CHAPTER 5

Accent Change without Face-to-Face Interaction among University Students during Covid-19: The Role of Technologically Mediated Communication

Amanda Cole and Ella Jeffries

1 Introduction

UK universities made a swift move to online teaching in 2020 amidst the Covid-19 pandemic. Resultingly, many university students were restricted to attending both lectures and social events online and not in face-to-face contexts. Much sociolinguistic research has highlighted the importance of contact and social interaction in the propagation of accent change, for instance, it has been demonstrated that encountering new linguistic forms when attending university has an impact on students' accents (Evans and Iverson 2007). The unprecedented context of the Covid-19 pandemic provides new scope for investigating if attending university for the first time but having all teaching events online can still create the sufficient environment to result in accent change for individual speakers. It has previously been suggested that accent change requires face-to-face interaction (Trudgill 1986; 2014) but other research has disputed this claim by finding evidence of change linked to media consumption patterns (see Stuart-Smith et al. 2013; Sayers 2014). This study situates the debate in a new context with a case study of three first-year students from southern and eastern England attending a UK university throughout the academic year of 2020/21. We investigate the degree of variation present in participants' speech at three points throughout the academic year. We relate the observed degree of change, if any, to participants' social interactions, new and existing social contacts, and, crucially, the extent to which these interactions occurred online or face-to-face.

2 Accent Change in Adulthood

A speaker's accent is usually most thoroughly shaped in the pre-adolescent years. By the age of around 12 or 13 years old it is relatively fixed,[1] mostly devel-

1 Fixed for stable linguistic variables. When it comes to linguistic changes in progress, many

oping in line with the speech of their community and their peers, even if this is different to their parents' way of speaking (Roberts and Labov 1995; Foulkes et al. 1999; Smith et al. 2007). Evidence for such age/maturational-related language fixing comes from studies in second dialect acquisition which have found that younger children who move to live in a new geographic location are more successful at acquiring features of a new dialect compared to adolescents (Payne 1980; Trudgill 1986; Tagliamonte and Molfenter 2007). Accordingly, as a result of the stabilization of a speaker's accent in adolescence, it is often possible to broadly locate where a speaker spent their childhood even if they move from one city or country to another in adulthood (Clopper and Pisoni 2004).

In adulthood, it is known that individual features of a speaker's accent/dialect may vary as a result of 'accommodation' (from Giles 1973), a process in which a speaker converges to sound more like their interlocutor or, more broadly, members of a particular speech community, in order to decrease social distance. For example, Babel (2010) found that New Zealand English speakers accommodated to Australian English speakers. The degree of accommodation was greater if the New Zealand speaker showed a 'pro Australian' bias as measured in an Implicit Association Test (a measure of implicit bias developed in social psychology by Greenwald et al. 1998). This finding is in opposition to Trudgill's (2008) assertations that accommodation is a fully automatic process which is not driven by social or identity factors (particularly, he suggests, in the context of new-dialect formation—see Van Rooy 2010 for criticism of this argument). Instead, Babel (2010) posits that accommodation is automatic in the sense that speakers aren't aware that they are doing it but asserts that group-identity factors—in the case of her study, a positive association with Australia—affect the process.

Accommodation is closely linked to language change at a community level. Small accommodations made by individuals over time can lead to community-level change (see Trudgill 1986). At an individual level, accommodation and language change (i.e., accent/dialect acquisition) are usually considered separately, but Trudgill (1986) puts them on the same scale. He considers that 'full accommodation' amounts to 'acquisition' of a second dialect. Nevertheless, he still posits an adolescence-related age restriction on what he calls 'full accommodation' (i.e. the acquisition of a second dialect). He hypothesizes that full accommodation is possible under the age of eight but becomes more difficult

apparent-time studies have found evidence for an 'adolescent peak' whereby late adolescents tend to be at the forefront of linguistic change, using higher rates of incoming variants than younger children (Labov 2001; Tagliamonte and D'Arcy 2009; Holmes-Elliott 2021).

between the ages of eight and 14, and for those aged over 14 it is very unlikely. While a complete accent/dialect transformation in adulthood is uncommon (though not unheard of, see Labov 1972), change in an individuals' accent can occur—though more subtly than in childhood. Foulkes and Hay (2015, 299) point out that 'lifetime adjustment to local context occurs even in the absence of abrupt shifts'. Several studies have evidenced long-term linguistic change in adulthood.

In Munro, Derwing and Flege's (1999) study, ten speakers from Canada who had moved, in adulthood, to Alabama in the southern US were judged by listeners from both Canada and Alabama to have an 'intermediate' American accent, suggesting that they had diverged from a Canadian accent. The authors confirmed with an impressionistic analysis that the speakers had indeed adopted segmental and prosodic features of southern US English, despite the variety's low overt prestige (Lippi-Green 2012). Similarly, Pardo et al. (2012) investigated rates of the phonetic convergence among five pairs of male roommates in Columbia College in the United States. All but one pair exhibited significant phonetic convergence (as measured by listeners' perceptions) over the course of the academic year. The convergence was found to correlate with their self-reported intimacy; those who reported a closer relationship demonstrated more phonetic convergence.

Other studies evidencing accent change in adulthood have explored the effect of relocation from northern to southern England (Sankoff 2004; Evans and Iverson 2007). Typically, there is a distinction between the TRAP [a] and BATH [ɑ:] vowels[2] in the south of England but not in the north of England (where both are pronounced [a]). This difference forms one of the perceptually strongest cues for the north-south divide in England (Beal et al. 2012). Wells (1982b, 354) goes so far as to say that many "would feel it to be a denial of their identity as northerners to say BATH words with anything other than short [a]". In spite of this, Sankoff (2004) found that a speaker from the north of England increased the frequency of the southern [ɑ:] in BATH vowels between the ages of 28 and 35 after spending time in other parts of the country, including London where the southern variant [ɑ:] predominates. Such a change in adulthood may be an automatic process of accommodation as a result of contact with southern speakers but may also signify a change in identity and an increased affiliation with southern England. Additionally, a shift towards southern English linguistic norms may reflect an ideological shift towards a perceived standard variety

2 We use lexical sets from Wells (1982a) to refer to vowels.

such as Standard Southern British English (SSBE). Though 'Received Pronunciation' (RP) is the term still most recognized among non-linguists, over recent decades, RP has taken on vernacular, southern features, especially those from London, and has evolved into the modern standard accent which linguists now refer to as 'Standard Southern British English' (SSBE) or 'Southern British English' (SSB) (see Williams and Escudero 2014; Bjelaković 2017; Lindsey 2019; Cole and Strycharczuk 2024). SSBE shares many features with other southern varieties and is phonologically an accent of South East England (Kerswill 2007). SSBE is afforded overt prestige and is regarded as an aspirational way of speaking due to its association with speakers with high social standing. Consequently, a key motivational factor for a shift towards southern English pronunciations may be to capitalize on these linguistic markers of prestige, education and higher social class.

Evans and Iverson (2007) also tested if accent change occurred in adults who relocated from the north of England. They recorded the speech of university students from the north of England at three points: (1) three months into their first year at university, (2) at the end of their first year, and (3) at the end of their second year at university. Although the participants attended different universities in different parts of England, they were all immersed in multidialectal environments and had exposure to and interaction with SSBE speakers. The study found small changes in vowel productions amongst the participants, including increasingly southern sounding STRUT and BATH vowels (the two major north-south shibboleths in England) after attending university. As in Sankoff's (2004) study, a shift towards SSBE features was likely, at least partly, due to the overt prestige often afforded to this accent. Correspondingly, the authors found that participants who produced more southern-sounding vowels in their own speech were more likely to choose southern-sounding 'best' exemplars in perception whereas those who had more northern-sounding vowels chose northern sounding best exemplars. Evans and Iverson (2007) also conclude from their results that having a perceptual phonetic space tuned in to a particular dialect may inhibit the perception and production of phonetic variables outside of this space. While this ability to perceive variation is still being molded during childhood (Jeffries 2019; 2022), it is more rigid in adulthood resulting in differences between children's and adults' acquisition of accent/dialect variation. This perceptual space can still be re-molded and adjusted during adulthood, but it is more likely to occur when an individual is exposed to more variation in their linguistic input (e.g., Logan et al. 1991).

It is perhaps little surprise that Evans and Iverson (2007) found that speakers' accents changed after attending university. Commencing university (often

at 18 years old in England) is usually the first time that young adults live independently and a time during which they meet other young adults from all over the country and the world. Consequently, much accent/dialect mixing occurs throughout the years spent in Higher Education. Dialect contact—speakers coming into contact with linguistic productions that are different to their own—is an essential component of accent/dialect acquisition. Therefore, an analysis of the speech of students throughout their first year at university is ideally positioned to inform theories on accent change in adulthood. Nonetheless, the pre-mentioned studies which evidence perceptible second dialect acquisition in adulthood have focused exclusively on spoken language interaction in face-to-face contexts. However, as we discuss in the following section, it is becoming increasingly important to consider other ways in which a person's language use may be modified by exposure to linguistic forms that they encounter through technology and the media. The research carried out in the current study takes a point in time, during the Covid-19 pandemic, when the use of teleconferencing was drastically increased, including within Higher Education institutions. This study explores the potential for accent change as a consequence of technologically mediated communication among university students who completed their first year of studying when all teaching events were scheduled online.

3 The Role of Online Communication and the Media in Language Change

The extent to which online communication and the media can impact on patterns of language change, at both a community level and an individual level, is an increasingly pertinent question. The increasingly technological and digital world in which we live and communicate may have important linguistic consequences that are currently little understood. The role of online communications and technology in the lives of individuals was exacerbated during the Covid-19 pandemic when face-to-face contact was greatly restricted. As we increasingly live in an age of technologically mediated communication, Androutsopoulos highlights a significant challenge for the field of sociolinguistics: "how to conceptualize the rapid expansion of its main object of study, socially meaningful linguistic differentiation, beyond the domain of spoken language in face-to-face interaction" (Androutsopoulos 2016, 282). There is a growing need to incorporate the increasing ways in which language is used outside of this narrow domain as technology-assisted communication continues to grow.

Though it is an increasingly important field of enquiry, the effect of online communication on language variation and change is a point of much controversy and discordance amongst sociolinguistic scholars. As discussed, linguistic accommodation is closely linked to language change at both a community and individual level. Trudgill's (1986) stance is that accommodation is the fundamental mechanism of language change, but that accommodation requires face-to-face interaction. However, Giles and Ogay (2007) suggest that linguistic accommodation is just as likely in face-to-face settings as in various forms of mediated communication, referring to communication that is transmitted with the assistance of some form of technology. They posit that modern media, such as teleconferencing, may have the potential to lead to linguistic accommodation.

Giles and Ogay's (2007) claim is backed up by an ever-growing pool of research demonstrating that individuals can adopt linguistic features without extensive face-to-face exposure to these linguistic forms. Though they cannot directly evidence the role of the media, Buchstaller and D'Arcy (2009) suggest that the media is a potential driving force for linguistic change amongst adolescents and young people, a group who are typically not geographically mobile and have relatively low levels of face-to-face dialect contact, in the spread of *be like* in the US, the UK, and New Zealand. Similarly, Tagliamonte and Roberts (2005) investigated the use of intensifiers such as *very* and *so* in speech data from the UK and North America in comparison to their use in the popular US sitcom *Friends*. Finding similar rates of use of the intensifiers in these contexts, the authors suggest that the use of these forms in the media has led to an increased uptake among these global English-speaking populations.

Stuart-Smith et al.'s (2013) study—which Sayers (2014) endorses as the only empirical research to investigate the role of the media on language change—investigated two linguistic changes in Glasgow. They examine rates of TH-fronting and L-vocalization, two features typically associated with Cockney London speech. They found that, along with several other social factors, a strong engagement with the television program *EastEnders*, a soap opera drama set in East London, positively correlated with Glaswegian speakers' use of these two features. Trudgill (2014) disputes the conclusion that the observed correlation between linguistic features and TV viewing habits is evidence that the media can impact language change. He suggests that such research has a limited contribution to the big questions of language change which take place over a much greater timespan. He postulates that the comparably short existence of electronic media is not enough to tell us anything of real value. Trudgill (2014) asserts that language change can only occur due to face-to-face interac-

tion, but he does, however, concede that face-to-face interaction could perhaps be conceived to include telephone and video calls which may have the same linguistic consequences as canonically face-to-face interaction. The present study is the first to investigate whether such technologically mediated communication can lead to change in the accents of university students.

Our research questions are:

1. What accent changes (if any) have occurred in the speech of individuals during their first year of attending university online?
2. Does the observed degree of accent change relate to the students' patterns of social contact in both face-to-face and online interactions?

4 Methods

4.1 *Study Background*

We present detailed case studies for three speakers, providing a summary of their vowel space and consonants, across the academic year Autumn 2020 to Summer 2021. During this time, the UK underwent several restrictions and lockdowns as a result of the spread of variants of the Covid-19 virus. In October 2020, when the students began their course, England was under a 'rule of six' restriction meaning people were prohibited from meeting more than six people socially in either indoor and outdoor spaces. From 5th November, a national lockdown was enforced with people prohibited from meeting those not in their 'support bubble' (a network of two households for those who met certain eligibility criteria) inside but could leave home to meet one person from outside their support bubble outdoors. After a temporary easing of the lockdown in December, another national lockdown commenced on 6th January 2021 with people told to stay at home and mix only with their support bubbles (if eligible). On 8th March 2021, England began a phased exit from lockdown with increasing numbers of people allowed to meet, until 19th July 2021 when most legal limits on social contact were removed (Institute for Government 2022). As a result of these restrictions, throughout the academic year 2020–2021, teaching in the department at the university at which our participants were based was conducted completely online via the video conference software Zoom (Zoom Video Communications). Student activities were also moved to online only events. Therefore, for students living on campus, their face-to-face contact would have been mostly limited to their flatmates, and for students living at home, such contact was mostly restricted to members of their household (such as parents and siblings).

The three speakers in this study were all first-year, undergraduate students in the same department who were attending a university for the first time and had not previously lived outside the area they are from. The university is based in southern England, and all speakers were broadly from this area: one speaker is from East London, in the South East region of England, and the other two are from parts of northern Essex and southern Suffolk, both in the region of East Anglia. Though the three participants all had accents that shared many similarities with the accent local to the university, it has previously been shown that, at UK university, students do not necessarily exhibit language change in the direction of the local accent (e.g., Evans and Iverson 2007 observed a shift towards SSBE for northern students who attended university in different areas of the UK). The university where our participants studied, like universities across the UK, attracts students from all over the country as well as many international students. We would therefore expect that students encounter a range of different accents during their time at university and not solely the accent local to the university. As a result, we do not make predictions about the direction of language change as we expect that any accommodation to new linguistic features would be motivated by peer interaction. The focus of this study is not to define or document the accents of the speakers, instead, we are interested in whether any features of their accent change and to what extent this change is impacted by their degree of face-to-face and/or online interaction.

4.2 *Procedure*

At the end of each of the three terms of the academic year (ordered chronologically: Autumn, Spring and Summer terms), the three participants were individually audio recorded while reading aloud the same wordlist and two reading passages (wordlist from Hughes et al. 2013; passages: *Comma Gets a Cure* from Honorof et al. 2000; *The North Wind and the Sun* from International Phonetic Association 1999). The same interlocutor spoke to each participant for each session in order to control for potential accommodation effects. The sessions were conducted on Zoom and the recordings were made using the software Audacity, using the loop-back function to record computer audio. The interlocutor shared their screen, displaying the wordlist and passage text which the participants then read aloud. Prior to each session the participants completed an online questionnaire with questions pertaining to where the participant was currently living (e.g., at home with their families, in shared accommodation with other students etc.), who they socialized with, how frequently and how this contact took place (e.g., phone calls, video calling, written messages, face-to-face contact). Participants were also asked to define their accent in their

own words and mark on a 10-point Likert-scale how much they liked their accent.

4.3 *Speakers*

4.3.1 M20: 20-Year-Old Male from Northern Essex

M20 remained living at home with his family in northern Essex throughout his first year at university. During the Autumn term, when permissible under the UK restrictions, he reported having daily face-to-face contact with his family and local friends (not from university). His contact with other students from university was limited to online interactions via video sharing technology around two times a month. During the Spring term, after the easing of restrictions, he similarly reported having face-to-face contact every day with his family and every couple of days with his local friends. In addition, he reported having face-to-face contact with students at the university once every other week. He had interactions via video sharing technology every day with local friends, once a week with his family and once every two weeks with other students at the university. During the Summer term his face-to-face interactions had gone back to being limited to his family (every day) and local friends (every couple of days). On video sharing technology, he interacted with his family every other week and his local friends every day.

Overall, M20's interactions, both face-to-face and online, stayed fairly localized to his existing social networks through his local friends and family. Apart from fortnightly face-to-face interactions with other students in the Spring term, he only had face-to-face interactions with his family and local friends throughout the rest of the academic year. His response to how he defined his own accent changed very little throughout the three terms: 'Formal Essex' → 'Essex' → 'Essex'. On the 10-point Likert scale, there was also very little change in how he rated his own accent, although it was downgraded slightly between the Spring and Summer terms: 10->10->9.

4.3.2 F19: 19-Year-Old Female from East London

F19 relocated from East London to the university campus for her first year studying at university. She lived in university accommodation in a shared flat with three others throughout the academic year. During the Autumn term, and when permissible under the restrictions, she reported face-to-face interactions with her flatmates up to three times a week and with other students outside of her flat up to four times a week. She also had face-to-face interaction with her family as well as face-to-face interactions with friends from outside the university once a month. She reported interacting with her family via video sharing technology once a week, with other students at the university three

times a week and with other friends outside of university once a day. During the Spring term, after the easing of restrictions, she reported face-to-face interaction with her family every few months, with her flatmates once a week, with other students at the university twice a week and with other friends outside of university once a month. She interacted on video sharing technology with her family once a week, other students at the university multiple times a day and with other friends outside of university every day.

During Summer term her patterns of face-to-face interaction were similar to Spring term, and she had interaction with her family twice during the term, with flatmates once a week, other students at the university three times a week and other friends outside of university once a month. Her interactions on video sharing technology were also similar to Spring term: once a month with family, every day with other students at the university and every day with friends from outside university. Overall, F19's face-to-face interactions were predominantly with other students at the university who she met with in-person throughout the academic year. The way she defined her own accent changed throughout the three terms: Estuary English→ Cockney → RP. She also changed how much she reported liking her own accent, becoming more positive over the three terms: 3→5→6.

4.3.3 M19: 19-Year-Old Male from Southern Suffolk

M19 lived at his family home in southern Suffolk throughout his first year at university. During the Autumn term, when permissible under the restrictions in place at the time, he reported having face-to-face interaction with family members outside of his household every other weekend. He reported interacting via video sharing technology every weekday with other students at university. During Spring term, he reported face-to-face interaction with his family every day. In addition, he reported face-to-face interaction with other students at the university a few times a week and with his girlfriend, who was not a student at the university, most days. Much like Autumn term, in Spring term, M19 reported interacting via video sharing technology every weekday with other students at university. During Summer term his only face-to-face interactions were with his family (every day) and his girlfriend (outside of university). Once again, he reported interacting via video sharing technology every weekday with other students at university. Overall, M19's face-to-face interactions are mainly limited to his local connections such as his family and girlfriend, apart from some face-to-face interactions with other students in Spring term, the rest of the year his main interactions with students were via video sharing technology. He consistently defined his accent as 'Suffolk' throughout the three terms. However, he did report that, though he believes his accent remained a Suffolk one, that he

felt it was becoming more 'Essexy' due to the friends he had made at university who were from Essex. There was a small, positive change in how he rated his accent throughout the three terms: 8 → 10 → 10.

4.4 *Data Analysis*

4.4.1 Vowels

All wordlist and passage productions were transcribed in ELAN (Version 5.4; Max Planck Institute for Psycholinguistics 2019) and the ELAN files were then used as input for automatic segmentation into time-aligned text-grids using FAVE align (Rosenfelder et al. 2014). F1 and F2 measurements were extracted using FAVE extract default settings, including the inbuilt formant estimation method using mahalanobis distances and measuring a maximum of five formants up to 5000Hz for males and 5500Hz for females. FAVE is based on linguistic productions from the U.S.; however, it has previously been evidenced that it performs well on other varieties of English (e.g., Trinidadian English: Meer 2020), including on British English varieties (MacKenzie and Turton 2020). We adjusted the vowel labels to match the lexical sets of southern England. Several significant issues with textgrid alignment and formant tracking were observed. This likely results from recording speech produced in online video calls rather than in-person which may have distorted the quality and reliability of the acoustic measurements, likely compounded by participants not necessarily using high quality microphones with their devices. As a result, for vowel productions, we focus on wordlist productions where alignment issues were much fewer than in the passage production. The smaller quantity of data afforded us the possibility to individually check all formant measurement and vowel boundaries and adjust where necessary. Outliers were not removed as each text-grid, vowel boundary and formant tracking was manually checked and corrected for issues with alignment.

We analyze participants' monophthong systems. The wordlist that we used presented participants with high-frequency words while also controlling as much as possible for the surrounding phonological environment (wordlist from Hughes et al. 2013). All words were in a b/p + V (+ t/d) structure. The words included in the analysis were: *pit*, *pet*, *pat*, *put*, *pot*, *bee*, *boot*, *bard*, *board*. Participants also read *putt* in order to access the STRUT vowel but on several instances the participants faltered over the pronunciation and often produced it as homophonous with *put* despite exhibiting a categorical STRUT-FOOT distinction in their speech in other instances. Therefore, the production of this word was not included in the analysis. Participants produced each word twice in a randomized order, and both tokens are included in the analysis. We plot F1 and F2 values at 50% of the vowel duration using the PhonR (McCloy 2016)

package of R. We plot F1 and F2 values for individual tokens of each vowel as well as the mean values. For comparability and ease of reference, in all vowel plots, vowels are labelled as the RP values (e.g., TRAP vowel is labelled 'æ', GOOSE as 'u', KIT as 'ɪ' etc.) regardless of the speaker's actual production. Statistical analyses were not completed due to the low token numbers, however, vowel plots show the overall dispersal and variation of each speaker's vowel system across the three academic terms.

4.4.2 Consonants

Three consonantal variables were analyzed: (L), (T), (ING) which were selected due to their prevalence across south-eastern and East Anglian speech (e.g., Wells 1982b; Ciancia 2020). (L) refers to the production of coda-position /l/ as a vowel when it precedes a consonant or a pause. Though L-vocalization is a feature of East London speech it has diffused widely and was documented in the southern and eastern counties of Essex, Surrey and Kent by the Survey of English Dialects (Orton 1962), and, more recently, in the southern county of Sussex (Jansen et al. 2020). (T) refers to the production of /t/ which, in Britain, varies mostly between [t] and [ʔ]. The production of /t/ as [ʔ], also referred to as glottal replacement or T-glottaling, is ubiquitous in Britain and originated in several places independently including East London and East Anglia (see Ciancia 2020). In this chapter, we look at rates of /t/ in inter-vocalic position when preceding an unstressed syllable such as in *letter* and *beautiful*. It is known that in this linguistic position, T-glottaling is less common, more stigmatized and more prone to style-shifting compared to when /t/ precedes another consonant such as *that way* when it is ubiquitous (see also Cole 2022; Hughes et al. 2013, 67). The final consonantal variable analyzed in this chapter is (ING) which refers to the alternation between velar [ŋ] and the alveolar [n] in the suffix *-ing*. For the three variables under analysis, [t] for (T), [ɬ] for (L), and [ŋ] for (ING) are considered the 'standard' forms found in SSBE and the alternative variants are more stigmatized and found in working-class speech.

The consonantal variables were coded exclusively from speakers' passage productions. The variants were coded using Fruehwald's (2011) Praat Handcoder Script on the text-grids produced by FAVE Align (Rosenfelder et al. 2014). The consonantal variables were coded by one of the study's authors, and a subsection was checked by the other author, revealing high levels of inter-rater agreement. For each consonantal variable, two linguistic variants were observed in speakers' productions. For each speaker and each linguistic variable, we ran Fisher's exact test in R. The tests investigated if there were significant, statistical differences between speakers' linguistic productions (a binary

outcome) across the terms (three levels: term 1 Autumn, term 2 Spring, term 3 Summer). Fisher's exact test was selected as all variables were categorical but there were low numbers in some cells (i.e., a speaker may never produce a certain variant), making a chi-square test unreliable. For all analyses, statistical significance was tested with α set at 0.05.

These tests did not control for any linguistic factors which may have conditioned rates of variation. For instance, it has previously been found that, in the case of (ING), the alveolar variant is more strongly favored in verbal contexts than in nominal contexts (Labov 2001, 79). These tests did not need to control for linguistic constraints on variation because the context for each speaker and each term was identical as productions were from passage productions and not casual speech. Tokens were removed if the speaker stumbled over the reading of the word or repeated their reading. For each speaker, across the three terms, there was an average of 24 tokens of (L) (M19: 24; F19: 24; M20: 23), 35 tokens of (ING) (M20: 31; F19: 37; M19: 38), and 36 tokens of (T) (M19: 39; M20: 37; F19: 33) included in the analyses. There was some slight variation in token numbers between speakers and between terms due, in part, to reading errors, i.e., speakers produced a word with the linguistic variable present that was not in the text or they did not read a word that was present in the text. In addition, productions which could not be clearly heard or coded were not included in the analysis.

5 Results

5.1 *Vowels*

Figure 5.1 shows a vowel plot across the three academic terms for M20, the speaker from northern Essex who mostly socialized with existing contacts in his first year at university. With the exception of a relatively raised START vowel, M20's vowel system resembles Standard Southern British English (e.g., as described by Lindsey 2019). M20 exhibits a high degree of similarity between vowel productions in Summer and Autumn terms. This is with the exception of potentially some raising and fronting of the GOOSE vowel.

F19, the speaker from East London who socialized with many new contacts in face-to-face and online settings, exhibits a greater degree of variability in her vowel system between Autumn and Summer terms (Figure 5.2). In Autumn term, F19's vowel system resembles previous accounts of Multicultural London English (MLE), a variety previously documented in East London (Cheshire et al. 2008). MLE emerged in London as a result of high rates of immigration, leading to highly ethnically diverse, multilingual, and multidialectal communities

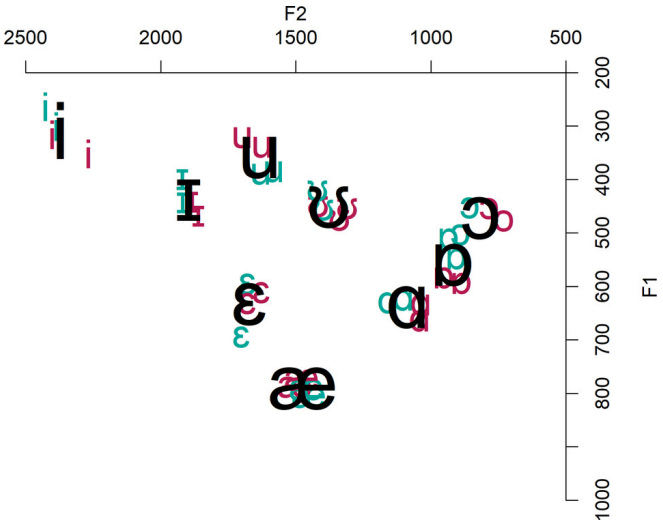

FIGURE 5.1
Vowel plot for M20
Green = Autumn term; Red = Summer term

(Cheshire et al. 2008). F19's vowels align with MLE such that START is relatively raised (see reference vowels in Cheshire et al. 2011, 162), there is extreme fronting of both GOOSE (Fox 2015, 216) and FOOT (Cheshire et al. 2008, 8), there is a near-overlap in GOOSE and FOOT as well as KIT and GOOSE (Cheshire et al. 2008, 11), and DRESS is lowered and close to TRAP (Kerswill et al. 2008; Fox 2015: 214). As GOOSE and FOOT are considerably front, correspondingly, the low back vowels are raised into this space.

Relative to M20, F19 exhibits considerably greater variation between Autumn and Summer terms, such that her productions are less consistent. In Summer term, GOOSE is further fronted (in line with the trend of GOOSE fronting across southern England: e.g., Strycharczuk and Scobbie 2017), KIT is lower and further front, TRAP and DRESS are moving further apart from each other, and FOOT is lower and more backed. We can tentatively suggest that she appears to be shifting broadly towards a relatively more pan-regional, southern system (including GOOSE-fronting which can now be considered a pan-regional, south-eastern norm and part of SSBE). Regardless of the potential direction of change, we do see variation between the two terms which occurs to a degree not present for M20.

When listening to F19's productions across the three terms, we also noticed variation, including a regional linguistic feature, for the COMMA vowel. Observations on the COMMA vowel are based on passage productions as no instances of the COMMA vowel were included in the wordlist. We observed three distinct variants. Firstly, F19's production of this vowel was, on some instances, a relatively backed, mid-close variant, [ɑ], which closely resembled her production of

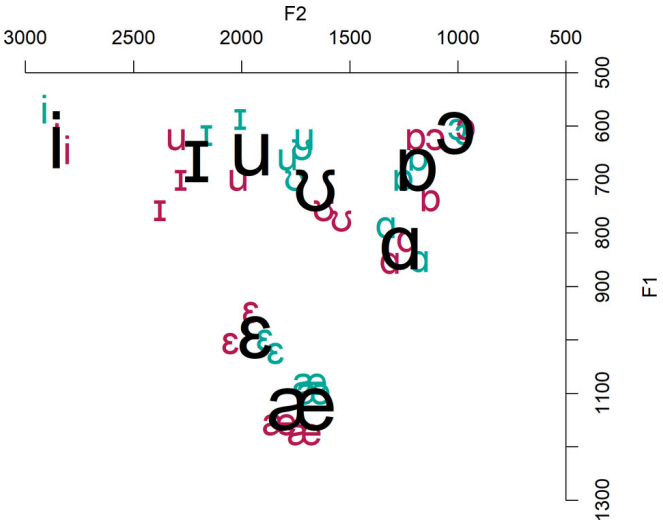

FIGURE 5.2
Vowel plot for F19
Green = Autumn term; Red = Summer term

the START vowel. Secondly, she also produced a schwa production, [ə], as found in SSBE, and, thirdly, as found in Cockney London English (Wells 1982b, 305), the central, open vowel [ɐ] similar to her TRAP production. Figure 5.3 shows a vowel plot of F1 and F2 values for three of F19's productions of the word *Sarah*. The three tokens which we have plotted in Figure 5.3 were selected as those which we feel best exemplify the three distinct variants. The [ə] variant which we have plotted was produced in Summer term while the [ɑ̟] and [ɐ] variants were produced in Autumn term.

Plotted in Figure 5.3 are the F1 and F2 values of the three productions of the word *Sarah* which best exemplify the three distinct variants of the commA vowel produced by F19, a young female speaker from East London. Mean values of the reference monophthongs from her Autumn term productions are in green. The standard schwa variant [ə] was produced in Summer 2021 term while both the central, open vowel [ɐ], and the backed, mid-close variant [ɑ̟] were produced in Autumn 2020 term.

Following the same procedure which we previously described for the analysis of consonantal variables, we then auditorily coded, based on the three variants outlined, F19's productions of the commA vowel in Autumn and Summer terms. There were a total of 15 tokens of commA for each term from the words *comma* and *Sarah*. Figure 5.4 shows the rates of production of each of the three variants in both Autumn and Summer terms. Though Fisher's exact test did not find a significant difference between Autumn and Summer terms, it is not inconsequential that in Autumn term F19 produces the [ɑ̟] variant on three instances (20% of instances), but by Summer term she does not produce

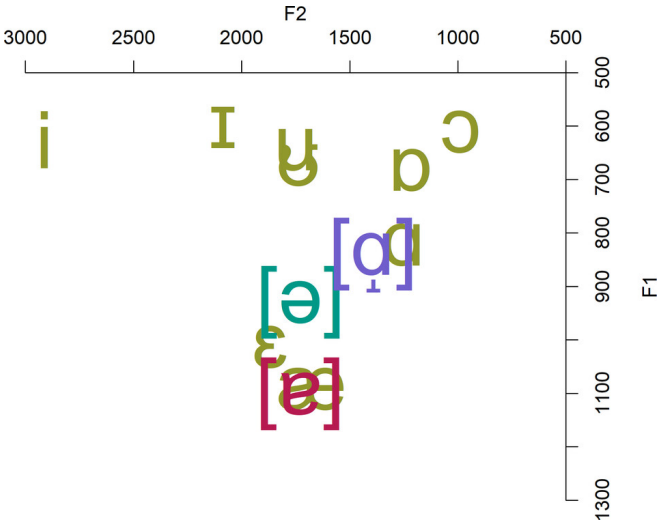

FIGURE 5.3
Vowel plot of the three variants for the commA vowel produced by F19 in the word *Sarah*

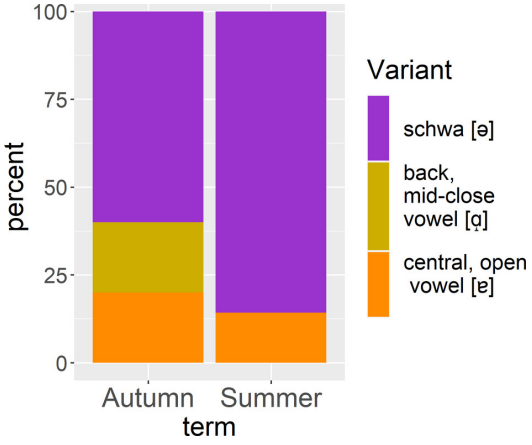

FIGURE 5.4
Rates of production of the commA vowel in passage readings produced by F19

any instances of this variant. Instead, the standard [ə] realization has become more frequent and is produced on all but two instances.

Like F19, there is also evidence of some variability between Autumn and Summer terms in the vowel system of M19 (Figure 5.5). Though M19 reports substantial contact with other students throughout his first year at university, this contact was almost solely conducted online and not in in-person, face-to-face settings. Like F19, several of the vowels produced by M19 resemble MLE productions such as a raised START vowel, centralized FOOT and the overlap between KIT and GOOSE. A feature that, to our knowledge, has not previously been documented in East Anglian or southern varieties of English is the overlap

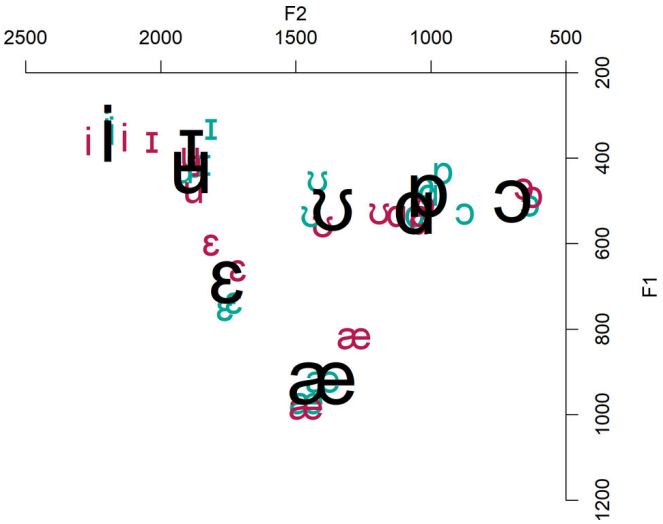

FIGURE 5.5
Vowel plot for M19
Green = Autumn term; Red = Summer term

between START and LOT in M19's vowel space. Nonetheless, though not previously documented, there has been very limited previous linguistic research on Suffolk varieties (c.f. Ciancia 2020's work on (T/D)-deletion and T-glottaling in Ipswich, Colchester and Norwich). However, the objective of this paper is not to document any regional variety, nor to describe the speakers' accents relative to previously observed linguistic traits, but instead, to observe the degree of intra-speaker variation across the academic year. Though perhaps not to the same degree as F19, M19 exhibits some variation in monophthong productions between Autumn and Summer terms. A clear target of change is not observable for M20. However, we do not see the consistent productions between the two terms to the same degree as observed for M20.

5.2 *Consonants*

Figure 5.6 shows rates of production for the three consonantal variables for M20. There are no significant differences between the three terms for any linguistic variable. Though some limited variation was present for (L), and he produced T-glottaling on one single instance across all three terms, he largely used the standard variants: [t], [ŋ] and [ɬ] for (T), (ING) and (L) respectively. Like his vowel system, his consonantal system includes standard, southern productions.

Figure 5.7 shows F19's rates of production for the three consonantal variables under analysis. No significant effects were found for F19's consonant productions. F19 exhibits, however, a decrease in rates of L-vocalization throughout the three terms. Of the eight tokens of (L) produced each term, in Autumn term she

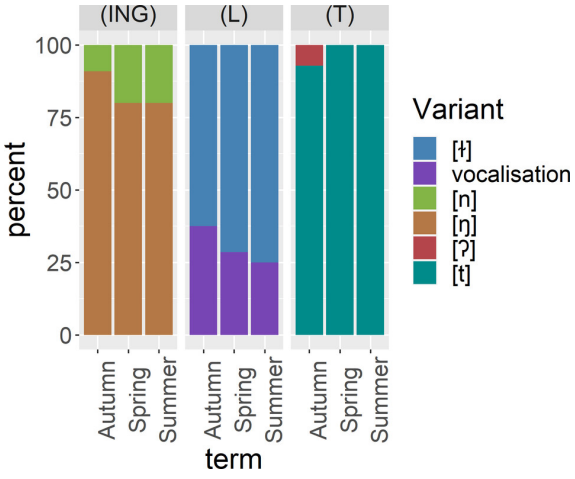

FIGURE 5.6
Rates of production for three consonantal variables for M20 between the three terms (term 1: Autumn; term 2: Spring; term 3: Summer)

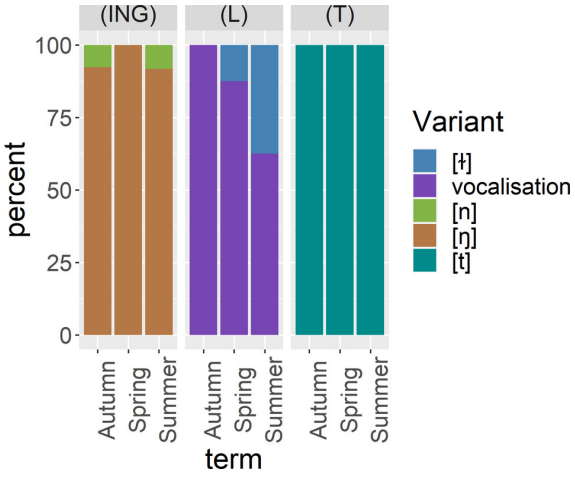

FIGURE 5.7
Rates of production for three consonantal variables for F19 between the three terms (term 1: Autumn; term 2: Spring; term 3: Summer)

categorically vocalized, in Spring term she produced [ɬ] on one instance, and in Summer she did so on three instances. Fisher's exact test did not find the difference to be significant (p-value = 0.27), potentially due to the small token number and overlap between the three terms, perhaps reflecting emerging rather than established change. For (T), F19 categorically produced [t] on all instances throughout all three terms. For (ING), she produced velar [ŋ] consistently across the three terms, with one instance of [n] in Autumn and Summer terms and none in Spring terms.

Figure 5.8 shows rates of production for the consonantal variables for M19. There was a substantial and significant effect in rates of (T) ($p<0.01$). In Autumn

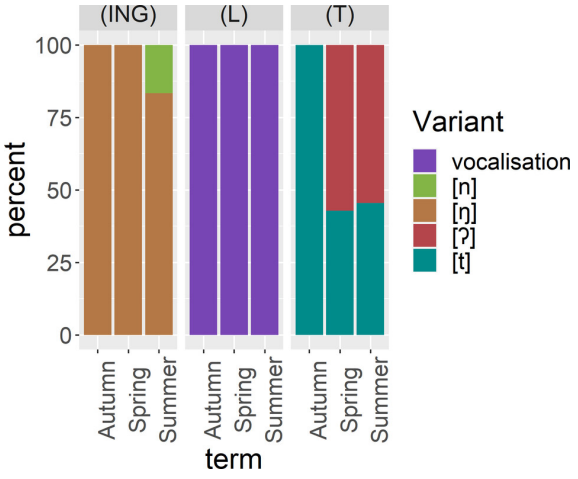

FIGURE 5.8
Rates of production for three consonantal variables for M19 between the three terms (term 1: Autumn; term 2: Spring; term 3: Summer)

term he did not produce any instances of T-glottaling (0/14) but by Spring term he did so on 8/14 instances (57.1%) and on 6/11 instances (54.5%) of instances in Summer term. For (ING), he categorically produced [ŋ] in both Autumn (12/12) and Spring term (14/14) but some variation was present in Summer term, when rates fell to 10/12 instances (83.3%). This effect was not found to be significant but may represent emergent accent change. There were no differences in rates of (L), with M19 categorically producing L-vocalization each term.

6 Discussion

Different patterns of variation across the academic year are notable between the three speakers, which can be linked to their differing levels of social interaction and, to some extent whether this constituted face-to-face or online contact. M20, the 20-year-old male from northern Essex shows conformity in his vowel and consonantal systems across the academic year. There is a very slight reduction in rates of L-vocalization across the three terms, but this change has not occurred to the degree observed in the consonantal system of F19 or M19. There may also be some evidence of raising and fronting of the GOOSE vowel, but again, this is not to the same degree as observed for F19 who exhibits more extreme GOOSE fronting throughout the academic year. Correspondingly, M20's definition of his accent remains stable as 'Essex' throughout all three terms (with the qualifier of 'Formal' in Autumn term). Further, the degree to which he reported liking his accent was consistently high across the three terms (10, 10, 9).

In contrast to M20, the 19-year-old female speaker from East London (F19) shows variation in her vowel system between the start and end of the academic year. She is the only participant who relocated to campus, lived with other students and reported extensive face-to-face interactions with other students. The accent change or, at least, increased variability in her accent throughout the year is in line with the previously documented change observed in the speech of university students who relocate (Sankoff 2004; Evans and Iverson 2007). The shift in F19's accent seems to constitute a shift away from MLE and towards the pan-regional, standard southern accent, SSBE (e.g., in relation to SSBE/RP reference vowel plots or descriptions in Williams and Escudero 2014; Bjelaković 2017; Lindsey 2019). Though the token numbers did not permit statistical testing, tentatively we can suggest that across the academic year F19 exhibits GOOSE fronting, KIT lowering and fronting, TRAP and DRESS moving further apart from each other, and FOOT lowering and backing. We propose that she appears to be shifting broadly towards a relatively more pan-regional, southern system and away from MLE.

In addition, there seems to be a potential change in F19's production of the commA vowel, encompassing a shift towards the standard schwa variant and away from the open vowel found in Cockney and the innovative low back vowel observed in her Autumn productions. Due to the prevalence of other MLE features in her speech it is likely that the low back variant of the commA vowel is an MLE feature that, to our knowledge, has not previously been researched or documented. In addition, there is a potential shift in her production of (L). She categorically produces vocalization in Autumn Term, as found in vernacular forms of English in London (MLE and Cockney), but in the Spring and Summer terms produces increased rates of the standard [ɫ] as found in SSBE. Though the observed change in (L) for F19 was not significant, this does not disprove that the variation in this feature across the academic year is meaningful. There was indeed a large degree of overlap in her productions between terms which, along with the low token numbers, likely curtails the potential for statistical significance. The observed introduction of a new variant into her speech is certainly notable and may reflect emergent change which has not yet stabilized.

In contrast to F19, the 19-year-old male from Suffolk, M19, stayed living at home during the academic year and reported very little face-to-face contact with other students (apart from some limited contact in the Spring term). He did report interactions with other students on every weekday throughout the academic year, but the majority of these interactions were mediated through video sharing technology. Despite his lack of face-to-face interaction, M19's accent also exhibits variation and potentially emergent change across the aca-

demic year. The linguistic variation is present at the start of Spring term when he was audio recorded (e.g., rates of T-glottaling rise substantially from Autumn term to Spring term) before he commenced any face-to-face socializing with other students. This suggests, then, that the limited face-to-face interaction he had with other students in Spring term was not the (only) source of variation in his accent.

In terms of describing M19's variety, though he is from East Anglia, his vowel productions do not clearly align with previous accounts of East Anglian vowels (e.g., as described by Trudgill 2021). The same is true of our other East Anglian speaker, M20, and there are notable differences between the vowel systems of these two speakers. For M19, there are some elements of MLE observable in his vowel production such as a raised START vowel. However, unlike previous accounts of MLE, he produces START merged with LOT. Previous research has suggested that the mixing of features from international languages and dialects of English with local regional features is not exclusive to MLE and is found across Britain (i.e., Multicultural British English (MBE) e.g., Drummond 2017). In line with this, M19's vowel productions have some similarities with MLE but also have notable differences (i.e., START/LOT merger), perhaps indicating local, regional features from his home location in Suffolk. MLE is a variety spoken by young people from a wide range of ethnic and social backgrounds. While it may have been of interest to look at our participants' use of these features in relation to their ethnic backgrounds, we did not collect the relevant information from our participants and therefore we are unable to comment on this. This paper does not have the scope to provide dialectological accounts of the accents spoken by the speakers. Instead, regardless of their inputting dialect, we are investigating rates of variation across the academic year.

Though not to the same degree as F19, M19 exhibits variation in his vowel productions between Autumn and Spring terms. In addition, we observe substantial change in his consonantal system, particularly for (T). He changes from categorically producing the standard [t] to producing a glottal stop over 50% of the time in both Spring and Summer terms. This difference was found to be significant. In addition, he categorically produces [ŋ] for (ING) in Autumn and Spring terms but has increased rates of [n] in Summer term. Though the difference in (ING) was not found to be significant, much like rates of (L) for F19, this difference may reflect the potentially emergent nature of this change. Interestingly, for both (ING) and (T), if the differences we see are meaningful and do reflect change, then this encompasses a shift away from standard forms towards more vernacular forms. Correspondingly, he also produces L-vocalization, a non-standard south-eastern feature, categorically and consistently in all three terms.

Though F19 and M19 both exhibit linguistic variation and potential change across the academic year, the target of change is distinct. This may be due to different social networks and patterns of dialect contact. For F19, the potential shift away from an MLE vowel system towards a more SSBE system, and her increasing rates of the standard feature [ɫ] in place of L-vocalization, may reflect accommodation towards speakers with an SSBE accent. In addition, the observed changes in M19's speech may reflect his social networks and patterns of dialect contact. M19 indicated that he perceives that his accent has become more 'Essexy' since attending university due to increased contact with speakers from Essex. The accents spoken across southern England have been closely influenced by the working-class, East London dialect of Cockney, which includes T-glottaling, L-vocalization and [n] for (ING) but this is particularly the case for the bordering county of Essex (Cole 2022). Therefore, M19 would likely have encountered high rates of both T-glottaling and [n] for (ING) (which both seemingly become more frequent in his speech) and L-vocalization (which remains categorical in his speech) through his new social networks with Essex speakers.

However, T-glottaling and [n] for (ING) have also been long documented in not just Cockney but also in regional dialects spoken in East Anglia, so it is unlikely that M19 was not already widely exposed to these features prior to attending university. Therefore, the increased use of these features may not just be related to exposure to these features but may also be linked to ideological positioning, sense of identity and, broadly, a shift towards non-standard speech forms. In the same way, F19's potential shift towards socially prestigious speech forms may possibly reflect her ideological positioning in relation to the perceived standard accent. In accord with the observed variation in the production data, F19 changes how she defines her accent from 'Estuary English' (Autumn) to 'Cockney' (Spring) to 'RP' (Summer), demonstrating awareness of the observed shift in her linguistic productions towards standard speech forms by Summer term. As F19's accent shifts to more closely resemble pan-regional standard features she also begins to report higher satisfaction with her accent (3→5→6 across the three terms). F19 simultaneously reports becoming more RP-like in Summer term but also increased satisfaction with her accent, potentially reflecting that she holds positive associations with perceived standard speech forms. SSBE is a prestigious accent which is the observed target of change in several communities in southern England (e.g., Milton Keynes and Reading: Williams and Kerswill 1999), even when it is not regularly encountered through dialect contact (e.g., Debden: Cole and Strycharczuk 2022). Therefore, a shift towards or away from SSBE often reflects an increasing awareness of investment in the standard language marketplace (Sankoff and Laberge 1978) which

happens for the first time for many young people when they attend university. Unfortunately, we were not able to conduct post-data collection follow-ups with our participants and therefore we cannot support our interpretations with qualitative data from them on whether they believed their accent has changed, how they feel about that, or on the accents that they were most exposed to throughout the academic year. This would be a fruitful future endeavor for work in this area.

As observed, the trajectory and target of change may not be identical for all speakers, even when attending the same university. Instead, the observed intra-speaker variation throughout the academic year likely reflects their distinct inputting varieties, social networks, patterns of dialect contact, social factors and sense of identity. In particular, we attribute the differences between F19 and M19 to awareness of, and investment in, the standard language marketplace (Sankoff and Laberge 1978), with M19 and F19 appearing to shift, respectively, towards more vernacular features and more standard features. This finding corresponds with the well-established kernel of sociolinguistics that females tend to use more standard forms than males (Labov 1990) and that overtly prestigious, standard forms are more likely to be the target for change for females compared to males (Trudgill 1972). F19 demonstrates, in Labovian terms, more 'linguistic insecurity' (Labov 2006) when she begins university. She rated her own accent as 3/10 in Autumn term, perhaps creating the environment for her to be primed to adopt new linguistic features and to shift towards a socially-prestigious accent. As her accent became more standard, her evaluations of her own accent increased to 5/10 in Spring term and 6/10 in Summer term. In contrast, M19 did not demonstrate linguistic insecurity (8/10 ranking in Autumn term, raising to 10/10 in both Spring and Summer terms), and consequentially may not have been motivated to shift towards a more prestigious accent but instead has adopted more vernacular features.

Although it would be inappropriate to form strong conclusions about gender based on our limited number of participants, it is worth considering the potential effects of gendered style in patterns of accent change in individual speakers, including in the context of technologically mediated communication. Research looking at the language use of online learners has found men and women's interactional styles to be quite different. For example, Barrett and Lally (1999) found that while men sent more messages which tended to be longer, women's messages tended to be more interactive. These gendered style differences mirror differences found in spoken conversation (Tannen 2013). Therefore, it appears that men and women are able to perform their gendered roles online just as well as in spoken communication; gender effects may be transferred between different modes of communication. Though outside the

scope of this research, it is a fruitful avenue to explore any potential differences in the process of language variation and change in in-person face-to-face contexts and mediated through digital communication.

Our study tentatively adds to the weight of evidence that attending university and the corresponding formation of new social networks and patterns of contact with other students is related to language change in individual speakers (Evans and Iverson 2007; Pardo et al. 2012). However, our study additionally demonstrates that such change may occur whether the contact is in-person or mediated through video sharing technology. The variability we find in the speech of F19 and M19 throughout the academic year occurs in the context of forming new contacts with speakers of different dialects whether this interaction includes in-person communication (F19) or not (M19). The presence of variation in the absence of new, in-person face-to-face contact for one single speaker, in our case M19, seems to demonstrate that technologically mediated communication may be sufficient for language change to occur in the speech of an individual. In contrast, language stability is observed for M20 who attended university for the first time but maintained his existing social networks and indicated limited social contact with new speakers throughout his first year at university. His lack of interaction with new speakers and his seemingly dense local social network likely acted as a norm enforcing mechanism, preventing the likelihood of accent change (Milroy 1987).

Linguistic interactions in the context of in-person, face-to-face conversations have traditionally been regarded as the only type of communication to cultivate language change (Trudgill 1986). However, as highlighted by Androutsopoulos (2016) (see also Stuart-Smith et al. 2013), newer mediated forms of communication need to be factored into models of language variation and change. Though we only present the results for three speakers, we provide an in-depth case study for each and our findings seem to support the notion that technologically mediated communication can have an effect on language variation and change. By comparing the findings for our three speakers, it seems to be the case that while increased interaction with new social groups drives forward the community building necessary for language variation and change, this interaction does not need to be solely in in-person, face-to-face settings. It seems that language variation and change in an individual's speech is possible provided they encounter new forms of linguistic variation without the need for in-person, face-to-face interaction.

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