Accommodation or political identity

Accommodation or Political Identity: Scottish Members of the UK Parliament

Lauren Hall-Lew

University of Edinburgh

Ruth Friskney

University of Edinburgh

James M. Scobbie

Queen Margaret University

Lauren Hall-Lew

Dugald Stewart Building

3 Charles Street

Edinburgh, EH8 9AD

+44/0 131 651 1836

Lauren.Hall-Lew@ed.ac.uk

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ABSTRACT

Phonetic variation among Scottish Members of the UK Parliament may be influenced by convergence to Southern English norms (Carr & Brulard 2006) or political identity (e.g., Hall-Lew, Coppock & Starr 2010). Drawing on a year's worth of political speeches (2011-2012) from ten Scottish Members of the UK Parliament (MPs), we find no acoustic evidence for the adoption of a Southern English low vowel system; rather, we find that vowel height is significantly correlated with political party: Scottish Labour Party MPs produce a higher 'CAT' vowel (Johnston 1997) than do Scottish National Party MPs. The results contradict claims that Scottish MPs acquire 'Anglo-English' features while at UK Parliament. Rather, we suggest that the variation indexes political meaning, with a subset of individuals drawing on that indexicality in production.

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INTRODUCTION

Is sociolinguistic variation best explained through accommodation, or identity work, or both? This question, which ultimately gets to the heart of current debates about structure and agency, is often mistaken to imply an exclusive interpretation of either account: accommodation may be framed as not agentive (e.g., Brulard & Carr 2013; Labov 2001; Kauhanen 2017) and identity accounts may be framed as overly agentive (e.g., Bell 2016 on Eckert 2012; Guy & Hinskens 2016). In the present paper we test the claim that phonetic variation among Scottish Members of the UK Parliament is best explained as 'unconscious' convergence to Southern English norms (Brulard & Carr 2013; Carr & Brulard 2006;). We consider an alternative analysis: that phonetic variation is an available resource for acts of political identity (Hall-Lew, Coppock & Starr 2010). In comparing a year's worth of political speeches (2011-2012) from ten Members of the UK Parliament (MPs) from Scotland, we find that variation is significantly correlated with the MPs' political party. To understand this group level effect, we also analyse the historical and regional diversity of low vowel variables, and analyse each of the speakers individually. The results of this analysis challenge claims that Scottish MPs acquire 'Anglo-English' features (Carr & Brulard 2006) while at UK Parliament. We take this to indicate that the phonetic variation examined here cannot be (fully) explained by pressures to accommodate. Rather, we suggest that the variation indexes political party membership, with a subset of individuals drawing on that indexicality in speech production. This paper integrates the growing body of work on linguistic variation and political identity (e.g., Hall-Lew et al. 2010) with studies of accommodation between Scottish and English interlocutors (e.g., Llamas et al. 2009) and sociophonetic work in Scottish contexts more generally (e.g., Lawson 2014).

THE SOCIOLINGUISTIC CONTEXT: SCOTS IN THE UK PARLIAMENT

In 2011-2012, 9% (N=59) of the 650 Members of the UK Parliament (MPs) at Westminster, in London, England, represented Scottish constituencies, the rest representing England, Wales and Northern Ireland. Approximately 11% (N=85) (Berry 2013) could be more broadly

classified as 'Scottish' (some Scottish MPs represented constituencies outwith Scotland). Note that a devolved Scottish Parliament sits in Edinburgh, Scotland, with a different set of Members (MSPs; but see Boyd 2012), and so it is the linguistic situation of the Westminster parliament that is of interest..

Scots' use of the English language in the UK Parliament has been taken as a prime example of linguistic accommodation (Carr & Brulard 2006). Wells (1982: 394) describes Scottish MPs taking elocution lessons back in the 18th century. Given that the sociolinguistic context of UK Parliament is always changing, the key factor of interest here is that before and since the time of data collection, Scottish MPs have been subject to the sociolinguistic pressure of speaking some version of Scottish English while working in a social environments where Received Pronunciation (RP) is still a normative accent. RP has long been the variety used by 'public figures' (Wells 1982: 279) in the UK and the variety that, until recently, has been required for 'social advancement, as a gateway to employment in the upper echelons of government and military service' (Agha 2003: 232). The UK Parliament may contain a greater proportion of native RP speakers than the general population. One description of RP is as 'public [independent] school pronunciation' (Mugglestone, 2007), and 35% of current MPs attended independent schools, compared to only 7% of the UK population (The Sutton Trust, 2010). Kirkham and Moore's (2016) analysis of former Labour leader Ed Miliband takes ('modern') RP to be the relevant descriptor of his speech (despite his representing a Northern English constituency), as does Carr and Brulard's (2006) study of Scottish MPs and political journalists.

What matters for analysing Scottish MPs is less about RP specifically and more about any Southern English variety that have, for example, the TRAP/BATH split (Wells 1982). Evidence of the adoption of such features is what Carr and Brulard (2006: 31, 41) frame as 'Anglo-English influence' or 'adoptive RP'. The present paper tests this claim with acoustic analysis and a consideration of Scottish lexical sets. We also examine biographical differences between MPs, as motivations to accommodate vary widely between Scottish MPs.

The linguistic repertoires of Scottish MPs are quite varied. There are individuals born and raised in Scotland who are native RP speakers (Romaine 1980), although their numbers have been declining (Johnston 2007), and although MPs are more likely to be native RP speakers than the average Scottish person (see Scobbie et al. 1999: 242), Scottish MPs hail from a range of regional, educational, and social class backgrounds. Some might be better considered speakers of Scots (ISO 639-2 sco) than speakers of Scottish English (ISO 639-2 en). We return to this when introducing our speaker sample.

To examine the likelihood of accommodation, we also consider the possibility of identity work. Variation that becomes a resource for social identity work may impact individual differences in accommodative behaviour or may result in non-accommodative patterns. Here, we consider the identity of political party (Hall-Lew et al. 2010). Carr and Brulard (2006) note that one politician in their sample who does not appear to converge to 'Anglo-English' norms is a member of the Scottish National Party (SNP). To investigate this observation further we conduct a systematic comparison between SNP party members and members of the Scottish Labour party. At the time of data collection (2011-2012), the UK Parliament as a whole was primarily distinguished between members of the coalition Government (Conservatives and Liberal Democrats) and members of the official opposition members (mostly Labour). Scottish constituency representatives, in contrast, were mostly Labour or SNP party members. Both Labour and the SNP were regarded as centre-left parties (Leith & Soule 2011), differentiated principally by their position on whether Scotland should remain part of the United Kingdom (Labour) or become an independent nation (SNP) (Hassan & Shaw 2012). The expectation with respect to linguistic accommodation is that SNP MPs are less likely to adopt RP norms than Labour MPs. Scottish Conservative or Liberal Democratic MPs might also be expected to accommodate, but are not considered here due to their low numbers.

Political identity can be operationalised in a number of different ways, and other sociolinguists (Campbell-Kibler 2010; Jaggers 2016; Knoblock 2014; Silva et al. 2011) have opted for political ideology (e.g., *left-wing* or *liberal*) instead of political party. Other work

(e.g., Hall-Lew et al. 2012; Labov 2010) has considered individuals' attitudes towards particular policies (e.g., *abortion, immigration*). We choose political party rather than ideology based in part on work in political psychology noting that, '50 years of research on public opinion shows that a unidimensional model of ideology is a poor description of political attitudes for the overwhelming proportion of people virtually everywhere' (Feldman 2003: 477; see also Converse 1964; Fowler and Kam 2007: 818). Our work also differs from other variationist studies of political identity in focusing solely on elected politicians, a growing body of work in its own right (Kementchedjhieva 2016; Kirkham and Moore 2016; Lei and Liu 2016; Podesva, et al., 2015). In this regard we follow Hall-Lew et al. (2010; 2012) who also rely on party membership as a measure of political identity in the analysis of phonetic variation among elected politicians.

In the analysis that follows, we first argue that there is little evidence for accommodation of the kind Carr and Brulard describe. We then present evidence that an individual's political party may be a predictor of phonetic variation, and that this variation might be taken to indicate a kind of accommodation. However, we argue that the accommodation is not necessarily towards 'Anglo-English' but rather towards competing Scottish norms. This argument is based on an understanding of the historical phonology of the Scottish and English low front vowels.

THE SCOTTISH AND RP LOW FRONT VOWELS

The RP TRAP and BATH vowels

A key variable Carr and Brulard (2006) point to for evidencing 'Anglo-English influence' (following Abercrombie 1979) is the RP (or Southern Standard British English, SSBE) TRAP/BATH distinction. This distinction is the result of an incomplete sound change whereby the BATH lexical set split away from the TRAP set sometime before the 20th century (Wells 1982), resulting in a small lexical subset with vowels in BATH longer and/or backer than those in TRAP. A backed BATH vowel is a feature of RP and, we suggest, part of the Westminster linguistic norm. Stuart-Smith, Smith, Rathcke, Santi, and Holmes (2011) found that Scots

may converge towards speakers of SSBE in laboratory interactions. Since Scottish speakers have incomplete knowledge of which words belong to the BATH set, the use of backed tokens of the TRAP lexical set might also indicate convergence to RP/SSBE.

The other known source of socially meaningful variation in that area of the vowel space is the height of the TRAP vowel. In RP, TRAP has been gradually lowering and backing from its relatively high, front [æ]-like position over the course of the 20th century (Fabricius 2007; Harrington, Palethorpe & Watson 2000; Wells 1982) towards [a].

The Scottish CAT vowel

Scots and Scottish varieties of English, like other Northern English varieties, did not undergo a TRAP/BATH split. Instead, these varieties have a single low central vowel, 'CAT' (Johnston 1997). The sociolinguistic facts are phonetically and phonologically complex, and understanding that complexity is necessary before conducting any analysis of potential accommodation towards RP (see also Romaine 1985).

Johnston's (1997) CAT lexical set encompasses Wells' (1982) TRAP, BATH, and PALM lexical sets. Macafee (2004) also includes START, though this often occurs with a back allophone [ɑ]. This points to the fact that CAT can have its own internal subsets, and these phonological distinctions can resemble, but not match, the RP lexical sets (Abercrombie 1979; Romaine 1985). For example, a Scottish speaker might pronounce *grass* and *path* with a backed variant due to a phonotactic constraint backing /a/ before a voiceless fricative, but this is a different constraint to the one that motivated the TRAP/BATH contrast in RP. This poses a challenge for researchers: a reliance on RP subsets could result in concluding that a speaker has an RP distinction (as the result of accommodation, for example) when in fact the distinction is a native Scottish one.

While it might be advisable to conduct a lexical subset analysis based on Scottish categories rather than non-Scottish RP ones, we have anecdotally observed that people in Scotland (e.g., university students from the local community) often disagree about the lexical membership of these sets. This suggests that any re-categorization would not be valid for all

speakers in a sample. Determining the membership of every lexical item in a lexical set is ultimately a historical question that is beyond the scope of the paper. Following the relevant previous literature, we therefore make use of Wells' RP-based lexical sets. However, to avoid falsely ascribing a low vowel distinction to RP influence, we look at the lexemes relevant to any cases of a possible a TRAP/BATH distinction.

In part because of this complexity, the Wells lexical sets considered in studies of the CAT vowel are often limited to TRAP and BATH (Lawson 2011; Macaulay 1977). Here we consider TRAP, BATH, START, as well as some incidents of PALM (discussed in *Methods*). And while previous work has focused on urban varieties of Scots or Scottish English, here we have a regionally diverse range of speakers due to the fact that our speaker sample is the result of electoral politics. It is therefore important to understand the distribution of CAT across varieties of Scots and Scottish English. With reference to RP lexical subsets, previous work suggests that there are at least four phonological systems in Scottish communities: Scots, Scottish Standard English (SSE), Highland-and-Hebridean English (HHE), and Received Pronunciation (RP). The following describes the lexical incidence of CAT as well as its phonetic similarity to the STRUT vowel, which differs by region and helps characterize the phonetic quality of CAT:

- A typical **Scots** speaker has been described as not distinguishing phonemically or allophonically between TRAP/BATH/PALM/START (Chirrey 1999; Macafee 2004). Its position is low and central. START might also be derhoticised. For some Southwestern Scots speakers, STRUT will overlap in F1/F2 space with CAT.
- A typical **SSE** speaker has been described as distinguishing allophonically between a more front TRAP/BATH/PALM and a backed START. Like Scots, START might be derhoticised, though to a lesser extent than Scots. STRUT patterns as in Scots, or is more 'central and slightly further back' than CAT (Schützler 2011: 34), at least in Edinburgh. Like Scots, all the variants are low.

- A typical **HHE** speaker distinguishes TRAP/BATH from PALM/START (Shuken 1984: 162), although 'both vowels have a wide range of variation in the front-back parameter', and on the Isle of Lewis, the contrast is realized in terms of duration rather than anteriority. PALM might also differ from START depending on the variety of HHE; in Lewis, PALM is closer to [a:] while START is higher, [ɐ:]. In general, the variants are low. START is rhotic. Is it less straightforward to describe HHE as having a single CAT vowel. HHE speakers are variable in their realisation of STRUT, which can be very centralised.
- A typical **RP** speaker will distinguish TRAP and BATH, with BATH further back (and longer) such that it is merged with PALM and START. Unlike the other varieties, in RP START is non-rhotic (as opposed to Scots' derhotic). RP would not be said to have a single CAT vowel. Conservative RP speakers produce a more back and low STRUT vowel, and more mainstream RP speakers produce STRUT as a non-peripheral vowel, 'closer phonetically to younger speakers' variant of TRAP' (Fabricius 2007: 296).

These descriptions are only a general guide. Differences between them are in some cases very fuzzy and many speakers will be bidialectal (especially between Scots and SSE).

In addition to phonological subsets, there are several sociophonetic accounts of variation within the CAT vowel (defined as TRAP/BATH). Variation in anteriority has been correlated with region (Johnston 1997), with a low back CAT vowel in Northeastern varieties (e.g., Moray) and a low front CAT vowel in Southwestern varieties (e.g., Glasgow). Variation in height has been correlated to social class in both Glasgow and Edinburgh, with lower variants attributed to Working Class speakers (Aitken 1979; Macaulay 1977; cf. Johnston 1984). Lawson's (2011) analysis of communities of practice in a Working Class all-boys school in Glasgow found variation in CAT height, with the anti-institutional 'Neds' group showing a significantly lower vowel than the pro-institutional 'Schoolie' group. This point to a recursivity of social meaning (Irvine & Gal 2000), whereby a lower Scottish CAT vowel indexes some quality shared between a macro-social Working Class identity (Macaulay 1977)

and a micro-social anti-institutional stance (Lawson 2011). In contrast, a raised CAT vowel is associated in urban Scotland with older, Middle Class speakers, such as the now rare but highly stereotyped *Morningside English* (Johnston 1984; Romaine 1985), which has been a feature of Scottish varieties since the early 20th century (Grant 1914, cited in Romaine 1985).

METHODS

In order to make an empirical examination of the likelihood that a Scottish Member of UK Parliament will converge to RP speech norms, we constructed a speaker sample that allows for controlling and testing known social factors as well as possible. In examining speakers' productions of the Scottish CAT vowel, we consider two possible indicators of accommodation: (1) evidence for backed BATH vowel, indicating accommodation to RP/SSBE, and (2) evidence for a raised TRAP vowel, indicating accommodation to either RP/SSBE or middle class Scottish norms.

Speaker Sample

Our small sample group comprises superficially similar speakers all participating in the same speech community: white, middle-aged, male, Scottish Members of the UK Parliament. The sample is internally differentiated with respect to region and social class. We also chose the sample to test for the additional social factor, political party.

Political contexts change rapidly. Data for the present study were collected in 2011-2012, when there were only six Scottish National Party Members of the UK Parliament (in contrast, 56 of the 59 Scottish constituency seats were won by the SNP in 2015). We analysed the five men and excluded the one woman. The SNP sample was then matched as far as possible with a comparable sample of Scottish Labour MPs. We selected five male Labour MPs with class and region contrasts, as far as available (Table 1). We made every effort to control for potentially confounding social factors, like length of time at Parliament. Both party samples represent a range of ages and political seniority, but neither factor emerged as significant in the overall analysis and will not be discussed further.

[TABLE 1 HERE]

Given previous findings that the vowel quality of CAT is predicted by speaker social class (F1) and region (F2), an ideal speaker sample would have a balanced representation CLASS by REGION by political PARTY. However, the reality of political representation in Scotland (as elsewhere) means that speakers are far from evenly distributed with respect to these and other demographically relevant factors. In addition, political parties themselves are associated with social class and regional identity in complex ways.

The Labour party has historically been linked with Trade Unions (Hassan and Shaw 2012; Reid and Pelling 2005;), including some individual career paths from trade union official to MP. However, the relationship between Trade Unions and the Labour Party has been under review (Collins 2014), and there are signs that the relationship between Trade Unions and social class is changing (e.g., a shift in trade union membership from manufacturing to public sector occupations (Hassan and Shaw 2012)). Conversely, the early Scottish National Party was nicknamed 'tartan Tories' by the Labour Party, in reference to 1970s victories in rural, formerly Conservative (Tory), seats (Hassan, 2009). Yet, despite implications that the SNP did not represent the working class, analysis of the 2014 independence referendum voting patterns found that the SNP stance was supported more by working class than middle class voters (Curtice 2014). Overall, it is not the case that either party was clearly more 'working class' than the other in 2011-2012. Our speakers' social class and political party can be considered independently. Because our speakers all held the same job at the time of data collection, their social class designation was based on their occupations before becoming politicians, their parents' occupations (if known), and their education level (amount and type). Speakers were assigned to one of four broad CLASS levels (Table 1): Upper Middle Class (UMC), Middle Class (MC), Lower Middle Class (LMC, which includes Upper Working Class), and Working Class (WC). Social class is highly complex, and for many of the speakers, assignment to a particular class was not

straightforward. Our statistical analysis of CLASS largely hinges on variation within the Labour sample: the sample includes one UMC (Labour), two MC (both SNP), three LMC (one Labour, two SNP), and two WC (Labour).

Speaker REGION is also affected by the realities of political representation. More MPs represent urban than rural areas. Scotland's 'Central Belt' (including Edinburgh and greater Glasgow) has many more MPs than the Highlands and Hebridean Islands. In 2011-2012 the Central Belt was heavily represented by Labour, aside from two Liberal Democrats. The Highlands and Islands were represented by the SNP and the Liberal Democrats. Only one of the Labour MPs from the Eastern Central Belt was demographically comparable to the SNP sample: the rest were women, MPs not raised in Scotland, or MPs who were too senior (e.g., Gordon Brown). Designating REGION based on childhood and secondary school locations (Table 1), none of the SNP MPs analysed here came from the West. Our representation of REGION is therefore collinear with PARTY with the exception of two MPs: McGovern (Labour, the East) and MacNeil (SNP, the Hebrides).

MacNeil is one of the three MPs who most complicates our group-level comparisons, the other two being Robertson and Murphy. Angus MacNeil falls outside of both the regional contrast (which is based on the Central Belt) and the class contrast (which is based on urban social stratification). Angus Robertson is complicated because he was born in London, England (where the UK Parliament sits), though he was brought up in Edinburgh. Furthermore, his mother is German and he is bilingual (his father is Scottish). He was retained in the study as one of the only SNP MPs at the time and also because he was party leader at Westminster. Finally, Jim Murphy is complicated because his family moved around during his childhood, including time in England and South Africa, as well as Glasgow. Both speakers must be analysed in light of their ages of exposure to Scottish linguistic varieties and the Critical Period (Lenneberg, et al., 1967). We return to these speakers in the analysis.

Although similar in many ways, individual differences present complexities for group-level analysis. These facts reflect the realities of political representation: voting patterns, regional representation and the social motivations for party affiliation among politicians do

not result in conveniently balanced samples. In order to rigorously consider the relationship between sociophonetic variation and political party membership, it is necessary to come to grips with these complexities as best as possible, and our approach to addressing this challenge is, we hope, a significant methodological contribution.

Data Collection

Recordings were collected from the UK House of Commons, including all types of oral parliamentary activity in the main Chamber (excluding Committees and the supplementary debating chamber). Recordings were purchased from the Parliamentary Recording Unit. As far as possible, speakers are represented by every speech longer than 30 seconds given in the main Chamber in 2012. Additional material was collected from 2011 if speakers spoke relatively little in 2012 (Weir, McGovern); one speaker spoke very frequently in 2012 (Alexander) and was only sampled every few months. We also took speech from 2011 from one additional speaker (Robertson) to avoid representing 2011 only by speakers who speak infrequently. In total, approximately ten and a half hours of speech were analysed.

Vowel Analysis

Vowel tokens were segmented by hand by four different researchers, with a subset double-checked by the first two authors to confirm high interrater reliability.[i] In addition to CAT, tokens of the Scottish MEET vowel (akin to Wells' FLEECE set) were coded for purposes of vowel normalization (Fabricius et al. 2009). We also coded for STRUT to enable the speaker-specific comparison in the centrality of the CAT vowel. This coding was instead based on 15 tokens per speaker taken from each speaker's longest speech in 2012 (for McGovern, who has no single long speech, multiple short speeches were used until 8 tokens were obtained).

Tokens of CAT were further coded according to Wells' (1982) lexical sets. In contrast to much previous work, we included tokens of the PALM and START classes as well as TRAP and BATH.[ii] One unusual decision we took was to exclude members of the PALM lexical set unless they were proper names, and to relabel this lexical set 'PROPER'. This decision was

based on the nature of the corpus, which features a low frequency of common nouns in the PALM class but high frequency of proper names, including 'foreign-a' (Boberg 1999, 2009; e.g., *Afghanistan* and *Pakistan*), and non-'foreign-a' (e.g., *Salmond, Thatcher*), and including titles (e.g., *Chancellor, Majesty*) and specific group affiliations (e.g., *Backbench, Democrats*).[iii, iv] Any proper names from any lexical set other than PALM were excluded.

Sound files were segmented exhaustively for tokens that occurred in content words,[v] with primary lexical stress, and at least 50ms long. Formant measurements were generated using a *Praat* (Boersma & Weeknink 2014) script written for *Akustyk* (Plichta 2006), resulting in the two dependent variables: median F1 and median F2 (based on measurements taken every 10 milliseconds). Measurement errors were excluded by omitting tokens beyond two standard deviations of the median formant values for the *had* and *hard* vowels described by Ferragne and Pelligrino (2010) for Glasgow English or Scottish Highland English.[vi] Tokens following or followed by a vowel or a pause, occurring in quoted speech, occurring with loud background noise, or occurring in a unique phonological environment (one token of *yards*) were also excluded. The resulting dataset has 3716 tokens of CAT, mostly represented by TRAP (N=2079), with many fewer tokens for BATH (N=511), PROPER (N=335), and START (N=653). Representation varies by speaker, from N=688 for Alexander to N=141 for McGovern (*mean*, N=358, *median*, N=338). Token counts are balanced between SNP (N=1788) and Labour (N=1790).

RESULTS 1: THE TRAP/BATH CONTRAST

First, we examine each individual speaker for evidence of variable use of a BATH distinction. Doing so necessitates attention to variation within the Scottish CAT vowel known to differ between speakers of Scots, Scottish Standard English, Highland and Hibernian English, and Received Pronunciation, all of which are potential native varieties of the speakers in our sample. (Although Scots is unusual for UK Parliament, the sample does include speakers who have used Scots lexis in official speeches there.[ix])

[FIGURE 1 HERE]

Several differences can be seen in Figure 3. MacNeil has an internally consistent CAT vowel, probably because he is from the Isle of Lewis, where TRAP/BATH and PROPER/START are distinguished by a length contrast (Shuken 1984). McGovern also has a lack of subcategories differentiation, and is perhaps the only speaker here with the traditional Scots pattern. His CAT vowel is backer than MacNeil's, in line with expected regional differences. At the other extreme are Alexander and Robertson, who are similar to one another: START is clearly distinct from the other three subcategories, and they show a slight backing of BATH. MANOVA models[x] on F1 and F2 for each speaker show that Alexander and Robertson are the only speakers with a significant difference between TRAP and BATH. While we can say they are the most RP-like, they are not RP speakers: A true RP system would have BATH much closer to START, and START would be non-rhotic. These are SSE speakers with some RP-like tendencies. The remaining six are typical SSE speakers, with TRAP and BATH overlapping, and START distinct in F1/F2 space. Weir is slightly different in that his BATH overlaps with both TRAP and START. For everyone, PROPER overlaps with TRAP/BATH.

Overall, we (almost) see all four phonological patterns among these ten speakers: one speaker of Highland-and-Hebridean English (HHE), one speaker of Scots, and eight speakers of Scottish Standard English (SSE), two or three of whom show some RP-like qualities. Alexander, Robertson, and Weir have biographies which can explain their TRAP/BATH configurations without reference to accommodation towards or influence from Westminster. Robertson was born in London. Alexander and Weir were trained as lawyers, which entails an orientation to a certain upper-middle class persona.

However, recalling Abercrombie (1979), the question remains whether these speakers' backed 'BATH' vowels are indeed due to RP-influence, or if they actually belong to a traditional Scottish subcategory, where certain RP/SSBE TRAP lexemes like *gather* and *value* are regularly produced further back than others. Looking at the lexical incidence of TRAP for Alexander, Weir, and Robertson, Robertson shows no backed TRAP lexemes, while Alexander

and Weir do. Furthermore, most correspond to those Abercrombie (1979) identified, suggesting that Alexander's and Weir's apparent 'RP-like' BATH-backing might rather be an artefact of a traditional Scottish distinction. If so, then for all three speakers their TRAP/BATH pattern is attributable to pre-Westminster acquisition, not accommodation to Westminster (cf. Carr & Brulard 2006). Thus, the only speaker in the sample who might be characterized as having an RP-influenced TRAP/BATH distinction is Robertson. Even there, the TRAP/BATH distinction is phonetically subtle.

But while speakers' overall distributions do not suggest accommodation to RP/SSBE, perhaps this is because accommodation is more likely to be seen in intra-lexeme variation than overall means. If Scottish English speakers are unsure of which lexemes belong to TRAP versus BATH (Stuart-Smith et al. 2011), then perhaps evidence of their attempts at convergence would be if we saw only occasionally backed productions of TRAP/BATH. We can approximate a measure of this by looking at the standard deviations of TRAP and BATH lexemes (Figure 4), where a speaker showing no accommodative attempts will have less variation than a speaker who occasionally backs TRAP/BATH. We find that, for all speakers, TRAP lexemes are the most variable, with the possible exception of one or two BATH lexemes by Weir and Murphy: *answer* and *examples*. The TRAP words that are the most variable in F2 are *families* (Weir), *dynamic* (Wishart), *than* (Weir), and *imagine* (Wishart), also all pre-nasal. Perhaps speakers occasionally accommodate to RP by backing instances of TRAP that they analogize to the pre-nasal BATH context. Even if this is the case, we argue that this is a far cry from the robust evidence needed to claim that these Scottish MPs are converging towards RP/SSBE through the adoption of a distinct BATH vowel.

[FIGURE 2 HERE]

RESULTS 2: THE CAT VOWEL

We now consider the CAT vowel as a whole, encompassing all four lexical sets (see *Methods*). We first consider inferential modelling, keeping in mind that the low number of speakers and

lack of exact balance between factor levels means that these should be treated with some caution. We model the normalized median F1 and F2 values of CAT separately with two best-fit linear mixed effects models (Baayen 2008) using the *lmerTest* package (Kuznetsova et al. 2014) in *R* (R Core Development Team 2014).[vii] A single model of best fit was obtained using the *step()* function in *lmerTest*, which 'performs automatic backward elimination of all effects of linear mixed effect model' (Kuznetsova et al. 2014:12). The factors remaining in these best-fit models are discussed below.

[TABLE 2 HERE]

Of all the predictors tested (Table 2), the most complicated is phonological environment, which was represented in four ways: preceding and following place, and preceding and following manner/voicing. Following manner/voicing was coded with attention to those environments that historically conditioned the emergence of BATH (Wells 1982:233), e.g., voiceless stops (never BATH contexts) were distinguished from voiceless fricatives (often BATH contexts). The dataset is swamped by tokens of TRAP followed by a voiceless obstruent (N=909). Following voiceless fricatives and nasals are proportionally much more representative of BATH (58% and 36% of 511 tokens) than TRAP (10% and 30% of 2079 tokens). Data are sparse overall for PROPER (N=335). The following phonological environment was always (r) for START (N=727); instances of weak rhoticity or variable non-rhoticity were rare in this dataset (in contrast to speakers in Carr & Brulard 2006), and any tokens were excluded from this analysis.

Other linguistic constraints included LEXICALSET, defined by Wells' (1982) criteria for RP, and (log) lexical frequency (LOGFREQ), which we based on the spoken portion of the British National Corpus (Leech et al. 2001), and which is based in part recordings from UK Parliament. We also tested for the (log) duration of the (hand-segmented) vowel (LOGDUR). Duration values must be treated with caution because of their relationship to rate of speech, which we only loosely mitigate here through the inclusion of a random intercept for speaker.

Preliminary analysis of rate of speech found interspeaker variation to be less than intraspeaker variation. CAT is one of the vowels least affected by the Scottish Vowel Length Rule (SVLR; Aitken 1981; Scobbie, Hewlett & Turk 1999).

The three social factors in the analysis were REGION, CLASS, and political PARTY. Interaction effects were impossible to model because of the sample size, which was constrained by which MPs had been elected to the UK Parliament.

[TABLE 3 HERE]

With respect to internal constraints, PHONOLOGICAL ENVIRONMENT and LEXICAL SET account for variation in both F1 and F2, DURATION accounts for variation in height only, and LEXICAL FREQUENCY is not significant in either model (Table 3). The lack of a frequency effect may or may not be related to the unusually high number of low frequency words in this dataset (represented especially by PROPER), and future study might consider a corpus-internal calculation of word frequency instead, 'to determine frequency within the semantic domain of politics' (Podesva, et al. 2015). Vowel duration, in contrast, is a well-known correlate of F1, especially for low vowels, due to effects of target undershoot (Lindblom 1963; Moon & Lindblom 1994).

[TABLE 4 HERE]

PRECEDING and FOLLOWING PLACE and MANNER accounted for variation in F2, while only PRECEDING MANNER emerged for F1 (Table 3). One effect is that a preceding approximant (e.g., *plan*) predicts a higher, backer CAT vowel than a preceding voiceless obstruent (e.g., *pan*) (Table 4). A backer CAT vowel is also predicted by a following approximant. These effects are phonetically attested in other studies of low vowel variation across varieties of English (e.g., Labov, Yaeger & Steiner 1972). The effect on F2 for preceding place is the most perplexing, in that CAT preceded by either anterior (e.g., *tan*) or

posterior (e.g., *can*) consonants is in both cases a fronter vowel than when preceded by non-lingual consonants (e.g., *pan*).

With respect to lexical set, START is significantly higher than TRAP, with no other significant differences in height between lexical sets (vis-à-vis TRAP). For F2, we see no difference between BATH and TRAP, but do see a difference between PROPER[viii] and TRAP and between START and TRAP. In the next section, we consider the complex issue of lexical set differences in an analysis of individual differences. The main take-away from the group-level analysis is that there is no evidence for accommodation towards a distinct BATH vowel.

The only social factor achieving statistical significance in the F1 model is political PARTY. A token of CAT produced by a member of the SNP is predicted to be a lower vowel than one produced by a member of Labour (Table 4). The social factors predicting F2 variation are REGION and CLASS, which support previous findings that CAT is a fronter vowel in the West than the East, and which introduces a new finding that CAT is a fronter vowel among Working Class speakers (and marginally the Upper Middle Class speaker) than (Lower) Middle Class speakers. The social effects are all weaker than the linguistic effects, and in particular the mismatch between the class hierarchy and the anteriority of the CAT vowel in this model suggests that all social factors warrant closer investigation.

Figure 1 shows the distribution of the (reverse) mean F1 of the CAT vowel by speaker, with individuals ranked from those with the highest vowel (Alexander) to those with the lowest vowel (Wishart). While the overall effect of political party is suggestive, the differences between individuals are subtle. Harris and Murphy (Labour) appear to be essentially indistinguishable from MacNeil, Robertson, and Hosie (SNP). Half of the speaker set are not actually differentiated by political party. The effect of political party seems to be entirely driven by Alexander, Sheridan, and McGovern (Labour) on the one hand, and Weir and Wishart (SNP), on the other.

[FIGURE 3 HERE]

Figure 2 shows the distribution of mean CAT F2 by speaker, with individuals ranked from those with the frontest vowel (Murphy) to those with the backest (McGovern). Group-level effects again appear to be driven by a few individuals. The effect of region is largely driven by Murphy and Harris, who are from the West. The effect of social class is largely due to Sheridan and McGovern, the two working class speakers. Note that both speakers are also key drivers of the political party effect for F1.

[FIGURE 4 HERE]

Sheridan and McGovern, though hailing from different regions, share both political party and social class, and produce the backest and, with the exception of Alexander, highest CAT vowels. Murphy and Harris share regional, social class, and party affiliations, and produce the frontest CAT vowel, but one that is neither especially high nor low. Weir and Alexander might be considered most socially similar (both trained as lawyers, a profession whose members often demonstrate an influence of RP (Scobbie et al. 1999)), but differ on political party, and produce the second-lowest and the highest CAT vowel, respectively (though one not especially front nor back). Those speakers who are middling in all cases are Hosie, Robertson, and MacNeil, who are all SNP members but who differ from one another in terms of region, social class, or both. Wishart has the lowest CAT vowel, and he differs from the other nine MPs in, among other things, working both before and during his time as MP in a highly performative profession, as a musician in a Scottish Celtic folk/rock band.

DISCUSSION

In the attempt to test for phonetic convergence towards RP and for the role of political party affiliation as a predictive social factor, we constructed a sample of middle-aged, white, male, Scottish politicians, and ended up with a small but highly heterogeneous sample encompassing multiple phonologies. Comparing each speaker with respect to the F1, F2, and lexical set dimensions of variation in the Scottish CAT vowel (Table 5), there are at least

seven different potential patterns that can be identified.

[TABLE 5 HERE]

Despite having only ten speakers, we argue that at least seven systems are needed to summarize our phonetic and phonological results. The 'middle' speakers (Robertson, MacNeil, Hosie) appear to be the most idiosyncratic: they produce neither a very high nor very low, very front nor very back CAT tokens, but are differentiated according to properties of their lexical subsets. They are stylistically diverse, and include the speaker who seems to have the most RP influence (Robertson) as well as the speaker of Hebridean English (MacNeil). Only two of the ten speakers (Harris and Murphy) are matched on every phonetic, phonological, political, regional, and social class dimension, and even this is a bit surprising since one of them (Murphy) lived as a teenager in South Africa (suggesting that the non-Scottish influences were minimal, perhaps because while he moved geographically he moved with the Scottish influences of his family). One important point of contrast is between those two ('type 6') and the 'type 7' speakers (Weir and Wishart); the former produce a fronted CAT vowel, while the latter produce a lowered CAT vowel. Socially, the former are Labour MPs from the western region, while the latter are SNP MPs from the eastern region.

Note that we can see here how the F1 correlations for political party are clearer than for social class and region. The 'type 1' speaker (Alexander) and the 'type 2' speakers (Sheridan and McGovern) represent opposite ends of the social class spectrum, and McGovern is from a different region from the other two, but all three produce the highest CAT vowels, and all are Labour MPs. This pattern is part of the overall evidence suggesting that F1 variation in the CAT vowel is an available or emerging index for political party identity. Results from regression modelling confirm this, as well as confirming that the relationship between F2 and region (Johnston 1997). We have complicated these findings with analyses at the individual level, and we now explore the possible reasons for why political party might be indexed by vowel height, and why particular speakers might be more likely to orient to this indexicality

in production than others.

Sociophonetic patterns may be broadly attributed to accommodation (which may or may not include social motivations) or identity work (which may or may not include accommodation). An asocial account of convergent patterns points to the variation in a speaker's social network and explains the speaker's production patterns with respect to statistical patterns of contact or exposure. A social account does the same, but takes the explanation to include the social reasons for social network composition, plus the potential socioindexicality of variants, the social identity of speakers, and the general social context. An account of variation based on identity work relies on the identification of social meanings that the variants index, and an account of why a speaker would want to orient towards or away from those meanings, as well as whether they are capable of and sanctioned to do so. While the data presented here do not allow us to definitively distinguish between these various possibilities, we suggest that some analyses are more reasonable than others.

A contact-only explanation is that MPs speak to others within their party more than to MPs of other parties (and there may be aspects of the way the Westminster Parliament operates which support this, for example physically going through separate division lobbies to vote, where there will be chance to speak to MPs voting the same way, therefore usually of the same party). Under this account, the Labour MPs in our sample who use a higher CAT vowel may be doing so because other Labour MPs have a higher CAT vowel. Assuming that RP/SSBE speakers, and other speakers of non-Scottish varieties, have a higher (in this case, TRAP) vowel than is typical among Scottish speakers, then this may be a reasonable analysis for our data. The Scottish Labour MPs in this study are part of a UK Labour party and will have been participating in those UK based structures (e.g. attending Parliamentary Labour Party Meetings), interacting with speakers who largely represent Southern British English varieties; this may be particularly true for an MP such as Alexander, a senior shadow cabinet minister at the time of data collection. That said, it is not possible to completely rule out an indexical analysis. The association within Scottish varieties between a higher CAT vowel and a middle class, conservative (not Conservative) persona (Johnston 1984; Romaine 1985) may

suit the construction of a 'New Labour' party persona (at least in 2011-2012). Labour had been seen as developing its focus on the middle class under Tony Blair (Hassan and Shaw, 2012). Kirkham and Moore (2016) demonstrate how former Labour Party leader Ed Miliband shows the greatest style-shifting (in terms of /t/-realization) in 'New Labour keywords' like *Britain* and *government.* Further analysis of our data might test for similar stylistic patterning for the CAT vowel, as well as the audience- and topic-based patterning also found by Kirkham and Moore (2016).

The contact-only explanation is not as useful for accounting for the SNP data. The SNP MPs have no such UK wide party-internal structures to inform their social networks, and a meeting of the SNP MPs at Westminster at the time of data collection would have just required the five MPs studied here plus the one female SNP MP. The rise in the number of SNP MPs in the 2015 election would allow for further testing in a radically different context. Above we noted Lawson's (2011) finding that a lower CAT vowel indexed *anti-institutional* meaning at a micro-social level in a particular community in Scotland. The position of SNP MPs at the UK Parliament is inherently anti-institutional; the party's commitment to an independent Scotland requires that the UK Parliament should not be an institution of Scotland. SNP MPs maybe be further motivated to avoid the aforementioned class indexes of a higher CAT vowel (Johnston 1984; Romaine 1985). For a party working to throw off its reputation the 'tartan Tories', and to gain ground in urban areas with younger, left-wing voters, the avoidance of the raised variant may be advantageous. In lowering the CAT vowel, SNP politicians can be anti-institutional and index alignment with new political personae.

If the social meaning of the CAT vowel is a resource for constructing political persona, we would expect to see individual differences in speakers' ability and motivation to adopt variants with political meanings. In lieu of a qualitative, interactional analysis (e.g., Kirkham & Moore 2016), one factor to consider here is the performative nature of the speech we analysed: televised speeches in the House of Commons. The three MPs who most carry the effect of political party in our model of F1 are Alexander, Weir, and Wishart, and all have in common that their pre-political professions have an element of high performance – for

Alexander and Weir as lawyers, for Wishart as a musician. The other seven speakers do not. Wishart, in particular, presents a promising case for further study, as the member of a band that is explicitly invested in the performance of Scottish culture. Engagement in such performative contexts, and the personality characteristics that lead to that engagement, may predispose a speaker to attend to and exploit the indexical meanings of phonetic variants in their Parliamentary performances.

While one reason to study Scottish MPs is because they encounter strong pressures to accommodate linguistically, another is because the speech of politicians is an obvious place for exploring indexicality and political meaning. Although political identity is a prominent part of social life, we know relatively little about how it operates as a predictor of linguistic variation. A political identity is 'a social identity with political relevance' (Huddy 2013: 739), and while people vary in the strength of their political identification, elected politicians have careers that demand a public declaration of that identification. While individual politicians may appear more or less typical of their party, with some even becoming iconic of their party's identity (e.g., Margaret Thatcher representing the 1980s UK Conservatives (Janda, et al., 1995), party identification is generally more central to politicians' public image and the composition of their social networks than for the average individual (McGraw 2003). One could argue that there is little about a politician's speech that is not, in a way, political.

CONCLUSION

Even a superficially homogeneous speaker sample can display great individual-level and group-level variation. Trying to account for that variation through strictly automatic processes of convergence is not a straightforward task, even for speakers of a marked variety in a social context with the strong pressure to accommodate. Taking Scottish Members of UK Parliament as a test case, we argue against previous accounts of production patterns as reflecting 'unconscious' and asocial accommodation. Rather, we find a suggestive main effect of political party, which potentially reflect both social network and social meaning differences between the two groups. Examining individual-level differences has enriched our

interpretation of the group-level effects, identifying particular individuals who appear to be driving those effects. Notwithstanding the complications of sampling from a phonologically diverse range of elected politicians, we argue that political party is a potentially rich social factor to include in studies of sociophonetic variation (Hall-Lew, et al., 2010, 2012).

We take the perspective that any phonetic convergence among these speakers may be towards Scottish English norms just as much as towards RP/SSBE norms, and also that it is more fruitful to acknowledge the ever-present social factors that set the stage for contact-based accounts of that convergence, rather than treating contact as a primarily asocial, statistical phenomenon. We further posit an indexical analysis of what might be characterised as patterns of phonetic divergence, suggesting a range of stance and class-based meanings that take on political value in the context of Scottish MPs speaking as a minority group in the UK Parliament. Although the confirmation of those indexicalities is left for future analysis, these considerations seem necessary if the goal of sociophonetics research is to account for patterns of variation as completely as possible.

ENDNOTES

[i] Thanks to Victoria Dickson and Samantha Dent for their help in segmentation.

[ii] Note that the same effects obtained significance and did so in the same order and strength in models that only included TRAP and BATH.

[iii] A secondary analysis comparing foreign and non-foreign proper nouns does show some differences between the two, with foreign proper nouns slightly fronter and lower than non-foreign proper nouns. However, the data are too sparse for a reliable comparison.

[iv] In cases where a token could have been coded as either one of Wells' lexical sets or PROPER, the token was assigned to PROPER, except for when the vowel was followed by a tautosyllabic /r/ (e.g., *Barclay's, Hargreaves, Karlovac*), because of the strong effect of a following /r/ on vowel quality. Ambisyllabicity was an issue for categorizing these and non-proper names as well, such as *safari*, which can be TRAP or START depending on the syllabification of the /r/. Since all tokens were manually segmented, lexical sets were assigned to tokens based on auditory cues to syllabicity.

[v] 16 tokens of the word *can't* were also included, even though this is a function word, because of the very low number of BATH tokens per speaker.

[vi] Tokens of MEET were eliminated if they showed: F1 < 77 Hz or > 472 Hz; F2 < 1707 Hz or > 2674 Hz. Tokens of CAT were eliminated if they showed: F1 < 365 Hz or > 886 Hz; F2 < 894 Hz or > 1774 Hz. These ranges were defined as liberally as possible by taking the extremes of the *had* and *hard* ranges and the extremes of the Glasgow and Highland ranges. Ferragne and Pelligrino (2010) did not include data for the Eastern Central Belt.

[vii] Before testing for the effect of each predictor on each formant of each vowel, we attempted to trim the number of factors included in order to avoid overfitting the data (Harrell 2001:61), following the procedure outlined in Kuperman and Bresnan (2012), but no factors were able to be eliminated, and all were entered into the full model.

[viii] This may suggest that 'foreign-a' in Scottish varieties is acoustically 'in-between' the fronter and backer vowel classes (TRAP and START), similar to what Boberg (2009) found for Canadian English.

[ix] Sheridan's use of the word *fearties* caused confusion for Hansard reporters in 2013, an incident which attracted media attention: http://www.deadlinenews.co.uk/2013/01/15/parliamentary-officials-baffled-by-accents-of-scottish-mps/ The presence of Scots in the UK Parliament has increased since the time of data collection, and media stories such as this one are more common: http://www.telegraph.co.uk/news/2017/04/03/scottish-mp-reveals-accent-thick-has-translated-speaks-commons/

[x] F1 and F2 are the two dependent variables in the model. The model generates Pillai statistics for each independent factor (Hay et al. 2006, Hall-Lew 2010). Factors included were, in order: FUNCCONT, PRECPLACE, PRECMANNER, FOLPLACE, FOLMANNER, LEXICAL_SET (TRAP versus BATH). Note that these factors, and the dataset itself, differ from those profiled in Nycz and Hall-Lew (2014), which explains the difference between the results shown and those in in that paper.

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TABLES

Table 1: Speakers, Social Factors, and Biographical Details. ‘C.’ indicates a College, ‘U.’ indicates a University, ‘LL.B’ is a Law degree.

MP	**Party**	**Region**	**Class**	**2012 Constituency**	**Childhood location(s)**	**Education**	**Pre-MP Professions**	**Parents’ Professions**
McGovern	Labour	East	WC	Dundee West	Glasgow; Dundee	left school at 15; Telford C.	glazier, trade union activist	*(unknown)*
Alexander	Labour	West	UMC	Paisley & Renfrewshire South	Glasgow; Renfrewshire	Edinburgh U. (LL.B)	parliamentary researcher; lawyer	minister; doctor
Harris	Labour	West	LMC/UWC	Glasgow South	North Ayrshire	Napier C.	reporter; press officer; PR	lorry/taxi driver; office clerk
Murphy	Labour	West	LMC/UWC	East Renfrewshire	Glasgow; South Africa	secondary (began Strathclyde U.)	political positions	pipe-fitter; secretary
Sheridan	Labour	West	WC	Paisley & Renfrewshire	Glasgow	secondary	printer; painter; material handler	*(unknown)*

				North				
Hosie	SNP	East	LMC/UWC	Dundee East	Dundee	Bell St Tech; Dundee C. of Tech	IT business owner	ironmonger; bookkeeper
Robertson	SNP	East	MC	Moray	London; Edinburgh	Aberdeen U.	journalist	*(unknown)*
Weir	SNP	East	MC	Angus	Arbroath	Aberdeen U. (LL.B)	lawyer	electrician; hospital cook
Wishart	SNP	East	LMC/UWC	Perth & North Perthshire	Dunfermline	Moray House C.	musician; community worker	dockyard worker; teacher
MacNeil	SNP	Hebrides	*(n/a)*	Na h-Eileanan an Iar	Outer Hebrides	Strathclyde U.; Jordanhill C.	engineer; journalist; teacher	postman & crofter; nurse

Table 2: Coding for model predictors. Each reference level is underlined.

Type	**Predictor**	**Abbrev.**	**Type**
Internal	Preceding place	precplace	factor (anterior, posterior, nonlingual)
	Preceding manner/voicing	precmanner	factor (approximate, nasal, voiced obstruent, voiceless obstruent)
	Following place	folplace	factor (anterior, posterior, nonlingual)
	Following manner/voicing	folmanner	factor (approximate, nasal, voiced obstruent, voiceless fricative, voiceless stop)
	Log lexical frequency	logFreq	continuous
	Log duration	logDur	continuous
	Lexical set	lexset	factor (trap, bath, proper, start)
External	Regional background	region	factor (East, West, Highland)
	Social Class	class	factor (WC, LMC/UWC, MC, UMC)
	Political party	party	factor (Labour, SNP)

Table 3: Best-fit *lmer* models for CAT F1 & F2: Main Effects

F1	**SumSq**	**df**	**F-value**	***p* <**	**sig.**
PrecManner	0.17653	3	3.307	0.0199	*
LogDur	1.73464	1	97.477	0.0001	***
LexSet	2.05705	3	38.531	0.0001	***
Party	0.09589	1	5.388	0.0484	*
F2	**SumSq**	**df**	**F-value**	***p* <**	**sig.**
PrecPlace	0.61320	2	70.767	0.0001	***
PrecManner	0.24002	3	18.466	0.0001	***
FolPlace	0.39471	2	45.551	0.0001	***
FolManner	0.52545	5	24.256	0.0001	***
LexSet	0.46656	3	35.896	0.0001	***
Region	0.26562	2	30.653	0.0041	**
Class	0.58569	3	45.061	0.0017	**

Table 4: Best-fit *lmer* models of CAT F1 & F2: Summary of Level Estimates

F1	**Estimate**	**StdError**	**df**	**t-value**	***p* <**	**sig**
(Intercept)	1.13	0.05	246.00	23.727	0.0001	***
precmanner: approx	-0.02	0.01	597.00	-2.593	0.0098	**
precmanner: nasal	-0.01	0.01	630.00	-0.532	0.5948	
precmanner: voicedob	-0.02	0.01	717.00	-2.371	0.0180	*
logdur	0.22	0.02	3456.00	9.873	0.0001	***
LexSet: BATH	0.01	0.01	441.00	0.682	0.4954	
LexSet: PROPER	-0.01	0.01	625.00	-0.597	0.5509	
LexSet: START	-0.10	0.01	544.00	-10.344	0.0001	***
party: SNP	0.07	0.03	8.00	2.321	0.0484	*
F2	**Estimate**	**StdError**	**df**	**t-value**	***p* <**	**sig.**
(Intercept)	1.06805	0.012446	9	85.811	0.0001	***
precplace: anterior	0.0408	0.00509	654.5	8.015	0.0001	***
precplace: posterior	0.070406	0.006328	684.1	11.126	0.0001	***
precmanner: approx	-0.041369	0.005726	795	-7.225	0.0001	***
precmanner: nasal	-0.001087	0.005918	769.2	-0.184	0.8544	
precmanner: voicedob	-0.002325	0.005595	856.5	-0.416	0.6778	
folplace: anterior	0.021967	0.006401	499.8	3.432	0.0006	***
folplace: posterior	0.070198	0.007559	485	9.286	0.0001	***
folmanner: approx	-0.070769	0.008816	702.9	-8.028	0.0001	***
folmanner: nasal	0.012009	0.006534	532.1	1.838	0.0666	.
folmanner: voicedfric	-0.034488	0.013603	470.6	-2.535	0.0116	*
folmanner: voicedstop	-0.000754	0.008813	643.9	-0.086	0.9318	
folmanner: vlessfric	-0.018681	0.008125	525	-2.299	0.0219	*
LexSet: BATH	-0.004151	0.007069	612.3	-0.587	0.5572	
LexSet: PROPER	-0.016939	0.006894	696.8	-2.457	0.0142	*
LexSet: START	-0.083691	0.008178	703.5	-10.234	0.0001	***
region: Islands	-0.004795	0.016905	3.8	-0.284	0.7913	

region: West	0.084918	0.011722	4	7.244	0.0019	**
class: UMC	-0.090987	0.020812	3.8	-4.372	0.0136	*
class: LMC/UWC	-0.015197	0.013595	3.8	-1.118	0.3287	
class: WC	-0.148394	0.015665	4.2	-9.473	0.0006	***

Table 5: Individual speakers by CAT production patterns, phonological patterns, and speaker social factors. 'Type' does not imply ranking.

'Type'	**MP**	**High/Low**	**Front/Back**	**Phonology**	**Party**	**Region**	**Class**
1	Alexander	high	middle	SSE	Labour	West	UMC
2	Sheridan	high	back	SSE	Labour	West	WC
2	McGovern	high	very back	Scots	Labour	East	WC
3	Robertson	middle	middle	RP-like SSE	SNP	East	MC
4	MacNeil	middle	middle	HHE	SNP	Hebrides	(n/a)
5	Hosie	middle	middle	SSE	SNP	East	LMC
6	Harris	middle	front	SSE	Labour	West	LMC
6	Murphy	middle	front	SSE	Labour	West	LMC
7	Weir	low	middle	SSE	SNP	East	MC
7	Wishart	low	middle	SSE	SNP	East	LMC

FIGURES

Figure 1: Scottish MPs' low vowels according to Wells' (1982) lexical sets, with PROPER rather than PALM (see *Methods*), and strut included for reference. Ellipses represent 95% of the distribution, based on a *t*-distribution.

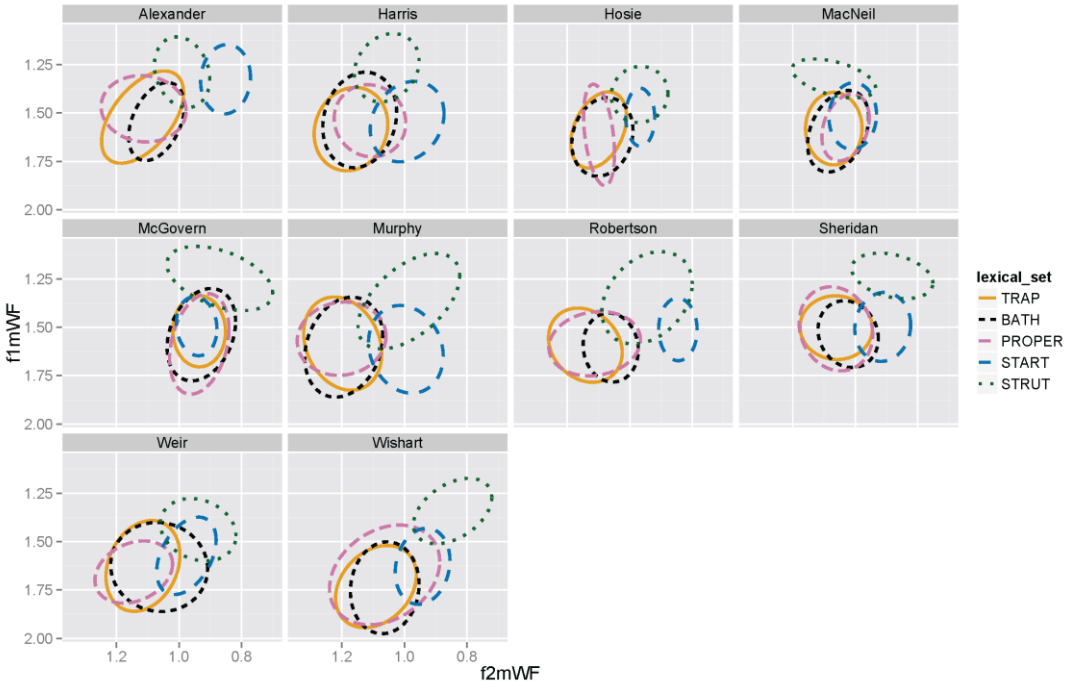

Figure 2: Standard deviations of F1 and F2 per lexeme, plotted by lexical set, by speaker

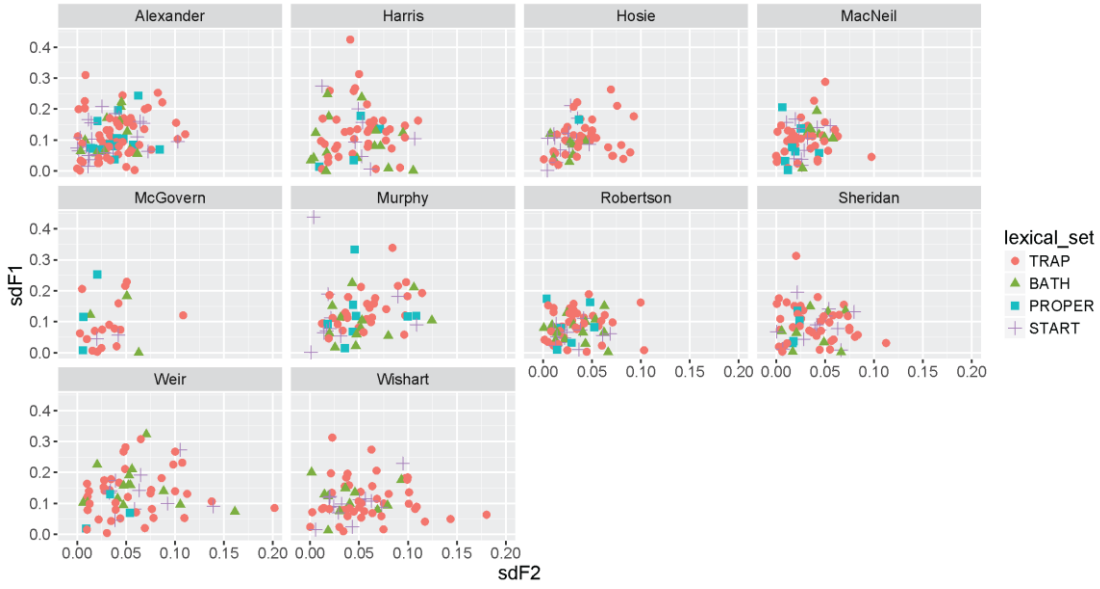

Figure 3: Individual MPs, arranged by mean CAT F1. Colour indicates political party (Labour= red).

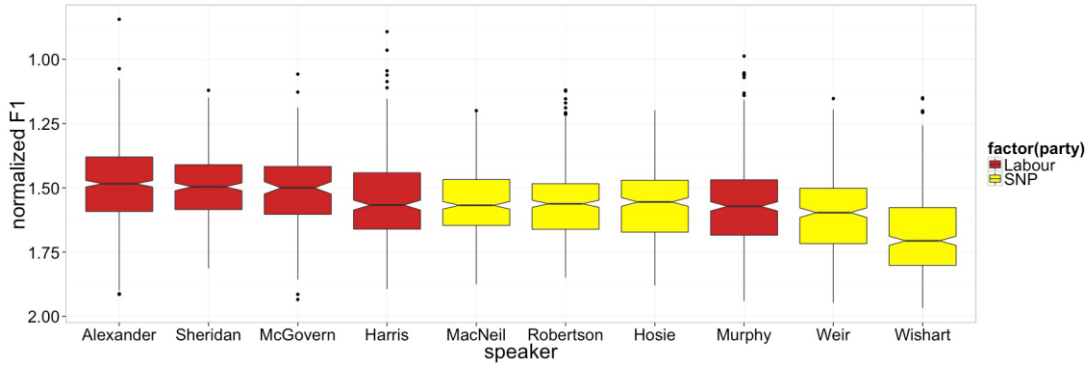

Figure 4: Individual MPs, arranged by mean CAT F2. Colour indicates region (East=blue). Line type indicates social class (WC=solid, LMC/UWC=short dash, MC/UMC= longer dash).