→[l-], (2) [ŋ-]→ø, (3) [ts-, ts^h-, s-]→[tʃ-, $tʃ^h$-, ʃ-], and (4) [n̡]→[m̡] in an online questionnaire form. Participants were asked to listen to 10 short sentence recordings produced by 4 young native Cantonese females and then to give their immediate impression of the speaker and what they notice about the speaker's pronunciation and way of speaking in Experiment 1. Three types of recordings were recordings (1) with tokens of lazy pronunciations only, (2) with tokens of standard pronunciations only, and (3) with tokens of both lazy and standard pronunciations. Nineteen commonly-mentioned adjectives were collected and used in a scale-ranking task in Experiment 2. Apart from the seven sentences selected from Experiment 1, another six had been added to Experiment 2, including two males' utterances to increase the diversity. A new group of participants heard the recordings and gave their estimations on the speaker's gender, age, which part of Hong Kong they come from, and then rated the 19 traits on a 5-point Likert scale, ranging from 1 = "no, not at all" to 5 = "yes, very". Preliminary results have revealed that lazy and standard sounds are significantly distinguishable to the participants in this sample. Overall, lazy sounds would more likely to be perceived as production of younger speakers, while standard sounds tend to be rated as from older age groups. Two factor groups, formal and likable, emerged from PCA. Sentences with standard sounds were rated as more formal and those estimated from older age groups also had higher ratings on the formal scale. Lazy pronunciations from younger estimated age groups in general were considered more likeable. For standard sounds to be seen as from younger speakers, it needs to achieve high scores on the likeable scale. With further analysis is still ongoing, this study will be able to shed the light on how sound changes in Cantonese contribute to listeners' social perception and the roles of other information of the speaker play.

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Hæ?: Exploring factors influencing identification and judgements of Norwegian dialects.

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Speakers typically vary in their use of phonetic and phonological variants as a function of their geographical location (English: Wells, 1982; Evans & Iverson, 2004; Dutch: Van Bezooijen & Gooskens, 1999; Norwegian: Gooskens, 2005). However, the contribution of acoustic cues speaker identification and categorisation is contested for some languages, in particular Norwegian (Gooskens & Heeringa, 2006). The current study focuses on the role of phonetic variants in dialect identification and categorisation in two Norwegian dialects; Standard Eastern Norwegian (the dialect associated with the capital, Oslo, as its cultural centre) and Nord-Trøndersk (a regional dialect localised in the middle of Norway, north of Trondheim). These dialects differ primarily in their use of palatalized variants /ɟ, ɲ, ʎ/ which are present in Nord-Trøndersk but not in Standard Eastern Norwegian (realised as /d, n, l/ respectively). This phonetic difference is exploited in the present study.

Native Norwegian listeners (N=30), with varying familiarity to Standard Eastern Norwegian and Nord-Trøndersk, undertook two tasks. First, in an identification accuracy task, listeners were required to identify the dialect from single words produced by a female talker. The words presented in the identification accuracy task differed only in the key phonetic variants. Second, in a sentence judgement task, listeners gave judgements on a continuous scale from Standard Eastern Norwegian to Nord-Trøndersk. Sentences were grouped into four conditions on a cline from fully Standard Norwegian to fully Nord-Trøndersk based on how much of the sentence contained Nord-Trøndersk variants (1. No Nord-Trøndersk variants, 2. Nord-Trøndersk phonetic variants of target words, 3. Nord-Trøndersk phonetic and intonation variants of target words, 4. Nord-Trøndersk variants throughout entire sentence). Both tasks used the same lexical items in the two dialects.

Results from the identification accuracy task suggested that listeners were able to identify each dialect above chance, and that no measures of familiarity predicted identification accuracy. However, when listeners were compared at a group-level based on familiarity measures, listeners who currently lived in or who had grown up in a location where palatalisation is a dialect feature were better able to identify what was not their dialect, with better identification for Standard Eastern Norwegian than Nord-Trøndersk. Overall, data from the sentence judgement task demonstrated that, as expected, all listeners judged speech samples with more regional variants as more 'regional'. However, the presence of only a few regional phonetic variants facilitated large increases in regional judgements, suggesting that listeners are highly sensitive to the presence of regional phonetic variants in a speech sample, even when the rest of the speech sample was spoken in the standard dialect. Additionally, speech samples with a higher number of words containing the target regional variants also resulted in higher 'regional' judgements by listeners. In conclusion, the present study highlights the sensitivity of listeners to regional phonetic variants, and strengthens the argument for their importance in theories of speech processing.

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Salience, noticeability and enregisterment of dialect features in Stoke-on-Trent English

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This paper explores what non-linguists consider to be salient features of Stoke-on-Trent English. Although the meaning of salience has been a contested issue in linguistics, for sociolinguists "salience is tied with both noticeability and awareness of sociolinguistic variables" (Drager & Kirtley 2016: 16). Preston (1996; 2016) has discussed awareness and its various 'modes' amongst non-linguists, encompassing 'availability', 'accuracy', 'detail', and 'control'. Noticeability seems to be a step prior to these 'modes' of awareness. According to Nycz (2016: 64), it is the "conscious awareness and subjective experience of a linguistic feature", and can be affected by factors including localisedness, pitch, position, 'surprisal value' (i.e. unexpectedness), and speakers' past experience (see Rácz 2013; Drager & Kirtley 2016; Hay, Drager & Gibson 2018). We explore and develop some of these ideas in this paper, using data from Stoke-on-Trent to further explore the concepts of salience and noticeability.

Stoke-on-Trent is a city in North Staffordshire, in the West Midlands of England. The city and the surrounding regions have been the subject of scattered linguistic research (e.g. Poole 1880; Nicholls 1934; Gibson 1955), but until Leach (2012; 2018) it had received no contemporary sociolinguistic attention. Despite this, the dialect of Stoke-on-Trent has been consistently singled out as "distinctly different" from that of other regions in texts offering general overviews of British varieties, such as Wells (1982) and Trudgill (1999). The present study focusses on two pieces of perceptual fieldwork, the results of which enable exploration of (non-)salient of features of the Stoke-on-Trent dialect. The first, an online questionnaire conducted in 2013, saw 161 participants from Stoke-on-Trent and the surrounding region asked to list "specific pronunciations and words [they] would associate with the local accent". The second arose from a real-time study of dialect perception, conducted in 2015, in which 113 listeners from around the country were asked to listen to a sample of Stoke-on-Trent speech (as part of a larger study reported in Montgomery & Moore 2018). As they listened participants were asked to click whenever they heard something they considered regional. They were then invited to add comments about why they clicked when they did, producing a time-aligned dataset of clicks and commentary.

In this paper, we compare the datasets, both of which provide information on overt awareness of features. We find similarities between respondents from Stoke-on-Trent and those from elsewhere, and across both experiments; for example, respondents consistently note /u:/ realisations of words such as book, look, and cook and variant PRICE vowels.

We also find important differences. The NURSE vowel is particularly salient in the real-time test for people outside Stoke-on-Trent, but it is not clicked by Stoke-on-Trent listeners, nor supplied in large numbers by respondents to the questionnaire. Such differences suggest important constraints on perceptions of salient features, and we discuss the effect of specific linguistic characteristics of particular feature tokens, features' availability for overt comment, and the role of features that might be considered stereotypical of other varieties.

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Variation in discourse clicks across age and gender in Glasgow

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Many non-lexical features of speech are known to vary according to social factors (e.g. gender and voice quality— [1] or age and prosody— [4]). While phonemic clicks occur rarely in some South and West African languages, clicks are common as non-lexical features in many languages, including English [6, 8, 3], and there is some evidence that they might vary similar to more traditional linguistic variables (e.g. male and female speakers might perform clicks differently and at different rates)[6, 7].

A few studies have investigated clicks in English ([6, 8, 5]), finding that clicks could occur along- side an inbreath, have collocated creaky voice, and be accompanied by oral or nasal particles. These studies use Conversation Analysis to examine clicks, as they have interactional functions which are embedded into turn-taking. These functions include displaying a stance (e.g. disapproval, disagree- ment, sympathy) or managing sequences of talk in interaction. Sequence-managing clicks can mark word search, index the start of a new sequence, mark incipient speakership (the shift of one speaker to another), backchannel, and more ([9, 8, 6, 5]). Additionally, performance of these actions varies (e.g. they can be performed with or without a click). Only one study, as far as we know, examines a single click function in-depth (indexing a new sequence-[8]), and does not account for where they do not occur. Only Ogden's study (2013) lays out all the possible conversational actions clicks can perform.

Clicks are rarely studied or discussed in conjunction with social factors. Click production and region and style have been studied on a small scale ([5]), while click rates and gender have been investigated using a large corpus in one study ([7]), suggesting an possible constraint of gender on click production.

Bearing this in mind, this paper combines the fields of Phonetics, Variationist Sociolinguistics, and Conversation Analysis to answer the following research questions:

1) What is the phonetic form and conversational function of Glaswegian clicks?
2) Do male and female speakers perform clicks differently?

This study is based on over 20 hours of audio and visual recordings of 25 same-gendered, self- selected pairs of Glaswegians aged 17 to 60. Clicks were identified and coded in Praat [2] for the presence of particles (e.g. *er*, *um*), phonetic accompaniments indicated by previous studies (e.g. au- dible inbreath, creakiness, nasality), and place of articulation (bilabial to lateral after [6]). Clicks were also coded by function, and while this is primarily a Variationist and Phonetic study, actions which clicks could perform were informed by Conversation Analysis at the qualitative level in line with previous studies. Early results suggest female speakers click less than male speakers and are per- forming different actions with clicks (seen Figures and). This places clicks in word search sequences in the wider context of gender-constrained linguistic variables and demonstrates the importance of examining interactional variables in context.

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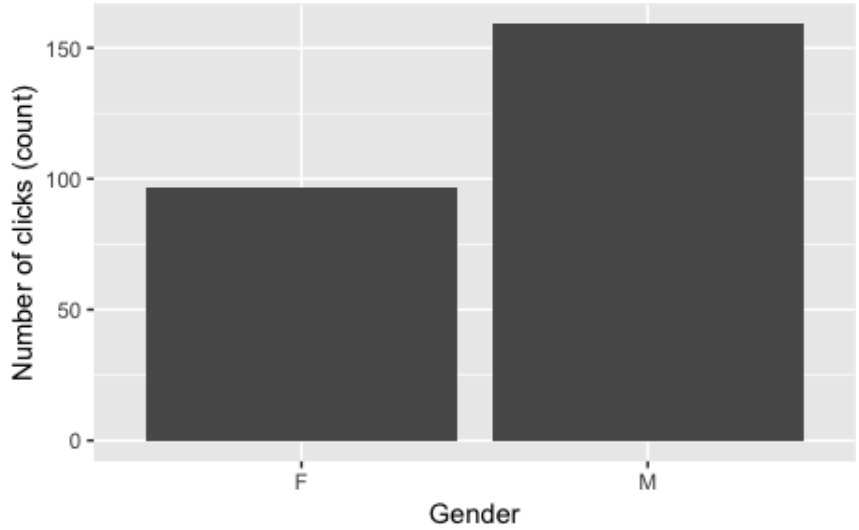

Figure 1. Number of clicks across gender

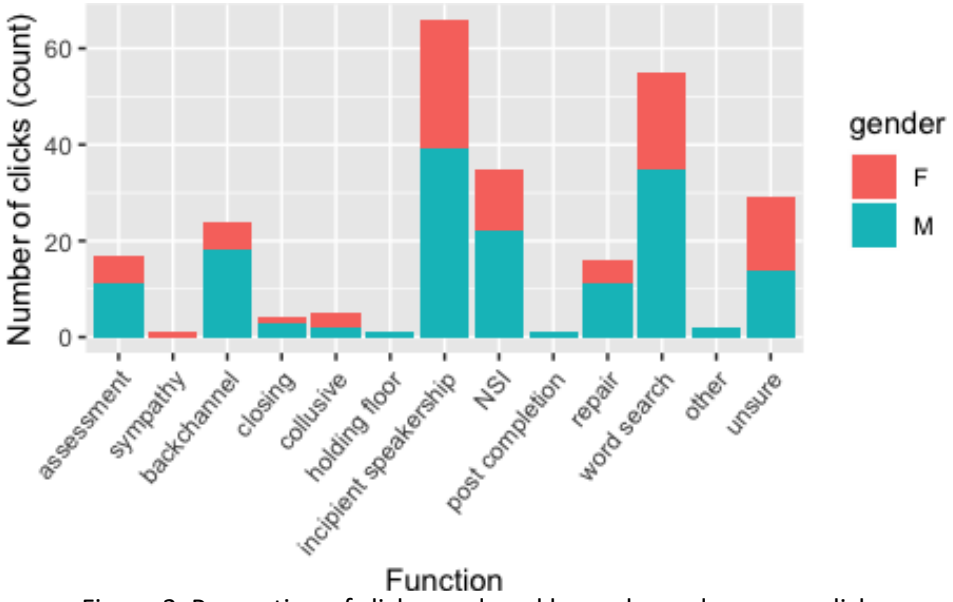

Figure 2. Proportion of clicks produced by each gender across click

Intonational Variation in the speech of Welsh-English bilinguals in north Wales

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Recent work on fundamental frequency range (FFR) in Welsh-English bilingual speech in north west Wales (where the majority of the population speak Welsh) has reported significant cross-linguistic differences between the two languages for female speakers but not for male speakers (Ordin & Mennen 2017). This complements the results of work on segmental variation in north Wales which also found that women were more likely to differentiate between realisations of /l/ in Welsh and English (Morris 2017). It is not known, however, the extent to which intonation varies both within and between the two languages in different areas of north Wales (particularly in areas where Welsh is not spoken by the majority) and whether the same social factors influence FFR across the region.

The current study therefore aims to examine both areal variation and the influence of other social factors on intonation in three areas of north Wales. Specifically, I address the following research questions:

(1) To what extent do Welsh-English bilinguals from north Wales have distinct patterns of FFR in their two languages?
(2) Are there differences between western, central, and eastern areas of north Wales and to what extent can this be accounted for by the social use of the Welsh language among young speakers in these areas?
(3) To what extent do speaker sex and home language influence FFR both within and between Welsh and English?

Data were collected from 48 Welsh-English bilinguals aged 16–18. The sample was stratified equally by area (western/central/eastern), speaker sex (male/female), and home language (Welsh/English) in order to examine the extent to which FFR is influenced by extra-linguistic factors. Participants were asked to read *The North Wind and The Sun* in both languages.

The recorded reading passages were then segmented into intonational phrases. The f0 level and span were analysed acoustically in order to examine FFR (cf. Mennen et al. 2012). The influence of linguistic and extra-linguistic factors on both the phonological and phonetic realisation of intonation was investigated using Conditional Inference Trees and Conditional Random Forests using the partykit package in R (Hothorn et al. 2006; Hothorn & Zeilis 2015; R Core Team 2017).

The results of the ongoing data analysis will be discussed with reference to (1) crosslinguistic differences between Welsh and English, (2) areal variation across north Wales, and (3) the effect of social factors on intonational variation in specific communities. I will then discuss the results in the context of previous work in perceptual dialectology (Williams et al. 1996) and on phonological and phonetic variation in this region (Morris 2013; Morris 2017). Particularly, I will claim that variation is not only a result of long-term language contact and synchronic language transfer in the speech of bilinguals but is also shaped by local social structures.

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Comparing coronals – a sociophonetic study of /s/ and /t/ in Danish drag queens

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The articulation of /s/ has been show through acoustic analysis in many languages to differ between the sexes, with female speakers having a tendency to have higher peak frequencies and/or spectral center of gravity in their productions of /s/ than male speakers (Flipsen et al 1999). Other studies have shown that gay male speakers may have peak frequencies that are as high as those found for female speakers (Munson et al 2006) and a study of /s/ in Glaswegian found that working class adolescent girls had peak frequencies as low as those of adult males (Stuart-Smith 2007). These studies suggest that differences in /s/ are not automatic consequences of vocal tract physiology, but can reflect gendered differences in articulation.

To further study the sociophonetics of coronals, we looked at the acoustics of /s/ and /t/ in a group of Danish drag queens appearing on a talk radio show. We include both of the coronal obstruents attested in Copenhagen Danish, because the stop /t/ is affricated, and has been shown to be involved in indexing gender in combination with /s/ (Pharao & Maegaard 2017). The study of gendered sociophonetic variables in the context of drag queen performances is of interest, because drag queens present an exaggerated image of femininity (Barret 1999, Calder 2019). By focusing on drag queen performances in a radio broadcast, we hypothesized that gendered sociophonetic variables like /s/ and /t/ would play an important role in how the drag queen personas were presented. 20 tokens of /s/ and /t/ were analysed in the speech of 5 drag queens and compared to the same amount of tokens of /s/ and /t/ in the speech of 4 gay men, 4 straight women and 4 straight men also obtained from talk radio shows.

Spectral center of gravity was found to be significantly lower in /s/ for the straight male speakers than for any of the other three groups. No significant difference was found between the straight women, the gay men and the drag queens suggesting that the speakers in these three groups have a more fronted /s/ than the straight male speakers. For the affrication of /t/ the center of gravity was found to be equal in the speech of the straight men and the drag queens and significantly lower than in the speech of straight women and the gay men, who again did not differ significantly from each other. Taken together, the straight women and gay men appear to have fronted articulations of both coronals as compared to straight men, whereas the drag queens appear only to front their /s/.

We interpret these results as an indication that the contrast between articulatorily related sociophonetic variables may be used for socially meaningful effect. By not fronting their /t/, the drag queens obtain a larger acoustic difference to their fronted /s/, effectively using the context to increase the social salience of the /s/.

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Intraspeaker variation in Newcastle English: real-time variation in emerging adulthood

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Though lifespan change has been a central theme in sociolinguistic theory for some time, much of this work has focused on the timeframes of childhood and adolescence (e.g. Van Hofwegen & Wolfram 2010, 2017; Tagliamonte & D'Arcy 2009). A small but growing body of work emphasises the importance of examining language change in a life phase that Arnett (2004) terms 'emerging adulthood,' referring to a life stage between adolescence and adulthood experienced in many so-called 'industrialised' or 'post-industrial' contexts (e.g. Bigham 2012; Rickford & Price 2013; Buchstaller 2015). Though emerging adulthood has been studied by sociologists, there is a dearth of research on the ways in which individuals who attend university exhibit change their linguistic patterns as they transition to the post-academic job market.

We focus on two speakers from Newcastle, who form part of our larger lifespan study of speakers from North East England. They were recorded together at two timepoints: 2009, when both were in their second year of university, and 2014, when Alison was working as a primary school teacher, and Paul was teaching piano with hopes of starting a doctoral program. While most previous panel analyses tend to focus on single variables, our research follows Sankoff and Blondeau's (2007) call to comparatively explore malleability in the use of different types of variables across the lifespan: stable variation in the realisation of (ING); changes in progress in the realisation of (t), the dynamics of the FACE and GOAT vowels, and the quotative system. Measurements and coding for each variable were fit to by-speaker statistical analyses with year of interview as predictor.

Results indicate that Paul produces a more monophthongal GOAT variant in his 2014 recording ($p<0.001$), aligning with the national standard and away from the Newcastle monophthong; Alison exhibits a marginally more monophthongal GOAT ($p=0.089$). There were no statistically significant changes in their FACE vowel. For the consonants, Alison uses less of the alveolar [in] variant of (ING) in 2014 ($p<0.1$), and her realisation of (t) remains stable. Paul, however, exhibits no statistically significant difference in his use of (ING) or (t). For the quotatives, both Alison and Paul show statistically significant patterns of variation and change ($p=0.024$ and $p=0.007$, respectively).

We interpret these findings at least partly as indicators of how speakers may "[modify and reconstruct their] linguistic identity over the course of the lifespan" (Dickson & Hall-Lew 2017: 249). That is, variation is one resource speakers can use to position themselves in their social landscape. Because monophthongal GOAT and FACE, glottalised /t/, and alveolar [in] are associated with both non-standardness and local-ness in Newcastle, we suggest that these observed linguistic patterns are related to the speakers' positioning themselves as professionals in education-related fields. In addition, the positioning of oneself with regard to interactional context is not to be ignored; in re-meeting and re-recording themselves, the speakers renegotiate relational aspects as these are embedded and emergent in interaction.

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Indexicality, sociolinguistic awareness, and language change

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A major enterprise of sociolinguistics since the inception of the field (e.g., Labov, 1963) has been to identify how social meaning affects language change. Labov (2001), for instance, outlined two types of linguistic changes, defined in terms of metalinguistic awareness: *change from above* (where speakers are aware of the change) and *change from below* (where speakers are not). These two types of change propagate differently through a speech community, with changes from above carrying explicit social meaning that can be selected for by speakers, and changes from below propagating more neutrally. Eckert (2019), by contrast, argued that changes from above and below both carry social meaning with complex *indexicality*. Here, we present previously unpublished data from an experiment designed to test how different kinds of indexicality (Eckert, 2008; Silverstein, 2003) affect the borrowing of a linguistic feature (*author citation*). We compared participants' actual rates of borrowing to their metalinguistic awareness of borrowing (Figure 2), finding that (1) participants' metalinguistic reports of not borrowing features were inaccurate across all conditions, and (2) metalinguistic reports of borrowing variants with higher-order indexicality were more accurately reported than reports of borrowing first-order variants.

In previous work (*author citation*), we found that higher-order variants were borrowed at significantly higher rates than first-order variants. In this experiment, participants were assigned to either the *Wiwo* or the *Burl* alien species and played a game using a miniature artificial language. We manipulated the *alienability* and the *social relevance* of a Burl-dialect feature in a 2x2 design, finding that Burl forms were borrowed at significantly higher rates when it had both components of higher-order indexicality (Figure 1).

Here, we take a closer look at the role of metalinguistic awareness across the four con- ditions of our experiment. Participants completed a post-experimental survey including detailed questions about their use of the alien language, such as "Did you try to adjust your use of the language to sound like other aliens?" Participant's responses were classified into three categories: "No", "Yes" (if they responded "yes" but did not identify the relevant feature, and "Yes: f/b" (if they identified the feature, an alternation between f and b). We used these responses as a metric of metalinguistic awareness, and compared this to their actual production rates of Burl forms across the four conditions.

Our results are presented in Figure 2. First, we found that participants across all con- ditions inaccurately reported *not* changing their language. This finding aligns with much empirical work in sociolinguistics (e.g., Labov, 2001, *author citation*) showing that participants inaccurately self-report *not* producing features that they do actually produce. Second, across all conditions but the second-order condition, there was no correlation between self- reported use of the borrowed form and the actual use of the new form ($r^2 = 0.01$). Third, the second-order condition stands out as anomalous. In this condition, there is a stronger relationship between actual borrowing and reported borrowing ($r^2 = 0.11$), suggesting that participants in the second-order condition only exhibit accurate metalinguistic awareness of the presence of borrowing.

These results suggest that the metalinguistic awareness expected to play a role in sound change is not straightforwardly mapped onto changes from above vs. changes from below. Instead, we find that metalinguistic awareness is affected both by the perceived presence of borrowing as well as the order of indexicality that a feature is associated with.

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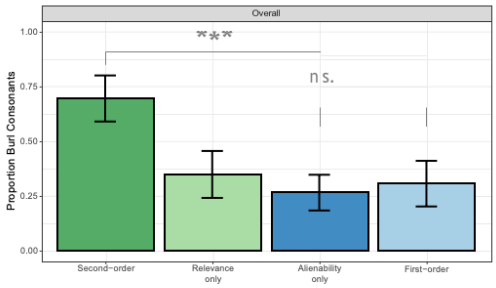

Figure 1: Proportion of Burl consonants used by Wiwos in each condition. First-order variants index group membership, while higher-order variants index *alienable* and *socially relevant* traits associated with that group; variants with only *social relevance* or *alienability* are treated like first-order variants.

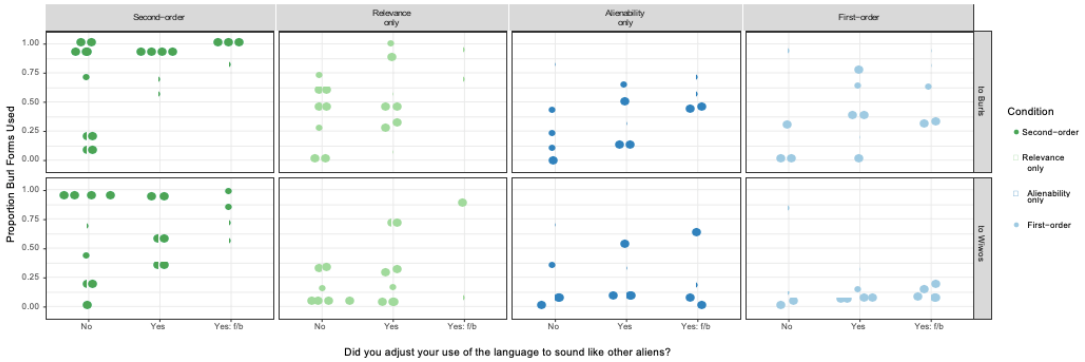

Figure 2: Individual Wiwo participants' rates of Burl forms across conditions, separated by their self-reported use of Burl forms, and by interlocutor.

Exploring an inverted style-pattern in a peripheral community: Variation, change, and socio-indexical meaning of Anglo-Cornish dialect lexis

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I showcase new and nuanced patterns of socially and stylistically conditioned lexical variation in data collected from a year-long ethnographic participant-observation and 80 innovative lexis-oriented sociolinguistic interviews in the Cornish towns of Camborne and Redruth. I introduce two chronotopic identities (see Bakhtin 1981) which are present in 21st century Cornwall, namely the 'Industrial Celt' and 'Lifestyle Cornwall'. The Industrial Celts, who are mostly older, tend to conceptualise Cornwall primarily as a Celtic nation and cite Cornwall's industrial and Celtic pasts as the core reasons for their sense of place. Those who conform to the 'Lifestyle Cornwall' identity, who tend to be younger, conceptualise Cornwall primarily as a county of England and cite aesthetic factors as the key reasons for their Cornish pride. Both production and perception of Anglo-Cornish dialect lexis can be accounted for by alignment to these Cornish identities.

Lexical data were elicited from participants using a novel methodological framework consisting of task-oriented elicitation procedures, such as spot-the-difference tasks, to elicit casual speech, and naming tasks to elicit careful speech. I investigate four Anglo-Cornish words, namely, *crib*/*croust* ≈ 'lunch', *maid* ≈ 'woman', *stank* ≈ 'walk', and emmet ≈ 'tourist'. All four Anglo-Cornish forms exhibit the same monotonic style pattern. Contrary to attention-to-speech models of style- shifting (e.g. Labov 1972), Anglo-Cornish lexis was more likely to occur in the careful speech style. This is an inverted style-pattern. An analysis of the social variation found that the best predictor of Anglo-Cornish lexical usage was the strength of local identity, as determined by a quantitative identity questionnaire. That is, those with a positive orientation to Cornwall are stylising their use of lexis when their attention-to-speech is greater in order to present themselves as 'Cornish'. This is supported by participants' meta-commentaries, such as '[the Anglo-Cornish dialect] is a performance, a deliberate performance'. I account for this quantitative pattern from the perspective of a language ideology framework and through the lens of socio-indexical meaning.

Some speakers, characterised in this study by a positive orientation to Cornwall, possess a subverted language ideological value system in which Anglo-Cornish supplants the standard as the variety which confers the greatest cultural capital (Bourdieu 1986). In the standard language market, Anglo-Cornish lacks status, but in this Cornish micro-market, dialect forms can assert status (cf. Snell 2018). This subverted language ideology is visible on the level of lexical usage for many with a strong Cornish identity. Speakers stylise their lexical usage in order to construct identities and to align themselves with respect to the increasingly complex ideological landscape within Cornwall. For example, those characterised by an 'Industrial Celt' iteration of Cornish identity make use of second- order indices of emmet to communicate their pro-Cornish stance. However, this usage is perceived to be hostile and to index an anti-tourist stance by another group, characterised by a 'Lifestyle Cornwall' identity, who make use of higher order socio-indexical meanings to parody Industrial Celts and to index a humorous affective stance through their use of emmet. These ideological stances become mobilised when speakers are paying greater attention to the social meaning of their language use.

These indexical changes have implications far greater than the purely linguistic, as they provide a lens through which to analyse a dynamic shift in centre-periphery relations between Cornwall and the rest of England.

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Sociolinguistic Variation on Second Language Acquisition: the influence of cultural schemata.

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The study of factors that influence the choice of sociolinguistic variants by speakers is a very important topic in the field of sociolinguistic variation. Related to this topic, another line of inquiry is how speakers perceive the social meaning of variants ("relaxed", "young", "southern") within their community. In the field of Second Language Acquisition, studies have shown that learners use more formal sociolinguistic variants than native speakers. Many reasons could explain this difference, for example, the formal input that learners receive in a foreign language class and the type of schemata construction. Schemata are cognitive structures that organize categories of information stored in memory. Certain works in the framework of the Schemata theory argue that learners have incomplete schemata in the target language. In order to explore this hypothesis, it is important to know how learners memorize and categorize the sociolinguistic variants of the target language. As a first step, the present study examined the organization and judgment of sociolinguistic variants of French in language learners from two origins: English and Chinese native speakers.

First, we implement the Sociolinguistic Repetition Task (Buson et al., 2018) in 66 students (English and Chinese native speakers). The participants listened and repeated 24 utterances: 12 sociolinguistically mixed utterances (a non-standard variant in a formal linguistic context and of a standard variant in an informal linguistic context) and 12 sociolinguistically homogeneous utterances (a standard variant in a formal linguistic context and of a non-standard variant in an informal linguistic context). In addition, we observed the social judgment employing a subjective reaction task in 81 students (English and Chinese native speakers). This task is based on the judgment procedure designed by Campbell-Kibler (2008). The participants listened and judged 12 formal and informal homogenous utterances according to 7 social categories: femininity, speech flow, extroversion, sympathy, accent, education, and intelligence. Both tasks were employed in French native speakers for results comparison between L1 et L2.

The results show that students modify more often the heterogeneous utterances than the homogeneous utterances during the Repetition task, just as native speakers do (Buson et al., 2014). They replaced the variants that are not compatible with the context with the compatible ones, making the utterances more homogeneous. This result suggests that coherent schemata of the varieties influence the task. However, while the English students equally modify the utterances in the direction of both the standard and the non-standard, the Chinese students modify them mostly toward the standard. The results of the judgment task showed that students have more difficulty than natives to explain their judgment and that the judgment varies with the student's origin. For example, while the Chinese students judge as “less sympathetic” the informal utterances, the English students judge them as “more sympathetic”. In sum, the first result suggests that the learners of a second language built schemata of the sociolinguistic varieties of French in the sense that they put together variants of the same indexical orientation. However, the difference between the two groups suggests that the cultural schemata of the native culture could influence the social meaning associated with the varieties.

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Making identity visible: In search of regional accents in sign languages

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In this paper, we ask the question: what evidence is there for regional accents in sign languages? We will give an overview of the literature on regional variation In sign languages, and discuss recent media reports and deaf community online video materials on sign language accents. By analogy with spoken languages, we would expect 'accent' in sign languages to refer to systematic differences in the pronunciation of signs that index a particular regional identity: consistent differences , for example, in the use of handshapes, locations and movements in signs between signers from different regions. Work has demonstrated just such sociophonetic differences as indexing ethnicity in American Sign Language (ASL) (McCaskill et al., 2011), as well as others that reflect fluency differences between native signers and second language learners (e.g., Mirus et al., 2001). But what of region? We discuss previous variationist work on location variation in ASL, New Zealand Sign Language and Auslan (the majority sign language of Australia's deaf community), and on handshape variation in British Sign Language (BSL) and ASL (Schembri & Lucas, 2015). Thus far, the evidence for regional accents in sign languages is not compelling, but are we looking in the right place? Might regional sociophonetic differences be more subtle? Recently, we have explored the average signing rate in the BSL Corpus data from 8 cities across the UK (Börstell et al., forthcoming), as a result of anecdotal reports that Glaswegians signed 'fast', but we failed to identify regional differences. We will then discuss a recent BBC news report (https://www.bbc.co.uk/news/av/uk-scotland- 47304237/scots-dialect-brought-to-life-in-sign-language), in which a deaf actor described his experiences training some other actors to use the 'Glaswegian accent' in BSL. The headline states 'Scots dialect brought to life in sign language', suggesting that the hearing reporters believe that Scots is represented more or less directly in Scottish BSL (it is not, but such assumptions about the relationship between signed and spoken languages are common). Furthermore, in the accompanying video, the deaf actor discusses what a Glaswegian 'accent' looks like, providing a rich example of sign language ideologies and attitudes about variation. He suggests some prosodic features are important – that Glaswegian signing should be more 'expansive' and 'expressive', with larger movements and more facial expression. He fingerspells some Scots expressions and shows how they might be translated. He demonstrates how some common BSL signs might be 'code-blended' with Scottish dialect words (e.g., he signs DRINK while mouthing 'swally'). Work on regional variation in BSL has provided ample evidence of lexical variation, including some Glaswegian variants for colour and number signs (Stamp et al., 2014). This is not, however, discussed in the media report, although anecdotal observation certainly suggests that when British deaf people talk about differences in 'accent', they often use this term to refer to regional lexical variation. We will conclude with some implications for the still nascent field of sign language sociophonetics.

Unraveling language-specific features: The case of Gay Sign Variant (GSV) in Israeli Sign Language

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Unlike hearing adults, deaf signers use their body both to communicate through a conventionalised manual system as well as to interact with the real world. In other words, language, gestures, and action converge in the same channel of expression. Therefore, while both hearing people (i.e., 'gesturers') and deaf people commonly use gestures, the distinction between gestures and language-specific signs is blurred for signers.

Our study explores the motions produced by signers of Gay Sign Variant (GSV), a sign language variety used by gay male signers (Blau, 2015; Rudner, 1981; Kleinfeld & Warner, 1996). We investigate a particular characteristic of GSV, known as distalisation (Blau, 2015) - the production of signs using joints further from the body (e.g., wrist movements rather than movements at the shoulder). In a preliminary study we compared the motions produced by two gay Israeli Sign Language (ISL) users and two straight ISL users. Tracking their motions using Microsoft Kinect motion-tracking technology, we measured joint distalisation in comparable signed sequences. Preliminary findings indicate that signs produced by gay individuals were more distal than signs produced by straight signers.

In our current study we investigate whether distalisation is language-specific or whether it is also observable in the gestures of the wider gay community. We elicit comparable sign/gesture sequences from four groups: deaf gay signers, deaf straight signers, hearing gay gesturers, and hearing straight gesturers. We hypothesise that if the feature is not considered to be language-specific, then the gestures produced by hearing gay gesturers will also differ from hearing straight gesturers similar to our preliminary findings. By drawing on the deaf gay community, as a sign language dialect, we are able to better understand the distinctions between language and gesture.

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Defining accent features in urban Northern English vowel systems

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A large body of sociolinguistic work relies on the existence of speech communities defined by their geographic location, such as 'Liverpool English'. Such terms implicitly suggest that speakers from Liverpool share a set of accent features to the exclusion of other localities. While this is a highly intuitive notion, defining such features is non-trivial, because ongoing sound changes make them a moving target. In this study, we propose a systematic bottom-up approach to identifying local vowel features, using a large corpus of crowdsourced audio data, and machine learning.

Our study is based on audio data from 113 speakers, representing five largest Northern cities: Leeds (N =28), Liverpool (N =19), Manchester (N =25), Sheffield (N =19) and Newcastle upon Tyne (N =22). Each speaker recorded themselves on a mobile phone reading the story *The Boy Who Cried Wolf*, and submitted the recording via the English Dialect App [3]. The recordings were selected based on their quality (no multiple talkers, no background noise, etc.). They were then forced aligned, with boundaries manually corrected as required. In each recording, we identified one token for each English vowel keyword, as defined by [5]. In addition, we also included the GOOSE vowel before /l/ (keyword FOOL), which is known to involve a variable allophony pattern in the North [4].

We extracted F1 and F2 measurements for all vowels, using a Praat script with adjusted settings for male and female speakers. Midpoint measurements were taken for monophthongs, whereas onglide (20% of vowel duration) and offglide (80%) were measured for diphthongs. The formants were Lobanov-normalised within speaker.

The purpose of our analysis was to determine relative importance of each variable (i.e. each vowel measurement) for identifying each city. We illustrate this, using Liverpool as an example. We fitted a series of random forest models, based on 1000 bootstrapped samples with equal number of Liverpool and non-Liverpool speakers. The forests were trained to distinguish the two classes based on all the available vowel measurements. For each iteration, we extracted relative variable importance, using the party package in R [1].

We visualised the distributions of relative variable importance, as exemplified in Figure 1 for the ten most highly ranked Liverpool features. Two most important features, in this case, were midpoint F1 in letter and the midpoint F2 in FOOL. According to forest predictions, speakers were more likely to be identified as being from Liverpool, if they had a lowered letter vowel and a relative fronted variant of FOOL. We applied the same analysis to the remaining cities, identifying predictive features for each of them. Table 1 summarises the top-ranking features for each city.

By and large, the features that contribute most to identifying each city are not the ones traditional descriptions focus on. We argue that this is because many traditional features tend to be salient, and as such, they may be subject to considerable socially-induced inter- speaker variation. We discuss this proposal within the framework of stereotypes, markers and indicators [2]. We also consider classification accuracy in the context of dialect levelling in the North.

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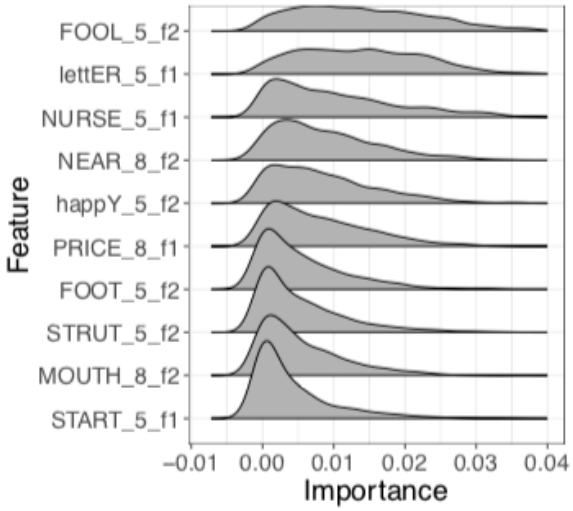

Figure 1. Relative variable importance of the ten most highly ranked features for identifying Liverpool speakers. Each feature is coded as keyword, followed by measurement time point (2=onglide, 5=midpoint, 8=offglide), and the measurement taken (F1 or F2)

Table 1. Vowel features with the largest relative importance for classifying each city

City	Feature
Leeds	NORTH midpoint F1 START midpoint F1
Liverpool	FOOL midpoint F2 letter midpoint F1
Manchester	NEAR onglide F1 letter midpoint F1 CHOICE offglide F1
Sheffield	LOT midpoint F2 NEAR onglide F1
Newcastle	KIT midpoint F2 STRUT midpoint F2

How consistent is the voicing effect across English dialects?

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Introduction: A key variable which appears across many (but not all) regional dialects of English is variation in vowel length before consonants, the so-called 'voicing effect' (VE), where vowels preceding voiceless consonants should be shorter than before their voiced counterparts, e.g., beat vs bead (Chen, 1970; House, 1961; Veatch, 1991). Previous experimental studies suggest that vowels are around 1.5 times longer when followed by voiced obstruents (Chen, 1970; House and Fairbanks, 1953; Jacewicz et al., 2007). To date, the VE has received little attention concerning the variability across dialects, though Tauberer and Evanini (2009) observed that the VE differed across North American English and was generally smaller in conversational styles compared with reading lists. Additionally, in dialects where distinctive patterns occur, studies of spontaneous speech have not been able to detect a VE-style pattern (Rathcke and Stuart-Smith, 2016). This study investigates the realisation of the VE in spontaneous speech across a range of British and North American English dialects, examining how dialects may differ in its specific implementation, and how the VE is modulated by phonetic, linguistic, and dialectal properties.

Methods: 58571 monosyllabic tokens (1,233 types) were extracted from 8 spontaneous speech corpora with ISCAN (McAuliffe et al., 2019), corresponding to 498 speakers (247 female) across 15 dialects of British and North American English (Table 1). A Bayesian mixed-effects linear regression of log-transformed vowel duration was fit using Stan (Stan Development Team, 2018), where following obstruent voicing was used as a predictor of interest, whilst obstruent manner (stops vs. fricatives), speech rate, lexical frequency, vowel height, and interactions between each predictor and following obstruent voicing were included as controls. Dialect, speakers (nested within dialects), and words, and vowel labels were included as random intercepts, with following voicing, manner, height, speech rate, and interactions between voicing and speech rate and voicing and manner for speakers and dialects.

Results: The voicing of the following obstruent affected vowel duration, though the predicted effect (between 1 and 1.16) is smaller than previously observed for word list and spontaneous speech ($\hat{\beta}$ = 0.08, CrI = [0.01,0.15], Pr($\hat{\beta}$ > 0) = 0.98). There was weak evidence that consonant manner modulated the VE ($\hat{\beta}$ = -0.10, CrI = [- 0.24,0.03], Pr($\hat{\beta}$ < 0) = 0.94), whilst the VE was predicted to be larger for non-high vowels than for high vowels ($\hat{\beta}$ = -0.07, CrI = [-0.13,0.00], Pr($\hat{\beta}$ < 0) = 0.98). Both speech rate and word frequency modulate VE, with larger VEs for slower speech and less-frequent words (speech rate: $\hat{\beta}$ = -0.06, CrI = [-0.10,-0.01], Pr($\hat{\beta}$ < 0) = 0.99; frequency: $\hat{\beta}$ = -0.07, CrI = [-0.13,-0.02], Pr($\hat{\beta}$ < 0) = 1). The dialect-level variation in VE size (between 0.08 and 0.19, median = 0.09) is roughly as large as the overall population-level VE (between 0 and 0.16, median = 0.08), indicating a wide range of dialectal variability relative to the size of the VE overall. As shown in Figure 1, dialects appear to differ gradiently, ranging from effectively-null values in many Scottish dialects (between 1.01 to 1.07) to a maximum of 1.47 for African American speakers in Washington DC. These results suggest that the VE is more subtle in spontaneous speech than in reading list studies (e.g., House and Fairbanks, 1953; House, 1961), and is highly variable across English dialects.

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Table 1: Summary of dialects and corpora used in this study (AAE = African American English).

Corpus	Dialect	*n* speakers (*n* female)	*n* tokens
Buckeye (Pitt et al., 2007)	Midwest	40 (20)	7933
CORAAL (Kendall and Farrington, 2018)	Washington DC (AAE)	50 (26)	22922
ICE-Can (Greenbaum and Nelson, 1996)	Canada	11 (1)	742
Modern RP (Fabricius, 2000)	RP	48 (24)	703
Raleigh (Dodsworth and Kohn, 2012)	Raleigh	98 (49)	3378
Santa Barbara (Bois et al., 2000)	Eastern New England	10 (4)	193
	Lower South	6 (1)	368
	Northern Cities	21 (7)	1440
	NYC	7 (3)	170
	West	55 (34)	3041
SCOTS (Anderson et al., 2007)	Central	24 (14)	2666
	Edinburgh	18 (8)	1236
	Insular	9 (7)	384
	Northern	28 (14)	1994
	Glasgow	27 (15)	2445
SOTC (Stuart-Smith et al., 2017)	Glasgow	46 (20)	8956
Total	15	498 (247)	58571

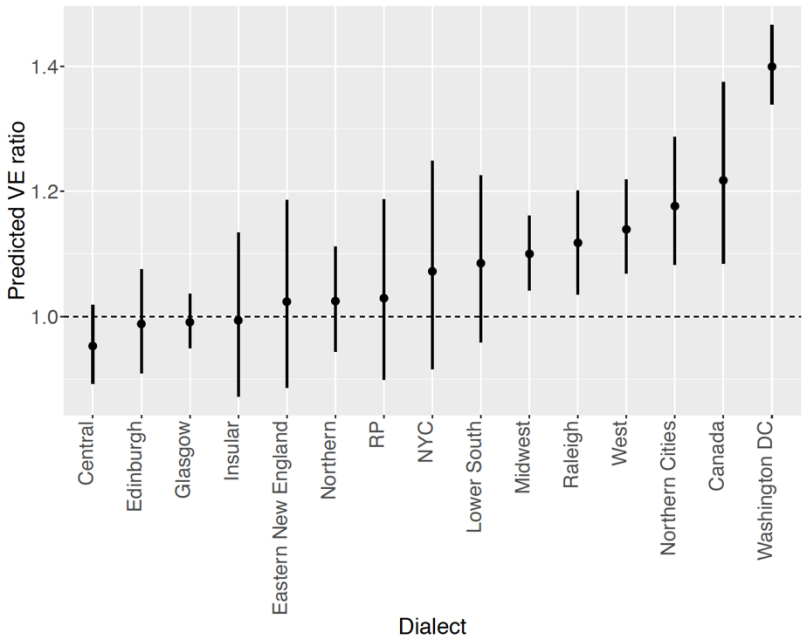

Figure 1. Estimate and 95% credible interval of the voicing effect for each dialect. Computed from model poste- rior, marginalising over all other predictors (e.g., average speech rate).

Stress matters: The effect of stress on change in the KIT vowel in New Zealand English

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The behaviour of unstressed vowels is often neglected in language change research. This paper focusses on the comparative behaviour of unstressed and stressed KIT in New Zealand English. In NZE there has been a well-documented chain shift involving the front vowels, which has resulted in the centralisation and lowering of KIT (Watson et al, 2000; Langstrof, 2006; Hay et al 2008). So far, research has predominantly focused on stressed vowels, and little is known about the involvement of unstressed vowels in this change. In traditional descriptions of English, KIT is one of the few vowels said to be able to appear in unstressed syllables (Gimson, 1962). This makes NZE an ideal test site to explore to what extent unstressed vowels take part in an ongoing vowel shift.

The data analysed is from 569 speakers in the Origins of New Zealand English corpus (Gordon et al, 2007). The data comes from three collections contained within ONZE, the mobile unit (MU), intermediate archive (IA) and Canterbury Corpus (CC), from first to last recorded respectively. The unstressed vowels analysed were lexically unstressed vowels in non-final word position that were transcribed as /ɪ/ in CELEX (n=87985). Stressed /ɪ/ was examined for comparison (n=96390). F1 and F2 were automatically extracted from vowel midpoints using LaBB-CAT (Fromont and Hay, 2012), and were Lobanov normalised. Data was analysed using mixed effects models, with random intercepts for word and speaker.

Like stressed KIT, unstressed KIT has undergone significant lowering and backing, but to a significantly lesser extent (Figure 1) and at a slower rate (Figures 2 and 3) on both the F1 and F2 dimension. During the course of the shift, stressed and unstressed KIT actually reverse in terms of relative F2. For the oldest speakers stressed KIT is higher in F2 than unstressed KIT but becomes comparatively lower in F2 as the vowel change progresses (figure 3). As a result, in present day NZE, unstressed KIT is significantly lower in F1 and higher in F2 than stressed KIT.

These results show that unstressed vowels can and do participate in ongoing vowel shifts, but this may not always be at the same speed or to the same degree at their stressed counterparts. Such is the case that, currently, in NZE, stressed KIT is lower and more centralised than unstressed KIT. This is interesting phonologically, as a reduction in stress is commonly associated with centralisation (e.g.
Barry, 1998) but as a result of the vowel shift in NZE unstressed KIT is actually now more peripheral than stressed KIT.

Further analysis explores the effect of additional variables such as word frequency, and the differing spellings that represent unstressed KIT (as spelling is a good general guide to the historic pronunciation in unstressed vowels). We examine to what extent these variables enable us to understand the reasons behind this stress-based variation. In addition, we look at the relationship between individual speaker's degree of lowering and centralisation for unstressed and stressed KIT, to understand the relationship between changes in these two groups.

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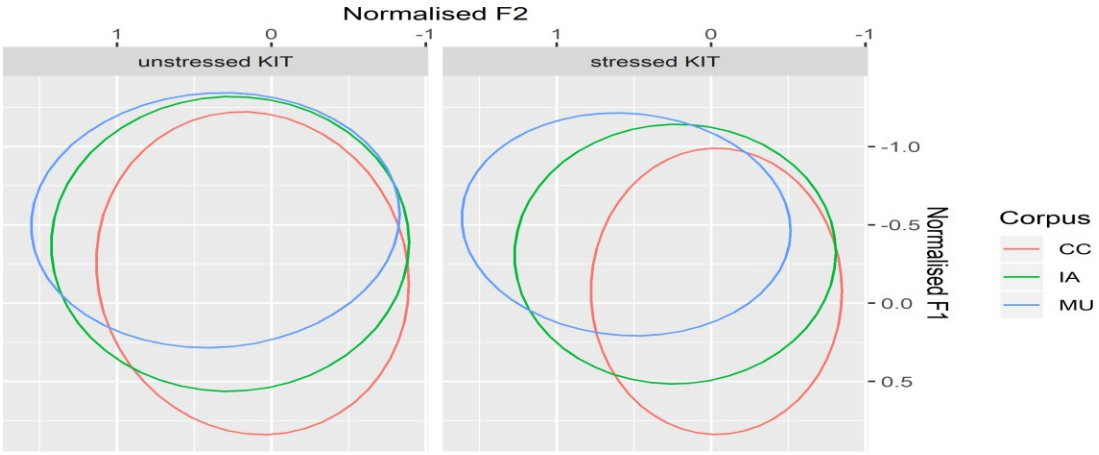

Figure 1. Vowel plot ellipses by corpus

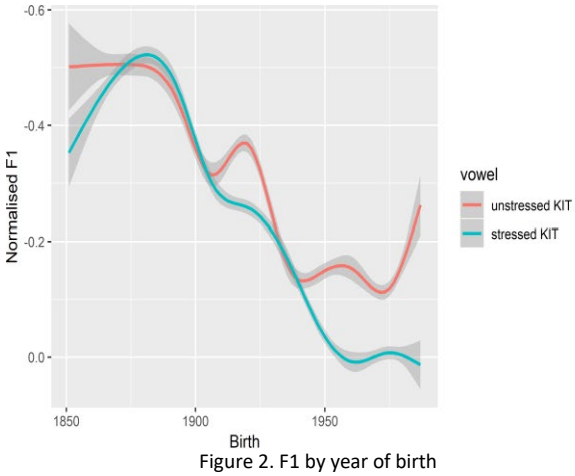

Figure 2. F1 by year of birth

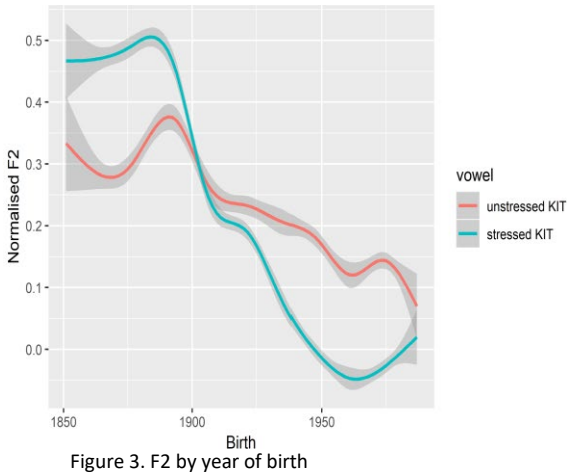

Figure 3. F2 by year of birth

The effect of regional variation on speech processing: evidence from an eye-tracking experiment.

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Previous research has shown that hearing speech produced in an unfamiliar accent has a processing cost (Adank, et al. 2009; Floccia, et al. 2006), although listeners can rapidly adapt to novel talkers and accents (e.g., Bradlow & Bent, 2007, cf. Shaw et al. 2018). However, when listening to a familiar accent, perceived information about the speaker has been shown to affect low-level speech perception (e.g., Strand, 1999) and lexical access (e.g., Koops et al., 2008), arguably facilitating processing. These experiments often use pictures or words to cue a specific social category (e.g., gender, age, region) explicitly, but it is unclear whether brief exposure to accent-specific phonetic features in the speaker's speech would also influence speech processing. The present study used the Visual World Paradigm (Tanenhaus et al., 1995) to investigate whether information about the speakers' accent embedded in the speech signal affects the time-course of spoken word recognition.

The phonetic variables under investigation were the BATH, TRAP, STRUT and FOOT lexical sets, which are well-known for distinguishing Northern and Southern varieties of English. The accents included in the task were Southern Standard British English (SSBE), which contrasts BATH and TRAP and STRUT and FOOT, respectively, and Leeds English (LE), which does not have these pairwise contrasts. Visual displays of the stimuli were two printed words, on the left and right of the screen: a target and a competitor (e.g., *path, pack; cut, cook*). Test sets containing the variables of interest were controlled for lexical frequency. The audio stimuli consisted of naturally-produced words recorded by two LE and two SSBE speakers (1 female, 1 male speaker per accent). Words were embedded in the carrier phrase "I'm asking you to access _____", which included both BATH ("asking") and TRAP ("access") lexical sets. Therefore, the Southern accent was cued by the BATH—TRAP contrast, whereas the Northern accent lacked this contrast.

Data collection is ongoing; 25 monolingual native English listeners born and raised in Yorkshire will complete the task. The statistical analysis will examine the effect of accent (LE, SSBE) on the number of looks to the target and competitor words as a function of time. We hypothesise that Northern listeners will look at the target word earlier in the SSBE condition because the BATH—TRAP and STRUT—FOOT contrasts will facilitate discarding the competitor word as they hear the vowel, e.g., when listeners hear the word *path*, they will be able to discard *pack* earlier in the SSBE accent. Additionally, listeners will look longer at the competitor in the LE condition because of the lack of contrast between the variables of interest. Future work will also include a group of SSBE listeners. Taken together, these findings would provide further evidence that information about a talker's accent, even when it is not provided explicitly, is used in speech processing and may support spoken word recognition. These findings have implications for our understanding of how social information is used in speech processing and episodic models of spoken word recognition.

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Testing hybrid exemplar theory in an accent recognition task

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Sociolinguistic research on the cognitive processing of language variation has provided evidence in support of exemplar theory (Schacter & Church 1992, Walker & Hay 2011, Hay et al. 2019). This phonological theory posits that speech is processed by matching linguistic input to stored (socio)phonetically detailed memories of words, or 'exemplars'. This allows for socially meaningful phonetic detail to automatically be a part of speech processing (Docherty and Foulkes 2014), rather than being disregarded in order to match speech input to abstract phoneme strings. However, whilst it has been found that matching social meaning and sociophonetic detail helps lexical access (e.g. words typically used by older speakers are recognised quicker when they are pronounced by old sounding voices (Walker & Hay 2011)), there is no direct evidence yet of the use of exemplars in access to social meaning – as opposed to social meaning helping access to exemplars. This prompts the question of highly frequent words (with well-established exemplars) help listeners to recognise social meaning better than infrequent or non-existing words.

This question has become particularly relevant with the introduction of so-called 'hybrid' exemplar models (Pierrehumbert 2016). In these now generally accepted models it is posited that listeners do not just use these highly specific memories of words (exemplars) in speech processing, but are also able to recognise patterns in those and establish sublexical abstractions such as phonemes and allophones. While there is strong evidence for the use of both in speech processing with respect to understanding denotational meaning and recognising words (see for example Ernestus 2014), it has not yet been investigated whether both play a role in the processing of *sociolinguistic* meaning.

This paper will present the results of an online accent recognition task designed to test whether exemplars or sublexical abstractions are (most importantly) used in the processing of sociolinguistic meaning. In this experiment British listeners were asked to recognise a number of varieties of English (Geordie, Sheffield, West-Country, Standard American, SSBE), on the basis of isolated words. These contain one of three features specific to the accent it is pronounced in (e.g. /eː/~/ɪə/ for FACE, /oː/~/ʊə/ for GOAT, and /ʊ/ for STRUT for Geordie (Hughes et al. 2013: 154)), and fall into three frequency conditions: high-frequency words, low-frequency words, and non-words.

If social meaning is most importantly attached at the level of lexical exemplars, it is expected that accent recognition will be much better in high-frequency words (as listeners will likely have memories of those words in the accents in question) than in low-frequency words or non-words (where they do not have such established exemplars). If social meaning is most importantly attached at the level of sublexical abstractions, accent recognition is not expected to be better in high- frequency words than in low-frequency words and non-words. Either outcome would allow for more precise claims about hybrid exemplar models, and understand more about the way sociolinguistic speech processing incorporates both the use of highly specific exemplars and abstract sublexical units.

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Are GOAT and THOUGHT Merging in Tyneside English? Multiple Methods of analysing a Merger-in-Progress

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This paper investigates the potential merging of the GOAT and THOUGHT vowels in Tyneside English. Pillai scores (Hay et al. 2006), are used to determine the extent to which speakers are merging these vowels in contemporary Tyneside speech. A more dynamic analysis using generalised additive mixed models (GAMMs) is also employed to compare the shape and slope of the predicted vowel trajectories of GOAT and THOUGHT. The data used in this study, 30 sociolinguistic interviews obtained from the *Diachronic Electronic Corpus of Tyneside English* (DECTE), was automatically aligned and extracted using FAVE.

A GOAT—THOUGHT merger has been reported for several varieties of British English, notably in north Wales (Wells 1982), Bradford (Watt and Tillotson 2001), and Lancashire (Ferragne and Pellegrino 2010). Previous research on North-East English accents has indicated that this merger may also exist on Tyneside, where the THOUGHT vowel has come to be indistinguishable from local monophthongal [oː] pronunciations of GOAT (Watt 1998; Watt and Allen 2003). However, there has been a notable lack of recent literature on this potential merger, and existing accounts of Tyneside GOAT—THOUGHT merging have been limited to brief auditory analysis.

The results of the present study indicate that, for many Tyneside English speakers, the GOAT and THOUGHT vowels show considerable overlap. This phonetic closeness appears to be the result of speakers raising the THOUGHT vowel to the position of the Tyneside [oː] GOAT vowel.

Analysis using Pillai scores suggests that young females in the region show the greatest overlap between the distributions of the GOAT and THOUGHT vowels (see Figure 1). This finding is consistent with the results of the GAMMs, which show that the predicted F1 and F2 trajectories of GOAT and THOUGHT are phonetically closer for young females than for males and older female speakers (see Figure 2). This could point to the merging of GOAT—THOUGHT as a sound change in progress on Tyneside.

Figure 1. also shows that, according to a Pillai score analysis, younger males on Tyneside are increasing the distance between their GOAT and THOUGHT vowels. Such results could indicate that young males and young females in same speech community are instigating sound change in opposite directions. An auditory analysis of the data reveals that male Tyneside speakers exhibit more variation in their realisations of GOAT than female speakers. While monophthongal [oː] is the most frequently used variant across all speakers, several males are found to use other variants such as a diphthongal [oʊ] and [oə], and a fronted monophthongal [ɵː]. It is therefore possible that these speakers are not increasing the distinction between their GOAT and THOUGHT vowels, but that continued usage of multiple GOAT variants among younger Tyneside males is preventing a GOAT—THOUGHT overlap in their own speech.

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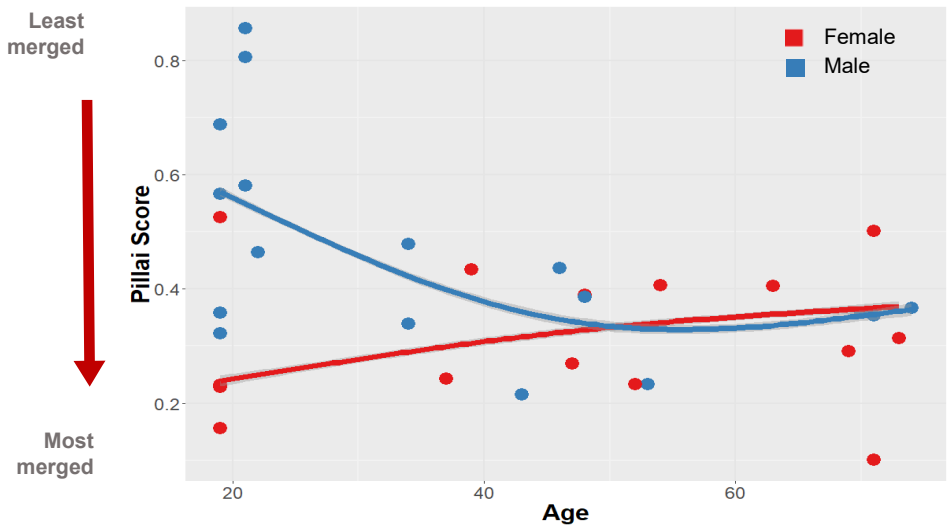

Figure 1. Pillaiscorebysexandage

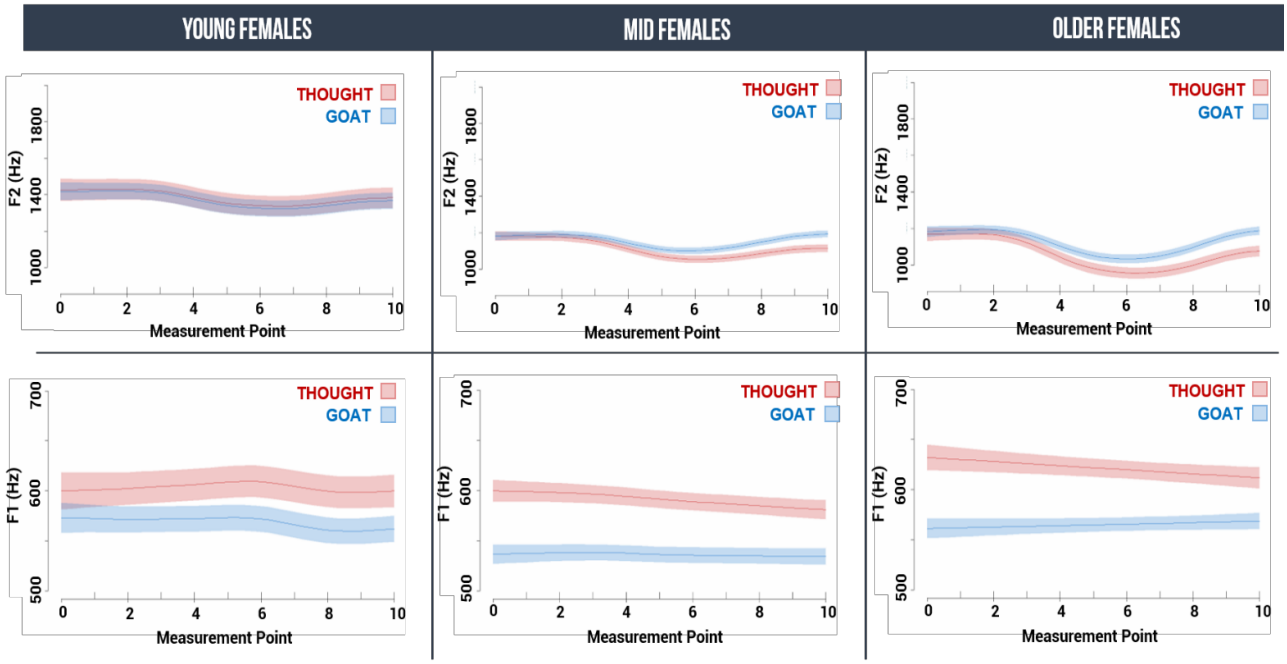

Figure 2. Predicted F1 and F2 trajectories of GOAT and THOUGHT for female speaker groups

Variation in the Production and Perception of Regional Putonghua in Ningbo, China

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Although many existing variationist studies rely solely on production or perception, the study of language variation has long benefitted from a combination of both production and perception data (Drager, 2009; Labov, 1972; Walker, 2014). This mixed-method approach not only offers a fuller picture of the variation in question, but also contributes to our theoretical understanding of, for example, the mechanism of indexicality (Campbell-Kibler, 2009, 2010). Nonetheless, to date, there is a lack of variationist studies of Mandarin Chinese using this method (though cf. Lin, 2018). This study presents a study on variation observed in the production and perception of Ningbo *Putonghua* – a regional variety of *Putonghua* (literally translated as 'common speech'), the standard language in China.

As part of a bigger project examining language variation and attitudes in China, this paper investigates young adults' production and perception of different linguistic features found in the local variety of Putonghua in Ningbo, a port city in Eastern China. Ningbo Putonghua is often characterised by the merger of dental-retroflex fricative/affricates (/s/-/ʂ/,/ts/-/tʂ/, and /tsh/-/tʂh/) and alveolar/velar nasal finals /n/-/ŋ/, possibly due to the contact between the standard Mandarin variety and the local non-Mandarin Wu variety (Xiao, 2013). This paper presents data collected from 40 university students (20 female and 20 male) based at universities in Ningbo. All participants are locally-born Ningbonese (aged 21-23) and bilingual in Putonghua and local dialect (Wu dialect). The production data of both target features was obtained through auditorily coding relevant tokens from one-on-one sociolinguistic interviews. A matched-guise experiment (Lambert, Frankle, & Tucker, 1966) was used to investigate the perception of these features, using recorded speech from native Ningbonese talkers varying the presence and absence of the two mergers in *Putonghua* and semantic differential scales.

Preliminary results from quantitative analyses show that the two local features differ in their usage in production: the merger of dental-retroflex fricative/affricates is more frequent than that of the alveolar/velar nasal finals. Additionally, the former merger is more frequent in male speakers while little difference is observed across gender groups for the latter feature. More importantly, the perception of these two mergers indicate that the social meanings associated with the two features are also different: the former often indicates a lack of status (e.g. education level) while the latter does not.

This study contributes to the understanding of language variation and language attitudes in general by combining the production and perception of Mandarin Chinese, an under-researched variety. Moreover, by investigating multiple features with potentially different (enregistered) meanings (Agha, 2005; Johnstone, Andrus, & Danielson, 2006), the paper sheds light on the complex process of meaning-making in a seemly simple linguistic variety. From a variationist perspective, the results indicate that speakers utilise different linguistic features in the construction of social meanings.

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