Language Variation and Change, **12** (2000), 69–101. Printed in the U.S.A.

Phonetic parallels between the close-mid vowels of Tyneside English: Are they internally or externally motivated?

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ABSTRACT

The distribution of variants of the FACE and GOAT vowels in Tyneside English (TE) is assessed with reference to the age, sex, and social class of 32 adult TE speakers. The effects of phonological context and speaking style are also examined. Patterns in the data are suggestive of dialect leveling, whereby localized speech variants become recessive and pronunciations typical of a wider geographical area are adopted. Within this broad pattern, however, there is evidence of parallelism between the vowels in terms of the relative proportions of their variants across speaker groups. It is suggested that pressure to maintain the symmetrical structure of the underlying phonological system is guiding this process. Labov's (1991, 1994) principles of chain shift are discussed in this connection. However, it is argued that the patterns in the data are more plausibly explained by considering the social significance of each variant instead of making reference to variants as socially neutral expressions of abstract phonological categories.

Certain tensions underlie current theories of the dynamics of vowel systems, especially those developed to model chain-shift processes.[1] Chain shift, indeed, is predicated upon the interaction of mutually antagonistic forces (preservation of contrast vs. parsimony of oppositions), with the contribution of the speaker being to act as a sort of conduit for the transmission of change once it has been set in train. Strong internalist accounts of vowel system dynamics have tended to marginalize the role of speakers, preferring instead to portray shifts as long-term, teleological processes extending sometimes over several generations. In this view, they are processes over which speakers have little or no control. The role of the speech community here could be said at best to facilitate the spread of a change and to circumscribe the limits of that spread. But often, scant regard has been given to the ways in which the adoption of sound changes is mediated by the

This article enlarges on material presented at ICPhS '99, San Francisco (Watt, 1999). The following people deserve acknowledgment for their helpful advice and input: Gerry Docherty, Paul Foulkes, Lesley Milroy, James Milroy, John Local, Joan Beal, Sandrine Dalban, Ann Williams, and Paul Kerswill. Several anonymous reviewers made valuable comments and suggestions. David Walshaw was of great assistance with statistical matters, and I am grateful also to Penny Oxley, who carried out the original fieldwork. The research was supported by the UK Economic & Social Research Council (R00429524350).

(unconscious) evaluative judgments of the speakers who are responsible for their transmission.

The vowel system in such accounts has been conceptualized from the structuralist notion of phonology as a set of oppositions, in which contrast is the key factor (e.g., Trubetzkoy, 1969). The system is equipped with safeguards to its integrity where contrast is threatened—say, where two contrastive categories begin to approach each other, risking merger—and is configured to prevent the development of too many contrasts (through split or borrowing). The vowel system is thus formalized as a closed, self-referential, self-regulating submodule of a language's phonology. The principles by which vowel systems organize themselves are thought to be well understood and are uncontroversial in the sense that they tend to be generally assumed in phonetics, phonology, and research into language universals (Crothers, 1978; Disner, 1980; Liljencrants & Lindblom, 1972; Schwartz, Boë, Vallée, & Abry, 1997; Vallée, Schwartz, & Escudier, 1999). For instance, it is accepted that if a language's vowel system features three contrastive categories (usually phonemes), these categories will be arranged in a triangular configuration at the extremes of the possible vowel space; as more contrastive categories are added, the overall triangular shape is preserved, with vowels spacing themselves evenly along the periphery of the space. Throughout, a pressure to maintain bilateral symmetry—by matching pairs of front and back vowels at equivalent "heights"—is taken as a guiding principle. This last idea is of particular relevance to the study presented here, and we return to it presently.

These principles continue to provide the basis for the conception of the vowel system underpinning much of the recent work on linguistic variation (see, in particular, Labov, 1994), albeit in a somewhat diluted form. The fact that languages have dialects and sociolects at all suggests that the independence of the system must be moderated by the communicative and social needs of the speakers who use it, since aspects of the system can be modified for the purposes of stylistic and social marking. Communities of speakers can to a significant degree accelerate the spread of an innovation or halt it in its tracks; according to Lennig (1978), the direction of some vowel changes apparently may even be reversed while they are in progress. Alternatively, speakers may avoid the adoption of innovative forms altogether if these are evaluated negatively.[2] The pressures on speakers and system should be seen as complementary: any attempt to explain sound change must take both speaker-centered (external) factors and system-centered (internal) factors into account. A socially realistic model of vowel system dynamics must therefore allow for a balance to be struck between the autonomy of speakers on the one hand and that of the system on the other, since the relationship between speaker and system is better viewed as symbiotic than as antagonistic.

The findings of the present study are interpreted as illustrative of this interdependence. In what follows, the distribution of phonetic variants of the /eː/ (FACE) and /oː/ (GOAT) vowels across a sample of 32 speakers of Tyneside (Newcastle) English (TE) is examined, with specific attention paid to the correspondences of patterns within the distribution of their phonetic exponents with the

https://doi.org/10.1017/S0954394500121040 Published online by Cambridge University Press

sex, age, and social class of these speakers and the phonological contexts in which the phonetic forms occur. The vowel variables are referred to throughout using Wells's mnemonic keywords denoting lexical sets (Wells, 1982:xviii), thus avoiding the customary, but sometimes confusing, use of phonetic symbols to denote both speech sounds and abstract phonological categories. Modifications to patterns in the data as a function of speaking style are also investigated.

Next, the data are appraised in terms of an internalist model. The question of the relationship between FACE and GOAT is examined with reference to the structural concept of symmetry, as the FACE and GOAT vowels (or /e/ and /o/) are typically paired with one another in systemically oriented analyses of vowel variation and change. Since the present study is based upon a sample of speech drawn from a large sample of speakers, however, the influence of external, social factors must also be given consideration. The patterns seen in the phonetic expression of the FACE and GOAT vowels are amenable to analysis according to a dialect leveling model, which would appear to capture the essence of these patterns rather well. It is concluded that the data are better handled in terms of a dialect leveling framework than by reference to the currently influential chain-shift model.

Before examining the data, some previous descriptions of the FACE and GOAT vowels in TE are briefly discussed as a means of estimating the extent and direction of changes that have occurred over the last century or so.

FACE AND GOAT IN TE

Newcastle upon Tyne, England's northernmost city, is in economic and cultural terms the hub of both the Tyneside conurbation and the far north of England (see Figure 1). The dialect of English traditionally spoken on Tyneside retains a number of phonological features from Northumbrian Middle English (e.g., unshifted [hus] for *house*, [nit] for *night*, etc.) and in this respect is similar to Lowland Scots and Scottish English (see Beal, 1993; Milroy, 1995). The persistence of these features might be ascribed to Newcastle's geographical proximity to the Scottish urban centers and the continuous influx of migrants from Scotland over the last few centuries (Beal 1993; Mess, 1928). On the other hand, the phonology of TE conforms in other respects more closely to varieties of northern England (no FOOT ~ STRUT split, non-rhoticity, etc.; see Watt & Milroy, 1999). Given the findings of recent studies of the consonantal aspects of Tyneside phonology (e.g., Docherty & Foulkes, 1999; Docherty, Foulkes, Milroy, Milroy, & Walshaw, 1997), it appears that the influence of southern English may be gaining ground, in that there are signs of the adoption by Tyneside speakers of features such as labiodental variants of (r) and (th)-fronting,[3] which are thought to originate in southeastern England.

The FACE and GOAT vowels in TE are phonetically highly variable, as is clear from previous literature on the subject (summarized in Table 1). Moreover, these vowels appear to be undergoing change: comparison of speech samples for older

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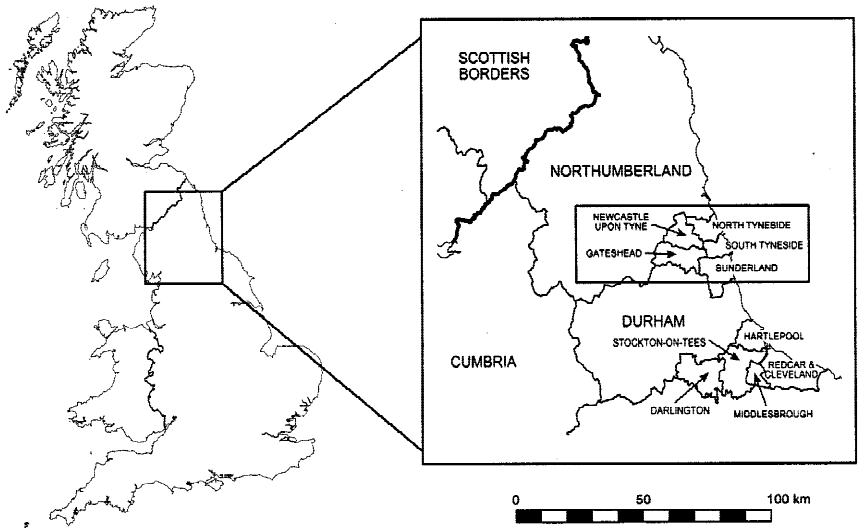

FIGURE 1. Location of Newcastle upon Tyne. Reproduced from Ordnance Survey maps by permission of Ordnance Survey on behalf of The Controller of Her Majesty's Stationery Office, © Crown Copyright NC/00/888.

TABLE 1. *Variants of* FACE *and* GOAT *in Tyneside English, as described in previous accounts*

	FACE	GOAT
Jones (1911)	[jɛ] [eːi]	[jɛ] [o(ː)u] [aː]
O'Connor (1947)	[eː] [eə]	[oː] [əə] [ə]
Viereck (1966)	[eˑ] [eː] [eə] [iɛ] [jɛ]	[əː] [əː] [əə] [iɛ] [oː]
Hughes and Trudgill (1979)	[eː][ɪe]	[əː] [uo] [aː] [e]
Wells (1982)	[e(ː)] [eə] [ɪɐ]	[o(ː)] [e(ː)] [ʊə] [ə(ː)] [əə]

and younger TE speakers reveals a number of interesting differences between these age groups. The hypothesized change could be characterized by an increasing reduction in the use of forms specific to the Tyneside region accompanied by the adoption of less regionally marked, supralocal forms. This process can be seen as an aspect of the leveling of TE with respect to other forms of British English. The results of the present study are fairly similar to those emerging from research being carried out elsewhere in the United Kingdom, much of which suggests that the sound changes underway in dialects of English around the coun-

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try are part of a broad convergence of localized varieties on less localized ones (for an overview, see Foulkes & Docherty, 1999).

Leveling of the vowel system of TE seems to have been underway for some time. Viereck (1968), for instance, whose study of the TE of Gateshead focused exclusively on vowel variation, asserted that

> Some dialectal features seem to be more stable and less likely to succumb to Standard English in the near future. Others, however, will no doubt soon be completely replaced, especially since the area under investigation is urban and consequently the pressure of the standard language rather great, so that the traditional dialect is bound to become increasingly mixed. Further, the fluctuation of the population must be reckoned with as well as sociological factors, all of which contribute to a dilution of traditional dialects. . . . [T]he time will soon come when historically developed, genuine dialect phonemes are no longer heard. . . . All this, we feel, increases the urgency of studying archaic, traditional dialect before these features disappear completely. (Viereck, 1968:76)

While one might wish to take issue with Viereck's claim that TE is converging on (or "succumbing to") Standard English, the general picture is very clear: the high degree of dialect contact brought about by the "great number of people [who] have poured into this area from other parts of the country" and the "various influences [education, radio, television, film] which undermine [TE's] traditional character" (Viereck, 1968: 65) have in combination served to eradicate the use of localized speech forms, replacing them with forms more typical of the English of other parts of the country. Thus, we may expect that the FACE and GOAT vowels under investigation here would not be exempt from this process of convergence, although they could of course differ in the degree to which they are affected.

For either vowel, previous commentators (Hughes & Trudgill, 1979; Jones, 1911; O'Connor, 1947; Viereck, 1966; Wells, 1982) have identified a large range of phonetic exponents, as specified in Table 1. It has been observed in the more recent accounts (Hughes & Trudgill, 1979; Wells, 1982)—at least implicitly, in that the vowels are described together in both works—that FACE and GOAT in TE are in a sense "mirror images" of one another in accents of English. Such a pattern among the range of variants listed in Table 1 is, however, perhaps less than immediately obvious, given the range of attested qualities.

Since Jones's time, the lexical membership of the FACE and GOAT sets for many TE speakers has come to approximate that of southern British English more closely; for instance, the neutralization of the FACE ~ GOAT contrast at [jɛ] or [e] in words like [tjɛk] *take* and [bjɛθ] *both* was—and still is, where it occurs—restricted to a small number of words in the GOAT set. As shown by Jones and by Hughes and Trudgill, [aː] can be found in TE GOAT words such as *cold*, *snow*, and *know*, although this is an increasingly recessive feature.

On the basis of these five descriptions—weighted in favor of the more recent studies of Hughes and Trudgill and of Wells—and from preliminary transcriptions of contemporary TE made on the basis of the recordings used in this study,

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TABLE 2. *Variants of TE* FACE *and* GOAT *collapsed into variant types*

	FACE	GOAT
Type I: monophthongs	[eː]	[oː]
Type II: centering diphthongs	[ɪə]	[ʊə]
Type III: closing diphthongs	[eɪ]	[oʊ] (+[əː])

three main types of variant are proposed for either vowel. These are listed in Table 2.

The Type I monophthongs [eː] and [oː] are broadly typical of accents of northern England and of Scotland (Wells, 1982) and thus are relatively unmarked in TE with respect to neighboring varieties. Just as previous commentators like Hughes and Trudgill or Wells used these symbols somewhat loosely—after all, it would be unrealistic to expect every speaker of the variety always to produce [eː] or [oː] with the cardinal vowel qualities these symbols represent in the IPA—they are used here to represent a restricted class of sounds: namely, clearly monophthongal vowels produced close to the front and back peripheries of the vowel space (thus including, e.g., [ɪː] and [ɛː] for FACE and [ʊː] and [ɔː] for GOAT). Since the alternations of interest in the present study involve the alternation of monophthongs with diphthongs, these qualitative variations are subsumed into the broader categories indicated by [eː] and [oː]. The fact that earlier descriptions of TE generally agree on a distinction between monophthongs and centering diphthongs provides additional support for the use of such a classification in this study.[4]

Type II diphthongs are to be found in other northern counties of England, such as Yorkshire and Derbyshire (see Orton & Barry, 1969–71; Orton & Halliday, 1963), but it is probably true that they are now somewhat rarer in these regions than on Tyneside, where they are by all accounts a long-established, traditional feature of the accent. Holmes (2000) found that a panel of 40 listeners from four regions of England (Tyneside/northeast; other northern; midland; southern) categorized [ɪə] and [ʊə], recorded in carrier words by a phonetician from outside the Tyneside area, as characteristic of northeastern English with high levels of consistency (on the order of 60% to 70%); the exception to this pattern of agreement was among the other northern group, whose responses were split between east midland, northern Scotland, and no response.[5] The listeners' responses to the Type I variants [eː] and [oː] were much more mixed. While responses across all four groups indicated that these forms were identified more often as northeastern than as characteristic of any other region, there was a comparably high no response rate (as high as 45% for [eː] among the Tynesiders, who clearly did not perceive Type I monophthongs to be especially typical of the speech of their

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home area). The other northern group were again rather noncommittal here. For [oː], the judgments were split equally between northeast and northwest (both 28%; 20% no response), whereas [eː] was identified as northeastern 10% of the time, as northwestern 25% of the time, and as unlocalizable nearly half the time (43% no response). Thus, non-Tyneside northern listeners did not categorize Type I monophthongs as being from anywhere in particular, but classified them as northern when they classified them at all, and, as one might expect, they returned vanishingly low responses (3% at most) for the southeastern or Standard English categories. The consistent association of Type II variants with Tyneside among listeners from various regions of England suggests that these forms have become stereotyped, a factor which chimes with Wells's (1982:375) remark that [ɪə] and [ʊə] are "nowadays rather old-fashioned." We return to this issue in subsequent sections.

Again, the symbols used here should not be taken to indicate a unique, exclusive phonetic quality. These variants incorporate any clearly diphthongal vowel with an offglide relatively more central or open than the nucleus. The actual phonetic qualities of the nucleus and the offglide may vary somewhat (cf. Hughes & Trudgill's and Wells's variants in Table 1).

We turn next to the Type III diphthongs [eɪ] and [oʊ]. Note that, although closing diphthongs of this type figure conspicuously in Jones's account, they are not cited by O'Connor, Viereck, Hughes and Trudgill, or Wells in their descriptions of TE. Given the wide geographical dispersion of [eɪ] and [oʊ] (see Wells 1982:192–194, 210–211), this could be because these authors felt no need to mention them in their discussions of the specifics of Tyneside phonology, and we might conclude that [eɪ] and [oʊ] have been a feature of TE for at least a century. But we should be careful here. Jones's text was in fact a transcription of sixteen lines of a song (*Ah Wish Yor Muther Wad Cum*, Joseph Wilson, c. 1860) with no accompanying commentary beyond footnoted glosses of some dialect words, and he used length-based transcription conventions (e.g., [hiː] *he*, [bit] *bit*; [huːs] *house*, [gud] *good*), which may have obscured qualitative distinctions. Furthermore, there is a scarcity of FACE and GOAT tokens in the text, with just three examples each of FACE ([tjɛk] *take*, [əgjɛn] *against*, [weːiz] *ways*) and GOAT ([koːulz] *coals*, [sou] *so*, [θou] *though*).[6] The closing diphthong in *ways* fits with Viereck's assertion (1968:70) that TE has tended to preserve a distinction between the reflexes of Middle English /ai/ (including *ways*) and those of Middle English /aː/ (like *take*), but it is not obvious why, if this is so, *against* (ME /ai/) patterns with *take* in Jones's transcription rather than with *ways*. The appearance of [ou] for GOAT in the transcription is more difficult to explain. But since (i) we are given no indication by Jones of the source of his sample (we are not told whether this is a transcription of any one individual speaker's productions, let alone his or her sex, age, or background), (ii) we do not know whether this is a transcription of speech or song, and (iii) there are only three tokens each of either vowel in the text, we must rely more heavily on the evidence from other, later sources. These sources do not indicate the presence of closing diphthongs of the

[eɪ] ~ [oʊ] sort in TE. Indeed, Wells made specific mention of Tyneside as one of a number of local accents that have implemented Long Mid Diphthonging—the development in what Wells called "polite usage" of [eː] and [oː] into [eɪ] and [oʊ], "only variably or not at all" (1982:211).[7] Therefore, we must assume that they are not a traditional feature of TE, and that Jones's text is unrepresentative. In any case, there is little doubt that Type III diphthongs are very much a feature of contemporary TE, although as we will see they are still somewhat sporadic and confined on the whole to the speech of middle-class informants. Unfortunately, Holmes did not include these variants in her perceptual study.

The fourth variant of GOAT, symbolized by [ɵ(ː)] in Table 1, completes the list of variants for this vowel and throughout this article is symbolized by [ɵː] (as in Table 2). It is fronted or centralized with respect to the Type I monophthong [oː] and has apparently been established in TE for some time, given that it is attested by O'Connor as early as the 1940s. It is possible that this variant is a reflex of the front rounded [øː], which is still extant as a GOAT pronunciation in rural Northumberland (Krause, 1989; Lass, 1989; Rydland, 1995). Alternatively, the absence of [ɵː] from Jones's description might indicate that GOAT fronting is an innovative feature of TE, and that it is unrelated to the phonetic form of the vowel in Tyneside's hinterland. The latter interpretation would certainly tally with the results presented here and more generally with a pattern of back-vowel fronting that is reported for English in other parts of the British Isles, such as Hull (Williams & Kerswill, 1999), Bradford (Watt & Tillotson, 1999), Reading and Milton Keynes (Cheshire, Gillett, Kerswill, & Williams, 1999), and around the world (e.g., Labov, 1994; Lass, 1989, 1990; Luthin, 1987; Watson, Harrington, & Evans, 1998; Wells, 1982).

The [aː] variant, while extremely salient on those occasions when it is used, is not included in the analysis due to its rarity in contemporary TE and to the fact that its lexical distribution is in any case rather restricted (see Beal, 1985).

DATA COLLECTION

Recordings

A large corpus of recordings of conversational speech was used for the present study. The corpus was collected for the project on Phonological Variation and Change in Contemporary Spoken British English (ESRC R000234892; for details, see Docherty et al., 1997; Docherty & Foulkes, 1999; Milroy, Milroy, Docherty, Foulkes, & Walshaw, 1999; Watt & Milroy, 1999) and is comprised of approximately 26 hours of recordings of conversational English. A total of 32 TE speakers were recorded talking in self-selected pairs (siblings, spouses, or close friends of the same sex) in sessions lasting around 45 minutes. Towards the end of the recording session, speakers read a 150-item word list (see Appendix). The speakers were subdivided by three social variables—sex, age, and social class—resulting in a total of eight speaker groups, each containing four speakers.

The younger age group contained speakers of between 16 and 25 years of age; the older age group consisted of 45- to 65-year-old speakers. The social class distinction—working class (WC) versus lower middle class (MC)—was based on place of residence. The two housing areas of Newcastle chosen for the study—Chapelhouse (MC) and Newbiggin Hall (WC)—were judged by the fieldworker, a local of Tyneside, to be a reliable guide as to the socioeconomic characteristics of their residents. Her judgments were confirmed by 1991 UK National Census information on a range of indicators (e.g., car ownership, proportion of adults in employment, educational attainment).

The speakers were recorded in their own homes using high-fidelity digital audio equipment and were encouraged to talk freely on topics of their choice with minimal input from the fieldworker. On the rare occasions that the conversation flagged, the fieldworker would address the speakers directly, asking them questions about their work or reminiscences of the past. The speakers were relaxed and unself-conscious and talked readily to one another.

Transcription

From the conversational material, a minimum of 30 tokens per vowel of FACE and GOAT was required for each speaker. Since both vowels are relatively frequent in spoken English, the requisite number of tokens for each speaker was in all cases easily obtained. Only vowels in monosyllables or in syllables bearing primary word stress were transcribed. The (word-internal) postvocalic phonological context was noted, and tokens were grouped according to the following gross categories:

V#: open syllable; vowel final
Vn: V + nasal
Vp: V + voiceless plosive or affricate
Vb: V + voiced plosive or affricate
Vs: V + voiceless fricative
Vz: V + voiced fricative
Vl: V + lateral

A ceiling of 10 tokens of individual items was imposed to avoid lexically or phonologically conditioned skewing of the sample. From the word list material, all relevant items (i.e., those featuring FACE and GOAT vowels in stressed position) were transcribed. The effects of the shift in speaking style brought about by the switch from free conversation to the word elicitation task is discussed later.

By way of verification, comparison of the transcriptions was made with a set of 1,112 FACE tokens and 1,130 GOAT tokens drawn from the same corpus and transcribed independently by Lesley Milroy. For both vowels, the correlations between the transcriptions were highly significant (at $p < .002$), indicating a very close match. We can therefore be confident that the transcriptions upon which this study is based reflect the distribution of the principal variants of FACE and GOAT in TE.[8]

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TABLE 3. *Variants of* FACE*, all speaker groups, FC style (%)*

Group	[eː]	[ɪə]	[eɪ]	*N*
Older MC men	78.3	21.7	—	143
Younger MC men	73.1	14.5	12.4	145
Older MC women	90.9	2.6	6.5	153
Younger MC women	79.5	2.4	18.1	166
Older WC men	36.2	63.2	0.6	174
Younger WC men	61.5	35.9	2.6	192
Older WC women	92.6	7.4	—	121
Younger WC women	97.4	2.6	—	151

Note: older = 45 to 65 years; younger = 16 to 25 years.

TABLE 4. *Variants of* GOAT*, all speaker groups, FC style (%)*

Group	[oː]	[ʊə]	[oʊ]	[əː]	*N*
Older MC men	72.6	12.0	—	15.4	175
Younger MC men	44.7	2.9	17.6	34.8	170
Older MC women	89.8	—	9.2	1.0	196
Younger MC women	73.7	2.9	19.9	3.5	171
Older WC men	31.6	36.2	1.7	30.5	174
Younger WC men	59.2	12.0	1.0	27.7	191
Older WC women	98.9	0.5	—	0.5	190
Younger WC women	99.5	—	—	0.5	197

RESULTS

The overall percentage scores for each phonetic variant of FACE and GOAT in free conversation (henceforth, FC) style are summarized in Tables 3 and 4, broken down by speaker group. Effects for the speaker variables (sex, age, class) and following phonological context in the distribution of the variants of either vowel were investigated using log-linear models (see, e.g., Rietveld & van Hout, 1993).[9]

FACE *data*

Variables. A number of interesting effects on the distribution of phonetic variants of this vowel can be observed in relation to the sex, age, and class factors. As Table 3 suggests, the general pattern is a strong preference for the Type I monophthong [eː] among all speaker groups except older WC men. Speakers in the latter group appear to prefer the Type II centering diphthong [ɪə]. This diphthong is avoided almost completely by female speakers. The use of the Type III closing diphthong [eɪ] among the speakers is overall rather rare, appearing most

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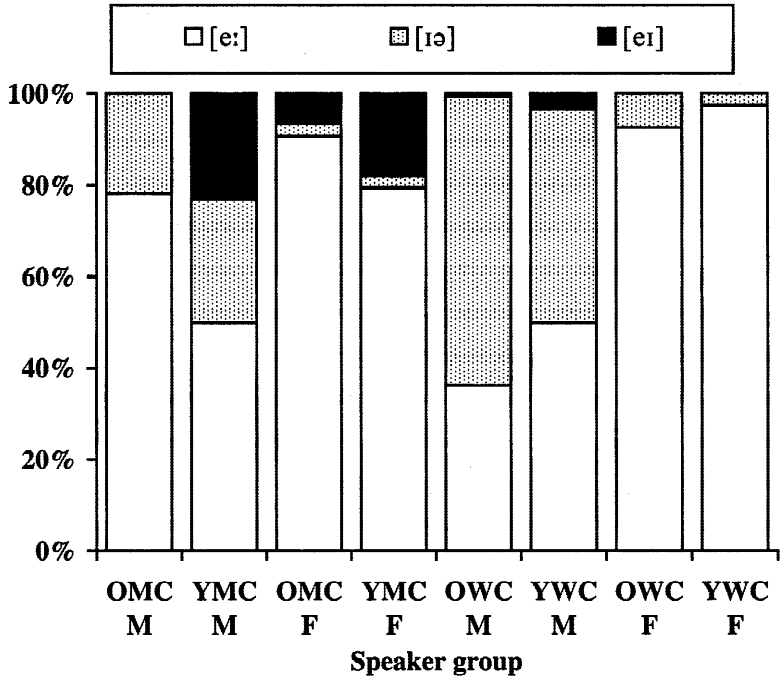

FIGURE 2. Comparison of distribution of variants Type I, II, and III of FACE, all speaker groups, FC style (%).

frequently in the speech of MC women (and, to an unexpected extent, in that of younger MC men; this group's unanticipatedly high use of the [ɵː] variant of GOAT is discussed later). For the FACE sample as a whole, then, we might expect to see a strong sex-based effect, since the use of the Type I monophthong is heavy among female speakers but is more variable among male speakers. This prediction is confirmed by the very highly significant effect found for the sex variable ($p < .0001$). The variants' distributions are also found to vary, although to a lesser degree, with class; sex and class considered in combination yield $p = .0001$, and there is, as anticipated, a strong effect for sex, age, and class ($p = .0076$).

Figure 2 gives an indication of the relative distributions of the three FACE variants across the eight speaker groups. The sex-based distinction is readily apparent here, as is the interaction of sex with the age and class variables.

Context. Postvocalic context also appears to have a strong influence ($p = .0001$) on the distribution of one of the three FACE variants (i.e., [ɪə]), but the effect probably depends upon this variant's distribution in the samples for male speakers, since [ɪə] is used very little by female speakers: of a total FACE sample of 591 tokens, it is recorded just 21 times (or under 4%). Table 5 therefore shows just the figures for male speakers.

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TABLE 5. *Frequency of occurrence of* [ɪə] *variant of* FACE *in four contexts, male speaker groups only (%)*

Group	*V#*	*Vn*	*Vp*	*Vs*	*N*
Older MC	21.2	26.2	22.4	10.5	31/143
Younger MC	10.8	8.1	25.7	0	21/145
Older WC	40.0	78.7	67.3	72.7	110/174
Younger WC	19.2	42.9	50.8	20.0	69/192

The environment in which [ɪə] is most strongly favored in male speech is the *Vp* context for younger men and the *Vn* context for older men.[10] The proportion of [ɪə] in open syllables (*V#*) such as *day*, *say*, and *gray* is generally relatively low. Despite the marked context effect, then, it is difficult to account in phonetic or phonological terms for the variations in the appearance of [ɪə] from one context to another, since the favored postvocalic segments do not appear to represent any obvious natural class. No lexically related distribution was detected.

Style. A shift in attentional focus from the content to the form of speakers' utterances might affect the distributions of the variants described earlier in various important ways. It is telling in this regard that, on being presented with the word list, one older WC speaker (who had until that point been talking in a normal, unself-conscious manner) asked the fieldworker, "Do you want us to say it the way it is on there or the way we would normally say it in a Geordie accent?" ("Geordie" being a term Tynesiders apply to themselves and their dialect). His conversational partner (his wife) responded, "I'm just speaking the way I'd normally say it." Clearly, these speakers are fully aware of style shifting as a phenomenon, of the expectations made of them as readers, and of their own linguistic habits in such a situation; they are able verbally to specify the difference between a mode of pronunciation customarily used for a formal task like this and normal, TE-accented speech. It is interesting that the husband believes the written forms to represent more closely a formal spoken register—"the way it is on there"—than they do his everyday pronunciations. This is, of course, not evidence that the variables discussed in the present study are necessarily subject to any such shift, or that TE speakers are aware of or can talk about the alternations in the two vowels. But recall the responses of the Tyneside listeners in Holmes's identification study, who classified the localized Type II [ɪə] and [ʊə] as specifically northeastern forms much more consistently (77% and 76%, respectively) than they did [eː] (33%) and [oː] (47%). If style shifting of the sort implied by our speaker's remarks involves a reduction in the use of Geordie features, then we might anticipate a drop in the frequency of the Type II variants as the level of formality increases.

The word list which informants were requested to read following the conversational sessions contained 13 FACE items: *gate* (twice), *paint*, *fatal*, *later*, *hate*,

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TABLE 6. *Variants of* FACE*, by speaker group, WL style (%)*

Group	[eː]	[ɪə]	[eɪ]	*N*
Older MC men	84.6	—	15.4	52
Younger MC men	51.9	9.6	38.5	52
Older MC women	26.9	—	73.1	52
Younger MC women	73.6	—	26.4	53
Older WC men	26.4	73.6	—	53
Younger WC men	50.0	50.0	—	52
Older WC women	72.5	—	27.5	51
Younger WC women	98.1	—	1.9	54

eighty, *eight*, *apron*, *matron*, *made*, *may*, and *tables*. The sample sizes for each speaker group were consequently a good deal smaller than was the case in the FC style. The size of individual speakers' samples was in some cases reduced by misreadings or omissions of certain target words or was augmented by voluntary re-readings, resulting in a small degree of variation in the total number of FACE tokens in word list (WL) style from group to group. Table 6 shows a breakdown of the FACE figures by variant, expressed as percentages; following context was not taken into account in the analysis of the word list material.

From Table 6 it is apparent that, once more, the Type I monophthong is the overall preference across the speaker groups as a whole. This is perhaps unremarkable, since Type I variants are unmarked with respect to variants of Types II and III. Note, however, that among those speaker groups who use the Type III closing diphthong [eɪ] the proportions of the variant are much greater than is the case in FC style. This suggests that these speakers may consider [eɪ] to be more appropriate for the reading task than the other available variants. Figure 3 compares the distribution of [eɪ] between WL and FC styles, and it is apparent that this variant is more typically a feature of careful style in TE speech.[11]

As might be anticipated, [eɪ] is used a good deal more among MC speakers than among WC speakers. There is a suggestion of a sex bias here—specifically, of an association of [eɪ] with female speech. Use among the WC groups is overall rather low, with only older WC women using [eɪ] to any extent. Within the MC groups, on the other hand, the distribution is complex: all four groups use [eɪ] at least some of the time in WL style, and in all four cases its use in WL style is greater—for older MC women much greater—than in FC style. The weak positive correlation between the data sets for WL and FC styles ($r = 0.428$, $p > .5$) confirms the lack of close identification between the distributions of [eɪ] in either style, thus supporting the claim that this variant is heavily marked stylistically and is perhaps considered more "correct" than the alternatives. The loss of definition in the sex distinction between the two MC age groups is once more indication of leveling.

The relative increase in the use of the Type II variant [ɪə] by WC men in WL style (compare Tables 3 and 6) is not entirely expected, however. It may be that

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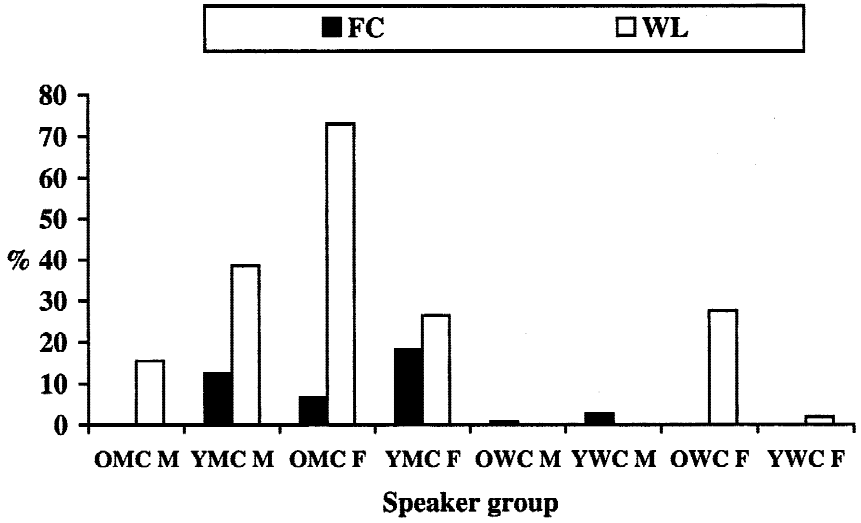

FIGURE 3. Type III FACE variant [eɪ] in WL and FC styles, all speaker groups (%).

these speakers are simply less sensitive to the pressures that cause female and/or MC speakers to adjust their pronunciations in a direction away from the localized forms. Or perhaps, following Veatch (1991), we might speculate that the centering diphthong represents a more emphatic, hyperarticulated pronunciation of what is nominally a peripheral monophthong. In any event, it seems that style shifting of the sort apparent in the speech of other groups is not in evidence in the use of FACE variants among male WC speakers.

GOAT *data*

Variables. Recalling the figures shown in Table 4, we can observe a series of parallels with FACE with respect to the socially conditioned patterning of the four posited GOAT variants. The distribution is more easily visualized if displayed graphically, as in Figure 4.

The general preference among the speakers in the present sample is once again for the generic northern Type I variant [oː]. However, two groups diverge conspicuously from this pattern: older WC and younger MC men use it in just 31.6% and 44.7% of their respective samples, preferring instead to use above-average levels of the Type II diphthong [ʊə] and the fronted variant [ɵː]. To see such indications of dialect loyalty among older WC men seems reasonable, but what is less obvious is why younger MC men would use the [ɵː] variant more than any other speaker group. Some possible interpretations of this behavior are offered later on.

The second trend concerns the distributions of [ʊə] and [ɵː] versus the distribution of [oʊ]. The first two forms appear to be in roughly complementary dis-

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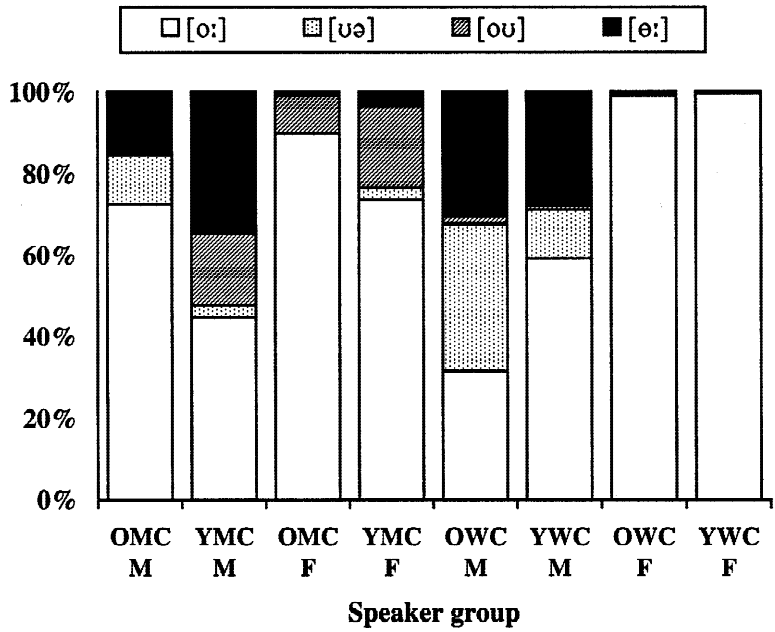

FIGURE 4. GOAT variants, by speaker group, FC style (%).

tribution with the third, inasmuch as speakers who use [ʊə] and/or [əː] are unlikely to use [oʊ] to any great extent, and vice versa. [ʊə] and [əː] can thus be thought of as male forms, whereas [oʊ] is a predominantly female form that is also popular to some degree among young MC men. Perhaps [oʊ] might be better characterized as a form that is most frequent among MC speakers, particularly young ones.

Statistical analysis of the data reveals that the effect of speaker sex upon the distribution of the four GOAT variants is once again strongest ($p < .0001$) where the data are grouped to compare the pooled figures for the localized forms [ʊə] and [əː] against the (distinct) sets of scores for [oː] and [oʊ].[12] This is also true of a combined effect of sex and class ($p < .0001$), reflecting a tendency among both MC men and women (WC speakers avoid the [oʊ] variant almost completely) to prefer [oʊ] as a function of age.

Context. As was the case for FACE, a context-related effect seems tied most strongly to the distribution of the Type II diphthong [ʊə]. Context in combination with the sex–class effect has a very highly significant influence ($p = .0002$), which is presumably—at least in part—a consequence of the virtual absence of [ʊə] in female speech. Four of the six [ʊə] tokens recorded for female speakers (of a GOAT total of 754 for the women) are found in the *Vl* context, which may be related to the propensity of TE speakers to append a centering offglide to canon-

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TABLE 7. *Frequency of occurrence of* [ʊə] *variant of* GOAT *in seven contexts, male speaker groups only, by social class (%)*

Group	*V#*	*Vn*	*Vp*	*Vs*	*Vb*	*Vz*	*Vl*	*N*
MC	4.5	5.8	0	14.3	8.7	0	17.5	26/345
WC	13.6	30.8	4.8	21.6	36.4	35.1	29.4	86/365

ical monophthongs before [l], which in TE is typically clear in all positions (see Viereck, 1966:69, for examples). Since [ʊə] is virtually unused by female speakers, and since class is strongly implicated in the distributional pattern where [ʊə] is used by male speakers, the figures for the older and younger male groups are collapsed by class, as shown in Table 7.

Roughly speaking, there is a tendency for [ʊə] to be favored in the *Vs*, *Vl*, and (for WC men) *Vn* positions; the variant is not recorded at all for the MC group in the *Vp* and *Vz* contexts. This is hardly surprising, given the overall infrequency of the variant among MC speakers. There is nowhere a consistent alternation that suggests allophony as such. Nor could any influence of lexical identity on vowel quality be detected. Once again, it appears that the distribution of the four variants of GOAT in an individual TE speaker's sample depends more on the social attributes of the speaker than on phonological or lexical conditioning.

Style. GOAT is represented in the word list by 8 items: *boat* (twice), *total*, *motor*, *wrote*, *load*, *go*, and *won't*. The figures recorded for GOAT in these items, as shown in Table 8, show that a similar pattern obtains for this vowel as is the case for FACE. [oː] is overall the most popular form, and the local variants [ʊə] and [ɵː] are less widely used than in FC style. Once more, older WC men exhibit no style shifting with respect to the latter forms. Type III diphthong [oʊ], like its FACE counterpart [eɪ], is proportionately more common in WL style for the sample as a whole than is the case for FC style. The style-shifted distribution of [oʊ] matches very well with that for [eɪ], as Figure 5 suggests; the lack of identity of the FC and WL figures for GOAT is reflected by the correlation coefficient of 0.638 (Pearson's r; $p > .2$) for these figures.

The tendency to substitute [oʊ] for other variants of GOAT is again greatest among older MC women, even though this group uses [oʊ] less in FC style than do younger MC men and women. We might conclude from this patterning that, of all the speaker groups investigated here, older MC females make the strongest equation between Type III diphthongs and "carefulness" of pronunciation, their preference in unmonitored speech for the monophthongs [eː] and [oː] notwithstanding. This pattern is reiterated among older WC women, but to a much less dramatic degree. A tendency of this sort is not entirely surprising, given that the [oʊ] variant may well be considered a prestige variant by older speakers. As Wells commented, "[ɜʊ] has only quite recently (since the Second World War?) ousted

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TABLE 8. *Variants of* GOAT, *by speaker group, WL style (%)*

Group	[oː]	[ʊə]	[oʊ]	[ɵː]	*N*
Older MC men	90.6	—	9.4	—	32
Younger MC men	36.4	—	33.3	30.3	33
Older MC women	43.8	—	56.2	—	32
Younger MC women	71.9	—	28.1	—	32
Older WC men	3.1	65.6	—	31.3	32
Younger WC men	51.4	5.7	—	42.9	35
Older WC women	80.6	—	19.4	—	31
Younger WC women	96.9	—	3.1	—	32

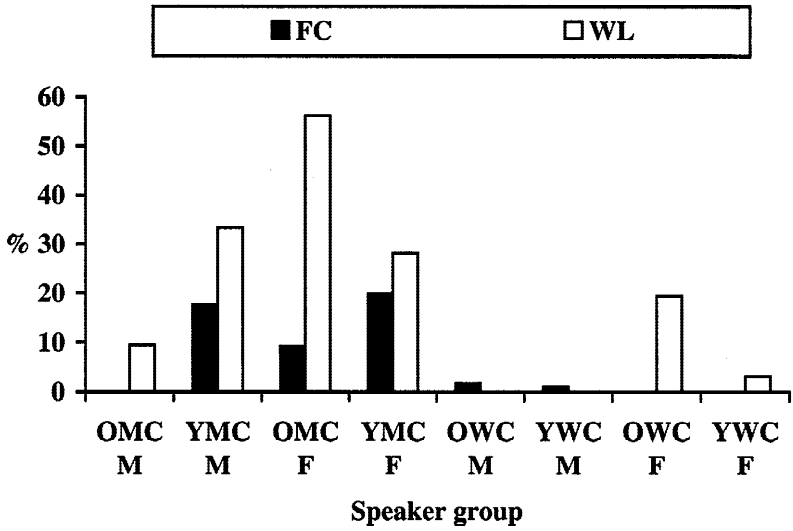

FIGURE 5. Type III GOAT variant [oʊ] in WL and FC styles, all speaker groups (%).

[oʊ], or perhaps rather [öʊ], as the ideal image of a 'correct' or 'beautiful' RP GOAT diphthong" (1982:237). Such an evaluation may be an influence here.

Summary

The figures for the phonetic variants of FACE and GOAT in TE are fairly typical of patterns reported in other studies of dialect leveling in British English, inasmuch as the decline of traditional, localized speech forms is balanced (or caused) by the substitution of less marked forms typical of a broader area. The main points that emerge are as follows.

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1. Type I monophthongs [eː] and [oː] are most frequent across the speaker group as a whole.
2. Type II centering diphthongs [ɪə] and [ʊə] are common among male WC speakers, but appear to be becoming recessive.
3. Type III closing diphthongs [eɪ] and [oʊ] are on the increase, particularly among younger MC speakers of both sexes.
4. Women appear to be leading the changes, and they are most advanced among MC speakers.
5. The centralized variant [ɵː] is apparently in decline, but is used at high levels by younger MC men.
6. The identity of the phonological context following the vowel is found to have a strong effect on the distribution of the variants of either vowel, although there are no patterns consistent enough from group to group to suggest an allophonic alternation. A following nasal appears weakly to favor the use of Type II diphthongs among male speakers.
7. There is a marked difference between the distributions of FACE and GOAT variants as a function of speaking style: specifically, the use of localized Type II forms becomes almost negligible except among older WC men in WL style, while Type III variants are favored more strongly in WL style than in FC style by other speaker groups.

Given that FACE and GOAT are overall rather similar to one another in the typological characteristics of their chief variants and in the distribution of these variants among the TE-speaking population sampled here, it seems reasonable now to compare them against one another directly. In the following section, the similarity between FACE and GOAT in terms of the proportions of their phonetic exponents across the eight speaker groups is considered, and the proposal that FACE and GOAT have similar surface forms because they are phonologically paired (or vice versa) is evaluated.

FACE AND GOAT AS PARTNER VOWELS

It has been suggested that the localized Type II forms are being lost from TE. That is, we have evidence of a sound change in progress characterized by the rejection of a traditional diphthongal form in favor of a supralocal, monophthongal form and the adoption among certain speakers—young and/or female MC ones, predominantly—of a supralocal diphthongal form more typical of varieties spoken to the south of Tyneside. The reduction in the use of the traditional forms is thereby balanced by the simultaneous adoption of supralocal forms, which are less geographically (and perhaps socially) marked. In other words, the patterns in the FACE and GOAT data are part of a process of dialect leveling, the hallmark of this process being a situation whereby heterogeneous speech varieties over time become more homogeneous, either by converging upon a pre-existing variety or by coalescing into an entirely new one (see, e.g., Auer & Hinskens, 1996; Hinskens, 1998; Williams & Kerswill, 1999).

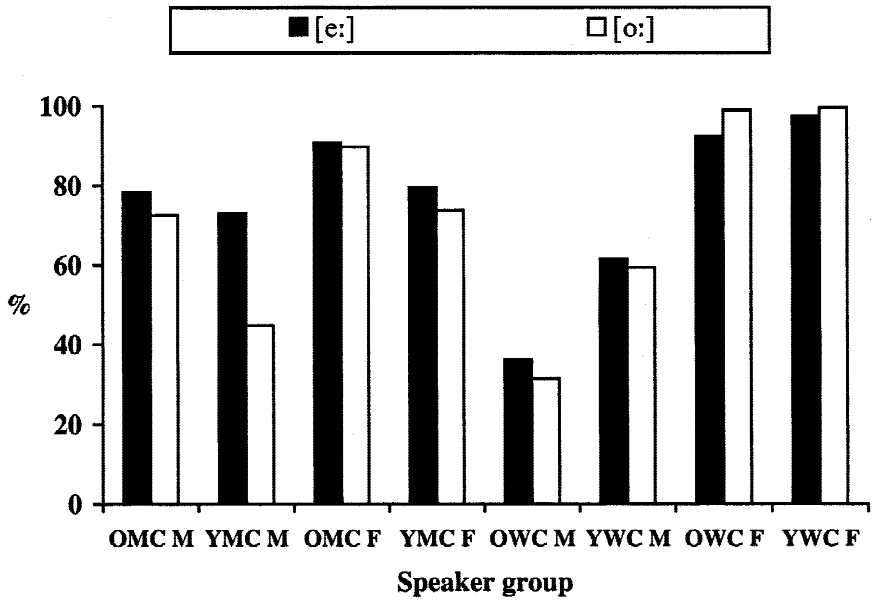

FIGURE 6. Comparison of Type I variants of FACE and GOAT, all speaker groups (%).

What is surprising in the present case is the similarity of the patterns in the data sets for FACE and GOAT when these are compared with one another and the apparent underlying orderliness this similarity suggests. When a dialect is subject to leveling, we might expect the system shared by the dialect's speakers to be temporarily thrown out of any equilibrium it might earlier have attained. One might imagine periods of linguistic change resulting from dialect contact (rather than the slow, gradual, internally choreographed reorganizations postulated by historical phonologists) to be characterized by some disorder and confusion at the phonetic level and quite possibly at the phonological level as well. Yet, in the following comparison of the FACE and GOAT figures, the pattern we see suggests that these vowels are leveling, as it were, in lockstep with one another.

Type I monophthongs

The percentage scores for each speaker group's use of the Type I monophthongs [eː] and [oː] are shown graphically in Figure 6. The relative proportions of Type I variants in the samples for each speaker group can be seen to parallel one another rather closely. The correlation (Pearson's r) between the data sets for FACE and GOAT was again assessed on the basis of the scores represented in Figures 2 and 4. The visual match in Figure 6 is borne out by the strong positive correlation between FACE and GOAT for this variant type ($r = 0.917$, $p < .002$). Only among

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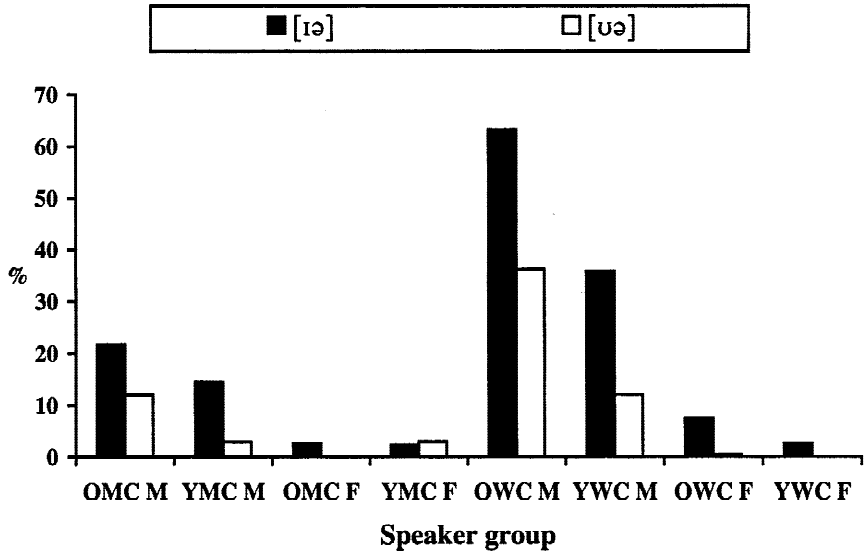

FIGURE 7. Comparison of Type II variants of FACE and GOAT, all speaker groups, FC style (%).

younger MC male speakers does this trend seem to diverge to any extent. For this group, a higher than average proportion of the sample is accounted for by the [ɵː] variant of FACE; indeed, as we have seen, this group uses [ɵː] more than any other speaker group. Overall, though, there is a remarkably close fit between the Type I figures for both vowels.

Type II diphthongs

The agreement between the percentages for Type II variants is also strong ($r = 0.964$, $p < .002$). As can be seen from Figure 7, there is some divergence in the levels of usage of Type II FACE and GOAT variants among male WC speakers; again, this is probably the consequence of the presence of a high proportion of [ɵː] in the samples for these speaker groups. The overall proportions of Type II diphthongal variants in the samples for the two vowels nonetheless approximate each other.

Type III diphthongs

The correlation ($r = 0.981$, $p < .002$) between the percentage scores for Type III closing diphthongal variants of FACE and GOAT is evident in Figure 8. MC speakers—most particularly, the younger ones—are seen to use [eɪ] and [oʊ] relatively frequently by comparison with other speaker groups. Among older MC men and the entire WC cohort, the use of Type III variants is negligible.

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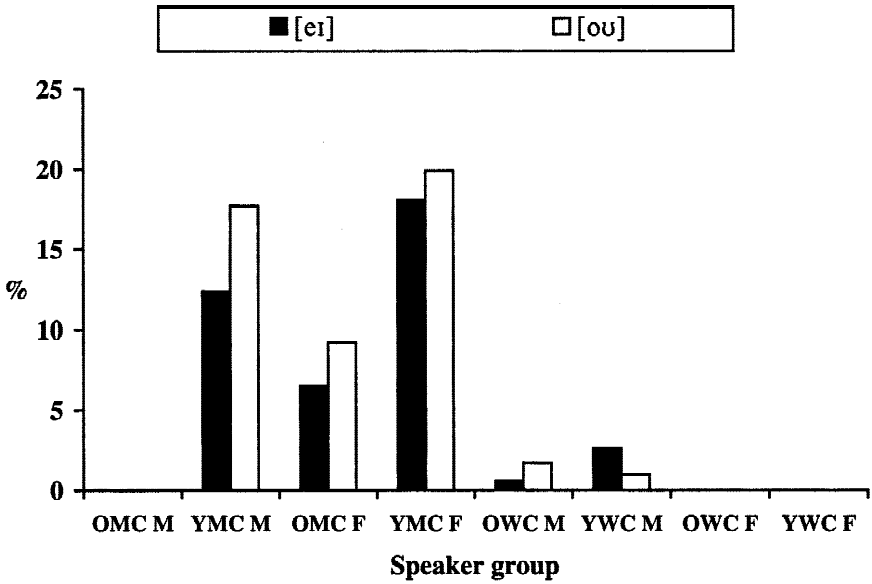

FIGURE 8. Comparison of Type III variants of FACE and GOAT, all speaker groups, FC style (%).

The strength of the correlation in the case of Type III variants and the fact that these forms are avoided altogether by certain speaker groups indicate that the adoption of [eɪ] and [oʊ] among MC speakers is highly socially marked. These forms are more typical of varieties of English spoken to the south of Tyneside, including status forms such as Received Pronunciation, and have been associated with "polite usage" by Wells (1982:211). The overall proportions of these variants are, of course, still fairly small, but this is to be expected if, as was argued earlier, they are indeed a relatively new feature of TE.

The parallelism between FACE and GOAT in FC style may be just as apparent in WL style. That is, the effect of a change in style in one vowel may be very similar in the other. Such style shifting is examined next.

Style shifting

As was suggested earlier, the direction of the style shifting evident for the FACE and GOAT vowels appears to be rather similar: Type I monophthongs are (as in FC style) the most popular variant overall in WL style, whereas the Type II variants are used hardly at all except by older WC men. Type III variants of both vowels are used significantly more often in WL style than in FC style.

The close correspondences between the paired percentage scores for each variant in the WL style for FACE and GOAT are evident in Table 9 (this excludes [ɵː],

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TABLE 9. *Comparison of variants of* FACE *and* GOAT*, excluding* [ɵː]*, by speaker group, WL style (%)*

Group	[eː]	[oː]	[ɪə]	[ʊə]	[eɪ]	[oʊ]
Older MC men	84.6	90.6	—	—	15.4	9.4
Younger MC men	51.9	36.4	9.6	—	38.5	33.3
Older MC women	26.9	43.8	—	—	73.1	56.2
Younger MC women	73.6	71.9	—	—	26.4	28.1
Older WC men	26.4	3.1	73.6	65.6	—	—
Younger WC men	50.0	51.4	50.0	5.7	—	—
Older WC women	72.5	80.6	—	—	27.5	19.4
Younger WC women	98.1	96.9	—	—	1.9	3.1
N	254	153	70	23	95	48
r	0.917		0.848		0.986	
p	<.002		<.01		<.002	

Overall: $r = 0.933$, $p < .002$

which has no parallel form in FACE). Indeed, the *r* values for each pair of variants suggest that variants of Types I, II, and III of FACE and GOAT are almost as closely matched from speaker group to speaker group in WL style, as is the case in FC style.

Again, the presence of [ɵː] in the samples for the three groups of the male speakers (younger MC, older WC, younger WC) skews the GOAT sample somewhat, and there are disparities in the Type III samples for several groups. But these are not sufficient to affect the overall pattern of similarity between FACE and GOAT. Hence, the parallelism of these two vowels, as expressed by their various phonetic exponents, is manifest also when the speakers' productions are subject to the higher level of self-monitoring typical of word list reading tasks.

In the following section the nature of the parallelism is explored in more detail. Specifically, the question is addressed as to whether we can attribute the similarities between FACE and GOAT at the surface level to an underlying symmetrical relationship between the vowels—a relationship which would almost certainly be assumed in an account focusing on the contribution of system-internal forces in the course of a sound change.

INTERNAL FACTORS

It has been argued that the conception of the vowel system that is current in sociophonology is essentially the same as that inherited from the structuralist tradition. The vowel system is, in such a model, a set of categories that are kept in opposition with one another through the operation of pressures which (ideally) serve to maximize the acoustic (and/or perceptual) distance between the catego-

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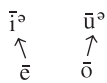
ries. Vowels thus locate themselves in vowel space in an orderly and quasi-predictable way, in the sense that, for a given number of lexical contrasts expressed by the vowel system (i.e., vowel phonemes), there appears to be only a fairly small number of configurations attested cross-linguistically. One of the guiding principles at work here is that languages prefer symmetrical vowel systems; this being the case, the range of possible configurations from which a system of contrasts of a given size can choose is rather constrained.

The idea that /e/ and /o/ (TE FACE and GOAT) are symmetrical partner vowels is implicit in such a model; typically they are described as being of equivalent height and tenseness. This is assumed at an abstract phonological level, but is claimed (against a rather heavy body of articulatory, acoustic, and perceptual evidence, it has to be said) to be true also at the phonetic level, even when change is underway. Pfalz (1918), for instance, described vowels as marching in rows (*Reihenschritte*) and presented a table of correspondences between the phonetic forms of /e/ and /o/ in Germanic languages; he asserted that the phonetic form of /e/ determines that of /o/ in a given language or dialect (and presumably vice versa). Of significance to the present study is his statement that "Where the e-sound is ẹə, the o-sound will be ọə" (1918:28, cited in Stewart, 1976:87; my translation). The Type II diphthongs in TE would appear to conform to this axiom, as would the other FACE and GOAT variants, with the exception of [ɵː].

The actual origin of Type II diphthongs in other varieties of English for which they are reported (Northern Ireland; Jamaican; Fond du Lac, Wisconsin) is accounted for by Veatch (1991:186) as the consequence of FACE and GOAT being strongly stressed: that is, the raising and breaking of [eː] to [ɪə] and [oː] to [ʊə] result from hyperarticulation (cf. Kerswill, 1984:25–26, who found a strong correlation between primary stress and the appearance of a centering diphthong variant of FACE in Durham English; see also Samuels, 1972:21–27). Labov, Yaeger, and Steiner (1972:97) briefly discussed the social distribution of [iˑə] and [uˑə] in the English of Gateshead, citing the appearance of these forms as an example of the historically common process of raising tense ingliding vowels (see especially Chapter 3), but they made no attempt to provide an explanation of this development in articulatory phonetic terms. The diphthongal forms are instead the product of gradual drift. Labov et al. presented evidence to show that the raising and breaking of these vowels are historically common among Germanic, Romance, Balto-Slavic, and Semitic languages: in fact they used the term "symmetrical" to describe the shift, which they schematized as follows.



In Veatch's account and in that of Labov et al., the coexistence of Type I monophthongs and Type II diphthongs is the result of the development of Type II diphthongs from [eː] and [oː] (ē and ō in Labov et al.). Furthermore, the appearance of Type III diphthongs [eɪ] and [oʊ] is accounted for in Labov et al. as the final stage of the same shift.

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> When the [raising and breaking of ē and ō] is completed, and the nucleus reaches high position, the next step is usually either monophthongization or a shift to a rising diphthong. (Labov et al., 1972:104)

As they stand, the patterns evident in the TE data might exemplify the three stages of this shift quite well. [eː] and [oː], it could be argued, raised in tandem and both developed centering offglides ([ɪə] and [ʊə], respectively); later these centering diphthongs somehow shifted to [eɪ] and [oʊ]. Presumably, however, these shifts did not affect both vowels across the board, since all three types of variant are still extant for FACE and GOAT: that is, the shift from Type I monophthongs to Type II diphthongs was not completed before Type III diphthongs appeared on the scene. The system of alternants described earlier could then be seen as a "fossilization" of a change that had been arrested by some means. Alternatively, the patterns in the contemporary TE data might indicate that the sound change is in progress and is as yet incomplete. Throughout, however, the theme of symmetry is implicit: whatever is true of one vowel will be true of the other.

The provenance of [ɵː] is also unproblematic if several forms of a vowel can coexist in this way. Fronting of back vowels is a commonly reported type of sound change, not least in English, and indeed Labov (1991, 1994) provided a principle to account for shifts of this type: "In chain shifts, back vowels move to the front." So although the appearance of [ɵː] disrupts the neat symmetry of the paired variants of Types I, II, and III, it can still be accounted for under the chain-shift model, and in spite of its presence the symmetrical pattern obtaining between FACE and GOAT is still readily apparent.

The results of this study might therefore be taken as good evidence of internally motivated shifting in the TE vowel system. The principle of symmetry is the crucial factor conditioning the path of the change: it serves to keep changes in both vowels in line with one another. There are, however, a number of problems with this explanation. If the shift is unidirectional ([Type I] ⇒ [Type II] ⇒ [Type III]) (i.e., if the appearance of Type III diphthongs depends upon the adoption of Type II diphthongs), it is difficult to account for the relatively high frequency of Type I monophthongs over the other two types when we bring their distributions across the speaker sample into the picture. If variants of Type II develop from Type I variants, why are the former apparently recessive, being favored by older WC men but virtually absent among female speakers? Given what we know about the adoption of innovatory forms in English-speaking communities, we would expect the opposite to be true. Type III variants [eɪ] and [oʊ] are, of course, most widely used by women, but in order for them to arrive at that stage of the shift they would have had to pass through the intervening Type II variant stage, according to Labov et al. Apparently, this is not the case, since where female speakers do not use the Type III closing diphthongs they stick resolutely to the Type I monophthongs. One would anticipate Type III diphthong usage to be heaviest among WC men because they use Type II diphthongs [ɪə] and [ʊə] more frequently than do the other groups and are thus, by Labov et al.'s criteria, fur-

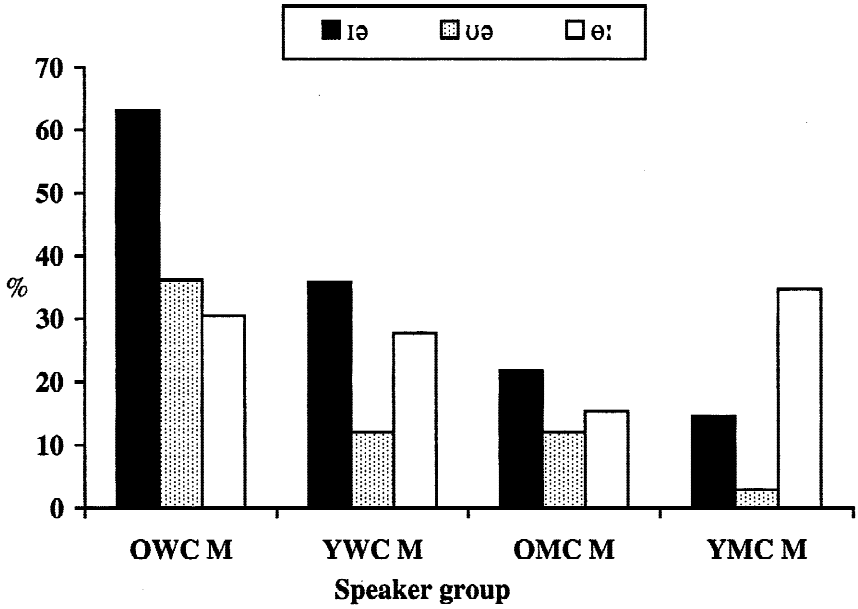

FIGURE 9. Proportions of Type II and [ɵː] variants, male speaker groups only, FC style (%).

thest along the track of the change. But, as the results presented earlier show, this is clearly not the case.

What is missing here is some account of the social marking that is attached to each of the variants. In other words, the patterns seen in the data are not interpretable entirely in terms of alterations the system makes to itself. Rather, we need to take into consideration the probability that the source of the Type I and III variants is not internal but external, and that these and the other variants of FACE and GOAT are ascribed values on the basis of (and that determine) their distribution among the TE speakers' sample. In the following section, the effects of some external factors are discussed, and the question of dialect leveling is raised, since in combination these account more plausibly for the variation in TE FACE and GOAT than does the internalist model on its own.

EXTERNAL ACCOUNTS

Consider the pattern in Figure 9. What is shown here is a comparison of the male speaker groups with respect to the proportions of Type II variants [ɪə] and [ʊə] and the fronted GOAT variant [ɵː] in their samples. The samples for the female speaker groups, being negligibly small, are omitted from the figure.

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Except for the case of [ɵː] among younger MC men, the trend suggested by Figure 9 is one of a general decline in the use of all three variants as a function of age, this decline being more advanced among MC speakers. These variants are, as has already been pointed out, more localized to Tyneside than are Type I and III variants, and so the use of [ɪə], [ʊə], and [ɵː] would be more strongly indicative of local identity than would the use of other forms. As with nonstandard phonology elsewhere in the United Kingdom, a certain degree of stigma may well be attached to their use; the direction of the style shifts described earlier would imply this, at any rate. What Figure 9 suggests, then, is that use of Type II variants is strongest among older WC men because it symbolizes local affiliation (as Holmes's results suggest) and also perhaps loyalty to traditional values and is lowest among younger MC men because of their relatively weak identification with these values. The sensitivity of younger MC men to the markedness of Type II diphthongs appears to be sufficient to suppress the use of these forms almost completely in the careful WL style, as indicated in Tables 6 and 8; older WC men, on the other hand, actually increase their use of the centering diphthongs in WL style, indicating that they evaluate these forms quite differently from other groups. The path of the change is thus arguably determined by the acceptance or rejection of Type II forms on the basis of how speakers evaluate them.

The adoption of Type III diphthongs into the TE FACE and GOAT repertoire among women and younger MC speakers would suggest the same conclusion: [eɪ] and [oʊ] are more characteristic of accents used to the south of Tyneside than they are of TE itself and therefore may be evaluated as more attractive than the local options by these speakers, although it is probably true to say that such perceptions have little to do with the geographical origin of these variants; as we saw earlier, Wells located their origin in "polite English usage," an association which may persist.

Across the sample as a whole, however, the preference is overwhelmingly for Type I monophthongs for both vowels and in both FC and WL styles. Whether these were the original input to the shift that produced the raised and broken Type II variants is in a sense immaterial, since the Type II variants [ɪə] and [ʊə] appear to be declining at the expense of [eː] and [oː], regardless of which preceded the other. Rather than postulate a reversal of the shift, as a purely internal account might demand, it seems more plausible to explain this increase in terms of the relationship between TE and neighboring varieties of northern British English with respect to these monophthongs. [eː] and [oː] are, as Wells (1982:364–365) and others pointed out, generally typical of English in northern England and, as Holmes (2000) indicated, are thus marked for northernness but not for locality more narrowly than this. It will also be recalled that Wells judged the Type II diphthongs to be rather old-fashioned. Presumably, then, the increase in Type I monophthongs as a general feature of TE can be seen as convergence on a broader regional pattern, as one might expect where leveling is taking place. Type I monophthongs are under this interpretation acceptable to most TE speakers because they are less likely to provoke in listeners any negative stereotyping associated with the more specifically northeastern [ɪə] and [ʊə].

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Considering next the distribution of [ɵː], however, we can see from Figure 9 that the reduction of the proportions of this variant among older WC, younger WC, and older MC men is countered by younger MC men, who use [ɵː] more than any other group. This finding tallies with Wells's observation that "the central rounded monophthong [ɵ(ː)] remains a very characteristic GOAT quality both for Tyneside itself and for all Northumberland" (1982:375). This should be qualified, of course, with the remark that [ɵː] is not at all characteristic of the speech of the Tyneside women in the present sample, and, apart from the resurgence of this form among younger MC men, it could be said to be in decline overall in TE. Here, we might consider the revitalization of [ɵː] among younger MC men to parallel the unexpectedly high frequency of local fronted forms of /ay/ and /aw/ in the speech of young, educated men on Martha's Vineyard, a pattern Labov (1963) interpreted as a reaction among these speakers to the encroachment of variants from the U.S. mainland. In much the same way, TE [ɵː] could be thought of as a form which younger MC men consider attractive in the sense that it is recognizably northeastern and a variant that does not suffer to a comparable extent from the stigma of old-fashionedness that may be attached to [ʊə]. As we have seen, [ʊə] is a form younger MC men avoid almost categorically in FC style, and it is altogether absent in WL style for this group.

If the use of [ɵː] counts as GOAT fronting, it could be maintained that Labov's Principle III ("In a chain shift, back vowels move to the front") applies here. However, the operation of this principle in Labov's model is confined to vowel nuclei that are fronting along peripheral tracks (i.e., along the upper /i/~/u/ continuum or along the /a/~/ɑ/ continuum). Fronting of GOAT, Labov contended, entails a coordinated shift with /u/ (i.e., the GOOSE vowel), whereby GOAT fronting "represents a generalization of the fronting of the high back vowel .... When /ow/ is fronted, it is always in parallel with /uw/ and considerably behind it" (1994:208).[13] Fronting of GOOSE, however, while a feature reported for many varieties of British English, is not described in any previous accounts of TE and is not found with any regularity in the TE recordings used for this study. If anything, the quality of TE GOOSE is generally as close to the close back rounded vowel represented by cardinal vowel 8 as can be found in any variety of modern spoken English, at least in checked syllables like *boot*, *book*, *food*, *lose*, and so on (see Watt & Milroy, 1999). Bearing in mind the fact that [ɵː] is reported as a GOAT variant as early as O'Connor (1947), GOOSE fronting ought to be an established feature of the dialect if Labov's stipulation is to hold for TE. Since apparently it is not, we must question the relevance of Principle III here or, at any rate, the GOOSE fronting precondition; without the GOAT fronting ⇒ GOOSE fronting implication, though, Principle III seems to lose force as an explanatory principle. The influence of external factors—namely, that younger MC men are expressing a preference for a preexisting localized variant they adopt as an assertion of local identity—provides us with a more coherent explanation for the increase in the use of [ɵː]. (Compare this with the high levels of use of [ɵː] as a GOAT variant among middle-class Hull girls described in Cheshire et al., 1999.)

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CONCLUSIONS

Overall, the patterns of usage of the phonetic variants of these two vowels are much more complex than would be implied by an analysis focusing on the relationship between FACE and GOAT at an abstract phonological level. In order to arrive at an understanding of the forces at work behind the distributions of the described variants, we must consider not only the possible origins of each form, but also the significance these forms hold for the speakers who use them and the degree to which they are used in speech as a reflection of the social structure of the community in question.

While the correspondences between the individual variants of FACE and GOAT are indeed close and thus strongly suggestive of underlying structural symmetry, we might also take the view that, for example, [ɪə] and [ʊə] pattern alike because they are equivalently socially marked. If both are considered old-fashioned, indicative of an inward-looking, strongly locally oriented attitude, or incorrect, they are on balance more likely to be avoided by women and middle-class speakers, who have been shown in numerous studies to disfavor variants associated with these traits. The same may be said of [eɪ] and [oʊ]: if TE speakers associate these with correctness, as the style shifts described earlier suggest, it is probable that they will find greater favor among younger, middle-class speakers and women. The unmarked variants [eː] and [oː] would then fill in the gaps, acting as default variants lacking strong regional or social marking in either direction. This being the case, an apparently symmetrical pattern may start to emerge.

Also, we should be careful about generalizing any such symmetrical pattern to other pairs of vowel categories (e.g., FLEECE and GOOSE) without examining their surface forms at a level of detail such as that used here for FACE and GOAT; FLEECE and GOOSE in TE are in fact found to share certain similarities with one another with respect to an allophonic alternation between the vowels in open and checked syllables (Watt & Milroy, 1999), but this is difficult to integrate with the observed patterns in FACE and GOAT in any way commensurate with the chain-shift model. And why is symmetry considered a strong guiding principle in vowel systems but not in consonant systems? Pairings such as /p/ and /b/ or /s/ and /z/ are often described as being of a similar type to, say, /i/ and /u/ or /ɛ/ and /ɔ/, but where sound change affects one category it is not immediately assumed (as per Pfalz's *Reihenschritte*) that the change will equally and simultaneously affect its partner.[14] In structural analyses of consonant systems (Hockett, 1958; Samuels, 1972), symmetry is postulated as a design feature, but implicit in these is the suggestion that our reasons for conceiving of consonant systems as symmetrical is as much motivated by aesthetic considerations as by linguistic ones (cf. Hockett's principle of neatness of pattern, exemplified by his instruction that "if we are confronted with two or more ways of identifying allophones as phonemes, both or all of which equally meet all other criteria, we should choose that alternative which yields the most symmetrical portrayal of the system"; 1958:109, quoted in Stewart, 1976:85).[15]

We should note that studies of socially conditioned variation in consonantal variables sometimes report patterns that make the variables appear to be linked to

https://doi.org/10.1017/S0954394500121040 Published online by Cambridge University Press

one another in much the same way as was found here for FACE and GOAT. James Milroy (1996), for instance, compared the distributions of labiodental variants of (th) ([fɪŋ] for *thing*, [iːvə] for *either*, etc.) with those of pre-vocalic and pre-pausal glottal stop variants of (t) in Derby English. Ranking his eight informants according to their respective use of labiodentals and glottal stops revealed a correspondence between proportions of labiodental (th) and glottaled pre-vocalic (t) that was statistically significant. But no plausible phonological connection can be drawn between these two variants. Rather, it might be speculated that their distributions are similar for each of the Derby speakers sampled because these speakers perceive labiodental (th) and pre-vocalic [ʔ] to have approximately similar attributes with respect to social marking, and they are thus adopted to a greater and lesser degree on the basis of their appropriateness to the self-identity of each speaker (see also Thelander, 1982, for relevant discussion).

In conclusion, the changes described in this article may be understood as speaker-motivated adoptions and rejections of sociolinguistically marked surface forms brought about by differentials in social psychological attitudes, perhaps reflecting factors such as local loyalty, a shift in the balance of identity with respect to broader region rather than immediate location, or some desire to appear modern, educated, or well-spoken. These speech forms are either pre-existing in the variety or are available by borrowing from other neighboring varieties. No appeal is necessary to spontaneous creation by the internal workings of the vowel system, even if these were responsible for the origin of each form in the first place. In this case, an approach which emphasizes the social motivations for modifications to the phonetic expression of phonological categories is preferred to an analysis which attempts to explain alternations in terms of an underlying structure assumed a priori to constrain the types of changes that are possible.

NOTES

1. In using the term "principles of chain shift" to refer to principles that may be invoked to model uncoordinated changes in single vowels, I follow Labov (1994:117), who stated that, "though [Principles I through III] are stated in terms of chain shifts, I will not hesitate to use them to describe and classify individual movements where they apply." "Chain-shift model" is thus used as a shorthand term to refer to structuralist analyses of the type elaborated by Labov, whether or not any actual chain shift is taking place.

2. The "evaluation problem" (Weinreich, Labov, & Herzog, 1968) continues to pose difficult questions in sociophonology. Since as yet only a small-scale preliminary study of listener reactions to the variants of Tyneside FACE and GOAT has been carried out (Holmes, 2000), and since the evidence for social attitudes toward these variants is rather indirect and patchy, for present purposes it is assumed that disparities in the distribution of variants across speaker groups can be taken as evidence of differences in the variants' evaluation.

3. That is, the use of [ʊ] pre-vocalically (as in [bʊɐd] *bread*) and [f,v] for (θ,ð) (as in [fɪn] *thin* or ['mʊvɐ] *mother*).

4. While collapsing detailed transcriptions into categories such as Type I, Type II, Type III may be undesirable in the sense that one loses the phonetic resolution of the original transcriptions, it should be remembered that the term "variant" is only meaningful if we choose to impose categories onto what is, after all, a phonetic continuum. As long as this is carried out in a careful, principled, and reproducible way, the approach serves the sociolinguist's purposes well; the advantages of very detailed impressionistic or instrumental approaches are usually outweighed by the difficulties they present in terms of handling the amounts of data needed for an adequate overview of the variation within the community. For assessments of the reliability of phonetic transcription, see Cucchiarini (1996), Nairn and Hur-

ford (1995), Vieregge (1987); on problems with the traditional formant-frequency analysis of vowels, see Faber and di Paolo (1995), Harrington and Cassidy (1994), Pisoni (1997).

5. The choices available were (a) northeast, (b) northwest, (c) east midlands, (d) west midlands, (e) southeast, (f) southwest, (g) Standard English, (h) north Wales, (i) northern Scotland, (j) Belfast area, (k) no response.

6. The membership of the GOAT lexical set in older TE is particularly difficult to fix. *Both*, for instance, is transcribed by Jones as [bjɛθ], while *hold* is [haːd] and *so* is [siː]. Such pronunciations continue to be used in modern conservative TE, but they are relatively rare and alternate with the GOAT pronunciations described in more recent accounts. Curiously, Jones transcribed items that are members of the STRUT set in accents featuring a FOOT ~ STRUT distinction, such as *come*, *done*, *fun*, *but*, *numb*, *mother*, with [o], but showed *good* (the sole FOOT item) as [gud]. It is doubtful, however, whether Jones meant to imply a FOOT ~ STRUT split here.

7. See also Trudgill (1998).

8. The results of a small-scale pilot study (8 speakers, or one per cell) also confirm the consistency of the transcriptions. For variants of Types I, II, and III the correlations between FACE and GOAT achieved a high level of statistical significance.

9. Implemented using NAG Generalized Linear Models (GLIM), v. 3.77.

10. A paucity of FACE tokens in *Vb*, *Vz*, and *Vl* contexts led to the omission of these contexts in the analysis. The context effects reported here are therefore based upon the *V#*, *Vp*, *Vs*, and *Vn* contexts only. Interestingly, Labov, Yaeger, and Steiner (1972:104) stated that following nasals may promote the raising of tense ingliding vowels, an observation that is backed up to some extent in the distributions of [ɪə] and [ʊə] among these TE speakers and that matches results reported by Kerswill (1984) for the FACE vowel in Durham, a city of some 82,000 inhabitants around 15 miles (25 km) to the south of Tyneside.

11. A reviewer suggested that Type III diphthongs may appear more often in WL style as a consequence of a reduction in speech rate. Specifically, the offglide, which is perhaps the result of coarticulation of the vowel with the following consonant, could be more perceptible at slower rates.

12. This effect is weakened when the localized variants are considered individually because of the complex interaction between the trends for [ʊə] and [ɵː] brought about by younger MC men's atypical preference for the latter variant.

13. Labov's transcription system corresponds to Wells's lexical set keywords as follows: /ow/ = GOAT, /uw/ = GOOSE; the /ay/ and /aw/ vowels mentioned in connection with the Martha's Vineyard study are PRICE and MOUTH, respectively.

14. At least in descriptions of adult speech; phonological analyses of child speech tend to attach more importance to implicational dependencies obtaining between consonants in language acquisition (see, e.g., Menn & Stoel-Gammon, 1995).

15. Fitting symbols representing the set of phonological contrasts into a language-universal grid or matrix is of course visually useful where phonologies of individual languages are to be compared, but, as Simpson (1999) pointed out, this sort of generalization by necessity involves a good deal of idealization and is undertaken at the expense of preserving much relevant phonetic detail.

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APPENDIX

WORD LIST

sheet	boat	lap it	half-cut
beetle	total	apron	automatic
metre	motor	matron	Jupiter
I beat it	I wrote it	micro	epileptic
gate	put	metro	sheet
paint	footer	leprosy	read
fatal	put it in	petrol	breeze
later	boot	acrid	key
I hate it	Bootle	atlas	gate
eighty-eight	hooter	hopper	made
bet	bite	butter	may
bent	title	hacker	boat
felt	mitre	topple	load
fettle	pint	bottle	go
better	bite it	hackle	boot
I met him	out	whisper	brood
hat	fount	custard	booze
ant	outer	after	brew
battle	pit	whisker	out
batter	bitter	doctor	loud
drat it	brittle	chapter	cow
cart	print	jumper	sight
can't	I hit it	hunter	side
carter	hilt	bunker	size
pot	beak	appear	sigh
totter	wreck	attend	sighed
bottle	back	occur	knife
font	I seek it	appearance	five
salt	I wreck it	attendance	knives
I got it	I back it	occurrence	dive
caught	bank	alpine	dial
daughter	lamp	alter	Friday
chortle	leap	polka	diary
haunt	cap	staircase	
I bought it	steep it	half-past	

I've got to do it tomorrow
I had to put it off
He meant what he said
He's booking separate tables for supper
A simple sentence
Pick up a packet of firelighters
Pack it in or beat it
He's putting it off
He put in a bid
Jump up on the tractor
He won't do that in a hurry
Put a comma in it

https://doi.org/10.1017/S0954394500121040 Published online by Cambridge University Press