Models of linguistic change and diffusion: new evidence from dialect levelling in British English*

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Abstract. The levelling of accents/dialects has been something of a 'given' in recent accounts of change in the spoken English of Britain. However, the very recent availability of a larger number of studies presents us with the opportunity to examine the mechanism behind this 'levelling' with a new degree of precision. The present paper brings together data from this body of research in an exploration, particularly, of the distinction between *levelling* and *geographical diffusion* in accounting for changes in vernacular speech. I argue that, while both processes assume dialect contact, levelling (as a direct result of mutual accommodation between speakers) is only possible as a process in its own right in relatively compact geographical areas, such as new towns. In other cases, levelling outcomes (on a much larger geographical scale) can best be explained as an epiphenomenon of geographical diffusion (a position taken by Trudgill). I suggest that the phrase *regional dialect levelling* should be applied to this wider geographical outcome, reserving the unqualified *levelling* for the outcome of the social psychological process of accommodation. This exploration invites us to look more closely at the distinction between regular (Neogrammarian) change and lexical diffusion, as discussed by Labov (1981). Preliminary conclusions are that phonetic gradualness as a characteristic of regular change cannot be upheld, and that there is no strong connection between change type and mechanism of spread, despite the presence of similar notions of diffusion on each side of the comparison.

1. Introduction

1.1 Regional dialect levelling in Britain

This article is an attempt to bring out general tendencies in the regional dialect levelling which, it is often claimed, is leading to the loss of localised features in urban and rural varieties of English in Britain, to be replaced with features found over a wider region. In particular, I consider two possible mechanisms behind these changes. The first is *geographical diffusion*, by which features spread out from a populous and economically

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and culturally dominant centre (Trudgill 1983; Britain 2002). The spread is wave-like, but modified by the likelihood that nearby towns and cities will adopt the feature before the more rural parts in between. At the individual level in such a diffusion model, speakers are in face-to-face contact with others who have already adopted the new feature, and (for various reasons) they are motivated to adopt it themselves.

The second mechanism is *levelling*, which implies "the reduction or attrition of *marked* variants" (Trudgill 1986:98; emphasis in original). 'Marked' here refers to forms that are "unusual or in a minority" (*ibid*.). Levelling, in this sense, is closely related to (indeed, results from) the social psychological mechanism of *speech accommodation* (Giles & Powesland 1997; Trudgill 1986:1-4), by which (provided mutual good will is present) interlocutors will tend to converge linguistically. In a situation (such as in a new town) where speakers of different, but mutually intelligible dialects come together, countless individual acts of *short-term accommodation* over a period of time lead to *long-term accommodation* in those same speakers (Trudgill 1986:1-38). The outcome is the levelling of differences among what was at first a conglomeration of varieties, often leading to a new variety (see discussion in Kerswill 2002:680-689).

There is, thus, a rather awkward terminological ambiguity. Regional dialect levelling is an outcome of various partly geographically-based language change processes. One of these is geographical diffusion. Another is, of course, levelling, in the sense of 'mutual convergence'. I would propose the use of the term *regional dialect levelling* for the dialect-geographical phenomenon and simply *levelling* (following Trudgill 1986) for the linguistic changes which are the outcome of accommodation.

1.2 Neogrammarian change and lexical diffusion

The article is also intended as a contribution to an ongoing debate about the modelling of phonetic change. My concern will be the distinction between *Neogrammarian* or *regular sound change* and *lexical diffusion*. Neogrammarian change is 'regular' in the sense of being unaffected by non-phonetic factors, including morphological structure and semantic and psychological factors, while being phonetically gradual (cf. Hock 1991:35, Labov 1981:268; 1992:42). In cases of *lexical diffusion*, "words change their pronunciations by discrete, perceptible increments (i.e. phonetically abrupt), but severally at a time (i.e. lexically gradual)" (Wang & Cheng 1977:150, cited in Labov 1981:270). It is clear that, for Labov, a corollary of the 'phonetic abruptness' of lexical diffusion is that phoneme substitution may be present (1992:42). I will be considering a range of data

from British dialect geography to investigate the 'regularity' vs. 'lexical diffusion' distinction.

In approaching language change (especially sound change) from a basis in social dialectology, I am following J. Milroy's lead (1994) in claiming that language change is the product of speakers systematically letting an innovation 'catch on': the real question for him is not explaining how a particular innovation, such as the palatalisation of /k/ before front vowels, begins, but rather "the conditions under which some of these innovations, and not others, are admitted into linguistic systems as linguistic changes" (1994:127). These conditions are social, and language change is a social phenomenon because "it comes about for reasons of marking social identity, stylistic difference, and so on" (127-8). Furthermore, this view means that all change is the product of borrowing or, in the framework I adopt in this article, *dialect contact*: without an innovation passing from one speaker to another, there is no change (127). The consequences of this view for the idea that sound change is phonetically gradual will be considered at various points in this article.

2. Neogrammarian change and lexical diffusion in English dialects

2.1 Labov and McMahon

Labov (1981) is an attempt to refine criteria for regular, Neogrammarian change and lexical diffusion. Having examined findings from both historical and sociolinguistic studies of sound change, Labov summarises his position in tabular form (Table 1) (Labov 1981:296).

	Neogrammarian change	Lexical diffusion
Discrete	no	yes
Categorised	no	yes
dictionary entries	1	2
phonetic conditioning	fine	rough
lexical exceptions	no	yes
grammatical conditioning	no	yes
social affect	yes	no
Predictable	yes	no
Learnable	yes	no
lexical diffusion	no	yes

Table 1 Neogrammarian change and lexical diffusion (adapted from Labov 1981:296)

Labov claims that Neogrammarian changes consist mainly of shifts within a phonological subsystem, equivalent to a natural class. Examples are short vowel shifts in American English and the fricativisation of voiceless final stops in Liverpool English. On the other hand, changes (at any rate in English) affecting the lengthening or shortening of vowels (thereby involving transitions between the 'short' to the 'long' vowel subsystem) have lexical exceptions. Speakers can 'categorise' the variants, in that they can easily tell the difference between the old and the new variants. This, Labov asserts, is not the case for Neogrammarian changes. Labov continues:

> Why should these shortenings and lengthenings be irregular? The explanation, I suggest, is that they are not sound changes in a literal sense. They are changes of membership in abstract classes of long or short (tense or lax) vowels ... We must recognize a hierarchy of features depending on the number of phonetic features involved in their realisation – necessarily, a hierarchy of abstractness. In modern English, [± tense] will be at the top of this hierarchy; fronting and raising [e.g. changes *within* 'short' and 'long' vowel systems – PK] will be near the bottom. (1981:298-299)

Neogrammarian changes, then, are less abstract than those which are lexically conditioned, since the latter have recourse to information on more than one linguistic level (particularly morphology, but also word class, in

addition to phonological environment). On the basis of Labov's examples and discussion, it is apparent that changes move from being to Neogrammarian to being lexically conditioned (i.e. lexically gradual) – and not vice versa. McMahon (1994:59-64) gives a clear illustration of this transition in her analysis of the Scottish Vowel Length Rule (SVLR). She argues that a natural, and therefore exceptional lengthening of vowels before /r/ and voiced fricatives began to be exaggerated. She states: 'This extra lengthening was probably audible to speakers, who might then have stopped thinking of vowels as either long or short [length is a phonological category in most English varieties - PK], and started to classify them all as short, with the majority lengthening before /r/ and voiced fricatives' (p. 63).[1] Subsequently, the SVLR was lexicalised – in other words, lexical exceptions began to appear. The rule is blocked in certain grammatical contexts. The number of exceptions is currently increasing, and there are considerable dialectal differences in the application of the rule. Working within a lexical phonology framework, McMahon interprets the change in terms of a transition from postlexical to lexical rules.

In the discussion of actual changes below, I will use Labov's classification as a point of reference.

2.2 From Neogrammarian change to lexical diffusion: house *and* mouse *in Northern England*

The nineteenth-century dialect surveys of Wenker in Germany and Gilliéron in France did not provide the confirmation of the Neogrammarian theory of regularity that had been anticipated (Petyt 1980:55-6). More recently, Labov (1992) has mapped the Great Vowel Shift diphthongisation of Middle English /uː/, a regular change which gave rise to phones such as [ɛʊ] and [aʊ], as it is manifested in the words *mouse* and *house* in the material collected by the *Survey of English Dialects* (*SED*) (Orton *et al*. 1962-71). Labov's map (Figure 1) shows that the monophthong is best preserved in the north. At least along the east coast, the transition appears to be quite gradual, starting with a shift to [ʊu], then via [aʊ] and [æʊ] to [ɛʊ] in the South East. Given that the transcribers did not use a particularly narrow phonetic transcription, it is probably reasonable to suppose that, across much of the country, this actually represents a phonetic continuum. In his article, Labov shows that there are only a very few transitional areas in which the two words have different

[1] A more succinct way of expressing this would be to say that length as a phonological category is neutralised. Instead, it becomes predictable (i.e. allophonic).

vowels. He concludes that almost all the data support a Neogrammarian interpretation. It is worth noting that the map suggests the diffusion of the change from south to north, with the South East clearly leading; this is a general finding for phonetic changes which cover large areas of the country. All this is evidence that the change was gradual, both phonetically and geographically – though, of course, our evidence for this claim is highly indirect.

So far, the Neogrammarian–lexical diffusion distinction seems unproblematic. There are two types of change, and following McMahon we can give a fairly precise account of the transition from the regular to the lexically-conditioned change. However, if we look at the situation in an area near the northern border of the shift, we get a very different picture. In County Durham, the county lying to the immediate south of Newcastle in the north-east of England in the [ʊu] area, there has been an almost total change, over two generations, from the use of [ʊu] in these words to [ɑʊ]. This has happened not by a phonetically gradual and imperceptible shift, but by the substitution of /aʊ/ for /uː/ in the relevant words. People in their 60s today (born around 1940) alternate between [hʊus] and [hɑʊs], [ʊut] and [ɑʊt], etc., while the youngsters on the whole do not. This gives us the correspondences shown in Table 2, which shows the distribution in two central Durham villages. The table also includes some words with [ɑʊ] which are now pronounced with /ɔː/.

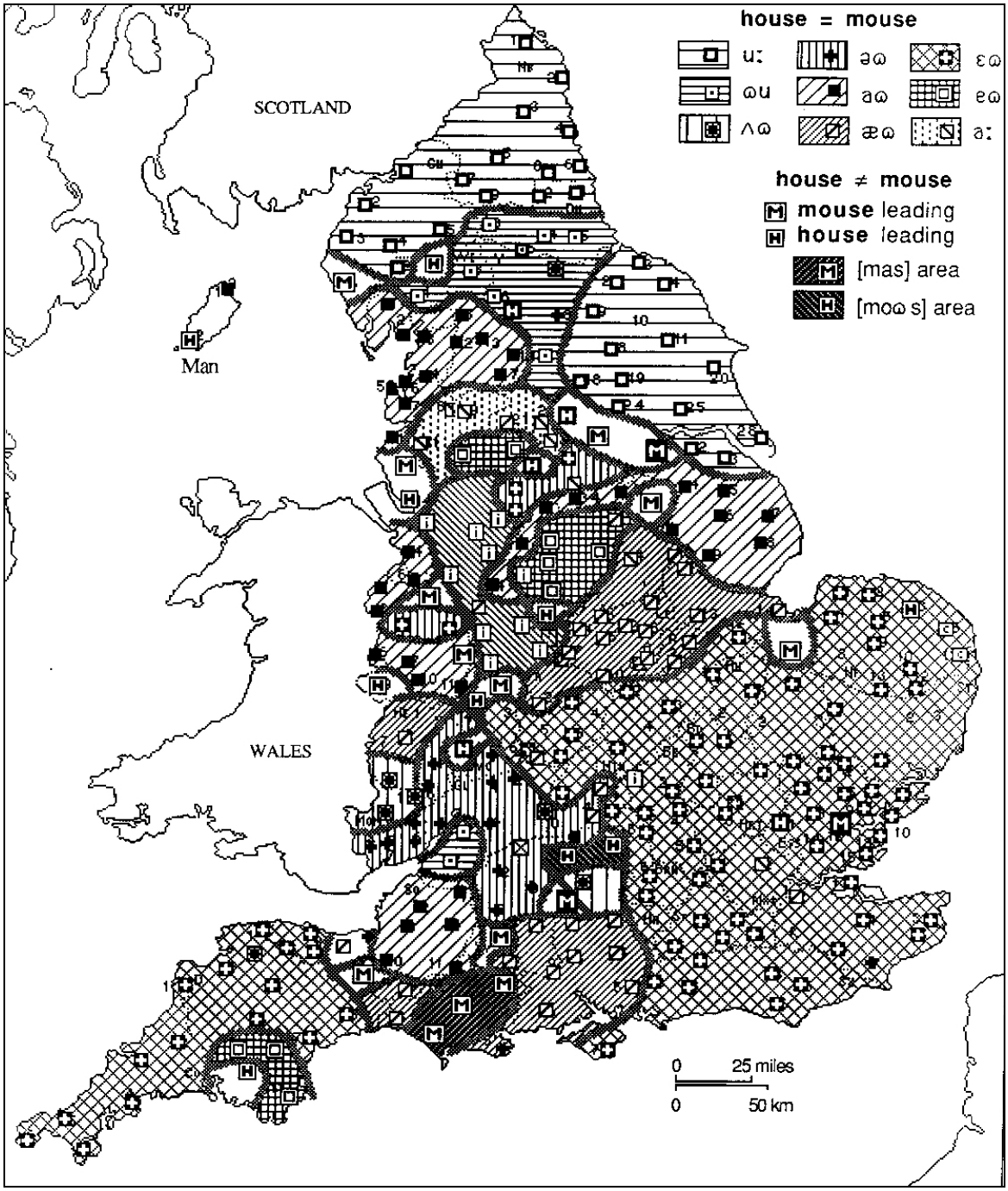


Fig. 1 Development of Middle English u: in house *and* mouse *in 311 localities in England (Labov 1992, based on the* Survey of English Dialects*)*

<table>
<tr><th rowspan="2">Word class</th><th rowspan="2">Examples</th><th colspan="3">Village/Year of birth</th></tr>
<tr><th>Byers Green 1880 (Orton 1933)</th><th>Ushaw Moor 1940 (Kerswill 1987)</th><th>Ushaw Moor 1987 (recordings by PK, 2002)</th></tr>
<tr><td>1</td><td>food, choose, move, prove ...</td><td rowspan="2">/uː/</td><td>/uː/</td><td>/uː/</td></tr>
<tr><td>2</td><td>out, house, mouse, town, cow, down ...</td><td>/uː/~/aʊ/</td><td rowspan="2">/aʊ/</td></tr>
<tr><td>3</td><td>owt (‘anything’), nowt (‘nothing’) ...</td><td rowspan="2">/aʊ/</td><td>/aʊ/</td></tr>
<tr><td>4</td><td>four, daughter, thought, bought ...</td><td>/aʊ/~/ɔː/</td><td>/ɔː/</td></tr>
</table>

Table 2 /uː/ and /aʊ/ in central County Durham

This pattern is characteristic of lexical diffusion, with an alternation between phones which are phonologically distinct in the dialect and a clear lexical effect. Unfortunately we cannot at present say anything about the change *within* word class 2. It is likely that there is a lexical effect on the frequency of use of the old and the new variants, depending on factors such as word frequency, and domain of use. Even if there is no lexical effect, the *overall* change can be characterised as an example of lexical diffusion because of the existence of two lexical classes of words containing /aʊ/. The stable distribution in 2002 corresponds to southern English varieties and standard English, suggesting that standardisation is a significant external motivation. Nevertheless, *owt* and *nowt* are retained, despite their restriction to northern English dialects.

If we take the view that language change takes place in the same way today as previously, then these results are apparently in conflict with those of Labov. The fact that we are now in a position to use sociolinguistic methods to investigate sound change does not mean that we expect incompatible results. In the present case, it is clear that we are not witnessing the continued spread of the sound change. Instead, we are dealing with a lexically gradual attrition of minority variants across the country, represented by word classes 2 and 4 as they appeared in 1933. This is undoubtedly part of the standardisation which contributes strongly to the current regional dialect levelling.

We should now seek an interpretation of Labov's results. It is not necessary to claim that they reflect a living Neogrammarian change. The *SED* targeted informants who were elderly, rural and had a low degree of mobility. It is perhaps not surprising that Labov's data reflects this stability, in a way that has not been the case for later studies of more mobile people. We should note that, even on Labov's *SED*-derived map, the transcriptions do not always show the same phonetic gradualness: in many cases, there is are large phonetic difference between geographically adjacent variants, reflecting phonetic discreteness.

All this indicates that this Neogrammarian change was long since complete at the time of the *SED* data collection in the 1950s and 1960s. It is normally assumed that the change had in fact run its course by the end of the 17th century (Baugh & Cable 1993:233). What we see today is the consequence of the fact that the change did not cover the whole geographical extent of the language. We can assume that, in the 200 or so years from 1700, there were relatively few repercussions of the vowel shift resulting from dialect contact and the lexical diffusion that is often associated with it. Even if mobility has long been a significant factor in English demography, there was always a substantial, if small, core of people who did not move and thereby represented continuity. It was people of this sort that the *SED* located. By contrast with this situation, Britain (1997a, b) deals with the consequences of dialect contact in a rural area which was subject to massive population movement in the 17th and 18th centuries. Dealing with variation in the vowels /aɪ/ (as in PRICE) and /ʌ/ (as in STRUT), Britain does not find any of the gradual transitions suggested by Figure 1, but a more complex picture including strong phonological effects (for /aɪ/), lexically unconditioned alternations and phonetically intermediate forms.

The question arises as to whether Neogrammarian changes can be observed. After all, Labov's Martha's Vineyard and New York City studies demonstrate how 'apparent-time' and 'real-time' investigations allow us to at least indirectly observe the socially systematic distribution of older and newer variants – though not, as J. Milroy (1994:120) points out, the supposed phonetic gradualness of such changes, leading him to question the presence of gradualness in any change.

3. Geographical diffusion vs. dialect levelling in Britain

3.1 New directions in British dialectology: traditional and social dialectology converge

The emergence of a sociolinguistic dialectology in Britain can be dated to the late 1960s with Trudgill's study of Norwich, published in 1974. This signalled a move from the rural to the urban, and with it a conviction that both the collection and the interpretation of speech data had to be socially informed. Studies in Glasgow (Macaulay 1977), Edinburgh (Reid 1978, Romaine 1978) and Belfast (L. Milroy 1980) followed. At the end of the 1980s, a new approach began to appear within this tradition. Concerns became more comparative, in that the aim was to view urban variation in a wider geographical context, instead of focusing narrowly on the social context of a single town or city. Several projects were set up, dealing with more than one urban centre or with migrants. Some of these are reported in Cheshire *et al*. (1989/1993), Kerswill & Williams (2000a), Milroy, Milroy & Hartley (1994), Milroy, Milroy, Hartley & Walshaw (1994), Williams & Kerswill (1999) and Britain (1997a, b).

All of these studies share a concern with the spread of features in geographical, as well as social, space. Several were reported in Foulkes & Docherty (1999), who saw to it that each chapter contained information in a standardised format allowing for ease of comparison. Many of the articles in that book point to dialect levelling as the main 'motor' behind changes in British English varieties. In their Introduction, the editors present some of the main themes of the book. On dialect levelling, they say:

> Watt [one of the contributors], by way of illustration, summarises the motivation behind ongoing changes in the Newcastle vowel system in terms of younger speakers aiming to 'dispel the "cloth cap and clogs" image', and to 'sound like northerners, but *modern* northerners'. Speakers can achieve these aims by avoiding variants which they perceive to be particularly indicative of their local roots, while at the same time adopting some features which are perceived to be non-local. It seems to be important, too, that the incoming features do not signal any other particularly well-defined variety, because of the potential signalling of disloyalty to local norms. (pp. 13-14)

The claim is, then, that people in Newcastle are (in some sense) aware of what features are 'old' and what features are both 'modern' and have a

wider geographical distribution. These are the motivations for introducing the features into one's speech. It can also be shown that dialect levelling of this sort accompanies a transition from close-knit to loose networks (Kerswill & Williams 2000b; cf. Milroy 1980).

Dialect levelling of this sort fits in well with the social-psychological mechanism of levelling discussed above. Variants, old and new, exist in the given geographical region. Speakers adopt the new ones by accommodating to other people who may be socially attractive because of their perceived 'modernity'. On the face of it, this mechanism conflicts with the geographical diffusion model, particularly since it does not include a geographical dimension. In order to see if these potentially conflicting mechanisms can be reconciled, it is necessary to examine relevant data – or at the very least to outline the type of research that would be needed.

The examples to follow allow us also to examine in more detail the other main issue discussed in this article: that of phonetic gradualness and its relationship to 'Neogrammarian' change. I turn to this issue first.

3.2 Phonetic gradualness and Neogrammarian change: evidence from regional dialect levelling in English vowels

Our first example is again from Durham and Newcastle.[2] The vowel /eː/, as in *face*, *may*, *rain*, etc., is currently subject to monophthongisation.[3] The traditional variant is [ɪə]. Figures for the use of the diphthong and monophthong are given in Table 3.

[2] The city of Durham has a population of 87,000. The borough also covers a large rural area, including the research site, Ushaw Moor. Newcastle has a population of 259,000.

[3] In common with what is now current practice, I use Wells's (1982) mnemonic system to identify lexical sets containing the 'same' vowel. In this system, this set is represented as FACE.

	City: Year of recording					
	Durham: 1983		Newcastle: 1994			
Sex	Men	Women	Men		Women	
Age group	26-59	26-52	45-67	15-27	45-67	15-27
% [ɪə]	45	8	63	36	8	5
% [eː]	55	92	37	64	92	95

Table 3 /eː/ (as in FACE) in two dialects in the North East of England (per cent use of two variants by working-class subjects) (Kerswill 1984, Watt 2002)

On the basis of the figures both cities, it is clear that the use of the diphthong [ɪə] is practically the preserve of male speakers. The Newcastle data additionally shows that their use of the variant is declining. We can deduce that the change began with the women, who according to Lesley Milroy prefer dialect features with a greater geographical distribution (Milroy, Milroy, Hartley & Walshaw 1994; cf. Cheshire 2002:430). Variants such as these are neutral in the sense that they do not signal a strong or specific local affiliation – even though they are not necessarily standardised towards an external norm such as Received Pronunciation, which uses [ɐɪ].

We can briefly examine the geographical direction of the change. We do not have figures for younger speakers in Durham, though informal observation suggests that the diphthongs are declining there, too. The sex distribution in Durham is similar to that of the much larger city of Newcastle, with the frequencies for women in both places being so low that the change would appear to be all but complete among them. However, the use of diphthongs is much less among the Durham men than among the older Newcastle men. Taking into account the fact that the Durham recordings predate those from Newcastle by 11 years, one might conclude that monophthongisation is more advanced in Durham. If this is so, we have an example of counter-hierarchical diffusion (Britain 2002:626; Trudgill 1986:50). In our case, this means that a smaller, partly rural location (Durham) has adopted a change before the nearest large city. Set against this conclusion is the danger of comparing two studies which presumably used somewhat different informant selection criteria and methods. Despite this, we can be relatively sure that the feature is *not* spreading directly from Newcastle to Durham: the differences in the scores are too great for this to be a reasonable conclusion. However, it is not possible simply to conclude that we are dealing with mutual

accommodation leading to levelling. In particular, it may be relevant that Yorkshire, the county to the immediate south of County Durham, traditionally has [eː]. Diffusion from there may be reinforcing diffusion from Newcastle. Neither precludes the simultaneous presence of mutual accommodation. We return to this issue in the next section.

We consider next whether this change is Neogrammarian or subject to lexical diffusion. Watt finds no lexical effects, while there are strong contextual effects (Watt 2000:79-80). This matches the Neogrammarian mechanism. On the other hand, it is clear from Watt's comments that it was relatively easy for him as transcriber to categorise the vowel tokens. In my own study (Kerswill 1984:31), I showed that the majority of tokens were either strongly diphthongised or clearly monophthongal. This type of phonetic polarisation would not be characteristic of a prototypical Neogrammarian change: this is the first indication we have that J. Milroy (1994) may be right in rejecting the existence of 'gradual' change.

In order to discover whether this polarisation is exceptional, we examine two further examples. Two vowels which are thought to be involved in dialect levelling in the south-east of England are /aʊ/ as in MOUTH and /aɪ/ as in PRICE. Tables 4 and 5 show the variants of /aʊ/ in Milton Keynes and Reading, respectively, both towns situated some 40-50 miles from London (see map, Figure 2).

	[ɛʊ̯]	[ɛɪ]	[ɛː]	[aːᵊ]	[æʊ]	[aʊ]
SED informants (1950-60)	✓					
Elderly (2f, 2m)	63.2	25.6	9.8	0	1.2	0
Women 25-40 (n=48)	0	0	11.7	17.2	38.6	31.5
Girls aged 14 (n=8)	0	0	0	5.9	4.7	88.8
Boys aged 14 (n=8)	0	0	0	12.3	3.8	83.1

Table 4 Milton Keynes: Percent use of variants of /aʊ/ (as in MOUTH), working-class speakers, interview style (Kerswill 2002:697)

	[ɛʊ̯]	[ɛɪ]	[ɛː]	[aːᵊ]	[æʊ]	[aʊ]
SED informants (1950-60)	✓					
Elderly (2f, 2m)	53.5	38.1	3.3	0	4.1	0.7
Girls age 14 (n=8)	0	2.3	0	8.0	0	90.4
Boys age 14 (n=8)	3.8	3.2	0	5.7	0	87.1

Table 5 Reading: Percent use of variants of /aʊ/ (as in MOUTH), working-class speakers, interview style (Kerswill 2002:697)

Fig. 2 South-east England, showing Reading, Milton Keynes and Ashford

/aʊ/ is the same vowel as that discussed by Labov in his (1992) article. It is clear from his map (Figure 1) that the main variant in south-east England is that transcribed as [ɛʊ]. This, we believe, is the variant we have transcribed as [ɛʊ̯] (we can assume that this is the same variant because the *SED* transcriptions were relatively broad). The tables show that this variant and the unrounded [ɛɪ] have almost completely given way to [aʊ] over two or three generations. Reading is somewhat behind Milton Keynes, due, we argue, to relatively more close-knit networks there than in the new town of Milton Keynes (Kerswill & Williams 2000b). We have argued that Milton Keynes is an example of *new-dialect formation*, where mutual accommodation is demonstrably the mechanism behind the development of a new dialect or 'immigrant koine' (Kerswill & Williams 2000a; Trudgill, Gordon, Lewis & Maclagan 2000; Siegel 1987, 2001). We would argue that the more rapid and complete change in Milton Keynes is due to that town's greater receptiveness to incoming changes spread, whether spread by diffusion or by levelling.

Whatever the mechanism, the pattern is the same in both towns. This change seems not to have any lexical exceptions, and it does not involve a change in the phonemic structure of the words. However, to an even greater degree than for the diphthongs in Durham and Newcastle there is a strong polarisation of, on the one hand, the two old variants [ɛʊ̯] and [ɛɪ] and, on the other, the most recent variant, [aʊ]. Reading speakers in their 40s or 50s are gradually substituting the new for the old. There is no phonetic continuum: speakers switch between the two variants, often within a single utterance.

Let us now examine the vowel /aɪ/, as in PRICE, in the same towns. Tables 6 and 7 again show change, towards a lower and possible fronter vowel. As before, change in Reading is slower. By contrast with /aʊ/, it is plain that there is something much closer to a phonetic continuum, as reflected by the symbols we have used to transcribe the tokens.

	[a̱ɪ]	[ɑ̟ɪ]	[ɑɪ]	[ɔɪ]	[ʌ̟ɪ]	[ʌɪ]
Elderly (2f, 2m)	0	0	24.4	56.6	15.3	3.4
Girls age 14 (n=8)	25.4	44.6	29.2	0.5	0	0
Boys age 14 (n=8)	1.0	38.0	60.0	0	0	0

Table 6 Milton Keynes: Percent use of variants of /aɪ/ (as in PRICE), working-class speakers, interview style

	[a̱ɪ]	[ɑ̟ɪ]	[ɑɪ]	[ɔɪ]	[ʌ̟ɪ]	[ʌɪ]
Elderly (2f, 2m)	0	12.4	47.8	21.8	1.7	15.7
Girls 14 (n=8)	2.8	21.2	45.1	21.1	4.3	5.1
Boys 14 (n=8)	0.6	19.1	63.7	13.7	2.7	0

Table 7 Reading: Percent use of variants of /aɪ/ (as in PRICE), working-class speakers, interview style

Finally, we look at a vowel shift in the south-east of England. Data for this shift, which affects short vowels, is taken from Torgersen & Kerswill (2002), and consists of formant measurements (F1, F2) of about 3,000 vowels tokens. The speakers were four elderly and eight teenage informants both in Reading and in Ashford,[4] a town some 50 miles to the east-south-east of London (see map, Figure 2). The purpose of the study was to test the hypothesis that structural (internal) factors would affect the progress of the shift more strongly than the external factor of dialect contact. Figure 3 employs Wells's (1982) keyword system to label the lexical sets involved. Each arrow shows the direction and extent of change deduced from a comparison of older and younger speakers in Ashford. It is readily apparent that the change in Ashford is a 'classical' chain shift (Hock 1991:156-8).

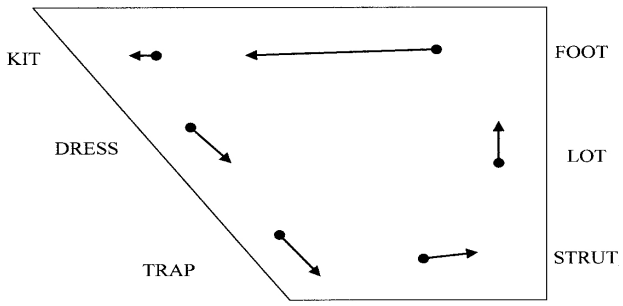


Fig. 3 Vowel shift in Ashford

[4] The analyses were carried out using SIL Speech Analyzer.

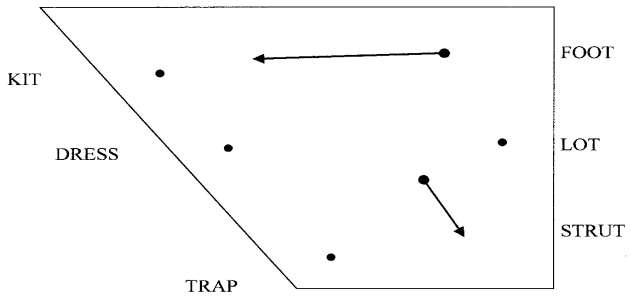


Fig. 4 Vowel shift in Reading

Figure 4 shows that the Reading vowels do not follow this pattern. First, for four of the vowels there is no change at all. Second, for STRUT the shift is in a different direction. Only for FOOT do we find the same change as in Ashford. In looking for an explanation for the difference between the two towns, we note first that the end points of the changes in each town coincide. In other words, the target appears to be the same vowel quality. The difference is, simply, that the starting points of the changes are different – to the east of London the front vowels were higher and STRUT was more front and lower than to the west. The result is convergence between the vowel systems east and west of the capital – an obvious sign of regional dialect levelling. A possible conclusion is that dialect contact (whether leading to diffusion or levelling) overrides structural factors when there is a conflict in the directionality of change promoted by each.

The change involving these vowels appears to be Neogrammarian, in that it seems to be phonetically gradual and with no indication of any lexical effect. Admittedly, we have not *directly* observed this change, since we are using an apparent-time method. Set against this is the fact that, despite the large and obvious differences between the generations, there is some variability between and within speakers in the same age/sex/town category. This variability is gradual in nature, consisting in differences in the dispersion of the F1–F2 plots for each vowel, rather than near-categorical differences. Gradualness is shown most clearly in the Ashford shift, which, like changes such as the Northern Cities Shift in the USA, is a chain shift (Labov 1994, Thomas 2002).

Further support for the phonetic gradualness of some vowel shifts is provided by data on the fronting of /u:/, as in GOOSE. Comparison of Received Pronunciation data from subjects born between 1911 and the 1940s (Bauer 1985) and our own data on elderly and young working-class speakers in Reading and Ashford (Kerswill 2000) show that, among today's teenagers, /u:/ has been fronted to a position some 500 Hz further forward on the F2 minus F1 scale than Bauer's (1985) youngest RP

speakers (b. 1940s). The elderly in our sample have fronting values higher than Bauer's older speakers born around the same time (1911-29), suggesting that nonstandard accents led in the fronting at that time. Our elderly speakers' fronting is similar to Bauer's RP speakers born 10-20 years later, in the 1940s. What this suggests is the presence of gradualness in the following sense: at a given time, we can expect a population, defined by age, gender and class, to have an average value for /u:/ on the F2 minus F1 scale of *n* Herz, and at a later time the value (*f*)*n* Herz, where *f* is a function of time. This tells us little, of course, about the mechanism behind this shift, including its social evaluation and distribution, or its symbolic use in conversation (cf. Eckert 1996 who discusses this point). Nor does it tell us whether speakers change their formant values as they grow older, as if to follow the community trend, nor whether, for individuals, there is a discrete alternation of 'old' and 'new' variants or the variable use of variants stretched out on a phonetic scale.

Taking this group-based view allows us to state with some confidence that gradualness exists at this level of social analysis if not at others. This leads us to investigate phonetic gradualness in the individual. J. Milroy rejects even the possibility of finding phonetically gradual change, since "dialectological research seems to be continually disproving the phonetically gradual hypothesis" (1994:120) and claiming (in the context of a phonetic change he has just discussed) that "linguistic change cannot be demonstrated in the speech of one individual during a short period of time, especially in laboratory conditions, even if it is actually taking place: this is because change takes place in the speech community, not in the speech of one person" (1994:121).

Milroy's assertion, already noted and accepted, that sound change is necessarily the outcome of a kind of borrowing can, I think, be viewed as a component of the same argument. 'Borrowing' was traditionally taken to be a word-level phenomenon, leading to the dictum '*chaque mot a son histoire*'. Dialectological evidence supporting this (such as the isoglosses for the High German Consonant Shift demonstrated in the 'Rhenish Fan' (Petyt 1980:57-60)) gave a picture of phonetic abruptness and lexical gradualness. If Neogrammarian change itself, and not its residue (for that is what these isoglosses are), is the result of borrowing, then it follows that we cannot expect to find 'imperceptible' degrees of change: if a change in one person's speech is imperceptible, then there is no reason for another person to copy it.

Despite these principled arguments, J. Milroy's (1994:120) claim that phonetically gradual change is not to be found in individuals is overstated. Elsewhere, we have provided apparent-time evidence of the

increased fronting of /əʊ/, as in GOAT, among young south-east English children between the ages of 4 and 8 (Kerswill & Williams 2000a:106-7; Kerswill & Williams fc:6). This data remains indirect. However, longitudinal studies have shown that adult speakers can and do gradually change their vowel realisations in line with community change (Yaeger-Dror 1989, Harrington *et al*. 2001). Labov's failure to find this behaviour in his data suggests that it is not universal (1994:101-106).[5]

The examples discussed seem to point to a further weakening of the distinction between 'Neogrammarian' and lexical diffusion-based changes. We must reject 'gradualness' as a criterion for Neogrammarian change, while recognising that in some cases, and depending on how a change is observed, gradualness of some sort may be present.[6] Secondly, the presence of lexical exceptions is *mainly* the preserve of phonetically discrete changes involving phonological restructuring (including changes of 'subsystem' – Labov 1981:298). Yet there may be lexically unpredictable tendencies even in some 'Neogrammarian' changes, as J. Milroy (1994:123-4) has found.

We are now in a position to return to the five English sound changes. In the light of the preceding arguments, we can summarise their characteristics as follows:

1. Geographical distributions based on the *SED* suggest that the change [uː]→ [aʊ] was originally Neogrammarian. Analysis both of the *SED* materials and more recent data show that, in modern times (including the time of the *SED*) the change has been lexically conditioned. It is now faster and more irregular than previously.

2. The remaining changes show that it is possible to observe Neogrammarian changes, but in ways subtly governed by whether we see change as manifested only in the group (this is Milroy's stance) or if it is also a property of the individual – as well as by practical considerations. Changes divide into two sub-types: those which appear to be phonetically gradual, and those which appear to be phonetically polarised – though there are difficulties with this classification depending partly on how we choose to operationalise the investigation of the changes. The changes do

[5] Some studies have tackled longitudinal changes in child speech from a variationist point of view (Roberts & Labov 1995; Foulkes, Docherty & Watt 1999, 2000); however, phonetic gradualness was not a research issue in these studies.

[6] Removing 'gradualness' as a criterion for Neogrammarian change would be to contradict the accepted definition of 'Neogrammarian'. It may be better to emphasise the regularity of such changes, and to use this as a label instead.

not result in any phonological restructuring of the words (though some such changes may, if they lead to a merger).

3. Some vowels are involved in regional dialect levelling. The extent of the levelling seems not be beyond the region. This takes place either through the shared adoption of new variants (Reading and Milton Keynes /aʊ/ and /aɪ/ and Reading and Ashford short vowels), or a shared adoption of existing variants which already have a wide currency (Durham and Newcastle /eɪ/).

Finally, we can apply Labov's criteria to see if the five changes are polarised into two categories. Table 8 shows a two-way division: lexical diffusion (Durham /uː/ → /aʊ/) and something akin to Neogrammarian change (the remainder). It suggests that there are probably only three relatively robust criteria: '1 or 2 dictionary entries', 'phonetic conditioning' and 'lexical exceptions'. 'Social affect' does not seem to differentiate the two types: at any rate in Newcastle, the use of /uː/ in class 1 words is a stereotype (as suggested by the fact that the local professional football team is often referred to as 'The Toon'). 'Discreteness' and 'categorisation' must be rejected as criteria, for reasons discussed above. The division of changes with and without lexical exceptions is itself only a tendency, as we have seen.

	dis-crete	categor-ised	diction-ary entries	phonetic condi-tioning	lexical excep-tions	social affect	% "Neo-gram-marian"
Durham /uː/→ /aʊ/ MOUTH	yes	yes	2	no	yes	yes	17
South-east England [ɛʊ̯]→ [aʊ] MOUTH	yes, perhaps	yes, perhaps	1	(yes)	no	yes	67
Newcastle/Durham [ɪə]→ [eː] FACE	yes, perhaps	yes, perhaps	1	yes	no	yes	67
South-east England [ɔɪ] → [ɑɪ] PRICE	no	no	1	yes	no	yes	100
South-eastern short vowel shift	no	no	1	(yes)	no	(yes)	100

Notes: 1. Entries in shaded cells meet Labov's criteria for Neogrammarian change.
2. Parentheses around 'yes' indicate that reliable data is lacking.

Table 8 Classification of 5 English vowel changes according to 6 criteria (after Labov 1981)

3.3 Dialect levelling in English vowels: mutual accommodation or geographical diffusion?

We now put aside issues of types of language change and return to our other central theme, that of the distinction between two mechanisms of change: mutual accommodation leading to dialect levelling and the geographical diffusion of features. The editors of *Urban Voices* appeal to a social psychological explanation for dialect levelling: speakers actively seek out neutral forms in order not to signal very local and possibly old-fashioned identities. If so, we do not need a diffusion model. As long as the features concerned are accessible in the individual's everyday life through contact with other speakers, and so long as there is broad agreement as to the social value of particular features (e.g., 'modernity'), then convergence between varieties may arise. Note that this does not imply that features spread from a more densely populated centre; instead, there may be a kind of balanced mutuality among the varieties (and their speakers) with respect to the loss and adoption of features, with the result that a change takes place at the same time over a particular area. One could apply the metaphor of the tide coming in on a near-level beach: water appears simultaneously wherever one looks. This presupposes at least a certain level of mobility in the population and good opportunities for people to meet within the area at hand. The geographical limit to this kind of levelling depends precisely on the degree of mobility. As an indication, consider the fact that, in the London area, there are commuters who travel up to two hours in each direction. Most go to London, but many also travel to other towns around London. One could find similar patterns in the densely populated hinterlands of Birmingham, Leeds, Manchester, Liverpool, Glasgow and Newcastle.

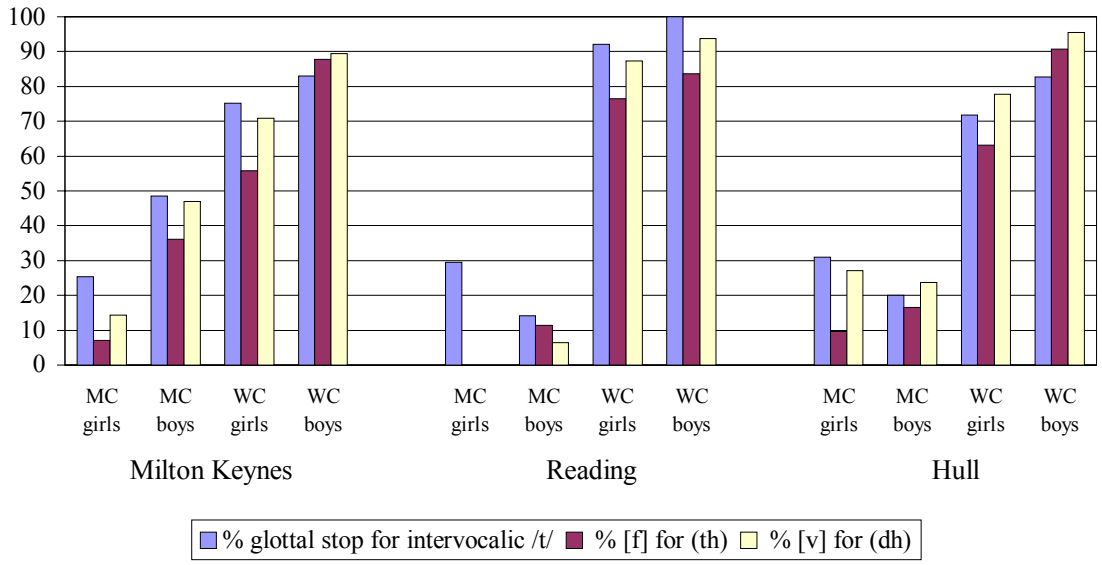
At the current stage of research, it is admittedly not yet possible to state the relative contribution of diffusion and levelling. None the less it is possible to come up with some speculations. Thus, it seems likely that levelling is a significant factor in changes in /eː/ in the Newcastle/Durham area, even if the incoming form is also spreading north from the large cities in Yorkshire. In the case of the vowel changes observed in three south-eastern towns, it is reasonable to suppose that diffusion is of greater consequence, simply on the basis of a comparison of the relative populations of the places involved: London has a population of eight million, as against some 180,000 for Reading and Milton Keynes and 100,000 for Ashford. Research on this has not yet been forthcoming. London is said to be the origin of innovations in all human fields, not least language: 'Its working-class accent is today the most influential source of

phonological innovation in England and perhaps in the whole English-speaking world' (Wells 1982:301). Without new research we cannot come to any conclusions about the origins of the innovations we have logged in Reading, Milton Keynes and Ashford. At this point we might mention the work of Sandøy (1998), who shows that linguistic innovations involving simplification may diffuse in a counter-hierarchical fashion from the periphery to the centre. This would have consequences for the way we approach the investigation of innovations in London and its satellite towns.

3.4 Consonants: torchbearers of geographical diffusion?

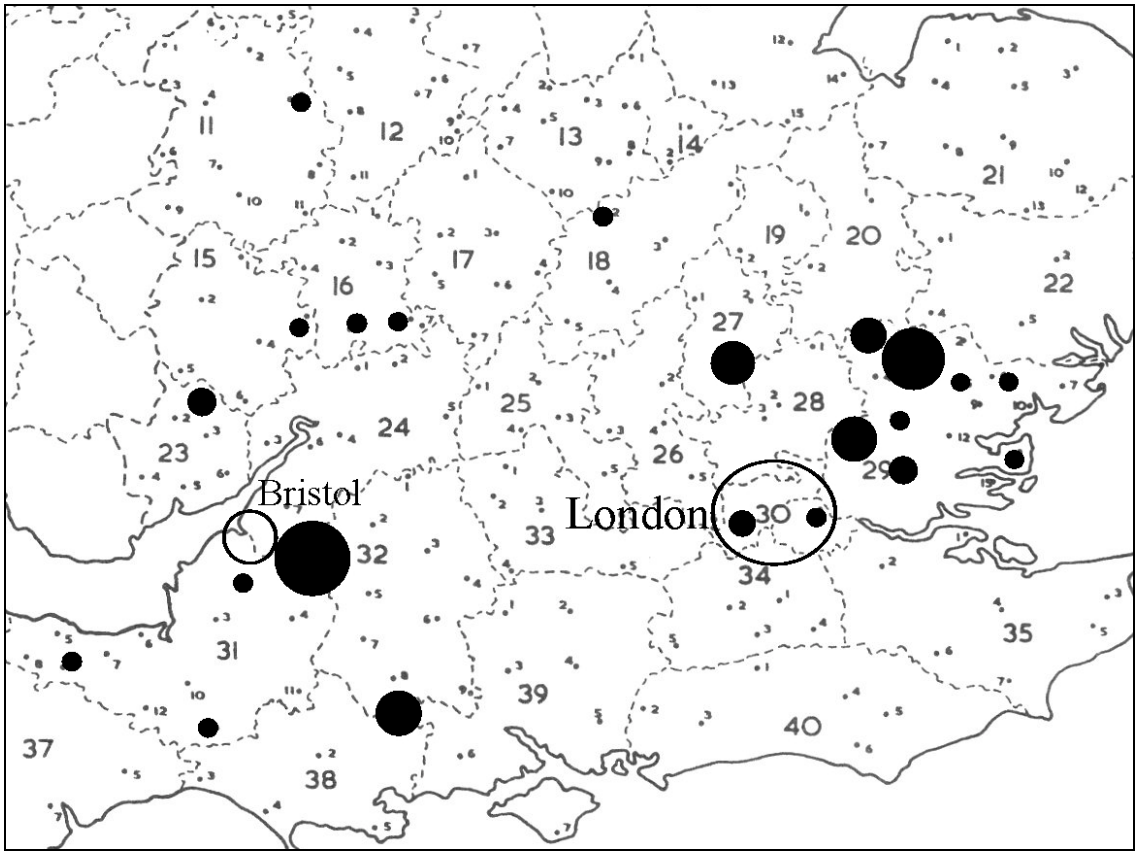
There appear to be no reports of vowel changes spreading throughout the whole country: local 'resolutions' of dialect contact are the order of the day. The same can, however, not be said of consonants. A feature that has spread through much of England is the use of the labiodental [ʋ] for /r/ in place of [ɹ] (Foulkes & Docherty 2000). Here, we examine three other features: the use of the glottal stop [ʔ] for intervocalic /t/ as in *better*, the merger of /θ/ and /f/ as [f] as in *thing*, and the merger of /ð/ and /v/ as [v] medially and finally as in *brother* and *smooth*. To gain a picture of the geographical spread of these features, we consider data from Reading and Milton Keynes and, in addition, a large city on the coast of Yorkshire, Hull (Williams & Kerswill 1999).

It is clear from Figure 5 that the three variables have similar sex and social class distributions in the three towns. In each, the variable of class is the better predictor. This distribution is surprising, considering that, in fact, the variables have dissimilar histories. Andrésen (1968:18) presents evidence that glottal replacement of intervocalic /t/ first appeared in the west of Scotland (including Glasgow) around 1860, spreading to the east of Scotland and the far north of England some years later. According to Andrésen, the first evidence of glottal replacement in the London area is from around the beginning of the 20th century. By the middle of the 20th century, glottal replacement and glottal reinforcement of intervocalic /t/ was a feature of rural dialects in most of eastern England, but not the South West, the Midlands or northern England, including Yorkshire (Trudgill 1974: 81). The phenomenon is therefore considerably older in the southern towns than it is in Hull, which lies in the traditional East Riding of Yorkshire.



Notes: (th) = merger of /θ/ and /f/ as [f]
(dh) = merger of /ð/ and /v/ as [v] medially and finally
MC = 'middle class'
WC = 'working class'

Fig. 5 Percent use of non-prestige variants of three consonant variables in Milton Keynes, Reading and Hull (interview data)



Notes:

1. No. of attestations: 7 6 5 4 3 2

2. Unfilled circles show the positions of Bristol and London.
3. The map is taken from Orton (1962:30), and shows *SED* localities

Fig. 6 Use of [f] in words in which [θ] is expected (Based on data from Survey of English Dialects *(1950-61), extracted by Oliveira Filho 1999)*

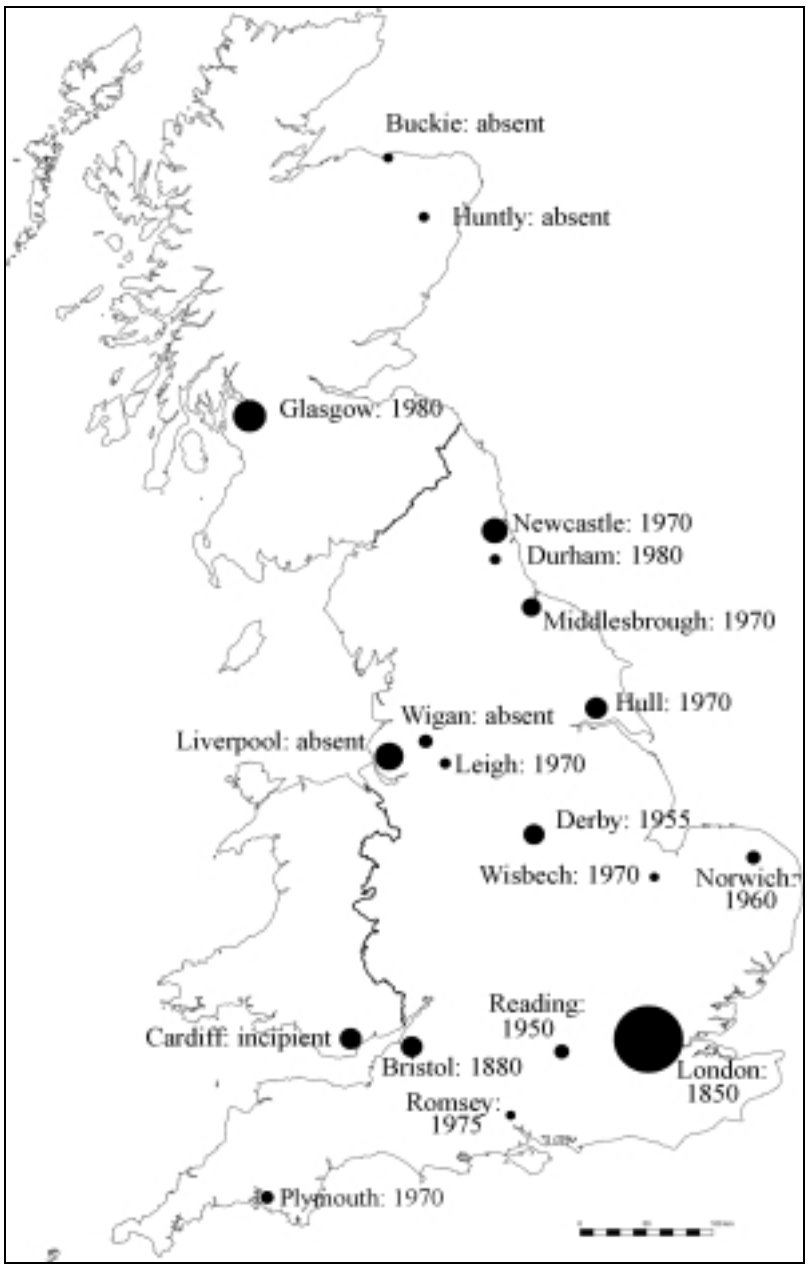
The two fricative mergers shown in Figure 5 have a history somewhat different from that of t-glottalling. Figure 6 shows the use of [f] for /θ/ in the responses to the *SED* questionnaire (there are too few occurrences of words with /ð/ for this variable to mapped out in this way – the normal pattern is for the two mergers to co-occur).[7] Filled circles

[7] I would like to thank Clive Upton for drawing my attention to the MA dissertation of Oliveira Filho (1999). In it, responses to *SED* headwords containing /θ/ and /ð/ are listed with a view to finding the distribution of these mergers in (mainly) rural dialects in the 1950s and 60s.

represent localities in which from 2 to 7 tokens of [f] are found in items where [θ] is expected (localities with no tokens or one token are not included). The size of the circles corresponds to the number of tokens. It is clear from the map that there are two separate focal areas for the spread of the change: an area around Bristol and another which includes London and the region to the north and east. On the assumption that innovations spread out from economically and culturally important centres, it is reasonable to suppose that the changes were established early in the two cities and subsequently spread out from them. In each case, the features seem to have spread out in a wave-like fashion. The change had not reached northern England by the time of the *SED* (if we ignore what must be a lexically determined use of [f] in the item *sheath*, which is found sporadically throughout the country).

When did this change begin? Matthews (1938:82-104) discusses the way in which London dialect ('Cockney') was represented in music-hall song lyrics in the 19th century. Among the lyrics given by Matthews, the relatively routine use of 'f' and 'v' for orthographic 'th' begins with those dating from shortly after 1880. Clearly the stereotype was well established by this time. From this we can be fairly sure that the use of [f] and [v] would have been common (or at least not idiosyncratic) by the generation born in about 1850. We do not know anything for certain about the position in Bristol. The geographical spread of the feature in the area surrounding Bristol was already considerable by the time of the *SED* fieldwork, and this suggests an early date. It is possible that the establishment in 1841 of good rail connections between London and Bristol, which was a large port city in the 19th century, facilitated the adoption of the feature from London before smaller towns and villages in the region. If this is the case, this is an example of the hierarchical diffusion of a feature. We return to this notion below.

We now consider the subsequent spread of this feature. To investigate whether the introduction of the mergers proceeded in a geographically gradual manner, we can try to map the approximate birth dates of the age cohorts who were the first to use the innovations to a significant degree. By this, we mean that the features were used by a substantial minority, and were therefore not idiosyncratic. Figure 7 gives this information in the form of years of birth which have been arrived at by an examination of published studies and BA and MA dissertations, as well as through personal approaches to linguists familiar with local speech. The date for Bristol was arrived at following the argumentation in the previous paragraph.



Note: The size of the circles indicates the relative populations of each town/city

Fig. 7 Spread of [f] for /θ/ and [v] for /ð/ in low-status urban varieties. Earliest dates of birth of cohorts using the innovations occasionally but non-idiosyncratically

It appears that the spread proceeds from south to north and that (with the exception of Bristol) the eastern part of the country adopts the change before the western part. Rather more convincingly than was the case with the *SED* data examined above, the distribution of years can be used to support a hierarchical diffusion model (Trudgill 1983:72-78). This is most visible through a comparison of the dates for Derby, Wisbech and

Norwich, three cities/towns that are approximately equidistant from London. The population figures for the three towns are as follows:

Derby: 236,000
Wisbech: 19,000
Norwich: 180,000

The order of adoption is exactly as the model predicts: Derby precedes Norwich by a few years, and Wisbech follows considerably later.

4. Conclusion

The overall picture supports the view that regional dialect levelling is widespread in Britain. Few researchers have been able to demonstrate its opposite – divergence or diversification – in local varieties; perhaps the best described example is the spirantisation of stops in Liverpool (see Sangster 2001 for a recent discussion). The British situation is rather different from that in the USA, where phonetic changes in several parts of the country have led to considerable divergence in the vowel systems (Labov 1994) – quite apart from the fact that the two main varieties of English spoken there, African American and European American English, apparently continue to diverge both phonetically and grammatically (Wolfram & Schilling-Estes 1998:179-181).

A focus on the processes behind regional dialect levelling shows that both geographical diffusion and the accommodation-based process of 'levelling' must be taken into account. We have argued that levelling, by this latter definition, can only apply in its 'pure' form in cases where there is high mobility within a relatively compact area (for example, a new town), with a consequent high probability that individuals will have contact with others throughout the area. This mechanism is unlikely *a priori* to apply over a large and demographically complex area, such as Great Britain. Here, we must suppose (other things, especially media influences, being equal) that geographical diffusion is the more likely mechanism. The dialectological data presented here overwhelmingly supports this position. Regional dialect levelling, therefore, is the result both of diffusion and of 'levelling'.

Raising the question of mechanisms behind sound changes forces us to view them within the wider context of language change models. Thus, a 'spent' diffusion-based Neogrammarian change, such as the Great Vowel Shift, becomes lexically gradual and phonetically abrupt. Traces of its geographically and (by some criteria) phonetically gradual nature can still be found through careful mapping. Regional dialect levelling – whatever

the mechanism behind it – does not seem to particularly favour either Neogrammarian or lexically gradual change: we saw an example of each in the North East.

However, we are led to question the basis for the idea that changes which on other criteria are Neogrammarian are necessarily phonetically gradual. (This being so, we are no longer entitled to call them 'Neogrammarian'.) At the group level some changes are clearly gradual (the fronting of /uː/ and changes in /aɪ/ in the South East), while others probably are not (the monophthongisation of /eː/ in the North East and changes in /aʊ/ in the South East). At the individual level phonetic gradualness is likely to be somewhat more restricted. This is so because the spread of a change is always a matter of dialect contact: old and new variants will therefore be 'salient' (Trudgill 1986) and consequently most likely discrete.

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