



LIFESPANS & STYLES

Undergraduate Working Papers on Intraspeaker Variation

Volume 2

Article 6

2016

Black Country English in the Spotlight: A Stylistic Analysis of Variable Contrast between Phonemes in an Urban Regiolect of British English

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ISSN: 20571720

doi: 10.2218/lis.v2i2.2016.1613

This paper is available at: <http://journals.ed.ac.uk/lifespansstyles>

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Abstract

When examining the COT/CAUGHT merger in central Pennsylvania, Labov (1994) uncovered a stylistic phenomenon, known as the “Bill Peters Effect”, whereby speakers heavily differentiate between /ɑ/ and /ɔ:/ in spontaneous speech but converge the two lexical sets into a near-merger situation during controlled tests comprising isolated minimal pairs. While it is interesting to discover that a speaker or a community of speakers may exhibit stylistic preferences for merging two variants in particular speech contexts, it is unclear as to what precisely drives this intraspeaker and interspeaker variation. By examining the distinctive Black Country variety of English (BCE) (Clark and Asprey 2013), this paper aims to discover if the Bill Peters Effect is specific to the COT/CAUGHT merger in North American Englishes (Drysdale 1959, Labov 1994, Boberg 2001, Majors 2005, Hall-Lew 2013) or whether it can be observed in merging situations between phonemes in other dialects of English. A study was conducted with 14 native BCE speakers in order to examine in which speech contexts individual speakers distinctly alternate between the FOOT/STRUT and PRICE/CHOICE lexical sets, and produce merged variants. The normalised F1 distances between each speaker’s realisation of FOOT/STRUT and PRICE/CHOICE across three different speech conditions were collected and analysed. The results show that BCE speakers have a stronger preference for merging the lexical sets in a controlled wordlist task, where lexical sets are elicited in isolation, than in less formal spontaneous speech, producing the opposite effect to Labov’s Bill Peters Effect.

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1 Introduction

In early schools of linguistic thought, it was traditionally believed that sound change obeys a rigid set of rules and that all linguistic categories are divided into discrete, non-overlapping, and mutually exclusive sets in order to preserve and maintain an underlying contrast between classes of sounds. However, evidence of marginal sound change phenomena, including studies of near-mergers in English (Labov et al. 1972, Labov et al. 1991, Bowie 2001) and in other languages (Yu 2007), has been collected, flouting this categorical theory of sound change. A near-merger is a process whereby a speaker consistently produces a measurable difference between tokens from different but phonetically converging lexical sets, phonological and semantic contrast between them is suspended, and the speaker is prevented from distinguishing the phonemes auditorily (Hickey 2004, Miller and Trask 2007).

Further research into specific near-mergers, such as the COT/CAUGHT merger in North American Englishes (Drysdale 1959, Labov 1994, Boberg 2001, Majors 2005, Hall-Lew 2013), has revealed fascinating sociolinguistic trends. While investigating the COT/CAUGHT merger in Duncannon, central Pennsylvania, Labov (1994) found that while younger speakers exclusively showed the merger between /ɑ/ and /ɔ:/, speakers over the age of 70 showed a definite stylistic preference to merge the two variants in only one specific speech context. Labov recorded elderly residents heavily differentiating between /ɑ/ and /ɔ:/ in spontaneous speech but near-merging the two phonemes in isolated minimal pairs. Labov called this the “Bill Peters Effect”, named after the first of his interviewees to have exhibited the distinctive stylistic preference (Labov 1994: 363, Millar and Trask 2007).

While it is interesting to learn that a speaker, or even a community of speakers, may show stylistic preferences for merging two variants in one particular speech context and not another, it is unclear what precise sociolinguistic variable drives this process within a speaker, and whether other English varieties which exhibit merging variants in their phonemic inventories may reveal an identical or similar effect to the Bill Peters Effect.

This study centres on the Black Country variety of English (BCE) and two sets of phonemes in its vocalic inventory which evidence a variable lack of phonemic contrast, namely, between PRICE and CHOICE, and between FOOT and STRUT. This study will investigate the complex nature of the relationships between the BCE PRICE/CHOICE and FOOT/STRUT lexical sets by analysing the results of a speech study conducted with 14 native BCE speakers. The speech study will comprise two tasks replicated from the Edinburgh DoubleTalk Speech Corpus (Scobbie et al. 2013): 1) a wordlist task where words are spoken in isolation, and 2) a scripted passage task where vowels are spoken in connected speech. A short unscripted interview with each BCE speaker was also recorded. The results provide an opportunity to compare the vowel systems of BCE and Southern Standard British English (SSBE), a standard variety where PRICE and CHOICE, and STRUT and FOOT are realised as four strongly distinct vowels: [aɪ], [ɔɪ], [ʌ], and [ʊ], respectively (Wells 1982a:120). This enabled an examination of the BCE vowel system more closely in comparison to a standard variety of British English where phonemic contrast between the four lexical sets is invariable. The context in which BCE speakers are more likely to make less distinction between the two pairs of lexical sets can also be evaluated by measuring and analysing the speakers’ realisations of the vowels across three different speech contexts: a wordlist, a scripted passage, and an unstructured interview.

In the next section, a detailed description of BCE and its vocalic inventory will be provided. A literature review will follow. It will explain how the distinctive cultural and linguistic identity of BCE has developed over time and what precisely has prompted its speakers to produce a variable lack of contrast between tokens of PRICE and CHOICE, and FOOT and STRUT.

2 Black Country English

BCE is a distinctive variety of British English spoken in an area known as the Black Country, which lies to the immediate north-west of the city of Birmingham in the West Midlands. It is largely associated with the speech of the working-class communities which inhabited the region during the British Industrial Revolution at the turn of the 19th century (Clark 2013). Figure 1 illustrates the approximate location of the Black Country within the UK.

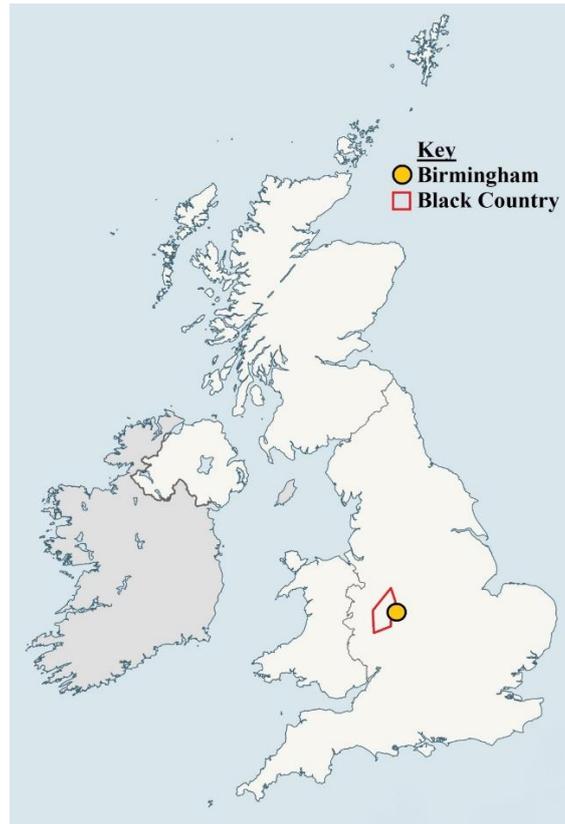


Figure 1: A map showing the approximate location of the Black Country within the UK. (“[United Kingdom location map](#)” by [NordNordWest](#) is licensed under [CC BY-SA 3.0](#). It has here been adapted by adding the approximate location of Birmingham and the Black Country.)

Identifying the precise parameters of the Black Country within the conurbation of the West Midlands is difficult. It is generally assumed that the Black Country centres upon the town of Dudley and the neighbouring boroughs of Walsall, Wolverhampton, and Sandwell (Clark 2013), shown in Figure 2. Although there are no administrative or politically agreed boundaries, the region itself is regarded to be “as well known as it is certainly ill defined” (Gale 1966:1).

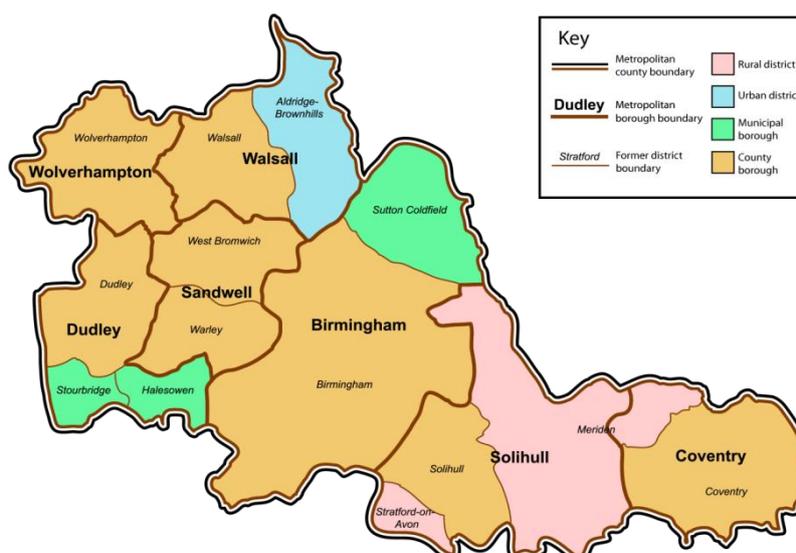


Figure 2: A map showing the administrative boundaries of the West Midlands County. (“[West Midlands](#)” by [Jza84](#) is licensed under [Creative Commons Public Domain Mark](#).)

The Black Country most likely gained its name due to the inhospitably high levels of air pollution produced by the coal mines, steel mills, and iron foundries which dominated its landscape during the Industrial Revolution (Clark and Asprey 2013, Asprey 2015). Thus, whether a locality is properly described as being within or outside the boundaries of the Black Country depends upon whether it falls within an area immediately surrounding the various industries which once occupied and contaminated the region. This helps to explain the problems in defining the precise area constituting the Black Country, because the confines of the foundries and furnaces do not suddenly come to an end; rather, they peter out at the edges of a series of “interminable villages” (Jones 2008:30). For the purposes of this study, I have selected the current limits of the Black Country set by Clark and Asprey (2013), as they take into account all aspects of the region’s history, geography, and sociology as well as the linguistic norms of BCE when identifying the region’s confines. These boundaries can be seen in Figure 3.

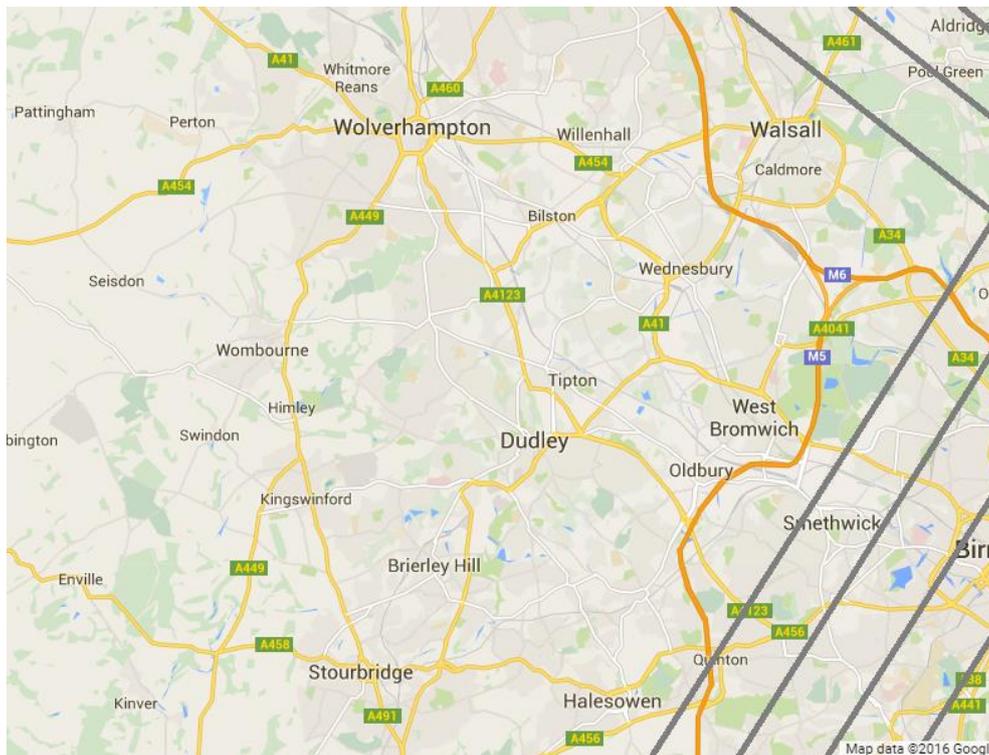


Figure 3: Limits of the Black Country (based on map by Clark and Asprey 2013:8, dashed area excluded; image attribution: Map data ©2016 Google).

This study focuses on the distinctive vowel inventory of BCE. An appropriate way of presenting the BCE vocalic system is through the structure of Wells’s lexical sets (Wells 1982a), where words are arranged into groups that share the same vowel feature historically in RP and General American English.

Wells (1982b) offers a general overview of the lexical sets for West Midlands speech, as shown in Table 1, which comprises the vernaculars of Birmingham and the Black Country around Wolverhampton. In his table, Wells notes the most frequently used variant for each lexical set first, followed by other salient variants indicated by the “>” symbol.

Table 1: The lexical sets for West Midlands speech (adapted from Wells 1982b:364)

KIT	ɪ	FLEECE	i:	NEAR	i:ə>ɪə
DRESS	ɛ	FACE	ʌɪ	SQUARE	ɛ:
TRAP	ʌ	PALM	ɑ:	START	ɑ:
LOT	ɒ	THOUGHT	ɔ:	NORTH	ɔ:
STRUT	ʊ>ʌ	GOAT	ʌʊ	FORCE	ʌʊə>ɔ:
FOOT	ʊ	GOOSE	u:	CURE	u:ə>ʊə:
BATH	ʌ	PRICE	ɒɪ	HAPPY	i
CLOTH	ɒ	CHOICE	ɒɪ>oɪ	LETTER	ə
NURSE	ɜ	MOUTH	æʊ	COMMA	ə

A table of lexical sets more specific to BCE speech is provided by Mathisen (1999), who completed a sociolinguistic study in Sandwell, focusing on the towns of Rowley Regis, Tipton, and Wednesbury. Like Wells, Mathisen recorded the vowels in each lexical set, marking the most frequently used variant first, followed by other notable variants. Mathisen's vocalic inventory for BCE can be observed in Table 2.

Table 2: Wells's lexical sets and BCE pronunciations (adapted from Mathisen 1999:108)

KIT	i	FLEECE	i:>ii>əi	NEAR	iə
DRESS	ɛ	FACE	æi>ɛi	SQUARE	ɛ:
TRAP	æ>æ:	PALM	ɑ:	START	ɑ:
LOT	ɒ>ɔ	THOUGHT	ɔ:	NORTH	ɔ:
STRUT	ɒ>ʊ>ə	GOAT	aʊ>ɔʊ	FORCE	ɔ:
FOOT	ʊ	GOOSE	u:	CURE	ju:ə>jɔ:
BATH	æ>a	PRICE	ai>ai>ɔi	HAPPY	i
CLOTH	ɒ>ɔ	CHOICE	ɔi	LETTER	ɛ>ə
NURSE	ə>ɚ	MOUTH	æu>ɛu	HORSES	i
				COMMA	ə

Table 2 evidences the variable lack of phonemic contrast in BCE between PRICE and CHOICE. Although Mathisen (1999) recorded that [ai] was the most frequently used variant for PRICE, some of the 57 BCE speakers in her study produced both [ai] and [ɔi]. This suggests that a number of BCE speakers produce the first vowel of the diphthong [ai] in PRICE in the back of the vowel space to produce [ɔi], and some then raise the vowel to produce [ai], which is identical to the diphthong in CHOICE, causing the two lexical sets to collapse. Wells's (1982b) lexical sets for West Midlands Speech in Table 1 support the hypothesis that the lexical sets in both PRICE and CHOICE have merged, both of which are realised as [ɔi], with some West Midlands speakers producing a slightly higher [oi] for CHOICE.

A similar hypothesis can be demonstrated by observing Mathisen's BCE realisations of the vowels in STRUT and FOOT. The most frequent BCE variant that Mathisen (1999) records for the STRUT vowel is the low back vowel /ɒ/. However, some BCE speakers are recorded by Mathisen as realising the STRUT vowel as the vowel in FOOT, namely [ʊ], thus merging the two lexical sets together. Again, Wells's lexical sets in Table 1 confirm the hypothesis that STRUT and FOOT have merged in general West Midlands speech, with both STRUT and FOOT vowels being realised as the near-high, near-back rounded vowel [ʊ].

Understanding the precise nature of these merged situations in BCE is complex. However, it is reasonable to state that the variation between the realisations of PRICE and STRUT in BCE evidences that speakers produce vocalic tokens of PRICE and STRUT which converge with CHOICE and FOOT, respectively, but do not completely merge with the two sets of vowels. This suggests that PRICE/CHOICE and FOOT/STRUT could be cases of BCE near-mergers.

3 Literature Review

3.1 The Development of the Black Country Speech Community

Before the British Industrial Revolution, the region now called the Black Country was an isolated collection of small agricultural hamlets and villages of no significant economic importance (Clark 2013). The settlements were inhabited by speakers of a variety of the Middle English West Midlands dialect, which covered the region between the Humber and the Thames to the west of the Pennines (Baugh and Cable 2013). Particularly remote and situated on a plateau 800ft above sea level, the Black Country was strictly bounded by two rivers, the Tame and the Stour, with no river or Roman road passing through the middle. Relative geographical isolation is the principal reason cited by Clark (2013) and Clark and Asprey (2013) for why BCE has retained much of the distinctive regional lexis and dialectal features which have disappeared from the rest of the Midlands dialects.

When the Industrial Revolution began, the seemingly inexhaustible abundance of Black Country natural resources resulted in it quickly becoming one of the most profitable and commercialised centres for industrial inception and growth in the country. The Black Country transformed into one "continuous town" (Jones 2008:29), overrun with furnaces, foundries, and smelting plants, which smoked for 24 hours a day, blackening the air and ground. Author and social activist, Elihu Burritt, memorably defined the Black Country as a "velvet-bound area of fire and smoke ... black by day and red by night", a place that could not be "matched for vast and varied production, by any other place of equal radius on the surface of the earth" (Burritt 1868:1).

During the Industrial Revolution, the Black Country experienced “meteoric population growth”, caused by the huge waves of in-migration of people seeking employment (Jones 2008:27). The linguistic impact of the migrants, who brought their own distinct language varieties to the Black Country, is uncertain. However, the surges of in-migration significantly influenced the demographics of the industrial powerhouse, which set the strong foundations of the distinct cultural and linguistic identity that BCE speakers proudly and affectionately uphold today.

The Black Country landscape has considerably changed over the past 50 years. Many of its industries have shut down, replaced with retail and housing developments, but the BCE speech community has retained a strong local and linguistic identity, partly due to its dialect. The distinctive vernacular provides a vehicle for a unique written language, with a traditional dialectal style of writing, well demonstrated by Fletcher’s (1975, 1989) Biblical translations and the locally renowned comedy book “Aynuk and Ayli”. The local newspaper, “The Black Country Bugle”, still features many columns and poems written in traditional BCE dialect, such as “Me Woife’s Tickling Stick” (Alder 2015), a poem published on 12 March 2015, which specifically highlights the traditional BCE orthographic realisations of the PRICE and CHOICE lexical sets. In the poem, the PRICE lexical set is written consistently as <oi>, the same pronunciation of vowel as in CHOICE, suggesting that the two phonemes were at least once merged in BCE.

3.2 The Origins of the Modern Realisations of PRICE and CHOICE in BCE

The origins of the current realisations of PRICE and CHOICE in BCE are complex. While a strong PRICE/CHOICE merger is evidenced in Birmingham English, with PRICE and CHOICE being realised as [ɔɪ], so that *line* and *loin* are homophonously [lɔɪn] (Asprey 2007:80), in some areas, the merger can also be observed to work in the opposite direction, with the rhyme in the CHOICE lexical set sounding more like PRICE (Asprey 2007). Wells (1982a:209) explains that the CHOICE lexical set, which consists mainly of loanwords from Old French, alternated between front and back realisations of the first vowel until the 19th century so that “*joined* rhymed with *find*”. As Asprey (2007:80) points out, Fletcher’s (1989) BCE translation of the New Testament provides further evidence of CHOICE merging with PRICE through use of the spellings <vice> for *voice* and <piyntin> for *pointing*.

Both Wells (1982b) and Mathisen (1999) report that PRICE in BCE is often realised locally as a diphthong comprising a backed vowel followed by a high front vowel, potentially producing variants that show a lack of contrast with realisations of CHOICE.

3.3 The Origins of the Modern Realisations of FOOT and STRUT in BCE

Although a fully autonomous variety, BCE has often been regarded as a mixed lect or an intermediate bundle of dialects sharing the linguistic innovations of Northern and Southern varieties, like every other Midlands variety of British English (Wales 2006:18, Wells 1982b, Baugh and Cable 2013). One notable feature of BCE which demonstrates this principle is its realisation of the FOOT and STRUT vowels.

The Black Country lies along the isogloss of the historical FOOT/STRUT split which occurred in the 17th century. Wells (1982a:196–7) explains that while most accents of English distinguish between /ʊ/ and /ʌ/ as contrasting phonemes, exhibited by the minimal pairs *stood–stud* and *put–putt*, the contrast between the short vowels did not exist in Middle English. Middle English /u/ split into the two current phonemes /ʊ/ and /ʌ/, caused by the unrounding of the /ʊ/ phoneme forming /ʌ/. While the split was prevalent in most southern varieties, it did not occur in the broad accents of the north or the north Midlands where the [ʊ] vowel is retained in both FOOT and STRUT.

As BCE is situated on the isogloss of this historic split, the split can only partially be seen in its vowel system. Wells (1982b:363) suggests that the opposition of the two phonemes /ʊ/ and /ʌ/ appears to be “variably neutralizable”, perhaps as the phonetically intermediate high-mid back unrounded vowel [ɤ]. Chambers and Trudgill (1980:135) term this intermediate realisation a “fudge” between the two contrasting phonemes /ʊ/ and /ʌ/. They posit that it should be expected, if not predicted, for varieties that sit on the transition zone of the FOOT/STRUT split even to mix the vowels /ʊ/ and /ʌ/, as the area occupies a region that forms a dialect continuum between one variety which uniformly has /ʊ/ for STRUT and one which has /ʌ/.

As noted by Asprey (2015), Manley’s (1971) study of the lexical sets of BCE spoken in Cradley Heath found that all recorded tokens of FOOT and STRUT were clustered closely around the intermediate fudge phoneme [ɤ]. Mathisen (1999) recorded three differing BCE variations of the STRUT set, namely the low back rounded vowel [ɒ], the high back rounded vowel [ʊ], and the schwa [ə], suggesting that some BCE speakers show a lack of contrast between the FOOT and STRUT lexical sets.

4. Speech Study Methodology

4.1 Participants

The sampling universe was defined by the limits of the Black Country outlined in the introduction (Figure 3). The participants were 14 native BCE speakers, of whom 8 were male and 6 female. All were non-linguists who were born and raised in the Black Country. Figure 4 locates the approximate address of each speaker within the Black Country (*F* indicates female speakers and *M* male speakers). Of the participants, 11 were over the age of 50 at the time of recording, with 2 over the age of 80: namely, *F1* from Bilston and *M6* from Brierley Hill. *M2* from Halesowen was in his mid-twenties. The participants' speech was compared with that of 5 SSBE speakers from the *Edinburgh DoubleTalk* corpus of acoustic and articulatory recordings at the Edinburgh Speech Production Facility (Scobbie et al. 2013).

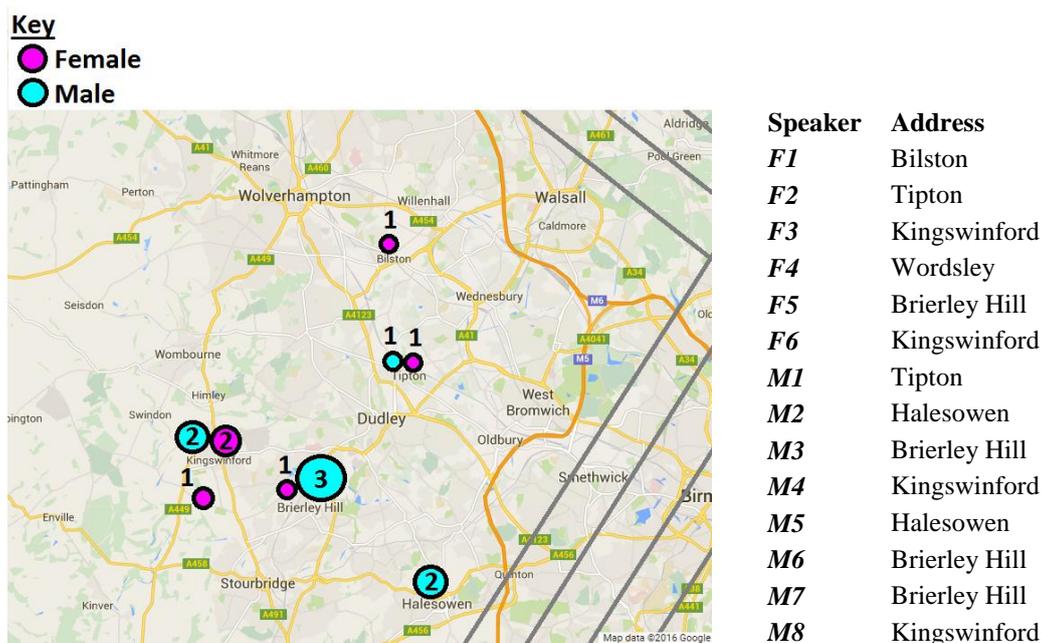


Figure 4: Location and number of male and female BCE speakers interviewed by settlement. (Image attribution: Map data ©2016 Google.)

4.2 Speech Materials

In order to compare the vowel systems of BCE and SSBE, the speech data gathered were based on the materials from two tasks used by DoubleTalk (Scobbie et al. 2013).

The two tasks were conducted with each speaker, who also took part in an unstructured interview. The first task consisted of a list of isolated words organised around lexical sets (Table 3), which facilitated analysis and comparison of the vowel space of the BCE speakers with the SSBE speakers from DoubleTalk.

Table 3: Word tokens elicited in the wordlist task (adapted from Scobbie et al. 2013)

1. <i>heed</i>	2. <i>hid</i>	3. <i>hayed</i>	4. <i>head</i>	5. <i>had</i>
6. <i>hod</i>	7. <i>hawed</i>	8. <i>hoed</i>	9. <i>hood</i>	10. <i>who'd</i>
11. <i>he'd</i>	12. <i>hard</i>	13. <i>heard</i>	14. <i>hurd</i>	15. <i>hood</i>
16. <i>haired</i>	17. <i>hoard</i>	18. <i>peered</i>	19. <i>poured</i>	20. <i>how'd</i>
21. <i>hide</i>	22. <i>ahoyed</i>	23. <i>hoist</i>	24. <i>commA</i>	25. <i>lettER</i>

Words 1–19 are words which were originally used by DoubleTalk. Words 20–25 are words selected and added to the wordlist in order to record the BCE speakers' realisations of the MOUTH, PRICE, and CHOICE phonemes. These sets were missing from the original DoubleTalk wordlist and would enable study of the positions of other vowel phonemes in comparison to other vowels in the BCE vowel space.

The second task comprised a scripted monologue. Scobbie et al.'s (n.d.) modified "Scottish" version of McCullough and Somerville's (2000) phoneme-rich *Comma Gets a Cure* (CGAC) story was replicated for ease of comparison with the SSBE speakers in DoubleTalk.

4.3 Recording Procedure

Speech data were collected via an individual session with each BCE speaker. A PMD 660 recorder and microphone were used, which provided recordings suitable for phonetic analysis.

Before starting the study, each speaker was presented with a consent form. After giving their consent, the speakers participated in the wordlist task. The 25 word cards were shuffled and laid out in front of the speaker in rows and columns. The speaker read each word card and repeated the process twice so that at the end of the first part of the recording session, there were three repetitions of each word on the wordlist.

Each speaker was then asked to read the scripted CGAC, and the session ended with an unstructured interview. The interviews centred upon the speakers' own experiences of growing up and living in the Black Country and their opinions as to how the landscape and culture of the Black Country had changed over time. However, the interviews were casually conducted and the speakers were allowed to stray off-topic.

Conducting these three tasks enabled an analysis of intraspeaker variations to assess whether there were any differences between the speakers' realisations of vowels when speaking in different speech styles: the wordlist elicited vowels in isolated words; the scripted monologue elicited vowels in connected speech; and the interview elicited vowels in connected speech but without the pressure on the speaker to follow a script.

4.4 Procedures of Analysis

Using Praat (Boersma and Weenink 2015), each BCE and SSBE speaker's wordlist recording was segmented into 25 separate sound files so that each file contained the material on each word card. For the waveform and spectrogram of each sound file, an accompanying TextGrid file was made, comprising two tiers: an interval tier at the top and a point tier at the bottom. The beginning and end of each vowel of the rhyme was marked on the interval tier of the corresponding TextGrid. On the point tier of each sound file's TextGrid, the midpoint of the vowel was marked and the F1 and F2 values of the midpoint were measured. For diphthongs, the F1 and F2 values at the points one quarter into the vowel interval (the midpoint of the first component of the diphthong) and three quarters into the vowel interval (the midpoint of the second component of the diphthong) were marked and measured. This procedure is illustrated in Figures 5 and 6 for BCE F1's

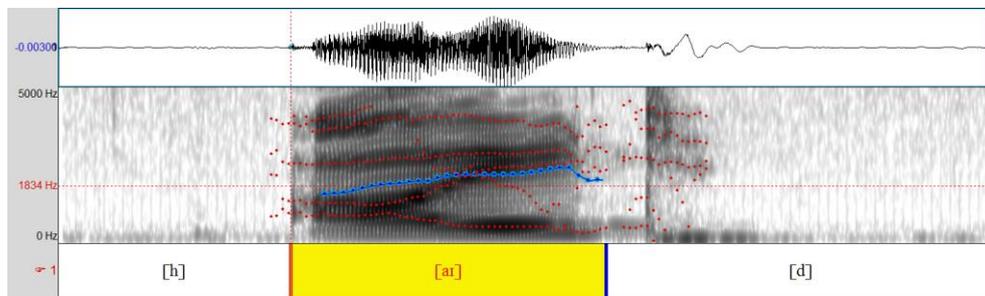


Figure 5: Marking the beginning and end of the vowel for BCE F1's realisation of hide [haɪd].

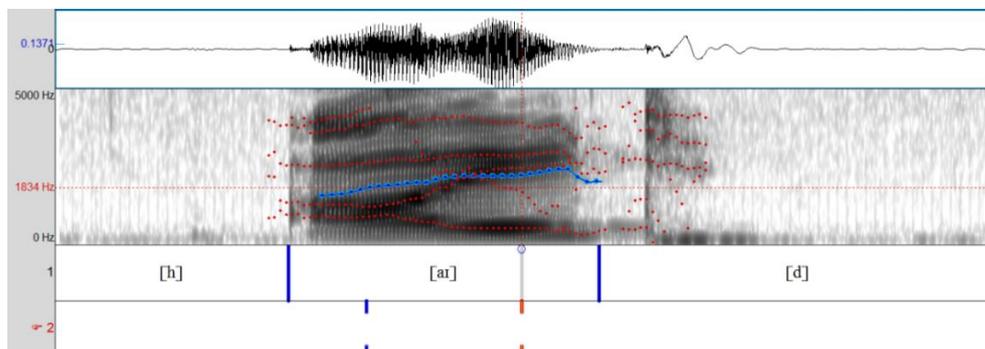


Figure 6: Marking the midpoints of the vowel for BCE F1's realisation of hide [haɪd].

difference between BCE and SSBE is the fronted grouping of SSBE’s mid-to-high short back vowels “hood” = [ʊ] and “hud” = [ʌ] towards the middle of the vowel space, forming a line of vowels clustered around an F1 z-score of approximately -0.25. BCE’s mid-to-high short back vowels are positioned far more back in comparison, mostly fluctuating at an F1 z-score of just below -1. Figure 8 also reveals that the distance between the FOOT and STRUT vowels, [ʊ] and [ʌ], is far larger in SSBE than it is in BCE, and that BCE speakers clearly differentiate tokens of PRICE and CHOICE in the wordlist condition.

Figure 9 compares the normalised F1 distances between FOOT/STRUT and PRICE/CHOICE for each BCE speaker across three speech contexts: wordlist, CGAC, and interview.

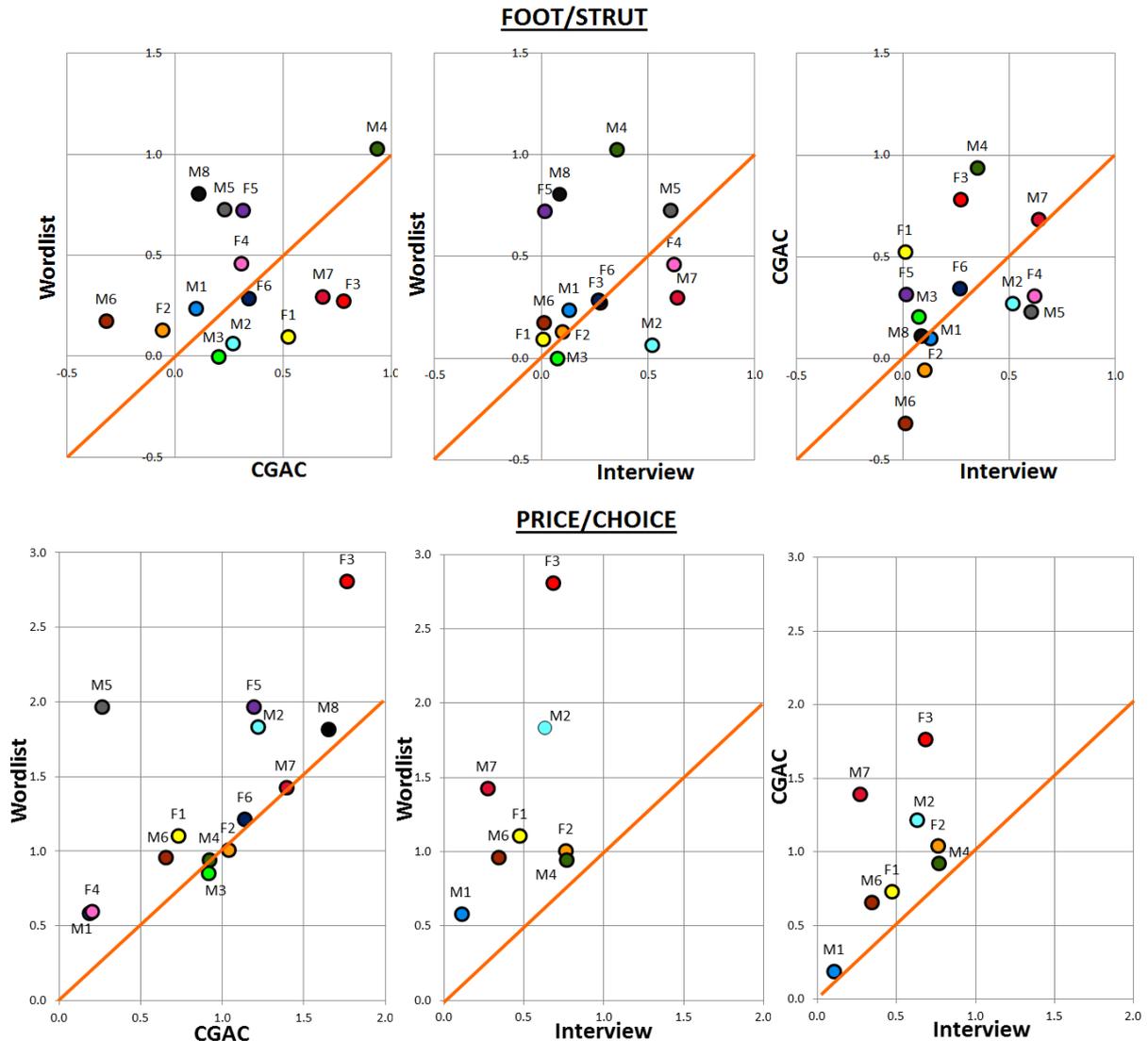


Figure 9: The normalised F1 distances between FOOT/STRUT and PRICE/CHOICE for each BCE speaker across three speech contexts.

In Figure 9, each point represents a speaker’s normalised F1 distances between their realisations of FOOT/STRUT and PRICE/CHOICE in one speech condition on the x-axis, which are plotted against another speech condition on the y-axis. Therefore, for each speaker and value plotted, the larger the number, the larger the distance between the lexical sets in that particular condition. In each graph, the less formal speech condition is represented by the x-axis and the more formal speech condition by the y-axis. Points along the orange diagonal line represent no difference between conditions; points above the line represent greater distance between vowels in the more formal condition than the less formal one; and points below the line represent greater distance between vowels in the less formal condition than the more formal one.

By observing the lower middle chart, which compares the BCE speakers’ normalised F1 distances between the PRICE and CHOICE vowels in the interview condition on the x-axis, and the wordlist condition on the y-axis,

the values are distinctly clustered above the orange line, showing the speakers' prominent stylistic tendency to merge PRICE and CHOICE more in the more formal wordlist condition than in the less formal interview condition.

The results from Figure 9 present evidence that there is considerably less difference between the distances between FOOT/STRUT across the three speech contexts for BCE speakers than between PRICE/CHOICE. This is indicated by the scales of the normalised distance values. For FOOT/STRUT, the scale of the axes range from -0.5 to 1.5, with the vast majority of the BCE speakers' distance values falling between 0 and 1. For PRICE/CHOICE, the scale ranges from 0 to 2 on the x-axis and 0 to 3 on the y-axis. In other words, the BCE speakers' distances between FOOT/STRUT are more invariably consistent across the three speech contexts than in PRICE/CHOICE.

For FOOT/STRUT, BCE speakers are generally very close to merging the two phonemes across the three speech contexts. For example, in the upper middle graph, which compares the differences of the normalised distances between the wordlist and interview, a cluster of 7 speakers, namely, *F1*, *F2*, *F3*, *F6*, *M1*, *M3*, and *M6*, is situated between 0 (the point of full merger) and approximately 0.3 for both speech contexts.

The BCE speakers generally produced less of a distinction between the tokens of FOOT and STRUT in the wordlist than in any other speech context. Notably, *M3* appears to produce overlapping FOOT/STRUT completely in the wordlist lying directly on "-0.003", and almost produces overlapping FOOT/STRUT in CGAC and the interview. Interestingly, the results from *M6* and *F2* indicate that in the scripted CGAC context, the two speakers realised tokens of FOOT more like STRUT, as expected. This is evidenced by the negative normalised distance values.

Before stating the PRICE/CHOICE results, it should be noted that 6 speakers did not produce a token of CHOICE in their interview, so their data was excluded from the results requiring a comparison with data from the interview.

For PRICE/CHOICE, BCE speakers make considerably less of a distinction between the two lexical sets in interview speech compared to the other speech contexts. The most striking results are provided by *F3* when comparing the normalised distances between her realisations of PRICE/CHOICE in the wordlist against the interview. *F3* realises PRICE and CHOICE with a normalised distance of 2.8 in the wordlist but with only an average normalised distance of 0.68 in the interview. In other terms, *F3* realises PRICE and CHOICE as 76% closer in interview speech than she does in the wordlist speech.

6 Discussion

The results show that Black Country English speakers produce overlapping tokens of the FOOT/STRUT and PRICE/CHOICE lexical sets more in the wordlist speech condition than in CGAC and the interview. Figure 9 reveals that *F3* gives the most outstanding results, producing tokens of PRICE and CHOICE with an average normalised distance of 2.8 in the wordlist, but with only an average normalised distance of 0.68 in the interview. This presents a case which contrasts with Labov's Bill Peters Effect, according to which elderly speakers of Central Pennsylvanian varieties of English tended to near-merge more in tasks where words were uttered in isolation than in spontaneous connected speech. If BCE speakers were to exhibit a Bill Peters Effect, the lower middle chart of Figure 9 would show the values to be clustered below the orange line as opposed to above, illustrating a larger normalised F1 distance between PRICE and CHOICE in the interview than in the wordlist. My results reveal the opposite.

By analysing Figure 8, it is clear to see the sizeable impact the FOOT/STRUT split had on Southern varieties such as SSBE, where FOOT and STRUT are largely differentiated and realised as two distinct phonological categories. In contrast, the results for BCE speakers suggest that FOOT and STRUT are both realised as one phonological category in BCE. In this respect, it can be concluded that BCE shares more in common with Northern varieties of British English than Southern varieties, despite the dialect lying in the middle of the isogloss of the split.

The results also reveal that the BCE speakers *M6* and *F2* realise tokens of FOOT and STRUT more similarly in the CGAC condition. This supports Chambers and Trudgill's (1980) hypothesis that it should be "expected if not predicted" for varieties like BCE that lie geographically in the transitional zone of the FOOT/STRUT split to mix or switch the FOOT and STRUT vowels, as the area occupies a region which forms a dialect continuum between two uniformly contrastive variants for STRUT.

By considering Figure 9, the results of the average normalised F1 distances between FOOT/STRUT and PRICE/CHOICE for each BCE speaker across three speech conditions can be observed. The results reveal that intraspeaker variation is far greater for the PRICE/CHOICE contrast than for that of FOOT/STRUT, where the results consistently cluster around 0 (the point of full merger) and 0.3 across all speech conditions. The consistently absent contrast between FOOT and STRUT can be explained by BCE being only incompletely affected by the historic FOOT/STRUT split and speakers still realising FOOT and STRUT as the same single phonological category. In contrast, PRICE and CHOICE were historically two distinct phonemes, and so more variable contrast between the two converging lexical sets is likely. The results for PRICE/CHOICE show that while BCE speakers have two distinct phonological categories for PRICE and CHOICE when spoken in isolated minimal pairs, in spontaneous

connected speech, PRICE and CHOICE are far less differentiated, as the first vocalic components of both diphthongal lexical sets converge in close approximation.

This part of the study provides an interesting analysis of intraspeaker variation within the BCE speech community, as individuals shift and alternate between making large distinctions between PRICE and CHOICE in a condition which is highly controlled by the experimenter, and making significantly less of a distinction between the lexical sets in a more naturalistic and spontaneous speech condition requiring a lesser amount of conscious self-monitoring. This is a difficult variable to quantify. However, the results clearly support the interpretation that while BCE speakers may be aware that PRICE and CHOICE do belong to standardly separate lexical sets, the effort to keep these classes distinct is reduced in connected speech. Understanding what precisely drives this process in BCE requires further investigation.

7 Conclusion

This study has examined the convergent nature of the BCE realisations of FOOT/STRUT and PRICE/CHOICE in the wider context of the historic, geographic, and demographic development of the Black Country and its distinctive language variety. The results of the study reveal that BCE speakers show a stronger preference for merging the two pairs of lexical sets in more formal and controlled speech conditions than in less formal and spontaneous speech. This provides evidence of an opposite effect to Labov's Bill Peters Effect.

After analysing Labov's (1994) work on near-mergers, my study presents an exciting opportunity for further research. It would be interesting to conduct a commutation test with the same BCE speakers from this study and investigate how they perceive their own produced realisations of PRICE and CHOICE.

Examining the relationship between BCE production and perception of these merging situations would be a valuable and worthwhile supplementary research project, as one could measure how proficient BCE speakers are at perceiving and distinguishing between the merging lexical sets and consequently strengthen the evidence for near-mergers as a genuine phonological process.

References

- Adank, Patti, Roel Smits, and Roeland van Hout. 2004. A comparison of vowel normalization procedures for language variation research. *Journal of the Acoustical Society of America* 116(5):3099–3107.
- Alder, Berni. 2015. Me woife's tickling brush [The Black Country Bugle, online newspaper]. Accessed 12 March 2015, URL <http://www.blackcountrybugle.co.uk/Woife-s-Tickling-Stick/story-26145758-detail/story.html>
- Asprey, Esther. 2007. Black Country English and Black Country identity. Doctoral dissertation, University of Leeds.
- Asprey, Esther. 2015. The West Midlands. In *Researching Northern English*, ed. R. Hickey, 393–416. Amsterdam: John Benjamins.
- Baugh, Albert C., and Thomas Cable. 2013. *A History of the English Language*. Abingdon: Routledge.
- Boberg, Charles. 2001. The phonological status of Western New England. *American Speech* 76(1):3–29.
- Boersma, Paul, and David Weenink. 2015. Praat: Doing phonetics by computer [Computer programme, Version 5.4.08]. Accessed 10 March 2015, URL <http://www.praat.org/>
- Bowie, David. 2001. Dialect contact and dialect change: The effect of near-mergers. *University of Pennsylvania Working Papers in Linguistics* 7(3):17–26.
- Burritt, Elihu. 1868. *Walks in the Black Country and its Green Border-land*. London: Sampson Low, Son & Marston.
- Chambers, Jack K., and Peter Trudgill. 1980. *Dialectology*. Cambridge: Cambridge University Press.
- Clark, Urszula. 2013. 'Er's from off: The indexicalization and enregisterment of Black Country dialect. *American Speech* 88(4):441–466.
- Clark, Urszula, and Esther Asprey. 2013. *West Midlands English: Birmingham and the Black Country*. Edinburgh: Edinburgh University Press.
- Drysdale, Patrick D. 1959. A first approach to Newfoundland phonemics. *Journal of the Canadian Linguistic Association* 5(1):25–34.
- Fletcher, Kate. 1975. *The Old Testament in the Dialect of the Black Country: Genesis to Deuteronomy Pt. 1*. Kingswinford: Black Country Society.
- Fletcher, Kate. 1989. *The Gospels in the Black Country Dialect*. Kingswinford: Black Country Society.
- Flynn, Nicholas. 2011. Comparing vowel formant normalisation procedures. *York Working Papers in Linguistics (Series 2)* 11:1–28.
- Gale, Walter K. V. 1966. *The Black Country Iron Industry: A Technical History*. London: The Iron and Steel Institute.
- Hall-Lew, Lauren. 2013. 'Flip-flip' and mergers-in-progress. *English Language and Linguistics* 17(2), 359–390.
- Hickey, Raymond. 2004. Mergers, near-mergers and phonological interpretation. In *New Perspectives on English Historical Linguistics*, ed. C. J. Kay, C. Hough, and I. Wotherspoon, 125–37. Amsterdam: John Benjamins.
- Jones, Peter M. 2008. *Industrial Enlightenment: Science, Technology and Culture in Birmingham and the West Midlands, 1760–1820*. Manchester: Manchester University Press.
- Labov, William. 1994. *Principles of Linguistic Change: Internal Factors*. Oxford: Blackwell.

- Labov, William, Mark Karen, and Corey Miller. 1991. Near-mergers and the suspension of phonemic contrast. *Language Variation and Change* 3(1):33–74.
- Labov, William, Malcah Yaeger, and Richard Steiner. 1972. *A Quantitative Study of Sound Change in Progress: Volume I. Report on National Science Foundation Contract*. Philadelphia: University of Pennsylvania.
- Lobanov, B. M. 1971. Classification of Russian vowels spoken by different listeners. *Journal of the Acoustical Society of America* 49(2b):606–608.
- Majors, Tivoli. 2005. Low back vowel merger in Missouri speech: Acoustic description and explanation. *American Speech* 80(2):165–179.
- Manley, Sandra. 1971. The Black Country dialect in the Cradley Heath area. MA dissertation, University of Leeds.
- Mathisen, Anne G. 1999. Sandwell, West Midlands: Ambiguous perspectives on gender patterns and models of change. In *Urban Voices: Accent Studies in the British Isles*, ed. P. Foulkes and G. Docherty, 107–123. London: Arnold.
- McCullough, Jill, and Barbara Somerville. 2000. Comma gets a cure. IDEA: International Dialects of English Archive [Online archive]. Accessed 29 September 2014, URL <http://www.dialectsarchive.com/comma-gets-a-cure>
- Millar, Robert M., and Larry Trask. 2007. *Trask's Historical Linguistics*. London: Hodder Education.
- Scobbie, James M., Christian Geng, Bill Hardcastle, Simon King, Robin Lickley, Marianne Pouplier, Steve Renals, and Alice Turk. n.d. ESPF: An Edinburgh Speech Production Facility [Internet archive]. Accessed 23 September 2014, URL <http://espf.pppls.ed.ac.uk/frontend.php/task/script-reading-comma-gets-a-cure-scottish-version>
- Scobbie, James M., Alice Turk, Christian Geng, Simon King, Robin J. Lickley, and Korin Richmond. 2013. The Edinburgh Speech Production Facility DoubleTalk Corpus. In *Interspeech-2013*, ed. F. Bimbot, C. Cerisara, C. Fougeron, G. Gravier, L. Lamel, F. Pellegrino, and P. Perrier, 764–766. Lyon: International Speech Communication Association.
- Wales, Katie. 2006. *Northern English: A Social and Cultural History*. Cambridge: Cambridge University Press.
- Wells, John C. 1982a. *Accents of English Volume 1: An Introduction*. Cambridge: Cambridge University Press.
- Wells, John C. 1982b. *Accents of English Volume 2: The British Isles*. Cambridge: Cambridge University Press.
- Yu, Alan C. L. 2007. Understanding near mergers: The case of morphological tone in Cantonese. *Phonology*, 24(1):187–214.