BRADFORD PANJABI-ENGLISH: THE REALISATION OF FACE AND GOAT

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Abstract

FACE and GOAT realisations from six female Bradford Panjabi-English speakers were observed to follow the characteristic pattern of other Asian- (and multicultural-) Englishes with significantly lower F1s than three Bradford Anglo-English females. A qualitative distinction with the closer KIT and FOOT vowels is maintained, with younger PE speakers showing a greater degree of separation (more open FACE and GOAT). Both groups demonstrate variability in the degree of separation between the two vowel pairs (FACE and KIT; GOAT and FOOT). The current paper considers whether closer FACE and GOAT realisations provide evidence for transfer or innovation within Panjabi-English. Closer realisations are considered to index a non-Anglo ethnic identity, as suggested in other studies into Multicultural-Englishes, with the relationship to KIT and FOOT working in a complex way to index a further local identity.

1. Introduction

Midpoint F1 values for six female Panjabi-English (PE) speakers will be compared with three female Bradford 'Anglo' speakers to determine if PE realisations are closer. Female PE reading passage data from fieldwork undertaken in Bradford will be considered and compared with female 'Anglo' word list data from Watt and Tillotson (2001). Further, speakers' FACE and GOAT realisations will be compared to KIT and FOOT. These are traditionally closer than monophthongal FACE and GOAT so it might be expected that a qualitative difference between the two pairs may not be present in PE if FACE and GOAT are considerably closer.

PE will be defined with a brief discussion of the PE speaking community in Bradford. Consideration of the possible realisations of these variants in Panjabi and Bradford 'Anglo-English' (AE) will be followed by a review of previous work into PE relating to FACE and GOAT. Processes involved in dialect contact will be considered as a way to explain the patterns observed. Whether the features are evidence of transfer from Panjabi or innovation within PE will also be explored.

2. Background

2.1. Panjabi-English

Panjabi-English (PE) is the term used to refer to the native-English variety spoken by second- and future-generation speakers with Panjabi language heritage. 'Panjabi language heritage' refers to speakers who have at least one Panjabi speaking parent who is a first-generation immigrant from the Panjab region or another Panjabi speaking location. PE is spoken throughout the UK and has been explored in a number of locations.

2.2. Bradford

Bradford is a city in West Yorkshire with a history of in migration (Fieldhouse 1981). The number of individuals recording Panjabi as their main language in the 2011 census is 4%,

 ISSN 1758-0315

greater than the national average of 0.5% (ONS 2013:11; QS204EW). Panjabi is the third most widely spoken main language in England and Wales, following English (92.3%) and Polish (1%). Census data does not represent those who speak Panjabi but may not consider it their 'main' language[1]. The online ethnologue estimates the number of Panjabi speakers in the UK at 594,000 (Lewis et al. 2013) and Reynolds and Verma (2007: 307) comment that speakers of the main Indic languages in Britain (Panjabi, Hindi, Urdu, Gujarati and Bangla) outnumber speakers of indigenous minority languages.

According to the 2011 census, Bradford's Indian and Pakistani population is above average for England and Wales at 23%, the national average at 4.5% (ONS 2012a, 2012b). Bradford was therefore considered to have a potentially sizeable population of PE speakers, and also a relatively dichotomous population, with no other language variety or ethnic minority forming a large proportion of the population.

3. The input

3.1. Panjabi

The Panjab region is a geographical location in North West India and Northern Pakistan. Panjabi is the language of the Panjab region (Bhatia 1993: xxv) and is one of several national languages of India and Pakistan. There is a great deal of linguistic diversity in Panjabi, with some dialects being considerably different to the commonly referred to Modern Standard Panjabi (MSP) as spoken in India (Shackle 2003: 585).

Consequently, knowing the variety of Panjabi spoken by PE speakers' parents, and from which geographical area they come is important. PE speakers completed a questionnaire detailing native and other languages spoken. All were second-generation native English speakers and all listed Panjabi and Urdu as either 'native' or 'other languages'. Two of the six speakers (Zayna and Sadiyah) also listed Hindko and Pushto as native or other languages spoken. All of the PE speakers have family originating in Pakistan. Although the questionnaire did not ask participants to further specify the location, some commented that their families were from the Mirpur region, like most of Bradford's Pakistani community.

Lothers and Lothers (2012) comment that the majority of Pakistani immigrants in the UK speak a variety of Panjabi they term 'Mirpuri Pahari'. This is used as a cover term to include the varieties Pothwari, Pihari and Mirpuri, which are names given to varieties of Panjabi spoken in the Mirpur. Heselwood and McChrystal (1999) comment that their speakers from Manningham in Bradford originate from the Mirpur. Consequently, along with Hindko and Pushto, if there is literature available to suggest that these varieties differ from MSP it will be discussed.

All diphthongs in MSP are rising with a central and peripheral vowel (Shackle 2003: 588). The closest to the RP /eɪ/ diphthong is a rising /əi/. Panjabi also has a front mid /e/ and a central high-mid /ɪ/ (Shackle 2003; Bhatia 1993; Tolstaya 1981). This is mirrored at the back of the vowel space, with the diphthong /əu/ and the monophthongs /o/ and /ʊ/.

Western Pahari and Lahnda varieties have short counterparts for the long and peripheral /e/ and /o/ (Zograph 1982). Shackle (1983) comments in a review of Zograph's work that, 'caution is therefore required in using the book as a guide of linguistic facts' (1983: 372). It is

[1] The 2011 census asked 'What is your main language' with answering options 'English' or 'Other'. If 'Other', individuals were required to write in their 'main' language. 'Main language' was not further specified so it is not known how it was intended or interpreted.

difficult to know how much value to give to the statement made by Zograph. Bhardwaj (2012) comments in a book for learners of Panjabi, that the long vowels *e* and *o* should be pronounced as 'the Scottish pronunciation of g*a*te [and] g*o*' (2012: 7-8). Scottish monophthongal FACE and GOAT are traditionally close (Stuart-Smith 1999), this might suggest Panjabi /e/ and /o/ are also relatively close.

3.2. Bradford Anglo-English

This refers to the variety of English within Bradford as spoken by white British monolingual speakers. Petyt (1985) identified two lexical sets /ɛɪ/ and /e:/, which include words from the modern FACE set, with the incidence of /ɛɪ/ decreasing. The same is noted for the back of the vowel space, with /ɔʊ/ and /o:/ making up two different sets for modern day GOAT with decreasing /ɔʊ/. Petyt (1985) suggests that both of these pairs may be undergoing mergers and this appears to have taken place, with modern day Bradford AE having FACE and GOAT sets with similar incidence, but different phonetic realisations to RP. Petyt reports the short /ɪ/ and /ʊ/ of the modern day KIT and FOOT sets to be present in the Bradford vowel system (1985: 97).

Bradford monophthongal FACE and GOAT are characterised by Hughes et al. (2012), as [e:] and [o:], respectively. Diphthongal realisations may still occur. With FACE, this could be with words containing *'eigh'* in the spelling. For GOAT, this could be with words including 'ow' or *'ou'*. KIT and FOOT are not reported to vary from the close front /ɪ/ and the close centralised /ʊ/ of RP.

Watt and Tillotson (2001) considered fronting of monophthongal GOAT in Bradford. They analysed wordlist tokens from seven speakers (5 females, 2 males) and found GOAT fronting from more open [ɔ:] to centralised [ɵ:] to be more advanced in the speech of younger, particularly female, speakers.

3.3. Summary

The speakers are exposed to numerous inputs. The L2 English as spoken by first-generation speakers would constitute a third input. No data has been collected to be representative of this group. Consequently, it is not known how much of an influence this may have upon PE.

4. Multicultural-Englishes

An increasing amount of research is now being undertaken into the variation of multicultural-Englishes. Multicultural London English (MLE) (Cheshire et al. 2011; Torgersen & Szakay 2011; Cheshire et al. 2008; Kerswill et al. 2008) refers to the new and developing variety spoken in London which contains influences from many of the languages spoken in the capital today. Multicultural Manchester English (MME) has also been considered, with similar features being found to be characteristic of this variety, despite geographical distance from London (Drummond 2013a).

Increasingly, research is considering Asian-Englishes, with work in Leicester considering the influence of Gujarati (Rathore 2011a, 2011b), and in London exploring the prosody of Gujarati-English speakers (Zipp 2013). Harris (2006) introduced the notion of 'Brasian' with his work in a West London school referring to the simultaneous presence of British and Asian identities.

4.1 PE

PE is being considered in a number of UK locations including Sheffield (Kirkham 2011), Glasgow (Lambert et al. 2007), London (Sharma & Sankaran 2011), Bradford (Day 2009), and Edinburgh (Verma & Firth 1995). Numerous features have been observed to vary in different ways, with common variability occurring with /l/ realisation (Lambert et al. 2007), retroflexion of /t/, /d/ and /n/ (Heselwood & McChrystal 2000), and rhoticity (Hirson & Sohail 2007). Focus will be placed on those studies which have considered variation in FACE and GOAT with further research on the variety not being considered.

Stuart-Smith et al. (2011) observed closer and fronter FACE and GOAT with Glasgow Asian speakers compared to monolingual Glasgow speakers. Using word list and reading passage data, speech from five bilingual (English dominant & Panjabi) and two monolingual Glaswegian males was compared. Clearer separation between the groups was observed with the GOAT vowel. One Asian speaker patterned with the monolingual speakers, he was also found to have the lowest proportion of Asian friends (Stuart-Smith et al. 2011: 9).

Further analysis in Stuart-Smith et al. (2011) used a dataset of ethnographic interviews from six trilingual (English dominant, Panjabi & Urdu) eighteen year-old girls. They were considered representative of three Communities of Practice (CofP). The 'Moderns' were characterised by their identification with Western cultural practices and norms, including wearing make-up, dating, and educational aspirations. The 'Conservative' group were sub-divided into 'Conservative-Religious' and 'Conservative-Cultural' groups. The 'Conservative-Religious' speaker represented a group who identified closely with traditional Muslim values such as marrying young and educational equality. The 'Conservative-Cultural' speaker represented a group for whom traditional Pakistani values, including dressing modestly with a headscarf, and favouring marriage over relationships, were important. The final group, the 'Inbetweens', fell somewhere between the Moderns and Conservatives.

For FACE, individual speaker was found to be a stronger determining factor than CofP. The Moderns showed fronter realisations than the Conservatives, with the Inbetweens somewhere in between. The Conservative-Religious speaker had the closest realisation, differing from the Conservative-Cultural female who had a more open realisation. For GOAT, CofP was found to be a stronger determining factor. The height of this vowel was similar for all speakers, with the exception of the Conservative-Religious speaker who had a much closer realisation. Her realisation was also the most fronted, but was similar to one of the Moderns. As with the males, Stuart-Smith et al. found greater separation with GOAT. They suggest this may be indicative of greater weight carried by GOAT in its relationship to ethnicity and identity construction, although they highlight that this is based on a small amount of data. They also introduce the notion of 'Glaswasian' relating to Harris' (2006) 'Brasian', highlighting the complex identities of speakers indexing both local and ethnic identity.

In their work with bilingual children, Verma and Firth (1995) comment that speakers in West Yorkshire have adopted local monophthongal FACE and GOAT but do not further discuss the quality. Although monophthongal realisation here is attributed to an adoption of a local feature, qualitative variation may also be present as with Glaswasian speakers who demonstrate closer realisations (Stuart-Smith et al. 2011).

Sharma (2011) reports fieldwork from Southall, London. Four second-generation PE speakers took part in ethnographic interviews and self-recorded in different contexts with different interlocutors. Two age-groups are represented, with both males and females (one speaker per cell). The presence of monophthongal FACE or GOAT was considered to be an Indian feature,

differing from the diphthongal 'Anglo' realisation. Sharma (2011) does not provide further information on monophthongal quality so it is difficult to determine whether these are as close as monophthongal variants in Glaswasian. The PE speakers all used monophthongal FACE and GOAT at least some of the time with some interlocutors. The use of monophthongal Indian variants occurred mainly with Asian interlocutors. However, this varied both by speaker and context. There were also interlocutors with whom the speakers used no monophthongal FACE and GOAT. The monophthongs occur variably with 'Anglo' diphthongs, the standard /eɪ/ and /əʊ/ or 'Cockney diphthongal variants' (Sharma 2011: 471).

5. Dialect Contact

This refers to the process by which different varieties come into contact with new dialect formation being a potential result. The interaction of accommodatory effects and individual and group identities defines variants, contributing to the construction of a new variety. The linguistic situation in Bradford is one of contact, with the interaction of two English varieties (Bradford AE and the L2 English of first-generation immigrants) and the influence of Panjabi, resulting in PE.

First considered in depth by Trudgill (1986), he discussed the linguistic patterns observable when dialects come into contact and interact. Mixed intermediate forms arise as a result of many individual accommodation events. Trudgill introduced three processes which occur allowing for restructuring to take place before the new variety is formed. Firstly, levelling, which leads to a decline in the number of marked variants. Reallocation occurs when more than one variant remains, the levelling process being 'incomplete'. Variation between them instead occurring socially, stylistically or, if phonetic features, allophonically. Finally, simplification is discussed which refers to an increase in monomorphemic regularity in new dialect formation.

Watt (2002) observed levelling in Tyneside English. Monophthongal FACE [e:] and GOAT [o:] realisations had been levelled to a regional standard, over more local [ɪə] and [ʊə]. Reallocation was found by Dyer (2002) who illustrated that Scottish monophthongal GOAT had been reallocated for second- and third-generations to index a local Corby identity, whereas for first-generation speakers it formed part of their Scottish identity. Allomorphic simplification was observed by Britain (2002) in Fenland English, with a reduction in the number of past tense *be* morphemes from three to two. The combination of these processes can result in a newly formed dialect or 'koine'.

More recently, Trudgill (2008a) questioned the role of identity in new dialect formation, claiming sociolinguists too often rely on identity as an explanation for variation. He argued that the automaticity of accommodation meant that any influence of collective identity came later, once the new dialect had been established. The development of post-colonial varieties of English was presented as evidence for this. Trudgill claimed that a shared national identity would not have been present amongst new settlers therefore could not have contributed. Instead mechanical explanations of automatic accommodation would have led to the processes described in new dialect formation.

The publication received a number of responses generally agreeing with Trudgill's claim of the automaticity of accommodation (Coupland 2008; Mufwene 2008; Tuten 2008). However, many questioned Trudgill's dismissal of identity in its entirety and his assumption that it is only relevant on a national scale, highlighting the complexity and multiplicity of identity (Bauer 2008; Holmes & Kerswill 2008; Schneider 2008; Tuten 2008). Some discussed the relationship between accommodation and identity and their dependence on one another,

particularly amongst adults who cannot abandon identity (Coupland 2008; Holmes & Kerswill 2008; Schneider 2008; Tuten 2008). Further, Holmes and Kerswill (2008) comment that identity could be used to explain the choice of one variant over another when numerically equivalent options exist.

Trudgill's rejoinder (2008b) aimed to answer the queries raised in responses and further justify his position. He discussed the role children of the second- and future-generations play in new dialect formation, claiming children's full accommodation to the local speech community is a 'universal human behaviour' (2008b: 277). A lack of socialisation allowing them to work forming the dialect independent of identity. This is also considered in Trudgill (2004) where he claims third-generation[2] children are the ones who 'do the generating' (2004: 27).

Previous work into PE and other multicultural-Englishes has consistently observed the effects identity can have upon the developing variety. The following comment highlights this,

> It seems that certain features originally derived from language interference are now being *actively* deployed as English accent features by second- and later-generation speakers, though with rather different realisations and distributions from those expected in the original language.
>
> (Lambert et al. 2007: 1512, emphasis added).

As mentioned in responses to Trudgill, the absence of a shared national identity does not preclude the absence of a collective identity, nor does it take into account individual identities and how the interaction of large numbers of individuals may affect the variety. The above quote highlights how features are used creatively in new dialect formation as a reflection of speakers' identities.

6. Innovation or transfer?

Determining whether variability from AE provides evidence for transfer from Panjabi, or innovation (where realisations cannot have come from Panjabi or English) is another aim of the current paper. PE is a developing native English variety and innovations are expected. The adoption of features from the heritage variety through being part of speakers' extended linguistic repertoire, or 'feature pool' (Cheshire et al. 2011) is also expected.

Providing conclusive evidence for transfer based on qualitative vowel realisations could be difficult given the linguistic variability within Panjabi. Shackle comments that in Panjabi, 'Vowel length is taken to be phonetically less significant than vowel quality' (2003: 587). Transfer then, may be reflected by the retention of a qualitative distinction between vowels. If FACE and GOAT are found to be closer than those of the AE speakers their patterning with KIT and FOOT could be of interest. If the difference between FACE & KIT and GOAT & FOOT is one of quality, this could be evidence for transfer, with the Panjabi rule of qualitative over quantitative difference being employed. However, if the two vowel pairs are found not to be distinguished qualitatively, this could be evidence for innovation, with a new pattern contrary to AE and Panjabi being developed.

[2] Trudgill (2004) refers to these speakers as 'second-generation'; the second-generation of speakers born within the new community. For purposes of continuity they are referred to here as third-generation. Throughout this work 'first-generation' refers to the original members who migrated into the community.

7. Research Questions

The following questions will be addressed,

- Do PE speakers have closer monophthongal FACE and GOAT than AE speakers?
- How do FACE and GOAT pattern with KIT and FOOT?
- Are there differences between two second-generation PE age-groups?
- Can variation from AE be considered evidence of transfer or innovation?

8. Methods

Results from six PE and three AE females are reported. Five PE speakers live in the north west of Bradford. One speaker (Shelly) lives two miles north in Shipley but works and interacts with the other participants. PE speakers represent two age-groups and are all second-generation. The AE females included are from Watt and Tillotson (2001). Table 1 contains speakers' names and ages. PE speakers are grouped into categories defined for a larger project. AE speakers do not fit into these so ages are listed. Lisa and Christine were considered with the younger (18-25) speakers and Peggy with the older (35-45) speakers.

Speaker (PE)	**Age-Group**
Shelly	18-25
Zayna	18-25
Maysan	18-25
Afsana	35-45
Sumra	35-45
Sadiyah	35-45
Speaker (AE)	**Age**
Lisa	17
Christine	27
Peggy	55

Table 1. Speakers included in the study

PE speakers were recorded reading 'Fern's star turn', this took three to four minutes to complete and provided around 15-20 tokens per vowel per speaker. This data considered forms part of a larger data set including paired conversations and spot-the-difference tasks. The passage provides direct comparability across speakers with no style or topic variation.

PE Speakers were recorded with a Zoom H4n recorder and Beyerdynamic TG H54c neck worn microphones. The zoom recorder recorded at a 16 bit 44.1kHz sampling rate. Use of the neck worn microphone ensured speakers were recorded at a high quality with a consistent distance between the microphone and speaker's lips. Many of the women wore headscarves as a reflection of their Muslim faith. In these cases, participants were informed they did not have to wear the headset. These women held the microphone rather than wore it, or went to creative lengths to ensure they could be heard without having to hold the microphone during the interview.

AE speakers read wordlists and short phrases (Watt & Tillotson 2001: 302), providing around 10 tokens for FACE, KIT and FOOT and 15-20 for GOAT. AE speakers were recorded on audio cassette with a Sony WM-D6C Professional Walkman using a Sony directional stereo microphone (Watt & Tillotson 2001: 277).

9. Analysis

Midpoint F1 measurements were taken for FACE, KIT, GOAT and FOOT. Measurements were also taken for GOOSE, LOT and THOUGHT. These are being considered as potentially characteristic in PE. Although not considered further here, they provide points of reference in the vowel spaces. Vowels were marked out in Praat (version 5.3.45) measuring from the onset to offset of periodicity in the waveform and the offset of F2 energy in the spectrogram. Vowels were marked out in a text grid and the formant tracker was checked to ensure the red dots aligned with the formant bands in the spectrogram. If formants were not accurately identified by the formant tracker these were entered manually or omitted.

A formant dynamic script was used to extract midpoint F1 measurements. The script measures F1, F2 and F3 at nine equal intervals throughout the duration of the vowel. Only midpoint F1 will be discussed.

10. Results

10.1. PE speakers

Shapiro-Wilks tests were run for individual speakers' FACE and KIT. If distributions were normal (non-significant result), independent t-tests were carried out to observe within-speaker variation of midpoint F1. If the results were significant (non-normal distribution), a non-parametric unpaired Wilcoxon test was undertaken.

All but one speaker had significantly different midpoint F1 values for FACE and KIT, p-values (all independent t-tests) are listed in Table 2.

Younger		**Older**	
Shelly	<.0001***	Afsana	<.0001***
Zayna	<.0001***	Sumra	=.0006**
Maysan	<.0001***	Sadiyah	=.277

Table 2. Significance values for within-speaker difference between FACE and KIT

Although both older and younger speakers pattern similarly with significantly different midpoint F1s for FACE and KIT, younger speakers appear to have a greater degree of separation. Mixed effect linear regression in R confirmed this. Using the lmer() function in the lme4 package, mixed effects models were created with fixed effects of age group and lexical set included. Speaker and word were included as random effects. Markov-Chain Monte-Carlo (MCMC) simulations were then run using pvals.fnc() to determine a p-value (Baayen 2008: 248).

A t-value of over 2 in the lmer() output determines significance at the 5% level (Baayen 2008: 248). Across speakers, FACE is significantly different to KIT, with KIT having a significantly lower midpoint F1 (t=-2.28; p=.004). A significant interaction between age

group and lexical set is also observed (t=-4.84; p=.0002). Illustrated in Figure 1 this shows the older speakers on the left ("O") and the younger speakers on the right ("Y"). The degree of separation between vowels is greater for the younger speakers than the older speakers.

Figure 1. Degree of separation between FACE and KIT. Red circles = KIT; Black circles = FACE

Shapiro-Wilks tests were also run for individual speakers' GOAT and FOOT. A combination of unpaired Wilcoxon and independent t-tests were then carried out. All but one of the speakers showed significantly different midpoint F1 in GOAT and FOOT, with younger speakers appearing to have increased separation. Table 3 illustrates the pattern.

Younger		**Older**	
Shelly	<.0001*** independent t-test	Afsana	=.0014** independent t-test
Zayna	=.015* independent t-test	Sumra	=.001** independent t-test
Maysan	<.0001*** unpaired Wilcoxon	Sadiyah	=.92 unpaired Wilcoxon

Table 3. Significance values for within-speaker differences between GOAT and FOOT

Mixed effects regression was then undertaken in R, followed by MCMC simulations. Mirroring the front of the vowel space, a significant difference between GOAT and FOOT is present with the MCMC simulations (t=1.88; p=.019). Further, there is a significant interaction between age group and lexical set (t=2.9; p=.005). This is illustrated in Figure 2 which highlights the increased separation between GOAT and FOOT for younger speakers.

Figure 2. Degree of separation between GOAT and FOOT. Red circles = FOOT; Black circles = GOAT

Plots in Figures 3 through 8 illustrate the within-speaker variation reflected by the statistical results for the PE vowels.

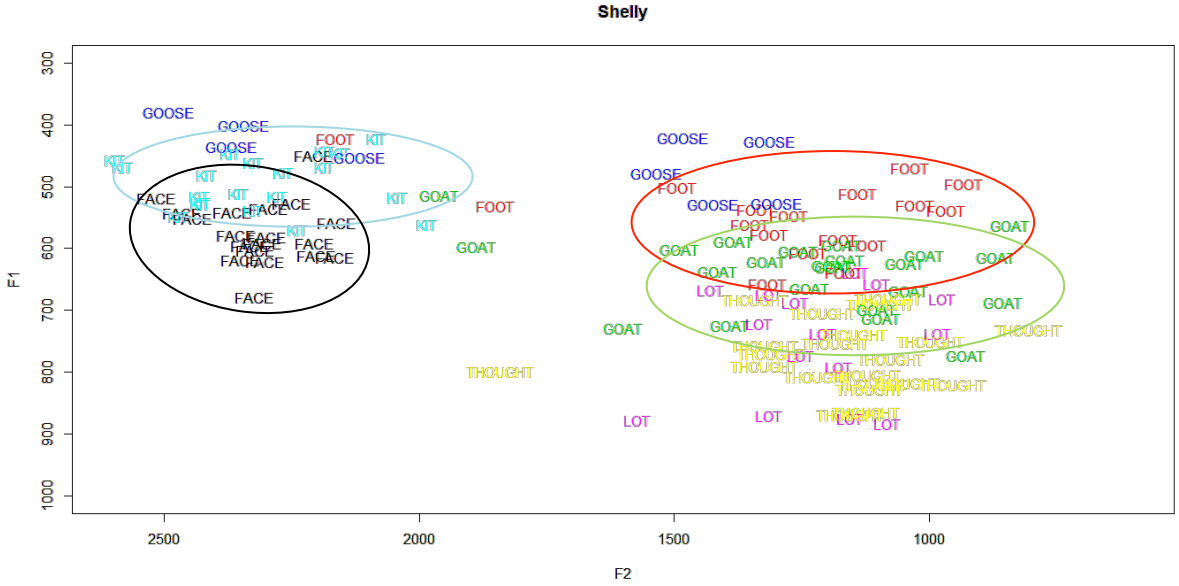

Figure 3. Vowel plot for Shelly.

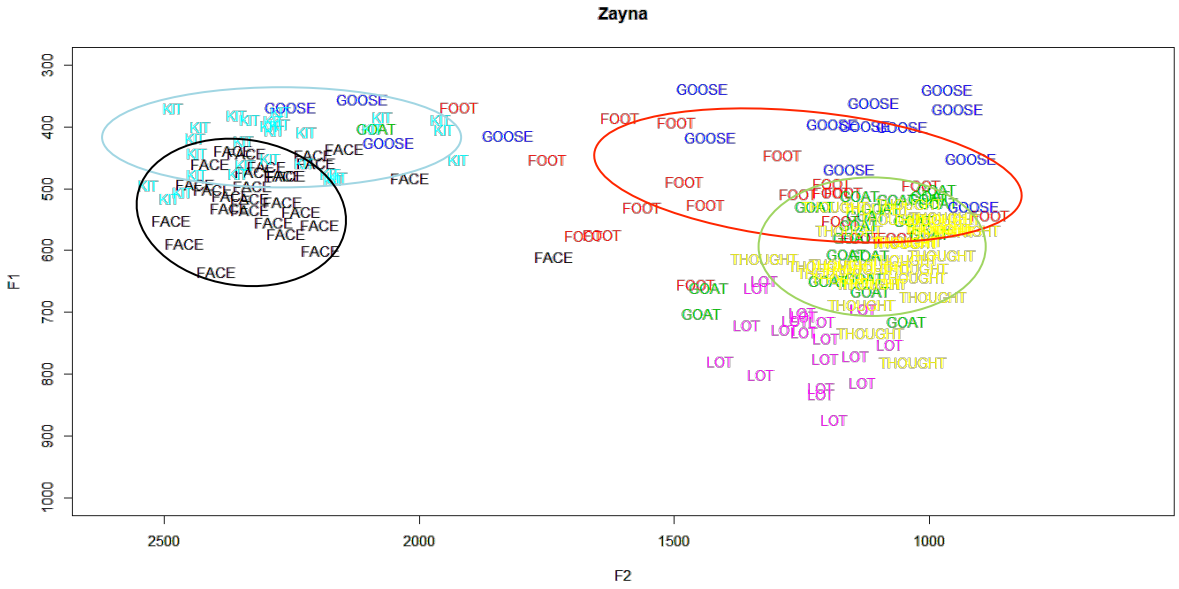

Figure 4. Vowel plot for Zayna.

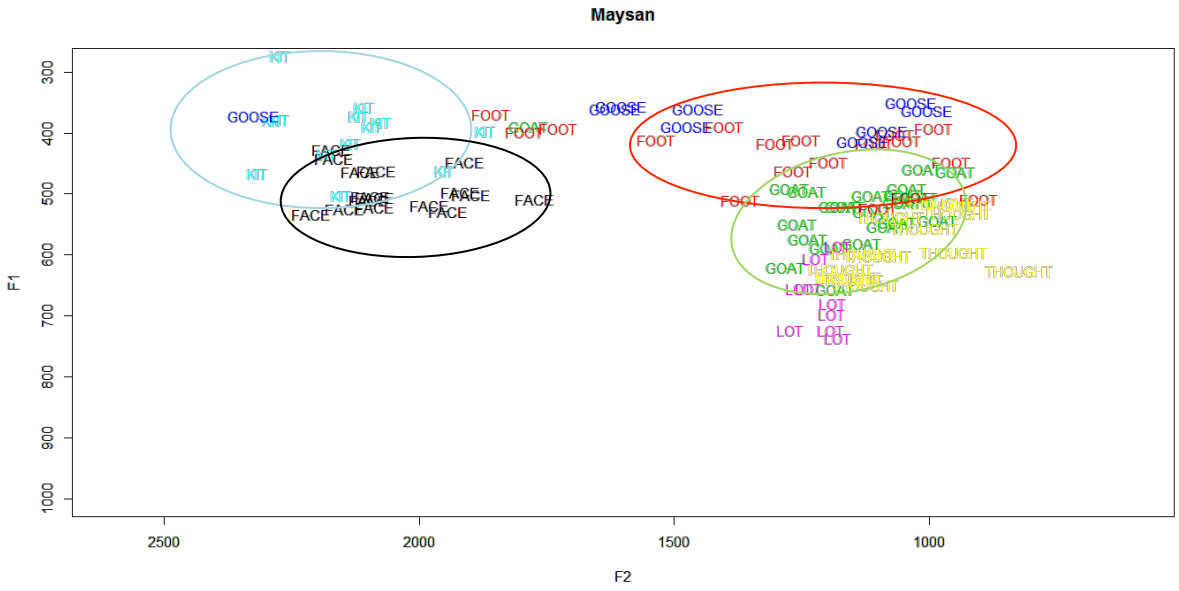

Figure 5. Vowel plot for Maysan.

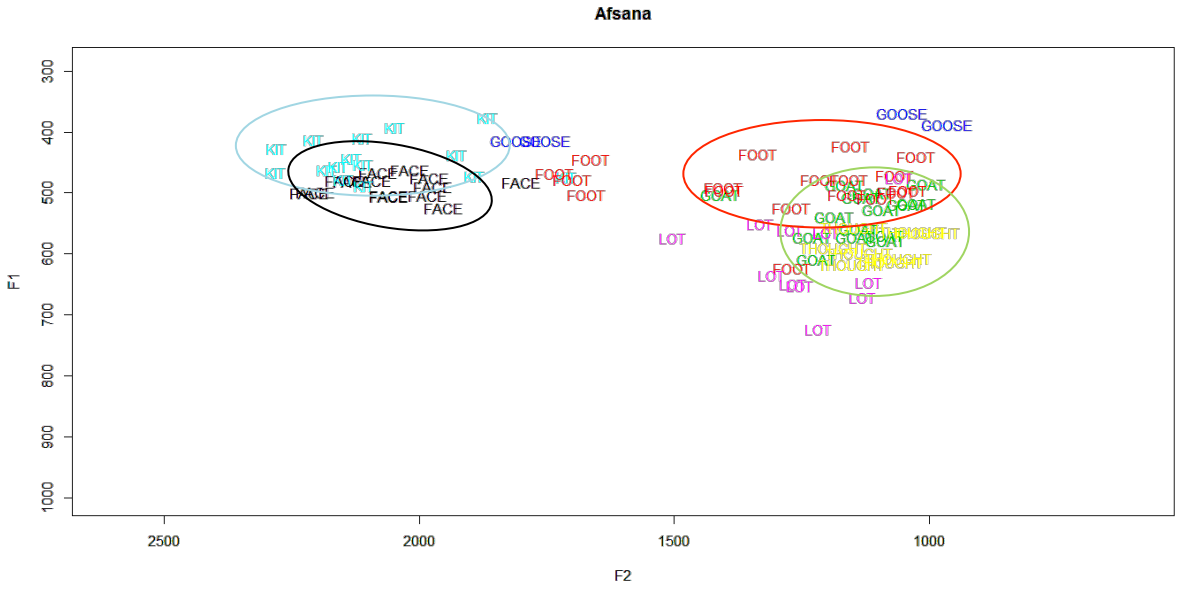

Figure 6. Vowel plot for Afsana.

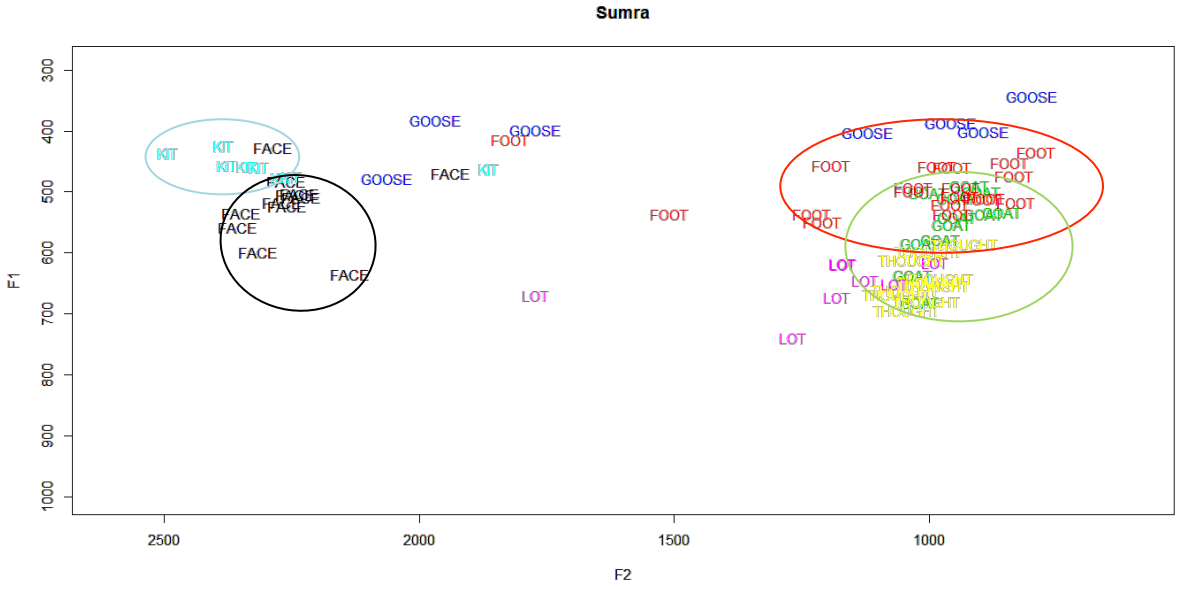

Figure 7. Vowels plot for Sumra.

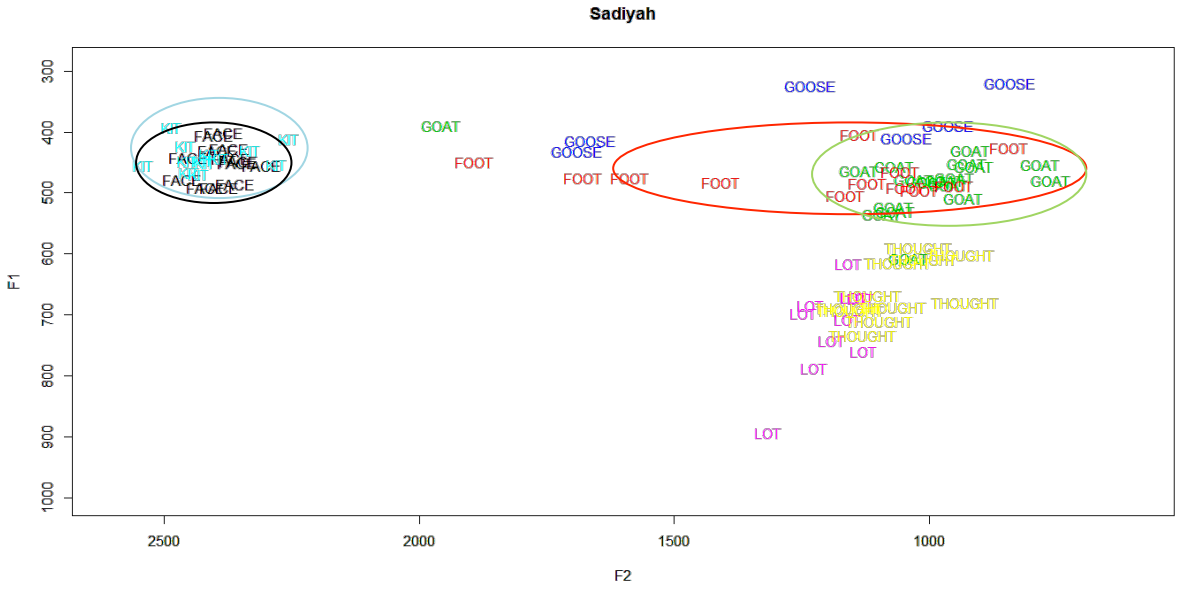

Figure 8. Vowel plot for Sadiyah.

Further statistical tests suggest the difference is in the position of FACE and GOAT. No significant difference was observed between the age-groups for KIT and FOOT (independent t-tests p=.75, p=.52, respectively). Significant differences were observed between the age-groups with FACE and GOAT midpoint F1s (unpaired Wilcoxon p=.0003 and independent t-test p<.0001, respectively).

The results presented here suggest that, monophthongal FACE and GOAT in these PE speakers maintain a qualitative distinction with KIT and FOOT. This qualitative distinction appears to be stronger for younger speakers.

10.2. AE speakers

A series of Shapiro-Wilks tests were undertaken for individual speakers' individual vowels. Table 4 illustrates that for all but one speaker FACE and KIT are significantly different in midpoint F1 (independent t-tests).

Speaker	
Lisa	p=.003 **
Christine	p=.04 *
Peggy	p=.099

Table 4. Significance values for within-speaker differences with FACE and KIT

Table 5 illustrates the same pattern with GOAT and FOOT, with all but one speaker having significantly different midpoint F1 values.

Speaker	
Lisa	p<.0001 *** unpaired Wilcoxon
Christine	p=.12 independent t-test
Peggy	p=.05 * unpaired Wilcoxon

Table 5. Significance values for within-speaker differences with GOAT and FOOT

These relationships are highlighted in Figures 9 through 11 showing formant plots for individual speakers.

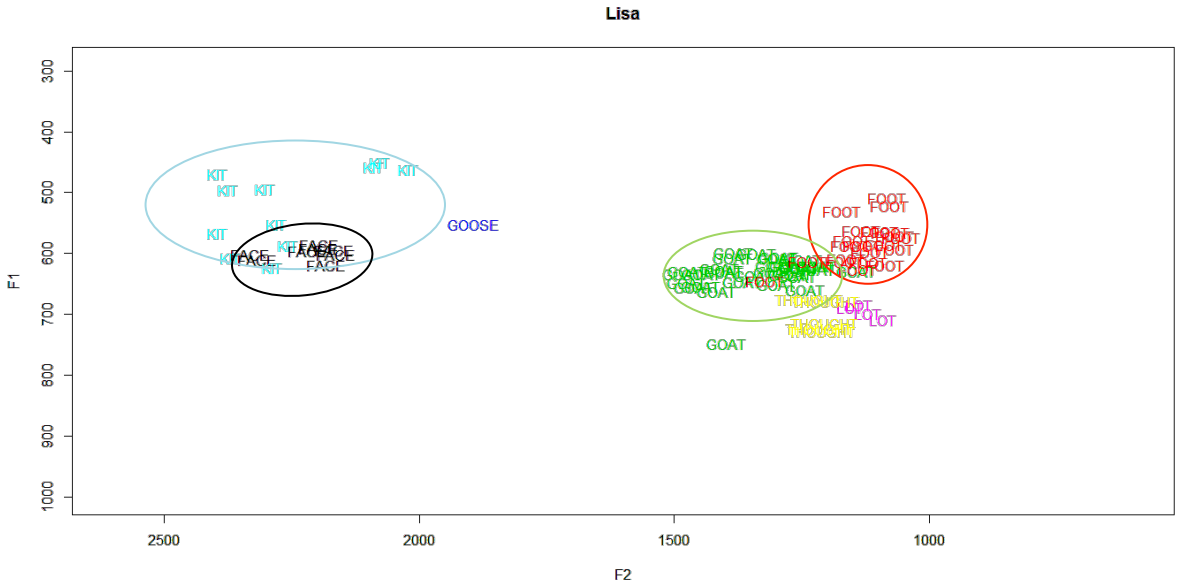

Figure 9. Vowel plot for Lisa.

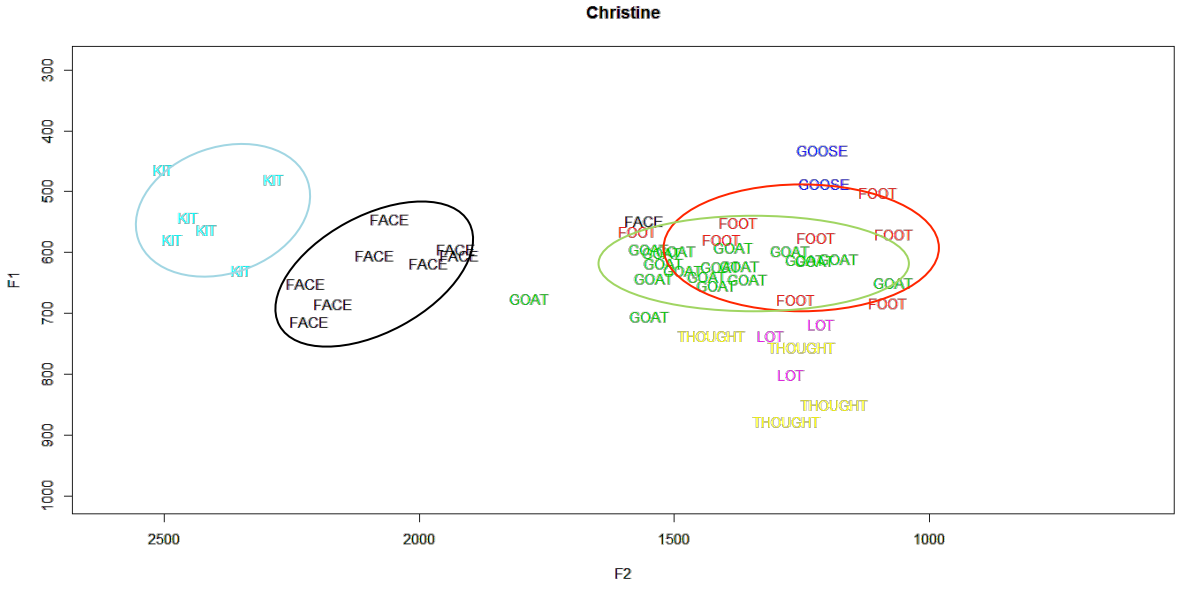

Figure 10. Vowel plot for Christine.

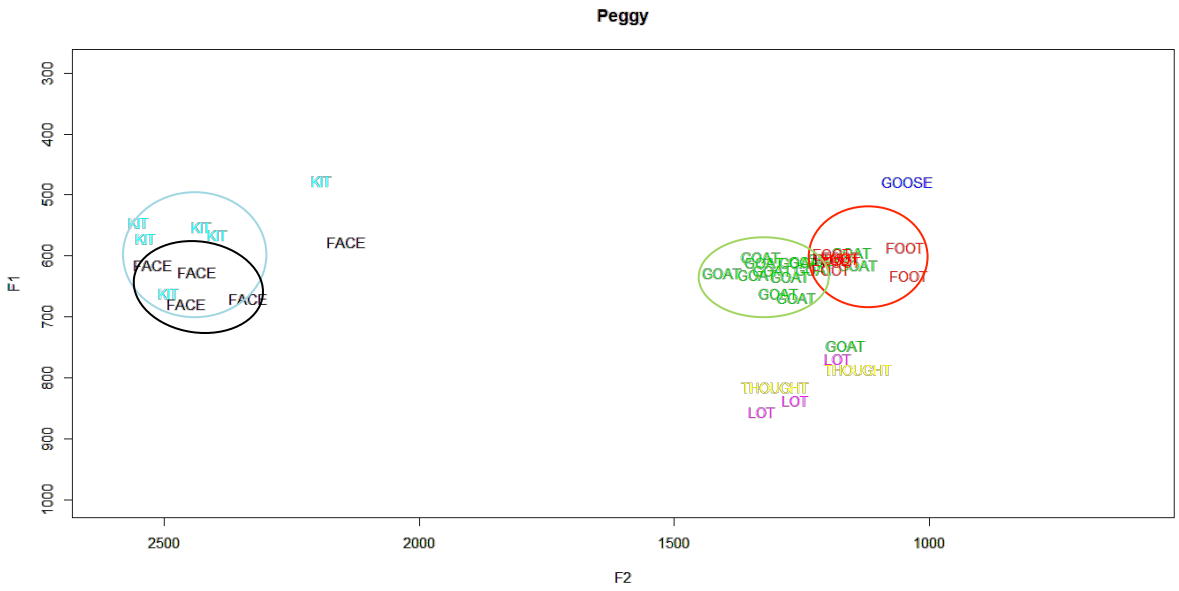

Figure 11. Vowel plot for Peggy.

Although mixed effects models were unsuccessful due to the small amount of data it seems AE speakers also show variability in the degree of separation between the two vowel pairs. Without further data and analysis it is not clear whether this is related to age in a similar way to that found with PE speakers. Here, the oldest speaker shows no difference between FACE and KIT, but the middle speaker shows no difference between GOAT and FOOT.

10.3. AE and PE speakers

Mixed effects linear regression models were undertaken with all speakers. Age group, lexical set and ethnicity were fixed effects with speaker and word included as random effects. Separate models were run for each vowel pair (FACE & KIT, GOAT & FOOT) followed by MCMC simulations.

A significant effect of ethnicity was observed in the FACE and KIT model (t=-3.14; p=.0002), indicating that PE speakers have a significantly lower F1 value for both FACE and KIT when compared with AE speakers. A significant difference was also observed between FACE and KIT across all speakers (t=-2.77; p=.007), suggesting KIT is significantly lower than FACE for all speakers. Figure 12 highlights the difference between PE and AE speakers, and also illustrates a lower KIT for both groups.

Figure 12. Significantly lower F1 for PE speakers. Significantly lower F1 for KIT.

A significant effect of ethnicity was observed with the GOAT and FOOT model (t=-2.5; p=.006). PE speakers have significantly lower midpoint F1 values than the AE speakers. Contrary to the front of the vowel space, no significant difference was observed across speakers between GOAT and FOOT, although FOOT is lower than GOAT (t=1.25; p=.23). Figure 13 illustrates the closer realisations for PE speakers overall.

Figure 13. Significantly lower F1 for PE speakers

11. Discussion

Variability in the degree of separation of FACE & KIT, and GOAT & FOOT is perhaps not restricted to PE speakers but could be evidence of more general variability in Bradford. The PE speaker who showed no significant difference between midpoint F1 values of both vowel pairs (Sadiyah) is a self-employed business woman with a great deal of contact in the wider Bradford community. If this feature was characteristic of PE, its presence in only Sadiyah's speech may be surprising. If considered as more general variation in Bradford and not constrained by ethnicity, its presence in Sadiyah's speech could illustrate her increased mobility, and potentially, increased integration.

It is unlikely that for speakers with no significant difference in midpoint F1 this is evidence of a merger. Further exploration of the ways in which the vowel pairs might be distinguished (duration, formant dynamics, F2 values, etc.) needs to be undertaken. Further, this paper considers only word list and reading passage data from nine female speakers.

Perhaps the most interesting observation is the significantly lower midpoint F1 values resulting in closer FACE, KIT, GOAT and FOOT realisations for all PE females when compared with AE females. The variation observed could be a consequence of the varying styles in which the two groups were recorded. AE speakers read a word list, whereas PE speakers read a passage. It is well known that speaking style can affect speakers' realisations (Labov 1978). However, considering patterns observed in other PE and multicultural-English varieties, the stylistic variation here is not considered to be the reason for the variation observed.

The closer realisations observed pattern with findings of Stuart-Smith et al. (2011). FACE and GOAT were observed to be significantly closer for Glaswasians than monolingual Glasgwegian speakers. The current work provides further evidence that this feature may be a more widespread characteristic of PE. Sharma (2011) also observed monophthongal FACE and GOAT with her second-generation speakers. Further, changes in the realisation of FACE and GOAT vowels in MLE could be patterning in a similar way. Cheshire et al. (2008) observed raised onsets and shorter trajectories in FACE and GOAT realisations for younger speakers in Hackney. They suggest that it is male non-Anglos who are leading the diphthong changes reported (Cheshire et al. 2008: 11). Drummond (2013a) observed monophthongal FACE and GOAT realisations in the speech of adolescent males in Manchester. He too comments on their close nature, although notes that the findings are currently based on a small amount of data (Drummond 2013b: pc).

It would appear that closer FACE and GOAT is a developing supra-local feature indexing non-Anglo ethnic identity. Sadiyah is the only PE speaker with no significant difference between midpoint F1 values of the vowel pairs. She still, however, shows close realisations of these vowels suggesting a complex interaction of local, and 'ethnic' identity. In the conversational data not considered here, she talks passionately about her faith and culture and how these are big parts of her life. Afsana is another of the older PE speakers. She shows highly significantly different F1 midpoints for FACE & KIT, and GOAT &FOOT but has some of the closest vowel realisations. Unlike Sadiyah, she has few friends and little contact outside of the local, predominantly Asian, community. It follows, therefore, that her speech patterns would be characteristic of PE, but not of more general Bradford variation. These results follow ideas discussed by Stuart-Smith et al. (2011) and Harris (2006) of a co-existent 'Brasian' identity, with speakers developing complex interactions between 'local' and 'ethnic' features. Figures 14 and 15 below contain boxplots illustrating the changing F1 at the front and back of the vowel space from AE to PE.

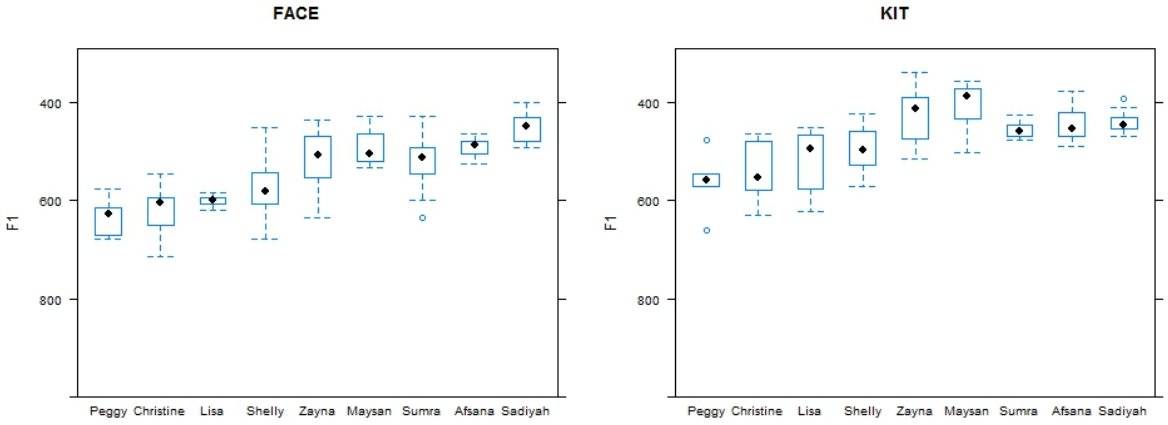

Figure 14. Boxplots for all speakers: F1 for FACE and KIT.

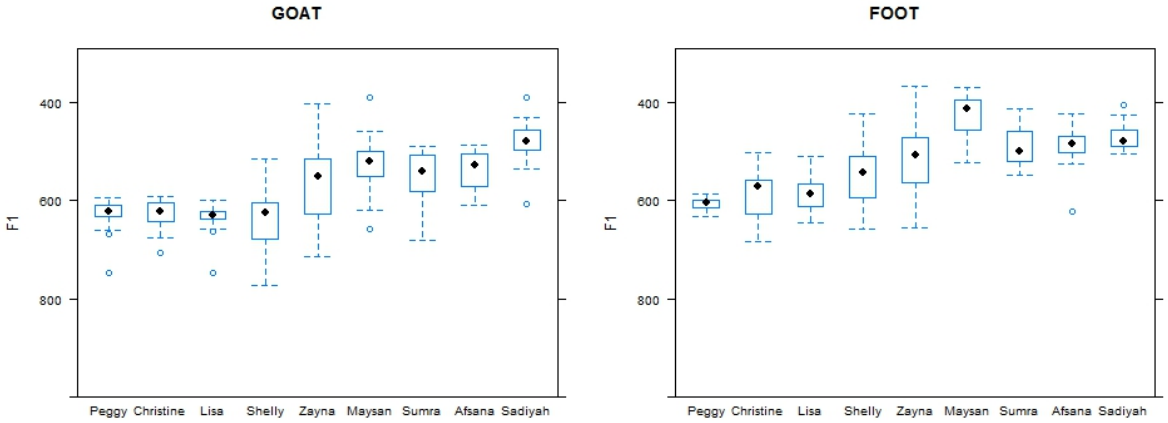

Figure 15. Boxplot for all speakers: F1 for GOAT and FOOT.

Determining whether the variability observed here is evidence of innovation or transfer from Panjabi is still unclear. The discussion of Panjabi above indicates that similar vowels with comparable qualities to those found in PE may be present in Panjabi. However, given the presence of this feature in other multicultural varieties of English a direct transfer from Panjabi would be surprising. Wells (1982: 626) notes that in Indian English, monophthongal FACE and GOAT are common, with realisations around /e/ and /o/. This suggests that monophthongal FACE and GOAT are not uncommon in English with Indic language influences. Wells (1982) attributes this to the influence of English, stating that long mid diphthongs probably arose around 1800 with an English presence in India existing before this time. This explanation does not account for the variation observed here in PE and other multicultural Englishes.

Without further knowledge of the first-generation realisations no categorical conclusions can be made. Reallocation of the potentially transferred feature may have taken place, aligning speakers with other varieties. Monophthongal FACE and GOAT could be indexing a non-Anglo ethnic identity. It would be useful to have a more comprehensive picture of the contact patterns of PE speakers, both within Bradford and throughout the UK. This could help address the question of how features have become characteristic in different localities and also determine whether the feature is a Panjabi transfer or a multicultural-English or PE innovation, or even if it is that clear cut.

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