

# The Nature of Phonological Variables in Scouse

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## 1 Introduction

Scouse is the dialect which developed in Liverpool in the nineteenth century, and has since spread to the surrounding districts of Lancashire and Cheshire. Until the middle of the last century, Liverpool drew its population from the counties of the Northwest of England; but after the potato famines of the 1840s, hundreds of thousands of Irishmen passed through the port, and many of them settled there. At the time of the 1861 census, 25 per cent of the city population were Irish immigrants. The resulting dialect is an interesting hybrid: on the phonological level, it remains similar to the dialects of neighbouring Northern towns, but phonetically it has been heavily influenced by Anglo-Irish. In the present century, Scouse has taken part in general developments in British English, and has been extensively standardized in phonology, grammar and vocabulary.

As a result of standardization, Scouse has a number of phonological variables which are not restricted to Liverpool, and most of which are widespread over the North of England. For instance, word-pairs such as *mud/good*; *pass/gas*; *scarce/curse*; *book/Luke* and *singer/finger* make perfect traditional rhymes, but the first member of each pair is subject to modification in middle class speech, under the influence of the standard forms. Such variables are—superficially at least—easy to identify and analyse. However, an analysis which concentrated on this kind of variable alone would systematically miss the Anglo-Irish influence, the ‘Scouse element’, which so sharply marks Liverpool speech off from the rest of the Northwest. It is important to note that the sort of Liverpool speaker who had *mud/mʌd/* and *pass/pɑ:s/* is also almost certain to exhibit a number of phonetic features which are less easily identifiable, but which give a general impression of a ‘middle-class voice’. Such a person will consequently sound less ‘Scouse’ and less ‘Irish’ than one who has *mud/mud/* and *pass/pas/*. It would therefore be naive to single out the vowels [ʌ ~ u] and [ɑ ~ ɑ:], extract from them vowel height, length, degree of retraction and rounding, and to assume that this alone is what conveys sociolinguistic information and reflects social stratification. What we have to do is to find some way of identifying the many

and elusive continuous variables and low level rules which affect a person’s speech as a whole, and mark his social status.

Sociolinguistics has grown out of general linguistics, and as a result, the sort of variables we naturally look for are those involving linguistic units. I would suggest, however, that we should be looking for sociolinguistic information direct, whether linguistic units are involved or not. To do this will call for a special kind of phonetic theory. Phoneticians have, for good reason, concentrated on linguistic phonetics, and set up a number of categories which are used to bring about phonological contrasts in the languages of the world. There is no reason to suppose *a priori* that these are also the categories which convey sociolinguistic information: indeed, it would be surprising if it were so. There are a number of popular labels—‘back-street twang’, ‘talking far back’, ‘sing-song’, ‘talking down your nose’ etc.—which refer to sociolinguistic information which is not at present amenable to analysis. In this paper, I shall show how the familiar kinds of variable are not always as simple as they at first appear, and that this initial simplicity results from inadequate phonetic techniques; I shall also suggest ways of tackling more subtle kinds of information in intonation and articulatory setting, which are essential for a full understanding of sociolinguistic variation.

## 2 Variation and Transcription

Phonetic transcription is so familiar in any linguistic work that it is easy to overlook how complex a process it is. It does not simply convert sounds into symbols: it extracts information. In a phonemic transcription, we extract linguistic information, and we cannot do this without first establishing the phonemic system. Similarly, if we wish to study variables, we have first to find out how the sociolinguistic information is conveyed, and then extract it. An impressionistic transcription may be a necessary first stage, but it is essentially a hit-and-miss affair, and must be replaced as soon as possible by some kind of systematic transcription.

The shortcomings of impressionistic transcription can be illustrated in the astonishing virtuosity sometimes found in dialect surveys, giving details far beyond what any phonetician could give with any confidence, accuracy or consistency. Even so, the detail still does not suggest the original form, unless one happens to be familiar with the dialect in question. One has to imagine a ‘Yorkshire voice’ in order to read a transcription of Yorkshire dialect, or a ‘Texas voice’ to read a Texan transcription, and so on. The fieldworker will certainly be responding to sociolinguistic information, but he has no way of representing it, and leaves the reader to reconstruct it for himself.

In a systematic transcription, what we need to mark will not necessarily be ‘states’ of the traditional kind. For linguistic purposes, it is a convenient and useful fiction to treat utterances as sequences of phonetic ‘states’, because at some level sentences really are linear sequences of vowels and consonants. In the case of sociolinguistic rules, on the other hand, ‘states’ will sometimes only confuse matters. Take for example the realization of Scouse /t/. As for other Scouse stops, complete closure for /t/ is obligatory only in certain

environments, such as initially in a word or stressed syllable, or next to another homorganic closure; in such cases the release of the closure may be very slow, thus *can* [tʰɛn], *want* [wʌnt]. In other cases the control mechanism is more like that for a tap than a plosive, and it is immaterial whether contact is made or not, thus *water* [wɔ:ɛ], *cat* [kɑ]. If we try to transcribe /t/, it seems to vary from 'stop' to 'affricate' to 'fricative'. However, it is quite arbitrary at what point the burst of noise following the release is considered long enough to be called 'affrication'. Secondly, a tapped fricative sounds like a 'stop' or a 'fricative' according to whether the listener responds to the consonant itself or to the duration of preceding segments; it can be heard as both at the same time, or even mistaken for an 'affricate'.

This last point illustrates a further problem, namely that the listener may well identify segments from information in the environment. In the phonemic analysis of *send* for instance, we might identify the final consonant as 'voiced' on account of the duration of the nasal, even though /d/ itself may be devoiced. Consider now the problem of /ð/, for which Scouse has the Anglo-Irish dental stop in addition to the standard fricative. In a word like *breath*, we will hear much sociolinguistic information long before we get to /ð/: if that information is 'middle class', it is difficult to hear /ð/ as anything but the standard fricative, and if it is 'Scouse', then /ð/ is almost bound to sound like the Anglo-Irish stop.

Suppose we were unaware of the difficulties, and went ahead with an impressionistic transcription. No matter how poor and inaccurate it might be, we could not very well avoid finding a greater frequency of 'affricated' and 'fricative' /t/ in working-class than in middle-class speech, and a corresponding high frequency of the Anglo-Irish /ð/. A statistical analysis would then apparently give the authority of mathematical precision to our method. In fact the statistics would not be valid, because until we have identified the variables properly, we have no computable units on which to base our calculations.

### 3 Variation and Scales

Naivety in transcription can lead to naivety in interpreting variables. If we try to identify a variable by examining an impressionistic transcription, then quite naturally it appears as a set of competing phonetic states as represented by the symbols: for any variable, the speaker has to make a choice from several variants. These variants can sometimes be plotted on a linear scale, following Labov (1966); they can then be given code numbers, and the variation analysed statistically.

Let us start instead with the speaker himself. We can assume he has a message consisting of a string of vowels and consonants, and a number of speech production rules which convert the string into a continuously varying acoustic signal. Both what he puts in the string and his production rules are subject to social pressures, and he will vary them accordingly. Any variation can have a number of different phonetic results, depending on where it takes

place in relation to the rules. For example, in *vice*, a speaker may decide not to carry out the rule changing /us/ to /ʌ/, what he actually says then depends on the rules he chooses for the production of /u/ and /ə/. The variation is multi-dimensional, and the notion of a linear scale inappropriate. Some variables look at first as though they can be effectively handled by the linear scale model; closer examination proves that they have to be dealt with by variable rules of speech production.

#### 3.1 (Λ)

The simplest example is probably (Λ). In Liverpool, as in other Northern towns, *mud* rhymes with *good* in popular speech, but varies to [mʌd] in educated middle-class usage under the influence of the standard form. There are a number of intermediate forms that can be transcribed collectively with *shwa*. Thus, (Λ) seems to vary on a very simple scale:

$$(\Lambda - 1): [u] \quad (\Lambda - 2): [\ə] \quad (\Lambda - 3): [\Lambda]$$

Higher scores for this variable will be found in middle-class than in working-class speech, and in formal than in informal style.

However, there are problems with [ə,Λ]. For most vowels it is possible to find some kind of norm or 'target quality', especially if they exist as words in isolation, e.g. /u/ 'who', /ɪ/ 'it', /ɔ:/ 'or'. Intrinsic allophones, varying in duration and quality, can be explained by reference to the phonetic environment. Forms of [ə,Λ], on the other hand, vary in height, retraction and rounding, but not according to any definable rules, and without any apparent target. Secondly, it is not clear at what point [u] becomes [ə], or [ə] becomes [Λ]. The borderlines are arbitrary, and probably depend on the ear and the sociolinguistic background of the hearer. Suppose a Liverpudlian makes the vowel of *mud* very slightly more open and less rounded than the vowel of *good*. This minute difference might be enough for another Liverpudlian to realize that he is 'speaking nicely' and using [ə]; a Southerner is likely to hear this vowel as the Northern [u].

These problems only arise, however, if we present the variable on a linear scale. What is happening, surely, is that speakers know to modify their [u] without being quite sure what to modify it to. At some arbitrary degree of modification, a sufficient phonetic difference is made for the listener to mark it in his transcription.

#### 3.2 (α:)

A word like *aunt* has the vowel [a] in Scouse, making it like *ant*; RP has [ɑ:], making it like *aren't*. A few middle-class speakers adopt the RP vowel, but more commonly a compromise is found, intermediate in quality or duration between [a] and [ɑ:]. We can represent the compromise forms *ad hoc* with the symbol [A]. The variants of (α:) seem to lie on a linear scale:

$$(\alpha:-1): [a] \quad (\alpha:-2): [A] \quad (\alpha:-3): [ɑ:]$$

Higher scores will again be found in middle-class speech and in more formal styles.

However, this variable cannot be taken in isolation, because [a] does not occur at all in RP. Where [a] does not correspond to RP [ɑ:], it corresponds to RP [æ]. In other words, Scouse [a] is always subject to modification. There are two rules involved:

- Rule A: a → æ as in *bad* [bæd], *jam* [dʒæm]  
 Rule B: a → ɑ: as in *fast* [fɑ:st], *dance* [dɑ:ns]

There is considerable resistance to rule B, and occasionally rule A will be applied instead, giving the hypercorrect [fæst, dæns]. If we are using a scale rather than a rule, this [æ] has to be plotted before (ɑ: - 1). Thus:

$$(\alpha: - 0): [\alpha]$$

Unfortunately the linear scale puts the variants in the wrong order for computing variable scores. Although (ɑ: - 0) is essentially a middle-class feature, its use would lower the score instead of raising it.

### 3.3 (εə)

In Liverpool and neighbouring parts of the Northwest, no distinction is made in popular speech between /εə/ and /ɜ: /, so that *fair* sounds exactly like *fur*. Some middle-class speakers adopt the RP vowel where appropriate, but more commonly a compromise is found in [ɛ:]. Without the centring off-glide. Once again, this looks like a linear scale of variants:

$$(\epsilon\text{ə} - 1): [\epsilon:] \quad (\epsilon\text{ə} - 2): [\epsilon:] \quad (\epsilon\text{ə} - 3): [\epsilon\text{ə}]$$

But again, the choice is not among states or forms, but whether or not to apply a modification rule. If the speaker does not apply it, he still has to choose rules to produce the central monophthong: (a) rounded, (b) fronted, or (c) plain; if he chooses the fronted type, this can in turn vary from a closer to a more open variety. If we force this variation into a scale analysis, the points on the scale turn out to be themselves scales on the next level. Thus:

$$\begin{aligned} (\epsilon\text{ə} - 1): & \text{(a) } [\epsilon:] & (\epsilon\text{ə} - 2): & [\epsilon:] & (\epsilon\text{ə} - 3): & [\epsilon\text{ə}] \\ & \text{(b) } (\text{i}) \text{ } [\epsilon:] & & & & \\ & \text{(c) } [\epsilon:] & & & & \end{aligned}$$

The characteristic Scouse vowels are [ɛ, ɛ̃], the latter being the more conservative. Together they seem to be replacing the traditional and widespread Northwestern vowel [ɛ:]. Middle-class people who retain (εə - 1) tend to use the plain RP-type [ɜ:], and this shades off with slight rounding into [ɛ:], and with slight fronting into [ɛ̃:].

### 3.4 (uə) and (oə)

As in urban speech in England generally, the phonemic merger of /oə/ and /ɔ:/ is being closely followed by the merger of /uə/ and /ɔ:/. Very, very roughly indeed, the time-scale in Liverpool is something like this:

	born before 1918	born 1919-1938	born since 1938
sure	[juə]	[juə]	[ɜ:]
shore	[ʃoə]	[ʃɔ:]	[ʃɔ:]
Shaw	[ʃɔ:]	[ʃɔ:]	[ʃɔ:]

To pronounce these words, the speaker has first to choose whether to carry out the merger or not, or even to find a compromise vowel. He then has the choice of several ordered but optional low-level rules, which operate not just for these vowels, but more generally in Scouse phonology:

- 1 lax [u, o] before an unstressed vowel:  
 or  
 (a) diphthongize [u, o]:  
 (b) front [u]:  
 modify VVV to V + glide + V:  
 front final [ə]:  
 uə            uə            iuə, iuə            uə            uə  
 uɛ, ʔuɛ            uɛ, iuɛ            uɛ, iuɛ            uɛ, iuɛ  
 uə, iuə            uə, iuə            uə, iuə            uə, iuə

These rules generate a large number of very slightly differing forms, which it would be quite pointless to attempt to plot on a linear scale. Only the first rule, incidentally, is at all prestigious, and the others operate mainly in working class speech.

### 3.5 (ng)

In Liverpool, and in other parts of the Northwest as far south as Birmingham, and as far east as Sheffield, [ŋ] is for many speakers an allophone of /n/ occurring before /g, k/. Phonetic [ŋ] is deleted in the middle of consonant clusters, as in *songs* [rɪŋz] or *banged* [bɑŋd], but it is pronounced word-finally, as in *song* [sɒŋ], *thing* [θɪŋ], and before a vowel, e.g. *singer* [sɪŋə], *banging* [bɑŋŋŋ]. This looks like the simplest of all possible variables, with the presence or absence of [ŋ]:

$$(\text{ng} - 1): [\text{ŋg}] \quad (\text{ng} - 2): [\text{ŋ}]$$

However, a final oral stop can arise in Scouse from other sources than phonological /g/, and g-deletion can be carried out at more than one level. The linear scale would here actually obscure the observable variation.

To being with, g-deletion can occur on the phonological level, giving for *sing* the choice of two representations, /sɪŋ/ or /sɪŋ/. A number of low-level rules now operate.

Rule A: a final voiced consonant lengthens the preceding segment, producing [sɪŋ:g] or [sɪ:ŋ].

Rule B: final [g] can be deleted, as it is redundant after lengthened [ŋ:].

Rule C: the release of a final nasal is made audible, and sounds like a weak homorganic stop. There are thus four forms of (ng):

- sup
- Rule A: sup:ɹ
- Rule B: sup:ɹ
- Rule C: sup:ɹ<sup>8</sup>

A fifth form [sɪp:ɹ] is theoretically possible, if rule C is applied to the output of rule B; but in practice this would be indistinguishable from [sɪp:g] resulting from rule A. Of these rules, only C is specifically Scouse, producing stigmatized forms; a stop which realizes phonological /g/ is quite prestigious locally, and is even used by middle-class women.

#### 4 Hypercorrection

Hypercorrection gives an interesting insight into the nature of variables. A linear scale can perhaps indicate the results of hypercorrection, but only modification rules of the kind suggested for (Λ), (α) and (εα) can explain why it should arise in the first place.

An informal study of my own slips of the tongue suggests that there are two quite different kinds of hypercorrection. The first is simple lexical confusion. I know in general how RP speakers pronounce words, which have /u/ and which /ʌ/, which have /æ/ and which /ɑ:/. and so on. There are just a few words like *putty* and *nasty* which baffle me; I cannot recall whether RP has /putt/ or /pʌtt/, /næst/ or /nɑ:st/, and I have to look them up in a pronouncing dictionary. Where the speaker is confused in this way, he is likely to carry out the modification rule in words where it should not apply. Perhaps the commonest hypercorrections thus produced are *butcher* /bʌtʃə/ and *bush* /bʌʃ/; others include *passage* /pɑ:sɪdʒ/ and *curse* /kɜ:s/.

The other kind of hypercorrection occurs when a sensitive vowel occurs twice in a tone-unit, producing e.g. *cup-hook* /kʌpʰʌk/, *gas-mask* /gɑ:smæsk/ and *chairperson* /tʃɜ:pɜ:sn/. The person who says /kʌpʰʌk/ is sufficiently concerned about his speech to aim at the standard pronunciation: if he is selecting variants from a linear scale, it is remarkably perverse of him to select (Λ - 3) in *hook* where it is inappropriate, and choose the non-prestigious (Λ - 1) for *cup*! A more convincing hypothesis is that the second sensitive vowel interferes with the operation of the modification rule, so that the wrong vowel sometimes gets modified, leaving the appropriate one unmodified. Here are some more extended examples, which I have unintentionally produced myself:

- I've pulled /pʌld/ a button /bʌtn/ off my jacket.
- Good luck! /gʌd lʌk/
- a book /bʌk/ being pu(blished) /pu .../
- and the wolf ran /rʌ:n/ after /æftə/ it.
- the black /blɑ:k/ castle /kæsl/

Now I know perfectly well how RP speakers pronounce these words, and I would get them right in isolation. So these are not cases of lexical confusion. In each case, the first occurrence of the sensitive vowel attracts the modification rule, even though it is the wrong vowel.

The hypercorrection seems to occur within the tone unit, as in this example. It's not a *jug* /dʒʌg/, but it's as if 'good' /gʊd/ as a *jug* /dʒʊg/. I know how *jug* is pronounced in RP, and accordingly modified my /dʒʊg/ to /dʒʌg/ in the first tone-unit; in the second tone-unit *good* incorrectly attracted the rule, and changed to /gʌd/, leaving *jug* unmodified as /dʒʊg/.

#### 5 Intonation

If linear scales are insufficient to deal with segmental variables, they are even less use for suprasegmental features, such as in intonation. It is certain that variation exists—e.g. Yorkshire intonation differs from RP—but it is very difficult to pin it down precisely. Nor can we rely on superficial phonetic features, for after all, pitch can only rise, fall or stay where it is; and rises, falls and level tones are found in all varieties of English. To deal with variables in intonation we have first to identify the rules for intonation, and then trace variables to differences in the rules among varieties.

Scouse and RP at first look very different. The tonetic stress marks developed by Kingdon (1958) for RP do not fit Scouse properly, simple rises and falls are scarce, and there are half a dozen distinct tones, all of which are different types of rise-fall. There are also several distinct fall-rises, and pre-nuclear tones do not correspond to anything in R.P. However, if we formulate our rules correctly, these differences are extremely unlikely to prove anything but superficial.

One important difference is in the way segments fit the pitch contour of a tone. Now what we call a 'tone' is strictly the pitch movement that follows the peak of the vowel of the stressed syllable. It so happens in RP that there is no significant difference in pitch between the beginning of the syllable and the peak; for this reason the handbooks rarely mention pitch levels before the peak. In Scouse, on the other hand, there is a significant difference. At the beginning of an accented syllable, the pitch moves away from its previous level, and then changes direction at the peak. In other words, a fall is regularly preceded by a preliminary rise, and a rise by a preliminary fall. Once we identify the rule, Scouse begins to look a little more related to RP.

A less superficial difference is found in the features employed to distinguish tones. RP has a two-way distinction of simple and complex tones, that is between *fall* and *rise-fall*, and between *rise* and *fall-rise*. Scouse has a three-way distinction of simple, intermediate and complex. The intermediate type differ from the simple tones in that instead of gliding smoothly up or down they skip suddenly from one pitch level to another; thus ... contrasts with ... and ... with ... They differ from the complex tones in that they do not change pitch direction; thus ... contrasts with ... and ... with ... Phonetically, the intermediate tones are liable to confusion with the contrasting simple tones, but phonologically they function more like the contrasting complex tones. A feature of middle-class speech is that the distinction between intermediate and complex is lost, and the complex tones replace the intermediate.

Given the intermediate type, we might conclude simply that Scouse has a

rather inventory of tones than RP. Alternatively, we can take the analysis further by investigating the rules for the use of tones. Consider the tones used for yes/no questions, and in particular the question *Are you from Liverpool?* According to the handbooks, such as O'Connor and Arnold (1973), the normal RP tone will be a rise, in this case on the word *Liverpool*. Scouse, on the other hand, will have an intermediate tone skipping down from high to low pitch. In more detail, the pitch makes a preliminary rise through /l/ and reaches high pitch on the accented vowel /ə/, and then it suddenly skips down to a low pitch on /pu:l/. Superficially, the Scouse and RP tones are completely unconnected.

However, despite the handbooks, it is actually rather common in English to ask a yes/no question with a fall-rise, and this is the link between the Scouse and RP tones:

- (i) RP: . . . . . (ii) 'common': . . . . . (iii) Scouse: . . . . .

What we have called the 'common' tone looks more basic than the others, and could be the source from which they derive: RP has suppressed the initial fall, whereas Scouse has suppressed the final rise. Both suppression rules are sociolinguistically significant. As already mentioned, middle-class Liverpudlians are likely to use the whole complex fall-rise rather than the intermediate type skip-down. In the wider context of English as a whole, the RP simple rise is possibly archaic, as the suppression rule has been dropped. The simple rise is certainly used in linguistically conservative parts of the country, such as in Lancashire and Yorkshire; possibly elsewhere there is a change between generations, older people using the rise, and younger people the fall-rise.

Other apparently alien features of Scouse intonation can be shown to be closely related to English intonation as a whole. What is emerging from a study of Scouse intonation—early stages of which were reported in Knowles (1974)—is a set of ordered rules for the use of tones in English; late rules modify tones slightly and determine details of their realization. Sociolinguistic variation seems to be confined to these later rules.

## 6 Articulatory Setting

Important as variables in segments and intonation may be, we have yet to tackle what is possibly the most important source of all for sociolinguistic information. This is the 'Scouse voice', the total undifferentiated characteristic sound of a Liverpudlian. Articulations are usually described with reference to the minimum number of organs which are necessarily involved. When describing /b/ for instance, we refer to the lips, the velum and the vocal folds; but we do not specify the width of the pharynx, the position of the hyoid bone or the height of the mandible. Much of this secondary activity facilitates the primary articulation—e.g. the efficient voicing of stops depends on a sufficiently low supra-glottal air-pressure, which in turn depends on the state of the pharynx—but it is also sociolinguistically determined. For any

dialect, the organs of the vocal tract have certain preferred positions, which may differ from those they have in the physiological state of rest. The movements away from and back into the preferred positions gives a variety of speech its characteristic 'colour'. The preferred shape of the vocal tract is known as the *articulatory setting*. Settings are in fact a very old idea—see e.g. John Milton's *Of Education* (1644)—which has become respectable again following Honikman's article (1964), and the work of Laver (1968). They are described by traditional dialectologists, e.g. Holmer (1942), as well as by some sociolinguists, such as Trudgill (1974a).

The Scouse setting has been described in detail elsewhere (Knowles, 1974). Of most interest here are the setting of the velo-pharyngeal mechanism, and the setting of the jaw. The velo-pharyngeal mechanism involves a group of organs acting together as a unit, for example in deglutition. In Scouse, the centre of gravity of the tongue is brought backwards and upwards, the pillars of the fauces are narrowed, the pharynx is tightened, and the larynx is displaced upwards. The lower jaw is typically held close to the upper jaw, and this position is maintained even for 'open' vowels. The main auditory effect of this setting is the 'adenoidal' quality of Scouse, which is produced even if the speaker's nasal passages are unobstructed.

The setting of the tongue effectively velarizes all consonants. This is most noticeable in voiceless apical consonants like /t, s, θ/, but certainly affects the quality of others, including /m, v, dʒ/. Velarized /r/ sounds rather like a simultaneously apical and uvular approximant. Scouse /l/ does not vary from 'clear' to 'dark' as in RP, but is velarized in all positions; consequently it sounds 'dark' where RP has the 'clear' allophone, and perversely 'clear' where RP has its 'dark' or pharyngealized /l/.

The effect of the jaw setting is that the tongue has to move in a restricted space; being at the same time pulled to the back it loses much of its natural mobility. Tongue-tip consonants are made instead with the blade; for /r/, the tip is not curled back, but just slightly raised, and in this position it often strikes the roof of the mouth in passing. Scouse /r/ is often perceived as a 'tap' or a 'flap'.

Vowels—other than back ones—are incompatible with the setting, at least as vowel production is usually understood. Vowel quality depends not so much on a particular articulatory position, as on the auditory correlates of the lower formants. Corresponding vowels in Scouse and RP are recognizably similar in quality, but whether they are produced with anything like the same tongue shapes is an open question. Tongue shape must be affected when an 'open' vowel is produced with a close jaw, or a 'rounded' vowel with spread lips.

An interesting question with regard to settings is exactly what it means to exaggerate the setting, and 'put on' a particularly 'thick' accent. To some extent, the features of the setting are gradable; the degree of velarization can be increased or diminished, the jaw can be more or less close, and so on. More interesting is what happens when the setting conflicts with the requirements of the phonology. To produce an [s] for instance, the tongue has to be grooved to direct a narrow jet of air against the cutting edge of the upper front teeth; the setting prefers a velarized laminal articulation. The tongue is sufficiently

flexible to combine efficiently any two of these three demands, and the other is overridden. In most cases the grooving has priority, and either the velarization pulls the blade back leaving the tip to make the articulation, or else the velarization is weakened. In a 'thick' accent the setting might be given priority, reducing the efficiency of the grooving, and allowing the air to escape more diffusely, thus making [s] more like [ʃ].

Although the setting is the most important component of the 'Scouse voice', there are others which we can only mention here. One involves the integration of phonology and setting with facial gesture, which sometimes modifies lip-rounding to labio-dental approximation. Another concerns the switch from speech breathing back to physiological breathing at the end of an utterance, which produces in Scouse such phonetic exotica as aspirated fricatives, as in *bush* [buʃh]. A third component is the degree of overlap between segments, or more interestingly, the lack of overlap, which gives rise to such pronunciations as *shrink* [ʃɹɪŋk].

## 7 Conclusion

The conclusions to be drawn from the above examples and discussion depend on the relative importance one attaches to the two sides of sociolinguistics. If one is more concerned with the social side, with the effect on speech of the social situation and the standing of the speakers, then the distortion of the data inherent in Labov's 1966 model is possibly acceptable. Even if we transcribe /t/ inaccurately, and our interpretation of (Λ) is misconceived, the results we get concerning the social distribution of the variables may not be too far wrong. The problem is that we may have anticipated the results in the way we transcribe and interpret the variables.

If, on the other hand, we are more concerned with the linguistic side, with the phonetics and phonology of variation, or if we wish to describe stratification in a dialect, then Labov's 1966 model is at best inadequate, and at worst misleading. If we were to force the variables discussed above in 3.1-3.5 into linear scales, and then restricted our description of Scouse to a detailed analysis of this small set, we would give a completely false idea of the dialect.

What we need to study variables properly is a theory of sociolinguistic phonetics. Several models of linguistic phonetics have been proposed over recent years (Jakobson and Halle, 1956; Chomsky and Halle, 1968; Ladefoged, 1971) to account for the possibilities of phonological contrast. Sociolinguistic phonetics, on the other hand, is concerned with the options open to the speaker at different stages in speech production, and the way these options can be used to convey sociolinguistic information about the speaker. A theory of sociolinguistic phonetics will also clarify the status of the several different kinds of rule we have described informally here in our discussion of variables in Scouse.