

Television is also a factor in language change: Evidence from an urban dialect¹

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Abstract

Within quantitative sociolinguistics, the influence of the broadcast media on language change has been rejected as implausible for many years. Drawing on the insights of theory and method from research in mass communications studies, we present results from a project which was specifically designed to investigate speculations about the influence of television on three sound changes in progress in Glasgow, Scotland. The results provide the first empirical support for the role of dialect contact in the diffusion of these changes, alongside engagement with particular social practices, and to a lesser extent, overt language attitudes. All three changes also show significant statistical correlations with engagement with a popular television show based in London. Interpretation of the statistical models suggests that we should seriously entertain the possibility that engagement with television is a contributory factor in these changes. However our data are not consistent with a ‘stimulus-response’ model of media influence, still implicit in much sociolinguistic discussion of this issue. Rather we offer an alternative conceptualisation of media influence which shifts the focus to the speaker/viewer engaging with the media within their immediate social context. Since very little is known about social and linguistic processing of language from the broadcast media, we conclude with proposals for further research in this area.

1. Introduction

The advent of television was one of the major sociological phenomena of the twentieth century. As it became more widely accessible, a direct influence of television programmes on the behaviour of individuals was both feared and expected, and hoped for and anticipated by those who wanted to use the medium for advertising. Now, in the early twenty first century, it is recognized that the feelings, thoughts, and actions of viewers may be affected by the television programmes that

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they watch, but at the same time, that any notion of the ‘influence’ of television, like that of the other broadcast media, is immensely complex, thoroughly bound up with other social factors, and fundamentally dependent on the viewers themselves in their locale (e.g. McQuail 2005, Curran 1996).² Early experimental work showed that viewers do not simply imitate media-represented actions (Bandura et al 1963), nor do they passively absorb information and ideas. Rather they actively negotiate their own socially-relevant interpretations within their own communities as they engage with the media (cf Hall 1980). This does not mean that engaging with the broadcast media does not affect cognition and behaviour, but rather that influence is itself mediated and constrained by viewers embedded in their local context (cf Philo 1999). Media influence cannot be considered apart from the social and cultural contexts which individuals share and shape.

Language was also expected to change in response to the presentation of particular linguistic models on television, especially standard ones. This was acknowledged for the spreading of vocabulary, idioms and catchphrases, open systems of language. But sociolinguists carrying out empirical studies of language variation did not find evidence for the anticipated standardization of English dialects, either in North America or in the UK (Labov 2001; Milroy and Milroy 1985). The influence of television on aspects of the closed systems of language (e.g. grammar, phonology) has been so thoroughly rejected by many quantitative sociolinguists that it has become akin to a language ‘myth’ (Chambers 1998), a topic too trivial for serious linguistic contemplation (Eckert 2004: 395).

Interestingly, and particularly so for this branch of linguistics, whose theories are founded on systematic observations of the relationships between social factors and linguistic patterns, direct empirical evidence for such a position seems to be lacking. Most discussion refers to negative and/or circumstantial evidence, which in turn seems to rest on an implicit view of how television influence might operate on the linguistic system at a subconscious level. Influence seems to be understood in terms

² In reviewing previous work on television influence, we will use the label ‘television’ and ‘media’ interchangeably to refer to the ‘broadcast media’ and ‘television’, which are of most interest for spoken language, reflecting a common practice in the linguistic and media effects/mass communications literature. We do not include research into the impact of new communications media on language; cf e.g. Tagliamonte 2006).

of an automatic response to frequent instances of passive exposure to media language, resulting in the widespread simultaneous transfer of linguistic information (form, constraints, and function) to the speaker/viewer. So, for example, the continued diversity of English dialects, or local differences in the fine-grained social and linguistic constraints of linguistic features across dialects (and between media and community usages), despite the widespread availability of media language, are taken per se as conclusive evidence that the broadcast media may not influence language. But just as early views of media influence on social behaviour in terms of an isolated mechanism of ‘stimulus/response’ were put aside in the mid-twentieth century for those which included interpersonal communication and more socially-informed modelling of audience reception (Klapper 1960), so sociolinguistic theory also needs to reconsider the notion of media influence in terms of the complex interaction between media representations of language and their reception at the social and linguistic levels by individuals within their communities (Holly et al 2001; cf Coupland 2007:184f.).

But reconceptualising what is meant by television influence on the language system of a viewer does not equate to an assumption that aspects of language are shifted during and/or after reception. On the one hand, our understanding even of the most basic aspects of the phonetic processing of speech signals which do not allow interaction and are presented audio-visually, is utterly rudimentary. We do not know what aspects of linguistic information may – or may not – be learnt during such a process, and, more importantly for sociolinguists, the extent to which this might differ from what happens during interaction ([REF]). Nor do we know how such linguistic processing relates to the social and cultural decoding of the symbolic functioning of media language with respect to localized codes of meaning (cf Androustopoulos 2001).

On the other, we need to build up a body of sociolinguistic evidence which will allow us to assess whether it is reasonable to infer that change in localized linguistic patterns may take place in a way which also includes factors to do with television and/or the broadcast media. In contrast with the mass of research on the involvement (or not) of other social factors on variation and change (Labov 2001), we know of only four studies to date which directly include reference to the potential relationship

of speakers' exposure to broadcast media with their observed language usage: two report significant correlations (Naro 1981; Naro and Scherre 1996); two do not (Saladino 1990, Carvalho 2004). All share the sociolinguistic context of media models representing more socially-prestigious varieties, to the extent that speakers articulate their desire to emulate televised models (Carvalho 2004). Again, we do not know whether or how consciously expressed volition to emulate actually affects the fine-grained processing and/or learning of systemic aspects of language from broadcast media. But it may differ from those sociolinguistic situations where such shifting is not available for comment, and where media influence is imputed at a subconscious and involuntary level.

This paper offers new data to contribute to the latter goal, and to help develop our understanding of the influence of television on change to core aspects of the grammar. Drawing on the insights of theory and method from research in media effects and media studies, we present the results from a project which was specifically designed to investigate speculations about media influence on some sound changes in progress in Glasgow. We begin by introducing the immediate context, the sound changes in the UK and in Glasgow, and then give an outline of television and language change in quantitative sociolinguistics, with other considerations which motivate the serious investigation of television within sociolinguistics. We outline the methodology of our study, and present the evidence for language variation and change in three phonological variables, which are the dependent variables in a set of large-scale multi-factorial analyses, exploring the potential relationships between phonetic variation and a range of social factors, from anticipated links with dialect contact, language attitudes and social practices, to those relating to the broadcast media, and especially television.

The results provide the first empirical support for the role of dialect contact in these changes, alongside engagement with particular social practices; language attitudes appear to be less important. All three changes also show robust statistical correlations with engagement with television, albeit differently depending on the extent to which the sound changes are progressing within this community of speakers. The interpretation of the statistical models suggests that we should seriously entertain the possibility that television is a contributory factor in these changes in progress.

However, the current lack of (socio)linguistic and phonetic knowledge about the processing and socially-embedded linguistic reception of television language is so profound that we are not in a position to explain now the mechanisms by which television might be exerting an ‘influence’ on phonological change. Rather we conclude by offering some suggestions, and outline a framework for further, much needed, research in this area.

2. Background

2.1. The ‘problem’ of rapid consonantal change in Glaswegian

The suggestion of television as a factor in language change in Glasgow arose from the discovery that Glaswegian, a traditional urban dialect of Scottish English, is participating in a set of consonant changes which are spreading rapidly through urban accents in the UK (Stuart-Smith 1999). The changes in question are most typically associated with London’s Cockney accent (Wells 1982): TH-fronting, or the use of [f] for (θ), in e.g. *think, tooth*; DH-fronting, the use of [v] for (ð), in e.g. *brother, smooth*; L-vocalization, the vocalization of coda /l/ in e.g. *milk, people*; T-glottalling, the use of [ʔ] for /t/ in e.g. *butter*; and R-labialisation, the labialisation of /r/ in e.g. *right, very*. Some or all of these features are now widespread in urban British accents and used predominantly by working-class adolescents with low social and geographical mobility (Foulkes and Docherty 1999; Kerswill 2003, Foulkes and Docherty 2007). Three of these consonant changes, TH-fronting, DH-fronting, and L-vocalization, are also found in Glasgow, with a similar social distribution, though DH-fronting was only just apparent (Stuart-Smith et al 2007).³ The innovations were found alongside changes to traditional Scottish features, e.g. derhoticisation of postvocalic /r/, in e.g. *car*, and the firm maintenance of local non-standard Scots variation, e.g. [h] for /θ/ in e.g. *think*. Stuart-Smith et al (2007) found that younger working-class Glaswegians are exploiting an array of variants, local *and* non-local, which are together evaluated as non-standard and differentiate them from middle-class adolescents, and which can

³ T-glottalling is already so well attested in Glaswegian, even to the extent that some consider Glasgow to be the original home of the glottal stop (Macafee 1983), that it seems difficult to consider it a ‘supralocal’ feature; R-labialization is very rare and seems still to be an idiolectal feature in Scotland.

be understood with reference to class-based language ideologies closely linked to the recent social history of the city.

Modelling of the transmission of these changes solely in terms of face-to-face interaction afforded by mobility and contact between dialect speakers (e.g. Trudgill 1986) seemed difficult given the distance (Glasgow is 450 miles from London), the lack of opportunities for personal mobility by the innovating speakers (cf Britain 2002), and the speed and timing of their appearance in Glaswegian vernacular. The media themselves decided that watching television must be the key factor, and in particular, the popular London-based soap drama, *EastEnders*, recasting the appearance of these Southern English innovations in an otherwise broad Scottish urban vernacular as ‘Jockney’ (‘Jock’ = Scot + Cockney), e.g. ‘Talkin’ Jockney – Scots youngsters’ language is changed by *EastEnders*’ (*Daily Record*, 27/06/00).

But whilst these reports were being published in the late 1990s, this was not the first time that watching television programmes representing working-class London life had been blamed for spreading exactly these changes in the UK. Trudgill’s real-time change study of Norwich revealed a sharp increase in TH/DH-fronting in 1983, fifteen years since his first survey, also in young working-class speakers, and this too had been linked ‘to the influence of TV programmes that have Cockney heroes popular with young people’ (Trudgill 1988: 43). At the same time, Trudgill’s (1986) dialect contact model of language change, which takes speech accommodation during face-to-face interaction as the mechanism for the transmission of variation, necessarily rejects watching television as a possible factor. Tackling the similar paradoxical evidence of speakers showing these changes who also seemed less likely to have personal contact with Londoners, Trudgill (1986: 54) speculated that the changes resulted from a combination of factors working together, including less overt forms of dialect contact, and attitudes towards the ‘street-sophisticated toughness’ of Cockney. He also wondered whether the ‘sheer speed [of the change] may be due to a ‘softening-up’ process produced by the engendering of favourable attitudes through TV programmes’ (Trudgill 1988: 44).

More recently, alternative views have been expressed about the possibility of the media, and especially television, being involved in the rapid spread of TH-fronting

and other features in the UK, at least in part because of its occurrence in less mobile youngsters. Williams and Kerswill (1999) speculate about the potential influence of exposure to linguistic ‘youth norms’ via youth-orientated programmes (after Foulkes and Docherty 2000). Foulkes and Docherty (2001) wonder whether passive exposure to linguistic features in the media might act as some kind of catalyst for language change.

Thus television has been mooted as a possible factor in these changes, but there is no evidence to support or reject such an idea. The purpose of this paper is to present a study which directly investigates the role of a range of social factors including television in language variation and change in Glasgow. From the outset some observations about the nature of these changes will be useful to inform our discussion:

(1) The linguistic constraints on the use of the new variants for all three variables in Glaswegian are necessarily different from those of Southern English English accents because of existing local non-standard Scots variation. For example, /θ/ has a local variant [h] which has a restricted lexical distribution and may only occur in word-initial and word-medial position (e.g. [h]ink, some[h]ing). This means that the use of [f] is less likely in word-initial and word-medial position, and more likely in word-final position (Stuart-Smith and Timmins 2006). Were television found to be a factor, we could not at the same time assume any kind of wholesale adoption of linguistic form with linguistic constraints from television model to local vernacular (cf Buchstaller and D’Arcy 2009: 322).

(2) The social meaning of the innovations in Glasgow are also particular to the local context; they have been reallocated and reinterpreted as an integral part of the local repertoire of Glasgow adolescents (Stuart-Smith et al 2007). Whatever the mechanisms of transmission, we could not assume that they had been lifted ‘off the shelf’ (Eckert 2004: 395; Milroy 2007), if that also implies the simultaneous transfer of all aspects of form and function, linguistic and social (cf Buchstaller and D’Arcy 2009).

(3) It is not so much the existence of the innovations in Glaswegian, and other urban accents across the UK, but the speed and timing of their

emergence in the local communities, which is at issue. There are reported instances of TH-fronting in Glasgow as early as the 1950s (Stuart-Smith et al 2007), and again sporadic mention of all in the early 1980s (Macafee 1983), but the changes only seem to have taken off since then. This pattern seems to be in line with their overall pattern of diffusion observed across the UK (Kerswill 2003). It seems likely, despite the lack of direct evidence, that dialect contact might be involved in some way.

(4) Our earlier research indicates that local identity construction and locally salient language ideologies are also important. As Trudgill (1986: 54) argued for the Norwich changes, so here we should expect to find a combination of factors to be involved.

(5) The sound changes are typically ‘natural’ to the extent that they are frequently observed elsewhere (e.g. Stuart-Smith 2004). Coronal realizations of the labiodental fricatives and vocalization of /l/ are common in the speech of very young children (cf Trudgill 1986: 55; Kerswill 1996). They also occur as peripheral and phonetically conditioned variants in the realizations of those who have fully acquired the phonemes (e.g. Lavoie 2001; Scobbie and Wrench 2003). We are therefore dealing with the spreading of innovations which are in some senses latent in the systems of most speakers of British English. Our task is to attempt to discover the various mechanisms that have enabled speakers ‘to redeploy resources already available to them’ (Foulkes and Docherty 2001).

Before describing our study we offer some theoretical and methodological context. We begin with the view from quantitative sociolinguistics before moving to a broader discussion of perspectives on media influence on social behaviours from mass communications and diffusion research. The last part of this section considers alternative views of language use and the broadcast media, including a socially-integrated approach to media influence on language change.

2.2. Television and language change in quantitative sociolinguistics

2.2.1. Arguments against the influence of the media on language change

The dominant view of television influence in quantitative sociolinguistics is probably summarized most clearly by Labov (2001: 228): '[a]ll of the evidence generated in this volume and elsewhere points to the conclusion that language is not systematically affected by the mass media, and is influenced primarily in face-to-face interaction with peers'. The arguments against the influence of the broadcast media on change to core aspects of language are based on different kinds of evidence.

First, there is the uncontroversial observation that despite popular beliefs that the broadcast media would lead to a widespread standardization of regional dialects, sociolinguistic studies on varieties of English, have shown, and continue to show, both that regional dialects are not rapidly converging to the standard, and that there is vigorous maintenance of local dialect diversity (e.g. Milroy and Milroy 1985; Chambers 1998; Labov 2001).

Second, it does not seem possible for children to acquire their first language and/or primary grammatical or phonological contrasts solely from exposure to language presented via television (Chambers 1998; Naigles and Mayeux 2001; Kuhl et al 2003). Empirical evidence for first language acquisition from television appears to be largely restricted to lexical items, as shown for example, by the research on *Sesame Street* by Rice and colleagues (e.g. Rice et al 1990; cf Naigles and Mayeux 2001).

Third, it has been argued that media models of language may not provide sufficient instances of changes in progress (Chambers 1998; Labov 2001: 385; Labov forthcoming, chap 9, 15; Dion and Poplack 2007) and that media language is more likely to lag than lead in changes (Labov 2001: 385; Chambers 1998; though see Tagliamonte and Roberts 2005). The difficulty of pinpointing specific representations of variation in the media as potential stimuli for language changes is further complicated both by the fact that media language is itself subject to alteration and adaptation with respect to particular audiences (Milroy and Milroy 1985: 29f. after Bell 1984), and that there seems to be a complex reciprocal relationship between media representations of linguistic variation and actual community norms (Tagliamonte and Roberts 2005; cf Coupland 2009).

Fourth, the invocation of media influence to explain only some changes, like the spread of TH-fronting, seems ad hoc (Trudgill 1988: 44), and potentially difficult, especially if one also assumes that media influence entails the simultaneous, direct transmission of a variant in several places at once. Current evidence suggests geographical diffusion (Trudgill e.g. 1986: 40).

Fifth – and finally – if one looks beyond sociolinguistics to the modelling of the diffusion of innovations, which is assumed also to be relevant to the spread of linguistic change, the evidence of numerous studies establish two generalizations. First, interpersonal channels are relatively more important at the persuasion stage of the diffusion process, whereas mass media channels are more instrumental at the knowledge stage (Milroy and Milroy 1985:30, after Rogers with Shoemaker (1971), now Rogers 2003: 205). Second, at the level of particular individuals (‘opinion leaders’) who play a role in diffusing innovations to the population, far more influence is assigned to personal contacts than the mass media (Labov 2001: 356f, after Katz and Lazarsfeld 1955). This last argument also brings us to the main underlying reason for rejecting the mass media, the indisputable assumption that the mechanisms for language change must be located largely in the complex processes of personal interaction when people talk with each other in their daily lives (Trudgill 1986; Chambers 1998; Labov 2001; cf Auer and Hinskens 2005).

This leaves the media with a restricted role in language change. The mass media are thought to be involved in the spread of lexical items, idioms, and catchphrases (e.g. Trudgill 1986; cf Charkova 2007; Rice et al 1990), to raise awareness and/or knowledge of linguistic varieties and variation (e.g. Milroy and Milroy 1985: 29f.), and potentially to alter attitudes towards innovative variants, which might in turn promote their adoption (Trudgill e.g. 1988). Change to core features of grammar in conjunction with the broadcast media are regarded as the conscious imitation of media models, for example where there is a decision to adopt a standard variety which may be linguistically distinct from a local dialect (Trudgill 1986: 41), or where a community may show voluntary orientation towards media-represented language norms, as in Carvalho’s (2004) study of phonological change in a small Uruguayan border town, whose speakers admit that they ‘want to sound like the guys on TV’, in

this case, in shows and soap dramas produced and broadcast by their close neighbour, Brazil.

2.2.2. Television as a factor in previous quantitative studies

Factors associated with television have very occasionally been included in variationist studies. Naro (1981) reports a significant correlation between informants' reported exposure to 'novelas' (soap operas) and an increased use of a standard syntactic construction in Brazilian Portuguese. Interestingly, he immediately reinterprets the television exposure variable into one which indicates 'the speaker's degree of penetration into the culture of the surrounding higher socio-economic levels' (p.86), effectively reversing any inference of causality from exposure to the television programme to the viewer who watches the programme. Naro and Scherre (1996) again report significant correlations for the same variety, but with a combined media variable; they are again reluctant to interpret these results in terms of media influence on language.

By contrast, Carvalho (2004) did not find significant correlations between exposure to Brazilian Portuguese television programmes and the innovative palatalization from Brazil spreading in her Uruguayan Portuguese speakers, though she did find that her informants themselves attributed this feature, and others, to attempts to emulate socially-desirable language represented on Brazilian television shows. The South American studies share a sociolinguistic context where the varieties of Portuguese broadcast on television are socially prestigious, and to which those speaking non-standard, or even non-native forms, overtly orientate. Voluntary imitation of media models is one of the few mechanisms for media influence on core grammar accepted by Trudgill (1986). Note however, that reported exposure to a nationally prestigious standard variety on television does not necessarily entail a positive relationship, as Saladino (1990) showed in her study of factors involved in the standardization of a Southern Italian dialect.

2.2.3. Inferring media influence from analysis of comparative corpora

A strength of the variationist paradigm is that it also permits the investigation of contemporary speech corpora to tackle sociolinguistic questions. A few corpus studies have compared linguistic usage in the broadcast media with community

norms, either implicitly or explicitly. Tagliamonte and Roberts (2005) looked at intensifiers, such as *really*, *totally*, *so*, as used by the characters in the popular American television show, *Friends*. Their results showed similar patterning to that found in contemporary spoken English, but also that the frequency of *so* in the female characters corresponded with the popularity of the show. They concluded both that ‘media language actually does mirror what is going on in language’ and that ‘this media data appear to pave the way; it is more innovative than the general population’ (p.296).

Results of this kind, which are unfortunately still fairly isolated, support Coupland’s (2007) arguments that the broadcast media can create new contexts for linguistic variation. The question then is whether linguistic level might intersect with this. For example, does lexis, or particular sets of lexical choices, lend themselves to innovative usage in media language because of the extent to which they facilitate pragmatic – and dramatic – expression for developing stylized personae in unscripted shows, and the development of characterisation in drama? This in turn might relate to the dramatic and/or performative nature of everyday spoken discourse in which the same variants are also found (cf e.g. Coupland 2007: 186). Having said that, variationists are still undecided about the role of the broadcast media in the rapid and pan-English diffusion of one variant, the quotative *be like* (e.g. I was like, ‘That was so cool’). This variant shows some similarities with the British consonantal innovations in that it is spreading very rapidly and it appears to be at least similar in form across geographical spaces, so it appears to be an ‘off the shelf’ change (Milroy 2007), but also on closer inspection shows rather different social and linguistic patterning (Buchstaller and D’Arcy 2009). Three recent studies overtly refer to media influence.

Dion and Poplack (2007) compared usage and patterning in *be like* in a selected corpus of American English film and television shows with that of a corpus of speech from Canadian Anglophones in French-speaking Quebec. The different linguistic constraints for the feature across the two corpora, as well as the very low number of instances, particularly in scripted media, were taken as evidence that the spread of this innovation amongst this community is not being facilitated by the media. Buchstaller (2008) entertained the possibility of media influence in transmitting the

form in her comparative study of British and American usage, but was also concerned that the differing social and linguistic constraints in the use of the variant across the two communities present an obstacle for assuming transmission by a process that would involve the wholesale adoption of form and function (i.e. media influence). These concerns are reiterated more strongly when a third variety, New Zealand English, is included (Buchstaller and D’Arcy 2009).

Note that the rejection of media influence in the transmission of *be like* in these studies seems to depend on a ‘stimulus/response’ model which necessarily entails the blanket imposition of form and function via frequently encountered exposure on a passive audience. If we remove that assumption, as we must after reviewing research in mass communications studies (see below 2.3.2), we are left with the observations that *be like* has spread rapidly through varieties of English, and that – as for the Glaswegian consonantal changes – there are locally-determined constraints on linguistic and social patterning. It seems likely that *be like* is spreading by means of interpersonal channels. The broadcast media might be involved in these changes, or for some communities and not others, but the fact is that the evidence adduced to date does not allow us to make a firm decision either way.

Moreover while corpus analyses of media language are important in that they reveal the nature of the media models being presented to speakers, considering media influence only by using evidence from comparing fine-grained analysis of media language with data from contemporary speech corpora is difficult. Another strand of the project whose results are reported here was the comparison of a close phonetic analysis of ‘media-Cockney’ of some London-based television programmes with that of the Glaswegian vernacular of the adolescents who watched them ([REF]). The results showed little coincidence in acoustic vowel qualities between community and media-language, and that was also expected, since vowel variation in Glasgow has never been linked to the media. There were similarities in some consonant features, but only at the most superficial level in that some occur in media-Cockney and in Glaswegian. Closer inspection showed that: some Glaswegian informants used more of consonant innovations than the media-Cockney characters; these features mostly do not show patterning according to gender, and if they do, not in the same direction as in media-Cockney; and the linguistic constraints of these innovations in

Glaswegian are different, and necessarily so, from those of media-Cockney, given existing local non-standard variation.

Like Dion and Poplack's (2007) results, these findings are not consistent with any model of media influence that assumes that speakers are either copying these features, replete with their original sociolinguistic constraints, or passively absorbing them, form and function from exposure. It is also very difficult to know in frequency terms what might constitute 'enough' instances of a feature for it to be appropriated by an individual engaging with a particular programme, especially if we are also ignorant about how that same feature might be circulating – and functioning – within that individual's local linguistic environment. Indeed we know from work on linguistic frequency, that very low frequency items can be as salient as high frequency items (Goldinger 1998). If television is a factor, as we suspect it is for the Glasgow changes from the evidence that we will present below (it is impossible to say for the Canadian data), it needs to be modelled in a different way, and is difficult to infer from this kind of comparison. The reviews in the next two sections will help provide a theoretical grounding for a possible conceptual framework.

2.3. Perspectives on media influence from mass communications research

2.3.1. Media consumption and engagement

In the early twenty-first century the broadcast media form 'part of the global sociolinguistic condition of a speech community' (Androutopoulos 2001: 4; cf Coupland 2009). Simply in terms of the possibility for exposure to media language, the statistics for television ownership and viewing are impressive: Bushman and Huesmann (2001) provide figures for the global ubiquity of television sets, and hours of viewing per day for American households, showing the increase of viewing from 4.5 hours per day in the 1950s to 7.25 hours per day in 1998. Watching television has become the main leisure activity apart from sleeping for people of all ages (Bushman and Huesmann 2001; Strasburger 1995: 2; see also British Heart Foundation 2000: 4). The mass media, including television, are a social institution (or set of institutions) which play an integral role in the everyday life for most of the world's population, and which constitute a bundle of social factors whose potential relationship with

language warrants the same kind of attention that is routinely given to other social factors by sociolinguists.

The media provide much more than opportunities for mass exposure to information, events, and associated instances of language use, fictional and otherwise. Some television programmes constitute social phenomena. A good example of this is the English popular drama, *EastEnders*, a ‘soap’, which since 1985 has portrayed the detailed personal lives of a small group of mainly working-class, London Cockney families who live about ‘Albert Square’ in ‘Walford’, a fictional area of the East End of London. The half-hour episodes of *EastEnders* are screened 4 times a week during prime viewing time, repeated again later each viewing night, and are collected together in a weekend ‘omnibus’ edition, enabling viewers to watch again, and/or catch up on missed episodes. The televised programmes are supported by an official BBC website, giving plot summaries for each episode. The exact figures for the viewing audience vary over the years that the programme has been on air, but at the time of our data collection *EastEnders* was particularly popular, attracting around 18 million viewers per episode, almost one-third of the UK population. Indeed, the viewing of key episodes have even been linked to exceptional surges in electricity demand (National Grid 2001). Such large audiences result in widespread informal discussion of plot, as well as of the lives, feelings, and potential actions of characters carrying key storylines. Thus, alongside substantial potential exposure to the media representation of the ‘Cockney’ accent (dubbed ‘Mockney’ by the media), the wide appeal and the format of the drama, which concentrates on the lives of seemingly ordinary people, means that viewers can and do become highly engaged emotionally and psychologically with the characters and their stories (Buckingham 1987; Gillespie 1995).

2.3.2. Researching the effects of media on social behaviours

The media are not only exceptionally prevalent, and subject to high levels of viewer engagement, but it has also been long recognised by those who work in mass communications, media effects, and media studies, that they also have effects on social behaviour (e.g. McQuail 2005). At the same time, the nature, intensity, duration and even the description and investigation of these effects is disputed. Most research falls into two main paradigms (e.g. McQuail 2005; Gunter 2000). Within the dominant paradigm, early

research until the 1960s tended to work with assumptions of a 'powerful media', often described in terms of transmission models with a source ('stimulus') sending a message to a receiver, and provoking a largely unwitting response. Systematic investigation to test this, for example, the Payne Fund studies of the 1930s looking at the impact of film on children, or electoral campaign research of the 1940s and 1950s, failed to find evidence for direct effects, and led to a revised notion of 'limited effects' for the mass media, which work in conjunction with other social factors, summarized clearly by Klapper (1960: 8): 'Mass communication ordinarily does not serve as a necessary and sufficient cause of audience effects, but rather functions among and through a nexus of mediating factors and influences'. Such results led to a shift, with some researchers concentrating on media use, and others on 'mediated effects', assuming more complex models which allow for audience response and processing within their social and cultural context. Work in this paradigm continues to rely largely on quantitative methods, avoids the assumption of 'direct' behavioural effects, and assumes that if media influence is involved, this will be in conjunction with a range of other social factors (e.g. Singer and Singer 2001).

The 1970s saw the development of different approaches, which shared an emphasis on qualitative methodologies using deep analysis of the potential meaning of media messages. Particularly influential has been the 'cultural studies/interpretative' approach, which assumes that the impact of television lies in the interpretation of numerous potential meanings of media texts by the audience in the context of their communities (e.g. Hall 1980; cf Curran 1996; Gauntlett 1998). Qualitative work in this alternative paradigm emphasizes the primary role of the audience, helping to build an understanding of the cognitive impact of the media in terms of individual responses to the media. It proposes that viewers are active decoders who select what they want to take from the material offered, and as such temper media influence (e.g. Fiske 1987), though not all conclude that viewers are able to resist (e.g. Philo 1999). Despite the split between the two paradigms, there is a long-standing desire for the insights and methodologies of both to be integrated (e.g. Gunter, 2000: 9).

Early research on media effects on cognition in its broadest sense was preoccupied with attitudinal change. However, while researchers expected to find that the media would influence and change attitudes, and that attitudinal change was linked to

behaviour, evidence was difficult to find (Gunter 2000: 195). More recently, research on 'cultivation effects' by Gerbner and colleagues, considered 'the degree to which the different media have come to interpose themselves between ourselves and any experience of the world beyond our immediate personal environment' (McQuail 2005: 64). This argues both that, for example, the television consistently portrays a more violent world than reality, and that heavy viewers are more likely to show television bias in their perceptions of real violence. It has also been recognized for a long time that some viewers may exhibit para-social interaction with characters from favourite dramas, with whom they enter into vicarious psychological relationships, almost as extended members of their family and friendship circles (Horton and Wohl 1956; Abercrombie 1996).

Not surprisingly, most research into the largely unplanned effects of the broadcast media, and especially television, on social behaviour, have focussed on antisocial effects, such as aggression and violence. While there is some evidence from correlational studies and behavioural experiments to indicate positive links between media violence and aggressive behaviour (e.g. Lefkowitz et al 1972), it is interesting for sociolinguists to note how the influence of the media on violence is framed conceptually. For example, Bushman and Huesmann (2001: 223-4) preface their review: 'The theme of this chapter is *not* that media violence is *the* cause of aggression and violence in our society, or even that it is the *most* important cause. The theme is that accumulating research evidence has revealed that media violence is *one* factor that contributes significantly to aggression and violence in our society [their emphasis]'.

Contemporary media research rejects the old stimulus/response model still implicitly assumed by the kinds of arguments which have been put forward to reject media influence on language in quantitative sociolinguistics. Rather it is assumed that media influence may be identified in quantitative terms, as a contributory factor alongside other social factors, and/or understood qualitatively as active viewers appropriating material from the media in ways fundamentally determined by their social context (cf Askew 2002: 5). Were television to have any influence on linguistic systems, we might expect it to be identified in conjunction with social factors, and for its mechanism(s) to relate, at least in some ways, to those assumed to operate for the reception of media texts more generally. Again, if the individual – in their local social context – is key to understanding the decoding and appropriation of media material in general (Hall 1980), and at the same

time we recognize the broad split in genre and format between ‘authority’ (e.g. news broadcasting) and ‘entertainment’ (e.g. drama) media, we might predict less potential impact from authority media, which usually represent standard varieties distanced even from viewers’ own regional standards.

2.3.3. Diffusion of innovations and the media

The changes spreading across UK dialects, and Glaswegian, are sociolinguistic innovations. A subdivision of mass communications research deals with the diffusion of innovations (e.g. Rogers 2003), whose modeling of the transmission of innovations through communities over time as an S-curve is also familiar from observations of language change over time (e.g. Milroy 1992). While diffusion is assumed to be the result of social processes, the mass media has always been assumed to play a role particularly in developing and spreading awareness of an innovation. However, when the behaviour of individuals within the adopting community is described in terms of their readiness to adopt (‘adopter category’), this generalization has to be refined to account for another observation. Innovators and Early Adopters, who are together estimated to constitute around 16% of any adopting population, and who are considered crucial to the process of the transmission of the innovations into and amongst a social system, use mass media channels more than interpersonal channels throughout all stages (Rogers 2003:211). Moreover all other adopter categories, even the Laggards of a community, those who are the last to adopt, and who rely most of all on interpersonal channels, still use mass media channels to a certain extent throughout.

While there are certainly differences between linguistic innovations and the technological and social innovations which form the main evidence for diffusion model (and not all innovations are necessarily ‘the same’; Buchstaller 2008), this framework has also been found useful for those working on language change for some time, both in terms of overall generalizations, but also in illuminating the different roles of individuals (Milroy and Milroy 1985a; Stuart-Smith and Timmins 2009). Linguistic discussion has tended to emphasize the importance of interpersonal channels and reduce reference to mass media channels, which aligns with the assumption that language change is primarily the result of interaction. However diffusion research recognizes that both channels function during all the stages of the process, that the relationship between media and interpersonal channels is one of relative rather than discrete importance, and

that mass media channels seem to be more important than interpersonal channels for those individuals who are thought to be key to enabling innovations to penetrate a system and start circulating within it. The question for linguists is whether the same might also hold true for the diffusion of linguistic innovations throughout speech communities over time; preliminary evidence is suggestive, though much more research in this area is needed (Stuart-Smith and Timmins 2009).

2.4. Alternative views of media influence on language change

2.4.1. Media influence on language beyond quantitative sociolinguistics

The role of the broadcast media, and especially television, in facilitating learning about linguistic systems is accepted as uncontroversial within other domains of (socio)linguistics. There is a substantial literature on the effects of television on educational learning, including literacy, in children and adults (e.g. Pecora et al 2007; also Howe 1983). Second language acquisition research recognizes that the media present useful tools for second language learners, and not simply for acquiring new words and phrases (cf Charkova 2007). The continuation of ‘transplanted languages’, such as the Modern Indo-Aryan varieties in diaspora (e.g. Moag 1977, Barz and Siegel 1988) is at least in part assumed to be in conjunction with the broadcast media. Similarly, planned attempts at maintaining minority languages at risk, such as Irish and Scottish Gaelic, rely on the broadcast media to support a reduced contingent of native and non-native speakers (Moriarty 2009); at the same time, there are informal reports of incursion of English consistent with engaging with American English television (pers. comm. B. Ó Curnáin; Ó Curnáin 2007). At the level of speech, phoneticians appear to be comfortable with assuming that dialects in the broadcast media may influence mental representations of speech of adults who speak different dialects (e.g. Hay et al 2006; Evans and Iverson 2004, 2007; Clopper and Bradlow 2008), irrespective of theoretical viewpoint, and even in the absence of direct evidence that it does.

If we take these observations and assumptions together with those made for first language acquisition, namely that beyond lexis there appears to be very little good evidence for the primary acquisition of linguistic structures from non-interactive

mediated speech (though see Naigles and Mayeux 2001:149), a further point becomes clear. The media only seem to be implicated in the acquisition of secondary systems, and/or additional linguistic structures, by those whose first language system is already developed, and/or the alteration of existing linguistic contrasts. If this is so, the inability to acquire primary linguistic contrasts from the broadcast media may not be straightforwardly linked to other linguistic shifts which might take place in relation to media engagement. It is also reminiscent of audience reception theory, which presumes that comprehension of media material is fundamentally contingent on the viewer's existing stored knowledge of the world, and the social context within which it is received (Hall 1980; Morley 1980; Philo 1990). The processing of media language may also depend on speaker-viewers already having the requisite social-linguistic structures to do so.

2.4.2. The broadcast media as a stylistic resource for language use

There is certainly good evidence from interactional sociolinguistics to indicate that appropriated media language manifests itself as integral to the discourse in which it appears. Indeed, as Androutsopoulos (2001: 24) points out: '[t]he [very] notion of *appropriation* stresses the fact that recipients are not just imitating media fragments, but [that] they may creatively modify them and use them for their own purposes'. The mass media provide speakers with rich and diverse sociolinguistic resources for their own locally-embedded stylistic practices, and at the same time construct 'new social meanings for linguistic varieties by embedding them in new discourse contexts and genres' (Coupland 2007: 185; also 172-6). Numerous examples of the appropriation of media language may be found: see, for example, the work on 'language crossing' and stylization, e.g. Rampton (1995), Rampton (ed) (1998), as well as the increasing contributions from research carried out in Germany, e.g. on 'Türkendeutsch' in Androutsopoulos (2001), or television adverts in girls in Branner (2002). Using appropriated linguistic chunks from the media productively and creatively within discourse relates to notions of active styling in terms of 'bricolage', the recombination of stylistic resources for personal ends (Eckert 1996: 4).

This kind of appropriation of media language tends to be evidenced by largish chunks – words/phrases – complete with phonetic quotation marks (alterations to suprasegmental features, including pitch change, loudness, tempo, and duration, see

e.g. Branner 2002). These might relate to the original, but are usually embedded within the local suprasegmental patterns of the speaker's dialect. The meaning of the appropriated element for any particular interaction is likely to refer to presumed shared meanings which incorporate reference to the original source for the participants, which may not be easily apparent. This kind of frequently observed behaviour raises numerous unanswered questions for linguists. For example, do individuals always use phonetic quotation marks? Is the media reference point always accessible to their interlocutors? Does such appropriation lead to the 'bleeding' of smaller units into the surrounding grammar, such as allophonic variation or morphosyntactic forms? And/or do appropriated forms act like Trojan Horses within the interactional lexicon, increasing the frequency of certain variants within particular phrases, and facilitating their spread beyond the original phrase (cf Docherty et al 1997; Foulkes and Docherty 2001; pers. comm. P. Foulkes). Can 'smaller' elements, such as phonemes or particular realizations be appropriated and incorporated (cf Androutsopoulos 2001)? Coupland's (2007: 186) interesting commentary on the increasingly blurred intersection between language performances within – and outwith – the media is also relevant here: might dramatic ways of speaking facilitate the appropriation of specific linguistic forms and structures? Much more research is needed to investigate these, and other related questions.

2.4.3. A socially-integrated approach to media influence on language change

It is clear that the potential influence of the media on language change deserves more serious consideration than it has received in the past. But not all have ignored the possibility; see e.g. Hjarvard (2004), also Kristiansen (2001), (2009) for Danish, Kubozono (2007) and Takano and Ota (2007) for Japanese. For some time German sociolinguists have taken a rather different stance, which is fundamentally different from the Anglo/American paradigm in two respects. First it assumed that the broadcast media probably do affect language, but it is thought to be very difficult to ascertain exactly how (e.g. Brandt 1985: 1672). Second, media influence is framed not in terms of 'either/or' but rather as 'both/also',⁴ i.e. that the media could only function in conjunction with other social factors, and not as a discrete, and/or necessary causal factor (Brandt 2000: 2165). The importance of the broadcast media

⁴ 'nicht im Sinne eines *entweder-oder*, sondern im Sinne eines *sowohl-als auch*'

to language is assumed to be ‘in its function as a “medium”’. Radio and television are taken as catalysts which act to increase, strengthen, accelerate and reinforce existing trends in language’;⁵ Brandt (2000: 2165); see also Schmitz (2005).

This ‘socially-integrated’ approach, which assumes a reciprocal relationship between media-representations of language and spoken language, and a contributory role for the media in linguistic change along with other factors, resonates with current views in media studies. Such a relationship is not accidental, since German researchers, in particular Holly, Püschel and colleagues have carried out fundamental research into linguistic interaction and watching television based on the detailed analysis of recordings made in German homes based theoretically within the qualitative framework of media reception studies (e.g. Holly et al 2001). Their contribution is significant not only in illuminating patterns of interaction before the screen along with analyses of media texts and genres, but also in conceptually extending theoretical notions of ‘appropriation’ (*Aneignung*), viewers’ reception of media within the context of their own socially-situated experience of the world, to linguistic interaction during and after media reception, which they call ‘communicative appropriation’ (*kommunikative Fernsehaneignung*); Püschel and Holly 1997; Holly 2001; Faber 2001).

Evidence for media influence is largely inferred by Brandt (1985) and Schmitz (2005), but is discussed in more detail to support the assertion that watching German television is influencing lexical and a few grammatical changes in Austrian German by Muhr (2003), whilst Lameli (2004) argues for the importance of the introduction of radio broadcasting, alongside large-scale changes in terms of social and geographical mobility, in his study of post-war dedialectalisation of German dialect.

2.5. Summary

⁵ ‘in ihrer Funktion als “Medium”, als “Mittler”, Hörfunk und Fernsehen sind nicht so sehr sprachliche Innovatoren, sondern Multiplikatoren, Verstärker, teils Beschleuniger, teils Verzögerer bereits vorhandener sprachtrends’

The media appear to affect other aspects of people's lives, but not through passive absorption of frequently encountered stimuli, and also not in isolation from viewers' local social environment. Moving away from a stimulus/response model means that there is no longer a reason to assume that exposure to media language should give rise to a simultaneous, wholesale, adoption of forms. Similarly, frequency and intensity of media exposure cannot automatically be assumed to have a lasting impact on the linguistic system of an individual. Media representations of language are more likely to show a complex reciprocal relationship with community norms; the media both reflect and respond to current social – and linguistic – trends. That children do not seem able to acquire primary linguistic contrasts from solely experiencing media representations of speech would make sense if an integrated social-linguistic system is a prerequisite for processing and decoding the linguistic and social meanings of mediated language. Again were any shifts to take place in conjunction with engaging with the broadcast media, we should probably expect them to be strongly constrained by the existing sociolinguistic system of the viewer, i.e. by the local linguistic categories and their specific associated social functions. Finally, the key counter-argument which underpins the rejection of media influence does not in fact force it. For while no linguist would want to deny that what happens during interpersonal interaction must be the main motivator of language change, however this might actually take place (see Auer and Hinskens' 2005 useful critique), this does not in itself rule out the possibility that the broadcast media are involved at all.

More recent discussions of the problematic UK consonant changes have referred to the media, and television, as a potential vehicle. Evidence from accommodation studies are leading to the development of models of language variation and change which do not rely entirely on one's interlocutor as a speaker's target model for convergence (see Kerswill 2002, Auer and Hinskens 2005). But even in this more recent literature there still seems to be an underlying assumption that passive exposure and/or frequency of exposure will somehow transfer media language to viewers, or if exposure is not explicitly cited, it seems to be assumed that resources from the media will become 'available' to a speaker. Finally, what is perhaps most surprising, is that the particular paradigm of sociolinguistics which has rejected the influence of the media on language change most vehemently, quantitative sociolinguistics – whose primary concern is linking linguistic behaviour with

conceptualizations based on observations of social data – also lacks direct systematic evidence to support, or reject, the dominant position.

The aim of this paper is to investigate whether the potential role of television as a contributory factor, along with other social, demographic and attitudinal factors, in the rapid spread of three consonantal changes in Glaswegian vernacular, TH-fronting, L-vocalization and DH-fronting. We ask two questions: (1) Are these changes still in progress? (2) Why are these changes taking place? We present the evidence to answer the first question in section 4. The second question will be considered at the level of the group, by using a multi-factorial regression study, whose methodology, including the composition of the independent variables capturing linguistic and social factors, is given in section 5. The data are drawn from a larger research project which we outline below.

3. A new study on television and accent change: the Glasgow media project

The Glasgow media project is the first stage in a long-term programme of research investigating the relationships between the broadcast media and language variation and change ([REF]). Our theoretical perspective assumed a socially-integrated approach, namely that were the media to be involved in language change, it would be most likely to function in conjunction with other social factors, not replacing mechanisms occurring during face-to-face interaction but complementing them. We tackled the broad issue of the broadcast media as a contributory factor in language change by focussing on the rapid spread of consonantal innovations in Glasgow. We narrowed the research question to a restricted set of factors: we took a single medium (television) and considered the possible impact of one selected media-represented linguistic continuum (called here ‘media-Cockney’) on another selected linguistic continuum (Glaswegian vernacular), with respect to specific features of accent (consonants and vowels), in the speech of one stratified age group (working-class adolescents) within their overall social context.

The project integrated methods from quantitative sociolinguistics with those from mass communications research adapted for the project. Media effects research has

developed quantitative methods to attempt to assess the potential effects of the media on social behaviours, using experiments and correlational studies (e.g. Gunter 2000); media studies research uses qualitative methods, including focus group interviews and ethnographic studies, to assess viewers' reception and interpretation of media texts. The core of the project was quantitative, a large-scale correlational study and a professionally-filmed television/language experiment; this was supplemented with qualitative data from interviewing and participant observation by the fieldworker, as well as linguistic analysis of a sample of popular dramas set in working-class London and representing different varieties of 'media-Cockney'. Here we limit our presentation to the correlational study (for other aspects of the project, see [REFS]).

3.1. Data collection

The research took place in Maryhill in Glasgow, Scotland's largest city. By 'Maryhill', we refer to an interconnecting series of urban wards a couple of miles to the north-west of the city-centre, whose working-class communities experienced substantial disruption to their social-spatial structures during the mid-twentieth century, and which is characterised by low employment, patches of urban deprivation, and low inward mobility. We worked with 48 informants, 36 adolescents and 12 adults, recruiting younger speakers from the same secondary school, and a feeder primary school, and men and women from local pubs and the same women's centre. The data collection took place in two phases over 18 months, during which a press embargo was maintained to prevent potential contamination of our data by local press coverage of the project. The purpose of the project was introduced as research into Glaswegian social life and language.

We collected digital recordings of spontaneous conversations of up to 40 minutes from self-selected same-sex pairs followed by reading of a wordlist from all informants. The adolescents also completed a substantial structured questionnaire to elicit additional information: demographic, social, attitudinal, relating to dialect contact and to media exposure and engagement, with the latter questions similar in design and content to those used in media effects research. This was followed up by a one-to-one informal interview with the fieldworker, who also engaged in participant observation at the schools over the four-month data collection period. We present

results from the first phase of the project (see Table 1); the second phase still requires further analysis.

3.2. *Linguistic variables*

We present results for three consonant variables which represent both innovation, with respect to earlier, traditional forms of Glaswegian Vernacular, and diffusion, in that these changes have been observed to be spreading across other urban British dialects (cf Kerswill 2003).⁶ The sound changes are at different stages. TH-fronting and L-vocalization are more advanced, DH-fronted is less so. Stuart-Smith et al (2007) identified use of [f] for /θ/ and vocalization of coda /l/ to a high back (un)rounded vowel in their Glasgow corpus collected in 1997. [v] for /ð/ was also heard, but was only found in one phonetic environment, and only in read speech. The three realizations are not expected in Glaswegian Vernacular, which is a levelled variety of West Central Scots (Macafee 1994), at the Scots end of the Scottish English continuum (Stuart-Smith 2003; Aitken 1984), though sporadic appearances of all three realizations are noted in Macafee (1983). For all three variables, the innovative variants are non-local, non-standard alternatives to an existing array of local non-standard variation. /θ/ can also show [h], as in *I [h]ink*, in some lexical items; coda /l/ also shows Scots vocalization in a restricted lexical set (e.g. *a' for all*), and /ð/ is realized as a tap, or deleted, intervocalically in e.g. *bother* (Stuart-Smith and Timmins 2007; Stuart-Smith et al 2006).

The recordings were digitized using a Kay CSL with a sampling rate of 44kHz and bit rate of 16. The analysis of the linguistic data was informed by previous analysis of these variables (REF). All tokens of the wordlist and all audible tokens from spontaneous speech (i.e. not obscured by overlap, noise or laughter) were subjected to narrow auditory transcription from repeated listening to the waveform; portions of the data were cross-transcribed. The results of the narrow transcription were then grouped into broader variant categories. Each consonant showed an expected range of allophonic variation. We concentrate here on the results for the innovative variant categories. [f] for /θ/ represents voiceless labio-dental fricatives varying in degree of

⁶ Ten phonological variables were analysed in the project, four consonantal, and six vocalic (REF).

approximation. [V] for /l/ represents a range of realizations heard as vowels with no audible laterality, and varying in quality from [o] to [ɤ] to [ɘ]. [v] for /ð/ represents voiced labio-dental fricatives, again with some variation in approximation of the articulators.

First the distribution of the innovative variants was established, across speaker groups, across phonetic environments for each variable, and over time, both apparent – comparing adolescents and adults, and real – comparing these data collected in 2003 with the 1997 corpus of Stuart-Smith (1999). The real-time comparison is made with caution, given the difference in samples (8 adolescents in 1997 and 36 in 2003). Statistical testing was carried out using chi-square tests given disparity in cell sizes and some low numbers. Some distributions could not be tested because the cell size was too low, for example, when adults produced too few instances of the innovative variant.

4. Accent change in progress in Glaswegian

The distribution of the innovative variants in read and spontaneous speech is given in Table 2, and according to phonetic environment in Table 3. Table 4 shows a summary of the results of the chi-square tests. We consider each change in turn.

4.1. TH-fronting

The data for read speech allows us to infer change in progress in apparent and real time. The adolescents use [f] for around half of their variation for /θ/ (55.4%), and far more than the adults, for whom only one instance was noted. They also use [f] significantly more than was found in 1997, from 30% to 55.4%. TH-fronting is more likely in word-medial and word-final position, and less in word-initial position. Comparison with 1997 (word-initial: 19%; medial: 62%; final: 32%) shows that the increased use of [f] occurs at the word edges, initially and finally. There is one instance of a gender difference: the boys in the youngest group use [f] more than the girls in the same group.

In spontaneous speech we again have evidence for change in apparent and in real time. The adults show only 5 instances of [f] (1.5% of the variation), in comparison to

the adolescents, for whom [f] constitutes around a third of their overall variation (34.5%). There is also a significant increase in [f] from 1997 to 2003 (26.2% to 34.5%). TH-fronting is most likely in word-final position, which is also where the increase in real-time is most apparent (1997: word-initial: 31%; medial: 9%; final: 9%). The youngest age group use [f] more than the two older groups, which boils down to the youngest boys using more [f] than the older boys. Within the age groups, the younger boys (age groups 1 and 2) use more [f] than the girls.

If we compare TH-fronting across the two speech styles, we find proportionally more [f] in read speech than spontaneous speech (not statistically significant, but close at $p = 0.08$). There are two likely reasons for this distribution, which was also found in the 1997 corpus. The first relates to the place of [f] entering Glaswegian vernacular as a competing non-standard variant alongside the healthy existing local non-standard variant, [h]. [h] does not occur at all in the reading of the wordlist, both because it is blocked by the orthography (traditional dialect forms are rarely elicited using standard orthography), and because it is prosodically extremely unlikely in utterance initial position. [h] is also lexically restricted, occurring mainly in the lexemes, *think* and *thing*, and some derivatives, which in turn restricts its possible occurrence in terms of word-position. This also accounts for the different distributions according to word position in the two speech styles, and in particular for the flourishing of [f] in word-final position, where [h] may not occur (for more details, see REF).

The second reason concerns the fact that most of our adolescent informants did not approach the wordlist reading task as an opportunity to demonstrate correct or closely monitored speech in the direction of the regional standard. Rather their readings had an air of performativity, with some laughing and commenting on the words, and others rattling through the list (cf Coupland 2009: 290). A particular stance was being taken with respect to both the task (reading a wordlist for a recording – an unusual and odd thing to do) and the persons present (the fieldworker, from the University, and their conversational partner); cf Kiesling (2009). This stance is expressed across their linguistic variation, in an increase of all possible non-standard variants; [h] was not available to them, so [f] could be exploited in its place (REF).

4.2. *L-vocalization*

L-vocalization is also clearly underway for this community. In the wordlists, both apparent time and real time comparisons are statistically significant. Adolescents showed vowels for around three-quarters of their variation (76%) in comparison with adults who used them a third of time (33%). Vocalization has also increased since 1997, from 47.1% to 76% in the 2003 data. There are differences according to the position of coda /l/; vocalization is now most likely in postconsonantal position (e.g. *middle*). This is different from 1997 where preconsonantal position (e.g. *milk*) showed most vowels. There are no differences according to age and gender.

The conversational data also show change in progress, again both apparent and real time comparisons are statistically significant. Vocalization is more common in adolescents (25.8%) than in adults (17.4%). It is also more frequent in 2003 than in 1997 (25.8% in comparison with 8.2%). The pattern according to position of /l/ is similar to that of read speech, with postconsonantal position (e.g. *middle*) as most common (preconsonantal position was again more common in 1997). Overall there is a gender difference such that girls use more vocalization than boys; this is significant for the oldest girls, and just significant ($p=.049$) for those in age group two.

As in the earlier corpus, far more vocalization was observed in the wordlists than in the conversations. The reasons are probably similar to those for TH-fronting, both in terms of the approach to the wordlist task and its concomitant effect on non-standard linguistic variation, and the impact of local non-standard variation. Like [h] for /θ/, Scots l-vocalization, as in e.g. *a'*, *ba'* for *all*, *ball*, is blocked by an elicitation task which depends on reading. Scots l-vocalization is no longer a productive process, but we suspect that literacy teaching creates an awareness and/or connection between the two kinds of vocalization processes, at least in as far as both constitute possible non-standard variants for /l/ (REF).

4.3. *DH-fronting*

In read speech we have evidence for change in progress in apparent time: adolescents use more instances of [v] than adult speakers (only 2 instances), though they only show [v] as 10.5% of their overall variation for /ð/. In real time, proportionally the use of [v] looks similar, perhaps even higher in 1997 (18.4% compared with 10.5% in 2003). But 18.4% for the 1997 data represents 7 instances out of a potential 38 words, with six out of eight speakers using [v] for *smooth* and only one instance intervocalically. The wordlist used for this study was designed to give the informants more opportunities to produce /ð/. Overall 70/662 realizations were produced as [v] by 29/36 (80%) of our adolescents, in both word-positions, with eleven speakers using it in word-medial position. In the conversations in 1997 no instances of [v] occurred at all. In the spontaneous speech collected in 2003 [v] is found 5 times, in word-final *breathe* (the only instance of word-final /ð/), and word-medially in *breathing, either, other* and *neither*. We interpret these results, and in particular, the extension of [v] into word-medial (intervocalic) position, even sporadically in spontaneous speech, despite the strong presence of the local non-standard variant [ɔ̃], as an indication that DH-fronting is a innovative change in progress in Glaswegian vernacular, but one which is less advanced than either TH-fronting or L-vocalization (cf Trudgill 1988).

We can only consider linguistic environment and social distribution for the wordlist data. [v] is far more likely in word-final position. Like [f], incoming [v] is effectively in competition with a local non-standard variant, the tap, but also like [f], the local variant has restrictions on its possible occurrence – this time to intervocalic position. Again [v] is expanding most successfully in word-final position, and only just beginning to creep into word-medial position. DH-fronting is more likely in the youngest children, whilst the middle age group use [v] the least; within boys, the youngest boys use [v] the most. In the youngest group, the boys use [v] more than girls.

The stylistic dimension to this change is striking: DH-fronting occurs far more often in the wordlist, whose reading seems to have offered a particular opportunity for the exploitation of this non-standard variant. This is partly because the wordlist gave the speakers instances of word-final /ð/ which is extremely rare in spontaneous speech (it did not occur at all in the 1997 corpus, and only once in the 2003 data). It is

also probably because, as noted above, reading the wordlist involved the informants taking a particular sociolinguistic stance, which led them to maximise the non-standard variation for this speech activity. Local [ʌ], and some instances of [v] could be used in word-medial position, but in the absence of a local non-standard variant in word-final position, [v] could be used to fill the gap.

4.4. Summary: Sound change in progress

The results allow us to answer our first question: young working-class speakers of Glaswegian vernacular are continuing to be innovative in their speech. For all three variables, in wordlists and conversational speech we find evidence consistent with an interpretation of apparent-time change, with adolescents using more ‘new’ variants than adults, and of real-time change, with more, and extended use of, ‘new’ variants in 2003 than 1997. TH-fronting and L-vocalization are similar in that they are better established than DH-fronting, which is still in the early stages, but still seems to be increasing. L-vocalization differs from TH-fronting in being already apparent in adult members of the community.

There is an interesting stylistic dimension to the changes, with ‘new’ variants being used more in read speech. This seems to be both for linguistic reasons, such as the restriction on local non-standard variants to particular phonetic environments intersecting with the restrictions imposed by the reading task, and for reasons of style and/or stance-taking in the sense that our wordlists did not encourage our speakers to produce correct speech in the direction of the regional standard, but quite the opposite. All these findings continue patterns observed by Stuart-Smith et al (2007).

Unlike the previous research we had age stratification within our adolescent sample, so that we could potentially look at differences in innovation use at different stages of adolescence (cf Eckert 1997). In fact these data do not show any particular patterning, other than that which is also related to gender. The youngest boys show more TH-fronting in spontaneous speech than the older boys; DH-fronting is most likely in the youngest boys. There are more indications than in 1997 that these changes are associated with gender, though not in any clear direction across the variables, so it is difficult to generalize in one way or the way, or to link the findings

with those from elsewhere (e.g. Foulkes and Docherty 2007). TH- and DH-fronting is a bit more likely in younger boys, but older girls show more L-vocalization. It seems as if for these working-class speakers in Glasgow, indexing to locality may be more important than gender.

5. Identifying the factors involved in the changes: The correlational study

The second research question could be answered in different ways, and at the level of the group or the individual (REF). Here we take an approach which concentrates on examining the potential role of extralinguistic factors in contributing to the use of innovative variants amongst our adolescent informants as a group. Whilst we had a particular interest in exploring factors associated with television, the multifactorial design of the statistical analysis was also motivated by the need to test existing explanations for the diffusion and exploitation of these innovations in terms of dialect contact and social identity construction, and by the basic assumption that the notion of media influence could only be entertained within its immediate social context.

Our original plan had been to carry out a longitudinal correlational study following the use of such studies in media effects research (e.g. Lefkowitz et al 1972). While a single correlation could yield a link between media and behaviour, that link is not in itself a demonstration of a causal relationship, which would have to be inferred. Longitudinal correlation allows testing of the hypothesis that stable or increased media contact will be associated by an increase in the behaviour. We collected linguistic and social data from our age group 1 and age group 2 informants for a second time, the following year. However, in the second year the individual preferences for television viewing and engagement, especially with respect to programmes featuring media-Cockney, were somewhat different from that of the first year, and overall interest in *EastEnders* was reduced – in line with a national waning of popularity (Manchester-based *Coronation Street* gained the Best Soap award). This meant that from the outset, the necessary conditions for a longitudinal study did not pertain for our data. We intend to explore the contribution of the second data in future analysis, though this will probably entail the detailed consideration of individual

profiles, and be restricted to descriptive analysis. The remit of the correlational study is therefore the first year of the data collection.

The regression analysis was carried out only on the adolescent data since we had already established that the adolescents were the innovators. Had we included adults, any subtle differences between the adolescents would have been obscured by the substantial overall differences between adults and adolescents. In this respect our sample is unlike those of many other studies where the cohorts within the sample are often substantially different in terms of age, social class, and other social factors, which then anticipates potential differences in linguistic variation in connection with the social factors (such designs also anticipate high explanation of variance because the differences in linguistic variation are likely to be modelled well by the factors in the model). Our adolescents were all from the same area and very similar backgrounds, and would appear much ‘the same’ to outsiders. Our task was to tease apart the social factors in a fine-grained analysis to identify which factors – and in which combinations – might be contributing to variant usage. We ran the regressions on the whole sample of adolescents on the assumption that the sample was generally representative of a community through which innovations are diffusing. This initial assumption was supported by a subsequent analysis which showed that the distribution of our informants when assigned to adopter categories showed a good match with the theoretical distribution for adopter types in an adopting community (REF).

Our fundamental question was whether relationships between linguistic variation and factors to do with television would be apparent in the context of other social variables for which we have information. This motivated our use of multiple regression analysis, whose procedure is explained in section 5.3. The five dependent variables were the use of the innovative variants, (θ):[f] and (l):[V] in read and conversational speech and (ð):[v] in read speech only. We outline the scope of the independent variables below.

5.1. Independent variables: linguistic

Theoretical approaches to the analysis of linguistic dependent variables usually assume that variation is constrained by both internal, linguistic, and external, extralinguistic factors (Labov 1994, 2001). Our independent variables fall into two categories, linguistic and extralinguistic, with the majority belonging to the latter, given that our main purpose was to consider the relative relationships of a large number of external factors with linguistic behaviour.

Previous research has demonstrated that position in the word/phonetic environment constrained the patterning of the three variables; this is to a certain extent dependent on lexis, but in complex ways. These linguistic factors also emerged as significant when the distributions were tested for the 2003 data (section 4), and were included as key representative linguistic factors in this analysis. We recognize that many other linguistic factors are likely to constrain the use of our dependent variables (for example, further factors relating to phonetic context, such as prosodic context, or position in the turn, such as turn initial or turn final; or function within the discourse). Any reduction of the amount of variance explained could be at least as much due to the bias of omitted linguistic variables, as that of external variables relating to social, psychological, and emotional state which are typically excluded but may play a role in any study of social behaviour.

5.2. Independent variables: extralinguistic

A very large number of extralinguistic variables was drawn up from a variety of sources: the detailed demographic, social and media use and engagement questionnaire, the informal interviews, the informants' conversations between each other, and the fieldworker's period of participant observation with the informants. We followed an overall general-to-specific design, which enabled us to work systematically from this large initial pool of independent variables through successively smaller sets until we reached optimally low multicollinearity, theoretically-balanced, final models (Figure 1).

The extralinguistic variables were first pruned in order to remove all variables with low responses (i.e. from less than 10% of our sample), and those with a strongly skewed distribution, which would have the same effect as a low response variable.

Then each extralinguistic variable was assigned to one of eight thematic groups: dialect contact; attitudes; social practices; television; music (including radio); film (including video/DVD); computers (including internet); and sport.⁷ Four of the thematic groups are theoretically important with respect to previous explanations of these sound changes; we will discuss them separately first, and then treat the other four together.

5.2.1. Dialect contact: within and beyond Glasgow

Dialect contact has been mooted as a possible factor in the appearance of these innovations in Glasgow, though direct evidence for this was lacking (Stuart-Smith et al 2007). The variables for dialect contact included: composition of an informant's family, location of the family members within and/or beyond Glasgow, frequency of contact with family members by seeing and/or talking with them, location of their friends, frequency of seeing and/or talking with their friends, mobile phone ownership and usage, frequency of textual contact with family and friends, and opportunities for personal mobility within and beyond Glasgow, including visiting relatives, and visits to other cities in the UK.

We had previously assumed that working-class adolescents from this area of Glasgow would show relatively low geographical mobility, partly because this life stage is one during which it is difficult for individuals to travel independently (Britain 2002), and partly because of the reduced opportunities for passive contact afforded by their being born and raised in a local environment, which shows a very low number of incomers (only 2.8% were born in England, 2001 Census). We calculated a locality index for all speakers (cf Chambers 2000), where 1 was assigned to being born and raised in the area; live in the immediate area; and have both parents and all grandparents born, raised and still resident in the area. The mean value of the index

⁷ The macro-variables 'age' and 'gender' turned out to be less useful for this study. Whilst the distributional analysis show some patterning according to age and gender, the regression models consistently either failed to be significant, or to show sufficiently high explanation of variance. It seems likely that whatever governs the age/gendered differences found in the chi-square testing relates not so much to our informants being of different ages, or different genders, per se, but to overlapping sets of age-related and/or gender-based practices in which they engage. In other words, younger boys probably do not use more [f] because they are younger boys, but because their linguistic behaviours relate, and are related, to a series of intersecting factors and practices, which in turn, and indirectly, relate to their being younger boys (cf Ochs 1992). 'age' and 'gender' were not entered as factors in the final models (cf Labov 2001: 272, fn 16).

for the sample is 1.19, indicating that our sample is strongly local to the immediate area.

Our informants' reported contact within and beyond Glasgow is shown in Table 5, and their opportunities for dialect contact beyond Glasgow are given in the form of the indices shown in Table 6. The most typical form of contact that our adolescents engage in is face-to-face contact with friends and family within Glasgow, though they also report face-to-face, telephone and text-based contact with those outside Glasgow. Most have a few relatives beyond Glasgow, mainly abroad, but also in the North and South of England, and elsewhere in Scotland, whom they talk to more than they see, generally when relatives return to Glasgow for visits. Most show a low degree of active mobility outside the city. Beyond Scotland there are most opportunities for dialect contact with in the North of England.

5.2.2. Attitudes to accents: auditory/mental image

The potential working of media influence on language change as an indirect factor influencing attitudes about a vernacular accent is also a key assumption across the sociolinguistic literature (e.g. Trudgill 1988). The questionnaire began with a brief attitudinal survey which used tape-recorded extracts of young adults reading the same passage from six British urban accents (Edinburgh, middle-class Glasgow, working-class Glasgow, informal Newcastle, Manchester, and London) and RP, drawn up by (REF). This allowed us to obtain attitudinal responses to actual recordings, and the extent to which informants were able to identify correctly the provenance (cf Preston 1992). A later section of the questionnaire asked informants about their feelings about the accents of eight urban accents (Edinburgh, Glasgow, Newcastle, Leeds, Manchester, Liverpool, London) this time letting us assess their 'mental image' of the accents (cf Preston 1999).

The results of the attitudinal surveys are given in Table 7. Our informants' ability to identify the accent recordings was variable, but tended to be better for accents that they said they liked (their own, and Newcastle). On average, London accents were rated lower than other accents, though not as low as RP, which was generally disliked.

5.2.3. Social practices and identities

The importance of specific social identities, linked with social practices, for explaining linguistic variation in adolescents has been realised for some time (e.g. Cheshire 1982). More recent work has concentrated on how social practices and linguistic practices are together developed to construct personal and group identities, which convey both social and linguistic meaning (e.g. Eckert 2000; Moore 2003), and also on ideology, identity and language variation (e.g. Milroy 2004, Llamas 2007). Stuart-Smith et al (2007) interpreted the Glasgow changes in the context of the socio-spatial history of the city, and its concomitant impact on ideology and identity construction. Recent ethnographic research on TH-fronting in adolescent Glaswegian boys demonstrates the more subtle connections between linguistic and social practices in the spread of [f] (Lawson 2009).

Whilst the fieldworker was able to spend some time with the informants over periods of data collection in school, the study did not include an ethnography. The variables which capture aspects of their social practices do so more in the fashion of an overall sketch. The original, very large number of ‘social’ variables, quantifying detailed aspects of their social lives, from taking part in activities in and after school, to aspects of their dress and hairstyles,⁸ and their feelings about school, Glasgow, and their future, was substantially reduced after the removal of low response/skewed distribution variables, and the further combination of variables to retain as much information as possible. We worked with a much reduced set of ‘cover’ and composite variables through which we could capture gross differences in social practices. Alongside ‘reported number of friends’, the variables were: ‘disliking school’ which also related to engagement (or not) in school-based, and break-time activities, as well as adherence to school uniform policy; ‘going out on weekend nights’, linked to going out on week nights and with going in the city centre and more generally hanging out on the streets; and ‘personal clothing choice’, a composite variable made up of observed practices in clothing and hairstyle which took their school uniforms closer to local home styles (for more details of social groupings, see REF).

⁸ Schools in Glasgow typically insist on school uniform, which is fairly closely monitored. Personal clothing choices indicates often subtle shifts towards local dress and hair styles.

There was some variation in the profiles of our informants in terms of social practices. Around half reported that they liked going to school quite a bit, and those who didn't tended to be older, but there is no clear pattern of age or gender. Many said that they went out at night at the weekend, secondary school informants more so, as one might expect. Again older informants reported higher numbers of friends than younger ones. In terms of clothing, around half of the informants supplemented their school uniform with other locally fashionable clothing, jeans or tracksuits, and on their feet, trainers with their socks pulled over their trouser cuffs. This was found more in secondary school informants than primary ones, but with no clear age/gender pattern.

5.2.4. Television

Variables relating to television fell into a number of different categories: ability to identify television programmes on hearing a dialect recording; general reported exposure to television; television as a part of daily life (talking about TV, watching TV alone and/or with friends, talking at the TV); talk about TV as it emerged during the informal interviews and their own conversations; favourite programmes and characters; and exposure and/or engagement with TV dramas, mainly based in the UK. The questionnaire presented a list of 19 popular dramas, chosen on the basis of an initial pilot study. Open questions elicited other programmes which they enjoyed watching, and/or whose characters they particularly liked. Since our focus was on the potential relationship between media-representations of London dialect, 'media-Cockney', and the sound changes, we included four popular TV programmes set in London: the soap, *EastEnders*, the police drama, *The Bill*, the comedy, *Only Fools and Horses*, and the school-based drama, *Grange Hill*.

Our informants report access to three or more television sets at home, and said that they watch TV every day, with average exposure of around 3 hours/day. Watching television was reported as one of their main leisure activities, but so too was hanging out, listening to music, and using computers. The London-based programmes, *The Bill*, *Only Fools and Horses*, and *EastEnders*, were ranked highest for watching and liking programmes for each genre (police drama, comedy and soap), reflecting popular audience ratings during the data collection period. *EastEnders* was most often named as 'favourite programme', and characters from *EastEnders* were most often

given as favourites, with ‘Kat’ and ‘Alfie’ as the most popular (their on-off romance had dominated the storylines for the preceding year). London-based programmes also dominated the top five programmes rated for liking the accent of a programme. At the same time, when asked to give the name of a television show whose accent they liked best, our informants nominated Scottish-based, and especially Glasgow-based comedies. Analysis of talk about television during spontaneous speech showed little mention of television programmes, perhaps partly because the context of these speech events was school (W. Holly pers. comm.). But when they did talk about television to each other, or to us, both *EastEnders* and the local Glaswegian comedies were mentioned, and in the case of the latter, also performed.

In order to assess exposure (reported watching) as distinct from engagement (liking or liking and watching, having a favourite character and/or programme, criticising characters’ actions), the television category regressions were run separately for exposure and engagement. We had originally planned to look at exposure and engagement with TV dramas combined into regional groups according to fictional dialect, e.g. media-Cockney, media Northern, media-Scottish, and so on. However, it quickly became clear that individual preferences for specific programmes could differ within a regional group (e.g. someone might like *EastEnders* but not *Grange Hill*), and so we reverted to specific programmes, running all the models separately for each media-Cockney programme (*EastEnders*, *The Bill*, *Only Fools and Horses*, and *Grange Hill*). In order to assess the relative contribution of television dramas set in London with those set elsewhere, we also included representative possible programmes from the North of England and/or Scotland (e.g. *Coronation Street*), and from outside the UK, again selected on the basis of the pilot study.

5.2.5. Other thematic groups: Music; Computing; Film; Sport

A further four thematic groups allowed us to include further variables capturing other aspects of our informants’ social lives. ‘film’ ranged from going to the cinema, to engagement with particular film genres (comedy, action, horror), to recording and watching films on video. ‘music’ included music preferences, reported listening to music (when and with whom), purchasing music, and reporting listening to and engagement with radio. In ‘computing’ we recorded reported gaming and internet use (such as chatrooms, or websurfing). ‘sport’ ranged from actual involvement in

different sports or supporting particular football teams, to watching particular sports on television.

Variables from these groups extended the social profile of our informants' social lives, showing that they were engaging with films, listening to different kinds of music, playing computer games and surfing the internet, and being involved in sport, from watching it on television to being actively involved in a range of activities from gymnastics to football.

5.2.6. Assignment of variables to groups

It is clear that the placement of variables within some of these groups could overlap both with each other, and also with 'television'. However, for the purposes of the analysis we needed to make an operational decision to ensure that each possible variable was included in one, and only one group. We also recognized that, given the relatively fine distinctions between some of the variables within these thematic groups, one might want to combine them into 'larger', composite variables, relating more generally to, e.g., engagement with film, or music. We therefore tested each thematic group for internal consistency of the variables using Cronbach's Alpha. A score approaching or beyond .7 indicates good consistency, and would justify combining the variables into a composite variable. However, Cronbach's Alpha was always low, and never higher than .4. Composite variables were therefore not created for these categories.

5.3. Procedure for the regression analysis

The regression analysis had two phases (see Figure 1). The first phase of logit regressions was carried out for each dependent variable on the independent variables within each thematic group. Significant variables from each thematic group were then taken forward to the second phase of logit regressions, which resulted in a set of final combined models for each dependent variable. The same statistical procedure was followed for each phase.

After a thoroughgoing analysis of multicollinearity among the explanatory variables,⁹ we arrived at a shortlist of key variables that captured the main categories of theoretical determinants and that had minimum overlap in terms of co-linearity (while multicollinearity does not cause bias, it does increase the standard errors, and hence reduces the precision and stability of estimates). This shortlist of variables constituted the factors used in the logit models in the first phase of the analysis. The process was then repeated on the collection of significant variables arising from phase 1 regressions, in order to draw up the factors for the final combined logit models in phase 2. The best final model for each dependent variable from the second phase is reported in section 6.

Variables are only included in a particular model if it is significant at the 5% level. We used a general-to-specific modelling strategy (i.e. we first include all relevant variables, then drop least significant variables first, then re-estimate, then repeat the process) in order to minimise the risk of omitted variable bias when making a judgement on whether or not to keep a particular variable in the model (see Maddala 1988, p.494-496). We did not, however, apply this process in a mechanistic way—which can lead to spurious outcomes—but remained mindful at each stage of the theoretical validity of the models.

Logit regression (Long 1997) was our preferred choice of estimation for two principal reasons. First, ordinary least squares regression is not well suited to modelling dependent variables which are categorical. In our case, the dependent variable equals 1 if an innovative variant [f], [v] or [V] is used and equals zero otherwise. OLS assumes an unbounded continuous dependent variable which would clearly not be the case in any of the models reported below. As a result, logit and probit methods have been developed to provide robust and meaningful ways of estimating models with dependent variables of this kind (Long 1997). Second, while each coefficient in logit and probit equation interacts with others and so cannot be interpreted as holding all other factors constant (one of the advantages of OLS regression), a quirk of mathematics means that by taking the exponent of the coefficients in a logit model, we can indeed unravel these interacting effects and hold

⁹ Details available on request.

constant the role of other variables when interpreting individual coefficients (the same is not true of probit estimation, however).

Logit estimation with exponentiated coefficients is therefore the approach applied here. Exponentiated coefficients, $\exp(B)$, can be interpreted as the proportionate change in odds of the dependent variable occurring as a result of a unit change in the explanatory variable in question. The odds of an event are computed simply as the probability of an event divided by one minus the probability of an event. So, if the dependent variable in question is the use of [f] for (θ), then:

$$\text{Odds of [f]} = \text{Prob}([f]) / (1 - \text{Prob}([f]))$$

For variables that have a positive effect on the probability of [f], the $\exp(B)$ value will be greater than one. For example, suppose the variable: “*EastEnders* is favourite programme” has an exponentiated coefficient = 1.84. This means that, for individuals who indicate that *EastEnders* is their favourite programme, the odds of observing [f] are 1.84 times the odds of [f] used by individuals who did not indicate *EastEnders* as their favourite programme. In other words, reporting *EastEnders* as your favourite programme makes the odds of [f] usage increase to 184% of what they otherwise would be, holding constant all other variables included in the model.

Where the effect of a variable is negative, the value of $\exp(B)$ will lie between zero and 1. For example, suppose the linguistic variable: “word-initial position” (e.g. (θ) in *think, thought*) has an exponentiated coefficient, $\exp(B)$, equal to 0.4. This means that, for words in which [f] occurs in “word-initial position”, the odds of [f] are 40% of what they otherwise would be.

In order to place negative and positive effects on the same scale of magnitude, we also present the inverse of the $\exp(B)$ values for negative effects in the final column of each logit table. For example, if $\exp(B) = 0.5$, the magnitude will be $1/0.5 = 2$, the same order of magnitude as a variable with $\exp(B) = 2$. This allows us to see which variables have the most potent effects in each regression. An effect with magnitude less than 110% has a relatively modest impact (note that a variable can be highly statistically significant but have modest impact—we may simply be measuring a

small effect with great precision), whereas an effect with magnitude of say 200% would be considered potent. We also include the sign (+ or -) to highlight the direction of the effect.

The last two rows of each regression table include the sample size, N , and the Nagelkerke r^2 , a measure of the goodness of fit of the model (interpreted as an approximation of the proportion of the variation in the dependent variable explained by the model). Given that the data are cross sectional and the variables we are trying to model are of such complex and varied determination, we would not expect to be able to explain more than say a third of the variation in the dependent variable (i.e. we judged any Nagelkerke r^2 above 0.33 to be a good result). All models include an intercept (“constant”) term, which does not have any particular meaning and should be interpreted as simply allowing the models to have a more flexible functional form (akin to not forcing the regression line through the origin in OLS).

6. Factors involved in the Glasgow changes: the regression results

We do not formally report the results from the first phase because of the very low amounts of variance explained by the separate thematic group models (on average overall only 7%, with a range from 4 to 11%). Informally the main findings from the first phase are:

1. a significant linguistic factor emerged for each dependent variable.
2. The three theoretically important groups, dialect contact, attitudes and social practices, all found some significant variables in line with expectations.
3. Factors associated with the television, and in particular with engagement with *EastEnders*, were also positively linked with these changes, but simple exposure to this programme, or others, or to television in general, is not.
4. the explanation of variance across the thematic categories, including that of linguistic factors, is too low to support the assumption that any single group, or theoretical model resting on the variables captured by any one group alone, might be responsible for these changes. This final result is in line with our original assumption that modelling of the factors involved in the diffusion

of these innovations would require us to consider a combination of factors together (cf Trudgill 1986: 54).

We now summarise the results of the best logit model for each dependent variable described in Tables 8 to 12. A series of final models tested a range of factors associated with television, and specifically:

- exposure to London-based TV programmes
- engagement with *EastEnders*, as shown by naming as favourite programme, or source of favourite characters
- liking London-based TV programmes
- watching and liking London-based programmes
- liking the accent of London-based programmes
- general engagement variables – e.g. criticising soap characters, watching TV with friends
- combinations of the above.

The best model was determined as the one that showed the best explanation of variance as indicated by the Nagelkerke r^2 and the best theoretical balance of variables in the input shortlist.

6.1. TH-fronting in wordlists (Logit model 1)

We can see from Table 8 that the most potent determinant (magnitude = -410%) of the odds of using [f] is the preference for animation films. For those who indicated this preference, the odds of [f] are only a quarter of what they are for those who did not state a preference for animation. Other negative effects include the linguistic constraint of [f] occurring in word-initial position (reduces the odds of [f] to 40% of what they otherwise would be), using the internet for chatrooms (reduces the odds of [f] to 61% of what they otherwise would be), watching *Coronation Street* (reduces the odds of [f] to 63% of what they otherwise would be), and watching *ER* (reduces odds of [f] to 67% of what they otherwise would be).

The most potent positive effect on the odds of using [f] is the tendency to exhibit personal choices for hair and clothing —increasing the odds of [f] to 350% of what they otherwise would be. The second biggest positive effect arises from the respondent naming *EastEnders* as their favourite programme (increases the odds of [f] to 164% of what they otherwise would be). Other positive effects include liking the informal London accent sample (increases the odds of [f] to 116% of what they otherwise would be), and having contact with relatives in South England (increases the odds of [f] to 164% of what they otherwise would be). Note that the *EastEnders* effect is larger here than the personal contact with Southern English relatives. (This model has a relatively strong goodness of fit: Nagelkerke $r^2 = 33\%$, the highest after Logit Model 5).

6.2. TH-fronting in conversations (Logit model 2)

The factor with the largest effect by far in this regression (Table 9) was “word-final position” with a huge magnitude of 1044% (increases the odds of [f] to ten times what they otherwise would be). The second largest, and negative, effect was watching *Coronation Street* (odds of [f] reduced to 67% of what they otherwise would be—very similar to the effect of *Coronation Street* watching in Logit Model 1), closely followed by respondents listing *EastEnders* as their favourite programme and/or the show with their favourite characters (increases the odds of [f] to 138% of what they otherwise would be—lower than its effect in Logit Model 1, but still potent). Contact with relatives in North England was found to have a negative effect (reduces the odds of [f] to 91% of what they otherwise would be). Talking about TV in conversation was also significant at the 5% level, but not especially potent (magnitude = -103%). This model had a relatively low Nagelkerke r^2 of 17%.

6.3. L-vocalization in wordlists (Logit model 3)

There are three very potent effects here (Table 10). First, personal clothing choice has a massive effect, making the odds of L-vocalisation nearly ten times what they otherwise would be. Second, the likelihood of L-vocalisation is reduced substantially if /l/ occurs before a consonant as, for example, in *milk* (odds of [V] reduced to just 13% of what they otherwise would be). Third, liking *EastEnders* and criticising soap

characters had a very large positive effect (increasing the odds of L-vocalisation to nearly four times what they otherwise would be). Contact with relatives in the South and/or North of England has a positive, but smaller effect. Liking *ER* also has a smaller, but negative effect. This model had a relatively low Nagelkerke r^2 of 20%.

6.4. L-vocalization in conversations (Logit model 4)

The biggest effect on L-vocalization in spontaneous speech (Table 11) is the linguistic variable, postconsonantal position (e.g. *people*), raising the odds of [V] to 555% of what they otherwise would be. Personal clothing choice was the next biggest effect (raising the odds of [V] to 282% of what they otherwise would be), followed by naming *EastEnders* as a favourite programme which raised the odds of [l] to 165% of what they otherwise would be. Note that this is almost identical to the effect of the *EastEnders* variable on using [f] for /θ/ in wordlists (Logit Model 1). Talking about TV in conversation was also statistically significant but of modest (negative) effect on the odds of L-vocalisation. This model had a relatively low Nagelkerke r^2 of 17%.

6.5. DH-fronting in wordlists (Logit model 5)

The strongest effect in the DH-fronting model (Table 12) was the linguistic variable “word-medial position” which reduced the odds of [v] substitution to just 2% of what they otherwise would be (magnitude = -5,263%). The second largest effect was watching and liking *EastEnders*, which also had a large effect, increasing the odds of [v] substitution by more than 15 times what they otherwise would be. Other very large effects included: talking about films or TV (which raised the odds of [v] substitution to 804% of what they otherwise would be), going out at weekends (raised the odds of [v] substitution to 352% of what they otherwise would be), disliking school (raised the odds of [v] substitution to 263% of what they otherwise would be), watching TV (reduced the odds of [v] substitution to 38% of what they otherwise would be), contact with relatives in South England (raised the odds of [v] substitution to 182% of what they otherwise would be), and correctly identifying an informal London accent (raised the odds of [v] substitution to 171% of what they otherwise would be). Note again that the *EastEnders* effect is greater than that for the dialect

contact variable. Of the five logit models presented here, [v] substitution model had the highest Nagelkerke $r^2 = 48\%$.

6.5. Summary of the regression results

As we had expected, the final regressions indicate the joint contribution of linguistic and extralinguistic factors together in accounting for the appearance of the innovative changes in our speakers. The results for the linguistic factors are also as expected from the original consideration of the distribution of the variation.

There are four main findings for the extralinguistic factors.

(1) Frequency of contact with family and friends in the South of England is empirically confirmed as a factor in the diffusion of these changes in three out of the five logit models presented.

(2) Engagement with the London-based television drama, *EastEnders*, is an significant factor in these innovations. In all 5 logit models variables capturing engagement with *EastEnders* was statistically significant and always had a positive effect on the use of [f], [V] or [v], both in wordlists and free conversation. Moreover, the magnitude of that effect was always relatively large, in every case increasing the odds of substitution to more than 130% what they otherwise would be. Exposure to television, or to particular dramas, on the other hand, is either not significant or negatively linked with the changes.

(3) Satisfactory regression models could only be achieved when extralinguistic factors from a range of thematic groups are entered together. The explanation of variance as indicated by the Nagelkerke r^2 is at least three times better for the final combined models than for any single thematic category regression model.

(4) Related to the previous finding – and probably most important for understanding the rapid diffusion of these innovations as the result of a combination of extralinguistic factors (cf Trudgill 1986: 54) – significant

factors from the four key theoretical groups are found together: dialect contact with the South (and once the North) of England, locally-situated social practices, engagement with *EastEnders*, and, less often, positive attitudes towards a London accent.

7. Discussion: Interpreting the extralinguistic factors

The final models provide clear support for the explanation of the diffusion of these changes into Glaswegian vernacular in terms of mobility and contact (cf Trudgill 1986; Kerswill 2003), and for the relevance of locally-based social practices and social identities (Stuart-Smith et al 2007). Attitudinal factors receive the least support, with significant factors holding for only two out of the five features. Factors associated with engaging with the popular London-based television show, *EastEnders*, consistently appear.

The challenge lies in how the last category should be interpreted, for a significant correlation between factors does not in itself demonstrate a causal relationship of one on the other; causality must always be inferred. In quantitative sociolinguistics correlational results give us support for existing theoretical assumptions about the relationships between language and society, and the mechanisms and/or processes underlying them, but only in so far as we have a means of interpreting the links that are significant. One way of approaching the interpretation of the correlations between linguistic variation and engagement with television, is first to unpack the assumptions which underpin the interpretation of those extralinguistic factors which relate to existing theoretical models of language variation and change (see Figure 2).

7.1. Attitudes towards accents and linguistic innovation

Assuming that positive attitudes towards a variety, accent, or even a place, might facilitate the adoption or use of features typically associated with that place, seems a sensible assumption for sociolinguists (e.g. Kristiansen et al 2005; Llamas 2007), even if it is not entirely clear what the underlying mechanism between expressed attitudes and linguistic behaviour might be. Positive attitudes towards London accents

have been taken as a contributory factor in these changes elsewhere (Trudgill 1986). This view also requires the additional presumption that the variants are available for the speakers to exploit (perhaps via less overt opportunities for dialect contact).

Here attitudes emerge as the weakest of the main theoretical groups. Positive attitudes towards London only appear as significant variables for two features, TH-fronting and DH-fronting in wordlists, and in the latter, the variable relates to correct identification of the London sample, as opposed to actually liking it. These findings may in part arise from the method of our attitudinal survey, which explored accent attitudes in an explicit way. Kristiansen (e.g. 2009) has shown from attitudinal research on language variation and change in Denmark that subconscious or ‘covert’ attitudes can be better predictors of linguistic behaviour than conscious or ‘overt’ language attitudes. It is possible that attitudes to accents elicited using covert methods (e.g. via questions not specifically about language/accents, but strongly associated concepts) might also yield better results for the Glaswegian changes, but this remains for future research. All we can say from these data is that for these speakers, overt attitudes towards London accents seem to be less important than other factors.

7.2. Dialect contact and linguistic innovation

Our results provide the first empirical evidence that dialect contact is involved in the spread of these changes in the UK, and in Glasgow (e.g. Kerswill 2003). In read speech TH-fronting and DH-fronting are linked with frequency of contact with relatives in the South of England and L-vocalization in wordlists is linked with contact with relatives in the North and South of England (this variable was significant in the first iteration of the phase 2 combined regressions for L-vocalization in conversations, but did not persist to the final model). Only TH-fronting in conversations shows a different result, with a negative effect of contact with relatives in Northern England, possibly suggesting that convergence may not be the only outcome of contact.

However, we should also acknowledge what conditions our acceptance of these statistical results as sufficient evidence for a causal relationship for dialect contact. An adolescent’s report that they often see and/or talk to a relative who lives in

London and who has come to visit them in Glasgow does not in itself make them use [f] for particular instances of /θ/ when reading out a wordlist. Confidence in assigning causality to such a statistical relationship rests on common acceptance of the mechanism which underlies the link, namely that there are sensible hypotheses about how increased frequency of contact with relatives in the South of England might lead to increased TH-fronting. In this case, it is assumed that short-term shifts in the speech production of individual speakers, usually in the direction of their interlocutor's accent (phonetic convergence, Pardo 2006), partly motivated by social-psychological dynamics of the interpersonal interaction (speech accommodation, e.g. Coupland 1984), over time become accepted as language change at the community level (e.g. Trudgill 1986; Labov 2001).

While short-term shifting (convergence and divergence) is well attested (Trudgill 1986; Pardo 2006) and generally assumed (e.g. Hay et al 2006), the relationship between short-term individual shifting and longer term community change is more difficult to pin down. Auer and Hinskens (2005: 356) conclude their careful review of empirical investigations into accommodation and change: 'Several findings suggest that the driving force behind change in the individual, and also in the community, is not imitation of the language of one's interlocutor, but, rather, an attempt to assimilate one's language to the possibly stereotyped characteristics of a group one wants to be part of, or resemble.' This 'identity-projection' model (cf Kerswill 2002: 680-1) allows speakers to shift their speech to socially-attractive speakers who exist in their mind, and not necessarily to those who are physically present. In some respects this seems similar to those initiative shifts which Bell (1984) identified as within Audience Design, and subsequently reworked as Outgroup Referee Design (Bell 1992; 2001). This might also allow the exploitation of resources from interpersonal and mass media channels (cf Carvahlo 2004: 141-2; Coupland 2007: 171-3). However, even if there is uncertainty about quite how these processes of alteration during interaction might work, and/or the extent to which a physically-present interlocutor might determine shifts in variation, a plausible conceptualization exists which authorizes us to infer a causal interpretation to significant dialect contact factors.

7.3. *Social practices, social identities, and linguistic innovation*

Speculation about the links between social identities and the exploitation of these innovations in Glasgow has already been advanced in terms of social-indexicality and language ideologies by Stuart-Smith et al (2007), and in terms of identities and practices within a Communities of Practice framework by Lawson (2009). These results support the assumption that speaker agency relates to these changes. Robust links were found for four of the five features modelled.

The lack of a significant social practice variable for TH-fronting in spontaneous speech is interesting, and may relate to the incursion of the incoming variants into an existing system of non-standard local variation. It is possible that [f] may not yet relate to the higher order social indexing captured in our gross ‘cover’ variables, or that the way that these variants function socially is not yet consistent across these speakers, or not for all of them. Lawson (2009) shows how TH-fronting usage differs according to Community of Practice in his Southside Glaswegian schoolboys. It seems that our wordlist task gave our informants the opportunity to take a particular stance expressed through non-standard variation, and especially non-local ones, at least partly because local non-standard variation was blocked by the reading task itself. The spontaneous speech tasks on the other hand facilitated the use of local non-standard variants (so [h] for (θ)) with long-standing social-indexical relationships with anti-establishment, and especially anti-Glaswegian-middle-class ideologies. Future research on these changes will need to consider not only the degree of usage of these variants, but also their patterning with respect to existing local variants (cf Lawson 2009).

However, as for the dialect contact variables, we do not assume that the link between any social practice variable and use of the linguistic variant is direct: for example, it is not thought that disliking school in itself makes a child use [v] for (ð). A causal relationship between social practices and linguistic variation is inferred because we think that we can identify at least some of the potential mechanisms which inform such a statistical relationship. In this case, there are several models, which all relate to speaker agency, but with different emphases arising from differing underlying theoretical approaches: in terms of ideologies, indexicality, and language (e.g. Milroy 2004); the development and management of sociolinguistic personae

(e.g. Coupland 2007); and/or the shared development of social and linguistic practices (e.g. Eckert 2000). Again, it is the presence of such models which allows us to accept the significant correlations as unproblematic, and even further to assume that they are indicative of a causal role in the change in progress, even if the mapping between independent variables and models may be complex.

7.4. Engagement with television and linguistic innovation

We return to factors to do with the television. To recap, the results show that factors capturing reported exposure, either generally to television, or to specific television shows, are either not significant or are negatively linked with the use of the innovative variants. We also find either no links or negative links with the representative television shows based in the North of England and/or in America. Positive links are found with engaging with *EastEnders* for all five features, and with more general engagement with soaps, in the reported criticising of soap characters whilst watching a drama. How should these correlations be interpreted?

Just as for the other theoretical categories just discussed, it seems difficult to accept a direct relationship between engaging with television and linguistic behaviour, so that for example naming *EastEnders* as one's favourite television programme will in itself impel a speaker to produce [f] for /θ/ when reading out the wordlist. But unlike the other categories, we lack both the consensus that the inference of a causal relationship is possible or sensible, and accepted models or mechanisms which would enable the translation of the statistical findings into contributory causal factors in the change. Even for the first stage of reception of media language, virtually nothing is known about how we process and/or learn from speech when it is presented in the form of audio or audio-visual recordings without the possibility of interaction, or whether this may trigger short-term shifting with a longer lasting effect (REF).

7.4.1. Is engagement with television an indirect causal factor?

We could ask whether it is a mistake to infer direct causality for these statistical links, but rather consider them solely as evidence of indirect causality. Previous quantitative sociolinguistic treatment of television influence on language has taken it to be indirect

through influence on attitudes (e.g. Trudgill 1986). Here we found overall that overt positive attitudes to London accents had a weak effect (only explicitly for one variable). But we also did not find evidence that the attitudes themselves arise from media influence, with television working as a kind of ‘softening-up’ agent (Trudgill 1988:44). A linear regression analysis carried out on attitudes towards the London sample as the dependent variable, and exposure to and/or engagement with *EastEnders* (or any other London based programmes) as the independent variables, did not show positive results (REF). It remains to be seen whether Kristiansen’s (2009) suspicions for a connection between the media, language change and subconscious/covert language values and in Danish, might also hold for this context.

Another obvious theoretical connection to consider is indirect causality via social practices. There are a number of possible – and sensible – inferences: perhaps television practices, including engaging with particular television shows, affect social practices more generally, and these in turn affect linguistic behaviour; and/or perhaps social practices affect linguistic behaviour, and at the same time, affect television practices, such as engaging with *EastEnders*. This kind of reasoning would take television not as a direct causal factor, but as an indirect factor via social practices. This would make sense because engaging with television surely constitutes a part of social practices on a broader level. We might expect this kind of relationship to exist and perhaps also for some of the variables which were not tested in the final models.

However, we cannot make this inference for the final logit models presented here. Assuming indirect causality for television via social practices requires statistical corroboration in the form of statistical correlations between engaging with television and the social practices factors entered in the model. Only then could we argue that they were related. But our final models do not permit this assumption for these speakers: our multicollinearity analysis specifically removed pairwise and strongly correlated or multicollinear variables, so that all extralinguistic variables were as statistically independent in the models as they could be. So, while this would be a sensible inference, at the fine-grained level at which we have been teasing apart the relative contributions of the social factors contributing to linguistic variation in this sample of speakers, we must interpret the theoretical contributions of social practices and engagement with television separately.

Next, thinking still in terms of engagement with television operating as an indirect causal factor, we could assume that the statistical correlations which we did find, do not characterise engagement with television so much as act as a cover variable for other factors not included in the model. Indeed it is quite likely that this is so irrespective of a direct relationship. For example, perhaps there are factors to do with personality which affect engagement with a specific programme, and which also affect linguistic behaviour, and/or which mediate between engaging with television and language use. However, this theoretical ‘black box’ of unmeasured factors remains beyond the scope of our study, and in fact, this argument applies equally to all extra-linguistic factors entered into the regressions.

Having rejected the possibility that engagement with television might be related to linguistic behaviour indirectly (or alternatively accepting that it is likely, but that we cannot specify it in any way, which is not very helpful), we return to the correlations and their interpretation. The real questions here are: what does it mean to interpret these correlations in terms of direct causality? What kind of mechanisms might be involved? What might ‘influence’ mean in terms of processes between speaker/viewer and media-represented speech, and speaker/viewer and other speakers?

We note that the results do not support an assumption of shift linked to frequent passive exposure to a represented variety. The statistical results for reported exposure are either not significant or negatively linked with linguistic innovation. We must also reject any assumption of direct behavioural influence, such that engaging with a particular programme is in itself going to impel a speaker to use, or increase their use of, a linguistic item. This is both because from the sociolinguistic perspective we do not assume that variation and change in linguistic behaviour is the direct result of influence or effects from other kinds of social factors which are typically entered into correlational models, and also because such a notion of media influence on social behaviour has been long abandoned by those work on the effects of the media, whether from a quantitative or a qualitative perspective (Bandura et al 1963; Philo 1999).

7.4.2. Is raised awareness of London features a mediating factor?

One possible mechanism to explore is that the correlations are the result of a raised awareness of these features in media-representations of London English, and/or from some kind of voluntary imitation of the televised model, perhaps in similar ways to what has been found, and described, for the influence of highly prestigious Brazilian Portuguese soap dramas on non-standard Brazilian and Uruguayan Portuguese (e.g. Naro 1981, Carvalho 2004). We considered the extent to which our informants might be aware of features of ‘media-Cockney’ by means of two tasks. The first was an informal imitation task which took place during the one-to-one interview. Each child was shown a series of picture cards and asked to give the words in their usual accent. Then they were shown a picture of a well-known character from *EastEnders* (Phil Mitchell, a local ‘hard man’ who was carrying a key emotive storyline at the time of the data collection), and were asked about his accent, and then asked to say the same words (in a different order) in his accent (a media representation of broad London Cockney).

All the informants were clearly aware that this character’s accent (and that of other characters) was different from their own, though they were hard pressed to say in what way it was different, and varied in their views. Some thought that his accent was just ‘pure English’ or ‘snobby’ and ‘posher’, unable to locate the accent regionally or within its intended social arena. Others thought it was rough (‘he talks more tough’). But that it was alien to them, at least at the metalinguistic level of awareness, was summed up nicely by one boy who said simply: ‘it’s aw right ... I wouldnae like to speak like it but’. The informants disliked the imitation task, protesting that they couldn’t do it. Our first impressions were that they had changed little, but fine-grained phonetic analysis of segments and suprasegmentals showed idiosyncratic subtle alteration to many segments, but more alteration to suprasegmental features, such as voice quality, pitch and length. There was no systematic alteration to the realizations of (θ) (l) or (ð) in the expected direction (REF).

The second task was part of the television and language experiment, occurring as an ‘acting’ round in a filmed TV quiz show during which informants had to act out a scene in character after watching a clip of a London-based or Glasgow-based drama. The results of the acting round for the London characters showed even less phonetic

alteration than the imitation task, and what did occur tended towards a stylized form of traditional Scots (!), still found in theatre and television dramas featuring working-class characters.

Overall, our informants seem neither aware of these features nor able to copy them. Thus the metalinguistic awareness of the Glaswegian informants with respect to the London features appears to be very different from that reported for South American Portuguese. We have no evidence of either a community or individual desire to emulate these forms of speech, and/or orient towards such models. For these speakers at least, it seems that we must rule out conscious attempts to copy features as a possible mechanism to inform the statistical correlations. Moreover, we note that the assumption that speakers could faithfully reproduce (socio)linguistic form and function of variation from media models is difficult to reconcile with existing evidence even for phonetic ‘shadowing’, tasks which require speakers consciously to entirely match a given signal. Speaker system invariably impacts even at this level (cf Goldinger 1998; Pardo 2006; Mitterer and Ernestus 2008).

7.4.3. Television is also a factor in linguistic innovation

We have turned full circle. Statistically significant correlations between engaging with television and linguistic innovation have been found. We cannot interpret them in terms of indirect causality through attitudinal factors or social factors (at least not those entered into our models). We acknowledge that they may be indicative of indirect causality for other factors which were not measured and/or included in the model. We reject any process of direct behavioural influence and/or wholesale absorption of form and function from frequent exposure to televised models. Nor can we demonstrate that they might result from the sole accepted sociolinguistic mechanism for media influence on core aspects of language, voluntary imitation.

Our conclusion is that we must seriously entertain the possibility that engagement with a television drama may be a contributory causal factor in language change, and specifically that it is in these three changes, along with other social factors. We reiterate that this does not also entail accepting that engaging with television shows or characters will lead to the effective imprinting of televised models of language (or elements of them) on the linguistic systems of viewers. Nor do we think that by

accepting that engagement with television is involved as a factor in these changes, we should at the same time expect that television or the broadcast media must always be entertained as a factor in other changes in progress, either because this is a common popular conception, or because it has at some point been mooted in connection with a particular language change. Rather, a model of television influence on language change needs to explain not just why television might be implicated in certain instances of change, but crucially why most of the time television does not seem to be involved, and why certain changes and/or features of language might be affected and not others. One of the co-incidental findings for the project as a whole was that factors to do with television were not significant in the regression models for any of the three vowels considered (REF). Thus our taking such a position means also acknowledging that getting to grips with the processes that inform such links will be a complex and lengthy undertaking, because so little is properly understood.

7.4.4. Rethinking the notion of television influence on language change

Any serious contemplation of media influence as a causal factor in language variation and change must begin by reconceptualizing what is meant by ‘influence’. In particular, we must reject any definition in terms of the blanket transmission of frequently-encountered linguistic features to passive speaker/viewers. Rather we must return to the individual speaker/viewer before the screen, and what it might mean for them to engage with the media, at differing levels of processing and decoding, social and linguistic, and how such experiences might then relate, or not, to subsequent instances of interaction with other speakers. Very little is known about any of this.

The grounding already exists for a conceptual framework. We could situate our understanding of what might happen at the level of core grammar within a more general approach to the reception of media texts as it has been extended to language by Holly et al (2001). Media influence on language could then be envisaged more broadly in terms of ‘linguistic appropriation’, what each speaker/viewer may take for themselves whilst engaging with a media text, given their own particular experience of the world. The insights to be gained here are that the decoding of media texts is at once individual and embedded in the local social context of the viewer (e.g. Hall 1980), and that as viewers are active in their reception, they may sometimes

appropriate media material, and the media may therefore occasionally appear to exert influence on social perceptions and behaviours (Philo 1999).

However there are fundamental differences – and constraints – which may apply to the reception of media language. Hall (1980: 132) points out that our ‘natural’ recognition of televisual signs hides a learned or habituated process of decoding which is so usual that we feel it to be natural, particularly when there is ‘fundamental alignment and reciprocity – an achieved equivalence – between the encoding and decoding sides of an exchange of meanings’; we use our socially-situated frameworks of knowledge to decode (tele)visual signs. We could speculate that we also use our social and linguistic systems to ‘decode’ televised speech. But if so, we would also have to assume that the existing native linguistic patterns of a speaker/viewer, alongwith the local symbolic functioning of linguistic elements for social, stylistic and stance-taking purposes, would exert considerable constraints on the process, conceptually acting like a filter. The predictions would be that most of the time there would be little or no alignment of local systems with speech experienced from the media: the result would be an effective filtering and/or rejection of media linguistic material alien in form and function. But perhaps sometimes, quite rarely, and/or imperceptibly to an observer (because the appropriation of media elements is likely to be subtle and fit so well with the native systems, and/or occurs at an individual level and so is not amenable to discovery through survey methods), there may be some sufficient alignment of local social and linguistic systems with those in experienced from the media, and existing elements within the local system might be somehow resonated.

The results from Glasgow would be consistent with such predictions. For example, no statistical links were found between the acoustic vowel quality (first and second formants) of Glaswegian /a/ and exposure and/or engagement with television programmes set in London (REF). However we also note that there are fundamental differences in linguistic and social patterning between Glaswegian vernacular and ‘media-Cockney’. Phonologically, media-Cockney has two vowels /a ɜ̃/ with specific phonetic spaces and complex lexical distribution. By contrast, Glaswegian vernacular has only one vowel, /a/, with a different dispersion in phonetic space, and different lexical distribution (Stuart-Smith 2003). Socially, while the fronted /a/ and retracted

/ɜ:/ in the London programmes index working-class characters, the same qualities show very different social-indexical links in Glasgow: the fronted /a/ indexes affected middle-class speech typical of older middle-class speakers from Kelvinside, the retracted /ɜ:/ indexes the Glaswegian version of a stereotypical, very ‘posh’, English English speaker, like the Queen. TH-fronting, on the other hand, is known to have been sporadically available within working-class Glaswegian speech since the 1980s, and even earlier, possibly as a result of mobility and contact in the armed forces during the war (Stuart-Smith et al 2007); it is possible that some kind of social and linguistic alignment could be envisaged, even if the detailed mechanism still remains unclear.

At this stage, however, all this is speculative. All aspects require investigation. One possible way of tackling further systematic study of television influence on speech is practically to break it down into two broad conceptual areas, both as important as each other, but with rather different research paradigms: the ‘phonetic’: processes of perception, perceptual learning, and short-term shifts in speech production from experiencing pre-recorded speech without the possibility of interaction; and the ‘social’: locally-embedded processes of decoding and appropriating socially relevant elements of phonetics and phonology from the broadcast media.

At the phonetic level, advanced exemplar models (e.g. Pierrehumbert 2006) assume the derivation of phonological and social categories from salient stored exemplars (though in fact what constitutes salience is not well specified, see Foulkes forthcoming 2010). Such an approach might be useful for considering the processing of speech encountered from the media (cf Hay et al 2006), perhaps in terms of the activation or resonance of existing exemplars reminiscent of Foulkes and Docherty’s (2001) notion of the redeployment of variation, though with the additional assumption that activation of social and phonological categories would also play a key role (REF). But even those who conceive of phonology in terms of (fuzzy) categories assume that the broadcast media may affect speech (e.g. Evans and Iverson 2004). However we know almost nothing about how and whether processes of speech production and perception in interaction might be similar or different from experiences of speech from non-interactive mediated sources like television and

radio, and empirical research to investigate this is in its infancy. The first experimental study to explore this suggests that speakers can learn about systemic aspects of another accent from non-interactive mediated speech, but differently from face-to-face interaction (REF). Substantial work is needed to develop an appropriate methodology to begin the robust empirical testing of these questions.

At the social level, we need to turn to the observations and insights of interactional sociolinguistics that individuals appropriate media material for specific local stylistic and stance-taking purposes (e.g. Rampton 1995; Androutsopoulos 2001). Further research is needed to investigate the extent to which larger linguistic chunks from the media might ‘bleed’ their phonology and/or morphosyntax. These changes show interesting differences according to style and stance-taking. Conceptualization of the social-indexicality of media language needs to take into account the stylistic opportunities for the exploitation of appropriated features, and/or the recognition of common stance-taking between media language/characters and locally salient expressions of stance for the speaker/viewer (Bucholz 2009). As Coupland (2007, 2009) points out, the broadcast media can offer recontextualization and new meanings for existing linguistic resources. We need much more work to uncover the reciprocal relationships in fine-grained aspects of language use between media and community at the symbolic level.

8. Concluding remarks

The finding that a set of consonant innovations typical of Southern English were spreading rapidly in Glaswegian vernacular seemed to present a paradox. Current models of language change emphasise diffusion of variation through processes that occur during interpersonal interaction, but the Glaswegian innovators also seemed to show the least potential for such contact. The media stated that the changes arose from watching popular television shows set in London, but this conflicted with mainstream sociolinguistic theory which rejected a role for the media in change to core aspects of language.

This paper presented the results from a new project which was specifically designed to investigate the potential role of television in language variation and

change. The starting point of this research was different from previous sociolinguistic discussion. Insights from theory and method from quantitative and qualitative approaches to media influence found in mass communications research were synthesized with those of sociolinguistics and led to the hypothesis that factors associated with television might play a role in language change, but only in conjunction with other social factors. The three changes were confirmed still to be in progress in Glaswegian vernacular. The innovative variants were treated as dependent variables in a multifactorial regression study which examined the relative contribution of some linguistic factors alongside a large number of independent, social, variables in accounting for the patterns of variation. Satisfactory explanation of variation was only achieved with representative variables from a range of theoretical groups (dialect contact, social practices, attitudes to accents, television, and so on). Opportunities for dialect contact with speakers from the South of English showed a significant relationship with the innovations, providing the first empirical evidence for the role of dialect contact in the diffusion of these changes in the UK. Participating in particular, broadly anti-establishment social practices were also positively linked with linguistic variation; positive attitudes to London accents less so. Factors associated with the television showed two main findings. Reported exposure to the television and/or specific programmes was either not correlated or negatively linked. All three consonant changes showed statistically significant effects of engaging with television, and specifically with the London-based programme, *EastEnders*. Interpretation of the statistical models led us to conclude that television is also a contributory factor in these changes, though quite how the television might be involved is still unclear. Unlike the few previous variationist studies, our Glaswegian informants do not show any indications of either being able or wanting to ‘sound’ like a Cockney. We suggested a socially-integrated conceptualization of media ‘influence’ on core aspects of language which takes the speaker/viewer in their local social context as the starting point. Such an approach is speculative, but enables predictions to be formulated for testing, for example, at the level of sociophonology.

We conclude by calling for more systematic research on the potential relationships between the broadcast media and core aspects of language variation and change. We need more correlational studies of this kind, which look empirically at personal patterns of media engagement, and linguistic behaviour. Only in this way can we

begin to gain a proper idea of the extent to which these results are typical or isolated, which linguistic features might show links, and which not. Just as other social factors have been understood by the empirical findings of numerous studies, so factors relating to engagement with the broadcast media need to be explored. This is a major research imperative, and one which has been almost completely neglected. We need studies which are amenable to longitudinal correlational analysis, perhaps where a specific program could be tracked beside community usage, and/or where increased engagement could be predicted. Such data might already exist, from audience reception research carried out within media studies, for example, Buckingham's early work on *EastEnders*.

We need ethnographic studies which track speakers in a range of aspects of their social lives, including watching and engaging with the broadcast media, whose data are subjected to fine-grained linguistic and interactional analysis. We need more and deeper analysis of media representations of language to gain a better understanding of how features function symbolically within, e.g. scripted dramas; for example studies like those of Tagliamonte and Roberts (2005) and Dion and Poplack (2007), but extending them to consider the affective and stance-taking roles played by variables, and how these compare with community norms.

Finally, we need experimental studies which manipulate how speakers experience language and which eventually link what is observed in individuals in the short-term with what may persist into the longer term. In these ways, work on the influence of television, and the broadcast media more generally, may at last join the mainstream endeavour to understand how and why language changes.

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Age Group	chronological age	no. of informants	gender	School
1	10-11 years	12	6 M 6 F	Primary
2	12-13 years	12	6 M 6 F	Secondary
3	14-15 years	12	6 M 6 F	Secondary
4	40+ years	12	6 M 6 F	Adults from same area

Table 1. Social profile of informants

Wordlists	(θ):[f]		(l):[V]		(ð):[v]	
		total		total		total
	%	N	%	N	%	N
1F	45.9	118	72.6	149	6.2	111
1M	66.2	107	74.7	141	21.9	104
2F	54.7	118	75.6	144	7.2	111
2M	50.9	122	79.3	144	5.5	109
3F	55.4	125	75.9	149	11.5	113
3M	59.2	125	77.9	149	10.5	114
4F	0	115	38.5	148	0.0	109
4M	0.8	121	26.9	141	1.9	109
		951		1165		880
Conversations						
	%		%		raw	
1F	35.9	239	28.6	113	0	12
1M	55.0	116	21.7	112	2	21
2F	21.6	253	31.0	222	2	25
2M	33.6	161	17.8	105	0	15
3F	33.3	281	32.1	226	0	18
3M	27.4	277	23.2	237	1	23
4F	2.3	220	15.1	246	0	26
4M	0.8	172	19.6	168	2	18
		1719		1429		158

Table 2: Use of [f], [v] and [V] for (θ), (ð), and (l), respectively, in wordlists and spontaneous speech. 1 = 10-11 years, 2 = 12-13 years, 3 = 14-15 years, 4 = 40-60 years, M = male, F = female. Average percentages are shown for the use of the variant by each age/gender group (bar (ð) conversations, for which the numbers are too low), followed by the overall total number of instances of the variable for the same group.

Wordlists	(θ):[f]		(ð):[v]			(l):[V]	
	%	N	%	N		%	N
word-initial	43.8	249	-	-	pre-pausal	73.1	386
word-medial	62.7	59	5.4	591	pre-consonantal	38.0	71
word-final	60.2	407	53.5	71	post-consonantal	85.2	419
		715		662			876
Conversations							
	%	N	raw	N		%	N
word-initial	30.2	739	-	-	pre-pausal	20.8	528
word-medial	21.1	479	4	117	pre-consonantal	17.6	289
word-final	78.0	109	1	1	post-consonantal	55.1	198
		1327		118			1015

Table 3: Distributions of [f], [v] and [V] for (θ), (ð), and (l) respectively, in wordlists and spontaneous speech, according to phonetic environment. Data is not given for (ð) in word-initial position, as [v] may not occur in this position.

		(θ):[f]	(l):[V]	(ð):[v]
Wordlists				
real time	2003/1997	**	**	-
apparent				
time	adolescents/adults	-	**	-
linguistic	position in			
environment	word/syllabic position	**	**	**
age		ns	ns	*
gender		ns	ns	ns
gender	within Age Group 1	**	ns	**
	within Age Group 2	ns	ns	ns
	within Age Group 3	ns	ns	ns
age	within girls	ns	ns	ns
	within boys	ns	ns	**
Conversations				
real time	2003/1997	**	**	-
apparent				
time	adolescents/adults	-	**	-
linguistic	position in			
environment	word/syllabic position	**	**	-
age		*	ns	-
gender		ns	**	-
gender	within Age Group 1	**	ns	-
	within Age Group 2	**	*	-
	within Age Group 3	ns	*	-
age	within girls	**	ns	-
	within boys	**	ns	-

Table 4: Results of chi-square tests for the distributions of [f], [v] and [V] for (θ), (ð), and (l), respectively, in wordlists and spontaneous speech according to: year of data collection ('real time'); use in younger and older speakers in 2003 (apparent time); linguistic environment; and age and gender. * indicates $p < 0.05$, ** $p < 0.01$; dash (-) indicates distribution included cell sizes with counts too low for testing.

	<i>within Glasgow</i>	<i>beyond Glasgow</i>
face to face	1.00	0.44
talk on phone	0.36	0.56
text/email	0.49	0.19

Table 5: Reported contact with family and friends within and beyond Glasgow given in terms of mean indices calculated from responses from all adolescents, according to type of contact. Indices encode frequency of contact with number of potential contacts, and have been normalized by the strongest type of contact (face to face contact within Glasgow).

	<i>have relatives</i>	<i>talk to relatives</i>	<i>see relatives</i>	<i>visit cities</i>
elsewhere in				
Scotland	0.25	0.59	1.00	0.91
North England	0.33	0.86	0.70	1.00
Central				
England	0.11	0	0	0.13
South England	0.28	0.42	0.38	0.53
N Ireland	0.03	0	0	-
other country	0.47	1.00	0.38	-

Table 6: Potential for dialect contact for the adolescent sample according to regional location of relatives (mean percentage), and to frequencies of speaking to and seeing relatives, and visiting cities (indices have been normalized against the highest frequency within each category, so ‘other country’, ‘elsewhere in Scotland’ and ‘North England’ respectively).

accent	correct identification	auditory sample	mental image
	%		
Glasgow WC	44	1.2	2.2
Newcastle	40	1.7	1.5
Manchester	25	0.9	1.1
RP	19	-0.6	-
Informal	17		
London		0.4	0.4
Glasgow MC	11	0.8	-
Edinburgh	11	1.2	1

Table 7: Results of attitude surveys showing proportions of correct identification of accent recordings, and means of responses to accent recordings (played at the beginning of the questionnaire), and of responses to the question, ‘What do you think about the accent in ...?’ (5 point scale runs from -2 ‘don’t like at all’ to +3 ‘like a lot’).

<i>Dependent variable</i>	<i>= 1 if (θ):[f];</i> <i>= 0 otherwise</i>	<i>Exp(B)</i>	<i>Magnitude</i>
word-initial position (e.g. <i>think</i>)		0.40	-248%
like animation films		0.24	-410%
use internet for chatrooms		0.61	-163%
like informal London accent sample		1.16	116%
personal clothing choice		3.50	350%
contact with relatives in South England		1.40	140%
watch <i>Coronation St</i>		0.63	-159%
watch <i>ER</i>		0.67	-150%
<i>EastEnders</i> is favourite programme		1.64	164%
Constant		4.13	413%
N		715	
Nagelkerke r		0.33	

Only variables with $p < .05$ are included.

Table 8: Logit Model 1: [f] for (θ) in wordlists.

<i>Dependent variable = 1 if (θ):[f];</i>		
	<i>Exp(B)</i>	<i>Magnitude</i>
<i>= 0 otherwise</i>		
word final position (e.g. <i>tooth</i>)	10.67	1044%
contact with relatives in North England	0.91	-110%
% talking about TV in conversation	0.97	-103%
watch <i>Coronation St</i>	0.67	-150%
<i>EastEnders</i> is favourite programme/favourite character	1.38	138%
Constant	0.97	-103%
N	1327	
Nagelkerke r^2	0.17	

Only variables with $p < .05$ are included.

Table 9: Logit Model 2: [f] for (θ) in conversations.

<i>Dependent variable = 1 if (l):[V]; = 0 otherwise</i>	<i>Exp(B)</i>	<i>Magnitude</i>
postconsonantal position (e.g. <i>people</i>)	5.55	555%
personal clothing choice	2.82	282%
% talk about TV in conversation	0.94	-106%
<i>EastEnders</i> is favourite programme	1.65	165%
Constant	0.19	-532%
<hr/>		
N	1015	
Nagelkerke r^2	0.17	

Only variables with $p < .05$ are included.

Table 11: Logit Model 4: [V] for (l) in conversations.

<i>Dependent variable</i> = 1 if (ð):[v]; = 0 otherwise	<i>Exp(B)</i>	<i>Magnitude</i>
word-medial position	0.02	-5263%
correctly identify informal London sample	1.71	171%
dislike school	2.63	263%
go out at night at weekends	3.52	352%
contact with relatives South England	1.82	182%
watch TV	0.38	-265%
talk about films on TV	8.04	804%
watch and like <i>EastEnders</i>	15.62	1562%
Constant		
<hr/>		
N	662	
Nagelkerke r^2	0.48	

Only variables with $p < .05$ are included.

Table 12: Logit Model 5: [v] for (ð) in wordlists.

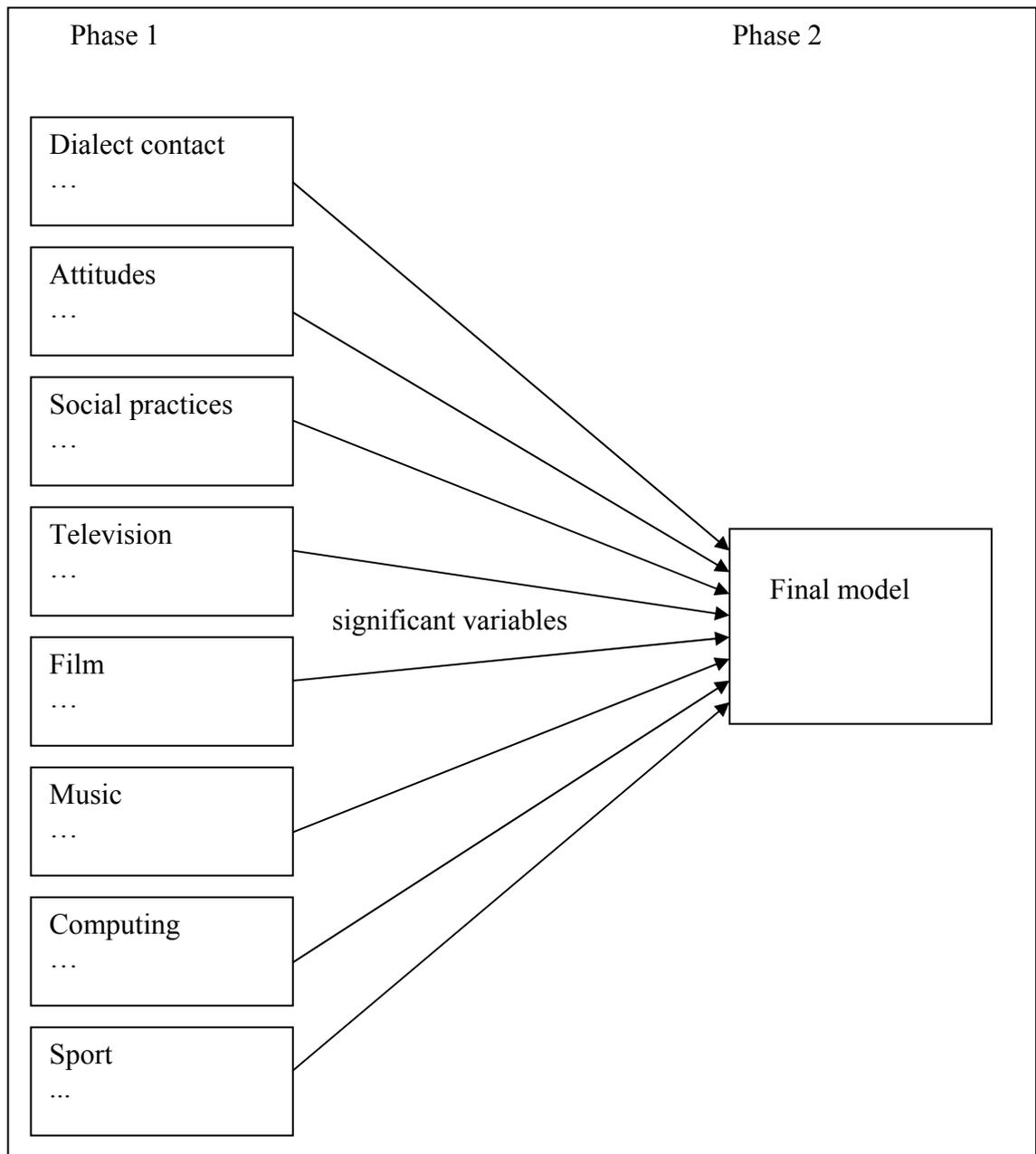


Figure 1: Diagram of design for regression analysis. Independent variables are considered in logit regression models for each thematic group. Significant variables from these models are taken into a shortlist for the final combined model, and after analysis of multicollinearity, the final logit models are run.

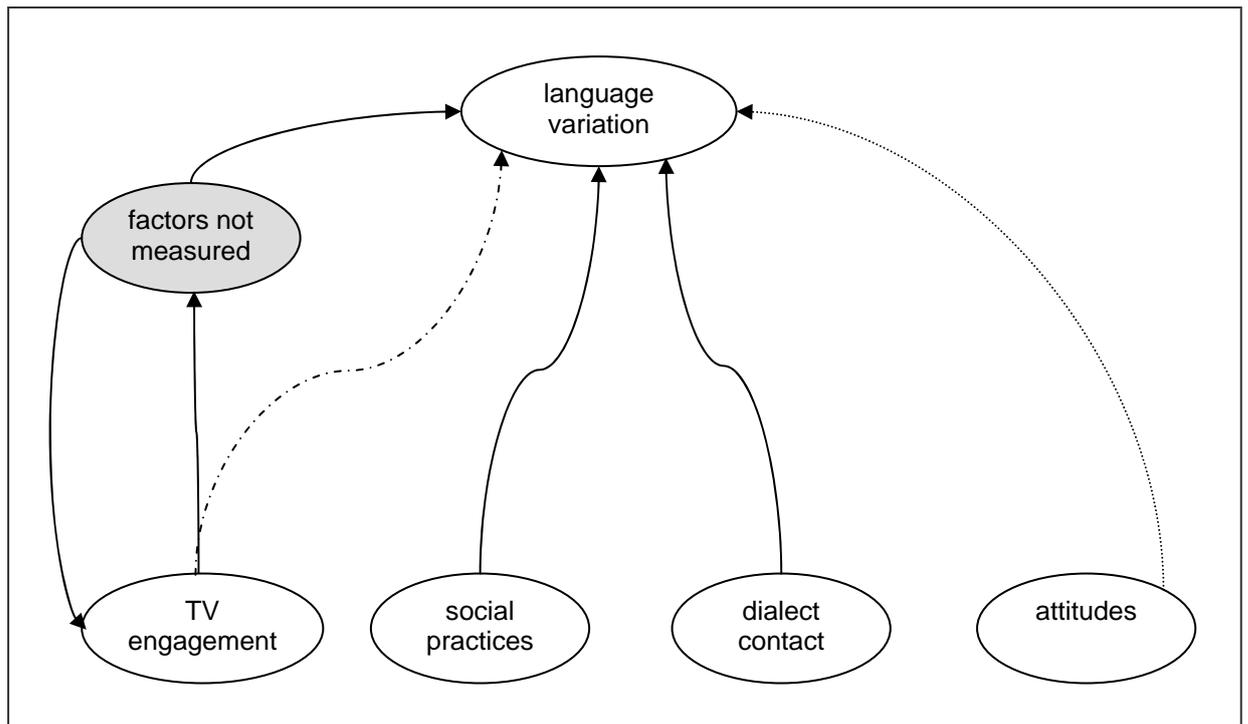


Figure 2: Schematic diagram of causal pathways relating social factors to linguistic variation. Bundles of the key theoretical social factors are indicated within the ovals at the bottom of the figure. The shaded oval indicates potential alternative factors not included in the model which may be interposed between language and TV engagement factors. Arrow connectors indicate the presence of a significant correlation within the regression models, and the inference of a causal link. Solid lines indicate factors for which accepted mechanisms/processes exist; the light dashed line connecting attitudinal factors indicates the weaker statistical evidence for a relationship. The dotted/dashed line connecting TV engagement factors indicates the likelihood of a causal relationship whose mechanisms are still far from clear.