

Chapter 4

The (t)Variable

4.1 Introduction

The study to date on the (t) variable has been extensive and exhaustive. Much work has been done on various different variants of (t), not least because the (t) variable has a vernacular variant, the glottal stop, historically stigmatised (see Wells 1982; Fabricius 2002; Bailey 1996). The glottal stop's social salience is renowned among laypeople and linguists alike. In recent years, the glottal stop has become the 'poster child' variant within sociolinguistic research. There have been several contact based studies on (t), but as we shall see, they have not been without their problems.

Due to the phenomenon known as *regional dialect levelling*, a process which leads to the loss of localised features, it would appear that [ʔ] is making inroads into several locations of the UK. Milroy, Milroy, Hartley and Walshaw (1994), claim that in Newcastle, the *local* form [ʔt] is being eroded at the expense of the *regional* form [ʔ]. But Milroy et al. (1994) do not demonstrate that glottal stops were a regional, supralocal form at the time of the study. *Levelling*, defined by Trudgill (1986: 98) is "the reduction or attrition of *marked* variants" which occurs when speakers of different dialects come into contact. But many studies that claim that [ʔ] is the supralocal, regional form, neglect to enter into discussion of where it is coming from, simply citing mobility or migration as accelerating factors. According to Britain (personal communication), many studies of [ʔ] have "used it (the glottal stop) as hypothetical evidence of dialect contact, without demonstrating that glottal stops were supralocal at the time".

A classic example of the study of the spread of glottalisation that is claimed to be a result of mobility and contact, is Kerswill and Williams' (2000) Milton Keynes project. They found that in the highly mixed contact situation of the New Town, features found in the majority of the (south-eastern non-standard) “input” varieties were also found in full measure in Milton Keynes. Thus, the children in their sample had mainly [ʔ] for intervocalic and final (t). They claim that in the case of word medial (t), differences between childrens' and caregivers' levels of glottalisation were striking. They also found that the youngest caregivers were using glottal stops approximately twice as much as the oldest caregivers. They claim, based on this evidence, that a possible change may be taking place in the status of the previously stigmatised form (Kerswill and Williams 2000: 96). However, these are strong claims. Kerswill and Williams (2000: 69) claims that "we need to know the exact linguistic and social history of the location from the time of the start of the mass settlement to the time when a koine emerges". Yet the only data used to compare the pre-New Town village of Stewkely, about eight kilometres south of Milton Keynes, to the data of New Town of Milton Keynes was SED data (Orton et al. 1962–71; Orton, Sanderson & Widdowson 1978).

Kerswill and Williams state that Milton Keynes was already a dialect levelled area before they began the project. It is situated on the boundary between what Trudgill (1990: 63) identifies as the South Midlands and Home Counties Modern Dialect areas. Using data from the SED, Trudgill finds that these areas are the most innovative of all, in that the forms of traditional speech have moved furthest from Middle English forms (Trudgill 1990: 63 cited in Kerswill and Williams 2002: 80). In addition to this, "In the period 1967–88, 76.2% of all migrants to Milton Keynes were from the southeast of England, and of those, half were from London;More recently, however, the numbers of migrants from Greater London has been declining, and there has been an increase in migration from the surrounding counties of

Buckinghamshire, Bedfordshire, and Northamptonshire" (Kerswill and Williams 2000: 78-9).

Given this information, might we expect to find south eastern linguistic features in full measure in 1990, the year that the project began? Furthermore, if we look at studies of the glottal stop in other dialect locations of the UK, we see an increase over time, particularly in the speech of the young. Examples of such studies are as follows:

- Stoddart, Upton and Widdowson (1999: 75), found that [ʔ] is used much more frequently in Sheffield by younger speakers;
- Docherty and Foulkes (1999: 50) found that [ʔ] is on the increase amongst younger speakers in Derby, particularly in pre- consonantal environment where it is almost categorical. In pre-pausal and pre-vocalic position it is the majority variant;
- Mathisen (1999: 10) found that "The glottal stop is very frequent in teenage speech and also variably in young adult (30 yrs speech)but very infrequent in the speech of the elderly";
- Flynn (2013: 314-15) found among Nottingham speakers that the glottal stop has statistically significantly increased in all contexts for young speakers, and as a consequence, use of standard [t] has been statistically significantly reduced.

Kerswill and Williams (2000: 81) claim that "Southeastern dialect levelling persisted during the 20th century....it continues today independently of the presence of New Towns, though doubtless accelerated by the population mobility they fostered" (Williams & Kerswill 1999).

One might question though, given the findings of the aforementioned studies that have found [ʔ] to be on the increase in the speech of younger people, would Milton Keynes have followed this pattern regardless of the make up of the population there? Are we witnessing in Milton Keynes the development of a New Town Koine? Or is this just another example of

what is happening with [ʔ] in numerous towns and cities in the UK presently? Moreover, one might question whether the (t) variable can be seen as diagnostic of koinéisation.

Stuart-Smith, Timmins and Tweedie (2007: 222), in their study of consonantal features of Glasgow English including T-glottaling claim that "Recent research is revealing rapid accent change in urban accents across the U.KConsonantal systems in particular are showing changes which together have been describe as 'homogenization'....such that resulting systems across dialects appear to be more similar. The linguistic reflexes of the changes are twofold: features are appearing in regional accents, for example, TH-fronting (Kerswill 2003), and local features are disappearing, for example, the reduction of the 'reinforced' glottal variants of (t) typical of Tyneside English (e.g. Docherty et al. 1997)".

Stuart-Smith et al. (2007: 255) conclude that dialect contact processes may indeed be at work regarding the changes in the consonantal features of Glaswegian English. However, they also claim that the changes may not be due to one single source of variation, and that we need not assume that dialect contact must be involved at all stages of the changes for all speakers. Citing working class adolescents as the group who have adopted the changes most fully, they throw out the theory that these changes are solely dialect contact induced "but that other mechanisms increase their usage by particular groups of individuals, here our working-class adolescents" (ibid.). They claim that the non-standard features they found, including [ʔ], were already present in Urban Scots with symbolic social functions, and that the adolescents exploited and amplified them. "it is clear from our account that several theoretical models – social networks, mobility, dialect contact, and language ideology – are needed together, and in conjunction with an appreciation of local socio-spatial history, to account for these intriguing data. Are our kids 'talkin' Jockney'? Descriptively they *are* using a mixed

consonantal system, with local and non-local features. Whether they intend this repertoire to sound mixed, or anything other than ‘pure Glaswegian’, seems unlikely, though that in itself does not rule out interaction with television or the media as additional contributory factors in these changes. But that is another story altogether." (ibid.). We see here that several arguments are put forward as to why there are changes within the Glaswegian consonantal system, particularly in the speech of young adolescents. We are left confused as to what is local, what is supralocal and what processes are and are not at work in this sound change.

The present study, despite all its transience and messiness is a *real* dialect contact study. It is one of the first *direct* dialect contact studies that looks at a sample of informants, with their differing systems of realising (t), coming into contact in a single location. It is one of the first empirical demonstrations of (t) systems coming into contact across two age groups, three different ethnic groups and children and adolescents from different dialect locations of the UK. We know the components that this dialect contact situation is made up of. This chapter examines the linguistic consequences for (t) of all these components coming together.

4.2 History of the Glottal Stop

Glottal stops are a relatively recent feature of English. They appear to have first been found and documented in the West of Scotland. There is little historical record of the feature until after the 1850s. Andréson (1968: 12-35) cites A. Melville Bell, A.J. Ellis and Henry Sweet (in 1860, 1875 and 1877 respectively) as “the earliest phoneticians to recognise the existence of glottal stop: all three describe it in connexion with Scottish accents of English”(Collins and Mees 1996: 177). Wells (1982a) cites Jones (1909) “In Scotland and London *t* is often replaced by the glottal plosive ?”. According to Bailey, in 1896 E.H. Babbitt recorded glottal stops in New York City in *letter*, *butter* and *written* as “common, but by no means regular,

among the school children” (Babbitt cited in Bailey 1996: 77). Joseph Wright recorded the glottal stop before syllabic /l/ in words such as *battle*, *bottle* and *nettle* in 1905. He claimed this pronunciation was classic of Edinburgh and its hinterlands (see Bailey 1996). Sweet (cited in Andréén 1968) records the existence of the glottal stop in what he refers to as “North English” in 1908.

Collins and Mees comment upon the fact that although the glottal stop is associated with London and often thought of as a feature of ‘Cockney’, “it was not until 1909 that glottal stop is mentioned as a feature of London English. Andréén (1968: 16) points out that in that year both Daniel Jones (1909: 16) and Otto Jespersen (1909: 14.93) separately commented on its prevalence in popular London speech.” (Collins and Mees 1996: 178).

The glottal stop has been well documented within the media and much commented upon by the general public as the archetypal variant of 'sloppy' speech, the stereotypical variant of all that is 'bad' in language change, the variant of language decline. It has also been heralded as the variant that is so widespread even young royals are using it. Mugglestone (2003) and Collins and Mees (1996) both comment upon glottalisation entering RP using the example that Princess Diana said “*There’s a lot of it about*” using perfectly enunciated glottal stops /'ðeəz ə 'lɒ? əv ɪ? ə'baʊt/. (Although Collins and Mees point out that there is no record of where and when she said it). It has also been portrayed as the variant of camaraderie that enables people such as politicians to appear as "one of us". Mugglestone claims the glottal stop was employed by Tony Blair, a denotation of Blair as “an ‘everyman’ who speaks to all.” (Mugglestone 2003: 280).

Beal (2010: 79) claims that the glottal stop has been associated with 'Estuary English', and it is assumed that it is diffusing from London to the rest of the country. However, Beal states that "the media are always quick to seize on any evidence that 'Estuary English' is swamping local accents in places distant from London, even when the evidence provided by sociolinguistic researchers tells a more complex story" (ibid.). Before we enter into a discussion about the spread of the glottal stop in British English, I shall first briefly discuss the association of the glottal stop with the notion of 'Estuary English'.

The term 'Estuary English' was first coined by David Rosewarne in 1983, who was at the time a post-graduate student of Applied Linguistics at Birkbeck College in the University of London ¹(<http://www.phon.ucl.ac.uk/home/estuary/maidment.htm>). The term first appeared in an article in the Times Educational Supplement in 1984, and then later in an expanded article in *English Today* in 1994. These are the only times that Rosewarne made his ideas public in print. In terms of (t), Rosewarne claimed that a feature of 'Estuary English' was 'word final and preconsonantal glottal replacement' (ibid.). (The same website questions the existence of Estuary English, a theme that other more recent linguistic research has also been concerned with). He also claims that glottal replacement is different within 'Estuary English' to 'Cockney' in that it is confined to the aforementioned environments in 'Estuary English', but possible in all environments apart from syllable initial in 'Cockney'. This all sounds very vague and unsubstantiated. However, my point is, did the public and media interest in 'Estuary English' fuel the extensive sociolinguistic research of the glottal stop in recent years? The variables (p) and (k) are also glottalised in certain parts of the country (see Milroy et al. 1994), so why the frenzied interest in T-glottaling?

¹ Last accessed 17/2/13

I shall now discuss what is happening in the UK in terms of diffusion of [ʔ]. In the words of Trudgill, the spread of glottalisation is "one of the most dramatic, widespread and rapid changes to have occurred in British English in recent times" (1999: 136). According to Beal (2010), despite assumptions that this spread is a result of diffusion from London and the south east of England to urban areas of the north and west of England and Wales, the spread of glottalisation seems to have involved a 'pincer movement'. She attributes this theory to the fact that there is evidence of glottalisation from the West of Scotland as early as 1860 and from London in the early twentieth century. Therefore, glottalisation in Northern cities could well have arrived from further north rather than London. Beal (2010: 79) concludes, that whatever its origins, there is compelling evidence for its diffusion in the late twentieth century.

Kerswill (2003: 232) suggests that "the feature seems to have diffused to urban centres outside the south-east within the last 30-40 years". Beal (2010: 80) echoes this theory, claiming that "there is evidence that this diffusion is, or at least has been, of the 'urban hierarchical' type". Urban hierarchical diffusion is the process whereby linguistic innovations descend down a scale of large city to large town, then to smaller town and finally to rural areas. To exemplify this, she points out that Petyt (1985) found glottalisation in Bradford but not in smaller towns such as Huddersfield. (A counter-example of this is Liverpool, see Watson 2006).

Many researchers who have looked at (t) have come to the conclusion that what is actually happening with glottalisation in the UK is a case of 'Regional dialect levelling' or 'Supralocalisation'. These terms refer to the process whereby "as a result of mobility and dialect contact, linguistic variants with a wider socio-spatial currency become more

widespread at the expense of more localised forms" (Britain 2010: 193). An example of this is the ascendance in Newcastle of the glottal stop, at the expense of the more localised variant [ʔt] and the standard variant [t] (see Milroy et al. 1994). An apparent time approach with children between 5-10 years old and younger and older adults revealed an increase in apparent time in the use of the supralocal variant [ʔ], and a decrease in apparent time in the use of the local variant [ʔt]. Importantly, the study also found that the supralocal form was on the ascendency amongst middle-class women, and the local form was most persistent amongst men. The standard form played did not feature significantly in the ongoing changes. However, as I mentioned in the introduction, Milroy et al. (1994), do not say where the supralocal form is coming from.

In summary then, the glottal stop in recent years has become a particularly salient phonological feature both in the field of sociolinguistics and within the media. It has attracted much commentary by linguists and laypeople alike, and continues to do so. Studies show that it is increasing in the speech of younger speakers across the UK (see Stoddard, Upton and Widdowson 1999: 75; Docherty and Foulkes 1999: 50; Mathisen 1999: 110; Williams and Kerswill 1999: 147; Newbrook 1999: 97), suggesting that its spread is a change in progress.

4.3 Motivations for studying the (t) variable in this environment

My rationale for studying (t) in this setting lies with the glottal stop. I was interested to find out if Non-Anglo informants were adopting the glottal stop, and if so to what extent. Given that the feature has spread so dramatically and rapidly in British English in recent times (Trudgill 1999), I was interested to find out if the feature could also spread in this highly mixed and fluid community. After listening to these data repeatedly, it was apparent that the glottalling was present to some extent in every informant's language, regardless of age,

competency in English and ethnicity. I was interested to find out whether glottalling held the same social significance for Non-Anglo informants as Anglo informants, or if when it was transplanted to a new setting, its social status changed. I was also interested to find out if Non-Anglo informants' patterns of usage of the glottal stop mirrored those of the Anglo informants'. Certain questions arose such as: to what extent does community of practice membership have an impact upon the patterns of usage of variants in dialect contact situations where there is no stable target model? Are certain ethnic groups adopting the feature more than others and others shunning it? Is the level of contact with the Anglophone community at the school a factor for how far Non-Anglos adopt the glottal stop in this setting? The overarching concern regarding researching the glottal stop in this speech community is to find out if, despite all the 'messiness' of the speech community and the ongoing fluidity, any levels of homogeneity and focussing can be found in this distinct setting.

4.4 Social status of the glottal stop

The glottal stop has in previous studies been described and regarded as a stigmatised feature (see Baker 2000; Wells 1982; Fabricius 2002), particularly in word-medial intervocalic position. Fabricius claims that T-glottalling in certain word-internal syllable-final environments is accepted as being RP (e.g. *football*, *Gatwick*), while T glottalling intervocalically (as in *water*, *butter*) and before syllabic /l/ (as in *bottle*) remains outside of RP (Fabricius 2002). I feel that it is necessary, when considering the social status of the glottal stop to look at this variant from a *then* and *now* perspective. The status of the glottal stop has changed over the years, as I shall demonstrate below. We start by looking at the glottal stop in the 19th century.

Bailey (1996) comments upon the lack of social evaluation of the glottal stop in the 19th century. Although phoneticians had noticed its presence, it did not appear in any elocution manuals or books aimed at improving speech at that time. Bailey goes on to say that the social meaning attached to the glottal stop was slow to emerge. He cites A.J.D. D'Orsey in 1882 complaining that the vernacular of London schoolchildren made it difficult to distinguish *life*, *like* and *light*. Helge Kökeritz, in his 1926-28 study of the dialect of Suffolk found that the glottal stop was in common use, but absent in the speech of the older residents. Bailey claims "Kökeritz was uncertain if this use of the glottal stop should be called "a class peculiarity," something that subsequent observers would have no difficulty in alleging, but he found that children, who "used the glottal stop rarely in reading aloud, were found to substitute it even for **d** during play-time" (Bailey 1996: 78).

He also comments that although the glottal stop was common in 19th century Britain, it did not influence overseas varieties to the extent that other innovations had. Bailey claims that despite being found in some varieties of North American English, it is not found in the Caribbean except for Barbados, South Africa, Australia or New Zealand. He states that "Everywhere that it does occur, however, some of its uses are treated as stigmatized, as exemplary of "rough speech" characteristic of the "vulgar"... (Bailey 1996:78).

More recent studies, by Mees and Collins 1999, and Milroy et al. 1994, show that glottalisation in some places is changing its status to a middle-class rather than a working-class form. "The spread of the glottal stop is so rapid that it is now widely perceived as a stereotype of urban British speech.... it is now evident in the casual speech of middle- and upper-class people, both male and female" (Milroy et al. 1994). Both studies found females

leading the change, which may suggest that [ʔ] is changing its status and becoming a prestige variant in Cardiff and Tyneside.

An important consideration when discussing the social status of the glottal stop within the confines of *this* thesis is to think about its status in *this* speech community. Notions of stigma, prestige and ‘correctness’, attached to linguistic variables can often be turned on their head when transplanted into a new linguistic setting. Britain (2005) comments upon the lack of importance a standard dialect and stigma and prestige more generally may have held for the newly settled migrants who came to New Zealand to carve out a better life for themselves from a poverty stricken British Isles in the mid-19th century. Britain describes New Zealand at that time as a less class-ridden society than the 19th century Britain that the new settlers had left behind. Regarding the importance of a standard dialect for these people, many of whom were not even literate Britain states “It is unlikely to have had a great influence on the linguistic attitudes of most people at this critical time in the formation of NZE. Those whose job it was to worry and fuss about language worried and fussed. But this, of course, tells us little about how the vast majority evaluated language.” (Britain 2005: 166).

I feel that similar changes to attitudes towards so called ‘stigmatised’ variants occur when these variants are transplanted from England to Spain. What significance does a dropped /h/ or a glottalised /t/ have when your neighbour may not even speak English? And how are variants such as these viewed by the kids in my sample whose first language is not English? What may be considered stigmatised to certain socioeconomic classes and age groups in some parts of the British Isles may in fact be viewed as attractive or prestigious in this setting, particularly for the teenage informants. Values and concerns about language may alter or be of little consequence in this speech community. One only has to look at the overall

glottalisation levels of the teenage informants of all ethnicities in this school to see that despite what may be happening elsewhere, [ʔ] is not experiencing intense disapproval here. In terms of stigma, we cannot say with any certainty whether [ʔ] is stigmatised here, despite the fact that everyone is using it. It is well documented that adolescence is the time when vernacular forms and stigmatised variants are used the most.

4.5 Description of the Glottal Stop

The glottal stop is a plosive made at the glottis by vocal folds, and is the only plosive-allophone that occurs in the English language that is articulated without using the tongue or the lips (see Pointner 1996). The only requirement by the speech organs “seems to be that they let the air escape when the glottis opens, either through the mouth or through the nose.” (Pointner 1996: 2). Roca and Johnson (1999) claim that to produce a glottal stop the vocal folds come together which creates a momentary break in the airstream. They go on to liken the gesture involved in producing the glottal stop to that of coughing. Bailey describes the articulation of glottal stop as being “formed by an abrupt interruption in the flow of breath at the back of the oral cavity” (Bailey 1996:76).

4.6 The distribution patterns of T-glottaling

The distribution patterns of T-glottalling are complex. Tollfree (1999) claims that the results of her South East London survey demonstrate the complexity of distribution patterns of T-glottalisation. Glottalisation was prevalent in words with *-er* suffixes such as *squatter*, verbs with *-ing* suffixes such as *heating*. It was more restricted in words like *theoretic* and *automatic*. It operates in compound items like *football* and over a word boundary with a following vowel such as *get it*. Tollfree (1999) claims that T-glottalisation is blocked when “(t) is preceded by a non-resonant consonant in coda position (e.g. *project*, *sister*, *chapter*)”

(Tollfree 1999: 171). She goes on to say that glottalisation frequently occurs following resonants in words such as *violent* and *guilty*. T-glottalisation is also blocked in foot initial onset position generally both word initially e.g. *team* and word internally e.g. *attest*. T-glottalisation is generally blocked in positions where the following nucleus has more prominence, e.g. *particular*, but common in words where the preceding syllable has more prominence e.g. *winter*, *butter*. She argues, based upon the evidence of this south east London English study, that T-glottalisation is highly sensitive to prominence patterns and that “T-glottalisation is optional where the stress on the syllable following (t) is less than that borne by the preceding syllable i.e. in non-foot-initial onset position.” (Tollfree 1999: 172).

According to Altendorf and Watt (2008: 209), phonetic constraints affect the occurrence and frequency of the glottal variant. The variant is more frequent in the following ascending order: "pre-consonantal position (*Scotland*, *quite nice*)>pre-vocalic across word boundaries (*quite easy*) and pre-pausal position (*Quite!*)>word-internal pre-lateral position (*bottle*)>word-internal intervocalic position (*butter*)". Social and stylistic factors affect frequency patterns (see Altendorf and Watt 2008: 210).

4.7 Terminology associated with glottalisation

In the sociolinguistic, phonetic and phonological literature there is much disparity and complexity regarding glottaling. Glottalisation and glottaling can be acceptable terms to apply to any articulation that involves the glottis (Baker 2000: 101). However, there is still much inconsistency regarding the allophones that glottalisation applies to. Citing Baker (2000: 101),

- “Harris and Kaye (1990: 251) use the term “glottalling” to refer to [ʔ] alone.

- Collins and Mees (1996: 177) follow Roach (1973) and employ “glottalisation” as a cover term for both [ʔt] and [ʔ].
- Trudgill (1974) uses the term glottal reinforcement for [tʔ] and glottalisation for [ʔ].
- Milroy, Milroy, Hartley and Walshaw (1994) employ the term “t-glottaling” for [ʔ] and “glottalisation” for [ʔt].

Further confusion arises regarding the terminology related to the actual allophones, e.g [ʔ] is referred to (amongst other terminology) as a “glottal stop”, “T-glottaling” or “glottaling” (Wells 1982) or “glottal replacement” (Milroy, Milroy, Hartley and Walshaw 1994). [ʔt] can be either referred to as “pre-glottalisation” (Kingsmore 1995) or “glottal reinforcement” or “glottalization” (Milroy, Milroy, Hartley and Walshaw 1994).

To be clear from the start of this chapter, I shall use the terms glottaling and glottalisation to refer to the linguistic variant [ʔ], glottal reinforcement to refer to [ʔt]. I shall refer to [ɾ] as flapping or T-voicing, [t] will be referred to as released /t/ and [t̚] will be referred to as the dental variant, soft dental variant or the Spanish variant.

4.8 Methodological Issues for (t)

The tokens for (t) were quite frequently occurring, so it was not necessary to use elicitation techniques like I had for the BATH vowel with the young informants. Tokens were extracted from the informal individual recordings, and peer recordings where necessary. (This was particularly necessary for some of the Non-Anglo informants, where tokens occurred less frequently or were sometimes inaudible). The intention was to extract approximately 100 tokens from each informant approximately with no more than 30% function words (the (t) analysis found variation within function words. Therefore I included function words, but limited them to approximately 30%). These functions words were *but, not, it, what, that* and

at. However, token numbers for informants range from 41-121, as do the number of function words ranging from approximately 25-38%.

Apart from the tokens that I omitted (see below section 4.8), all other tokens were subject to auditory analysis. . For the auditory analysis I used the audio editing programme Goldwave version 5. I analysed five variants of (t) which were present in these data. These were glottal stops, [ʔ] released [t], flapped or voiced [ɾ], a soft dental variant [t̪] and glottal reinforcement [tʔ]. For the analysis I used Microsoft Office Excel 2000, and for the cross-tabulations I used a pivot table in Excel. I also used Goldvarb X to show the weight of significance of social and linguistic factors.

It was necessary to listen to some of the tokens repeatedly. In the final analysis, the total number of tokens that the data produced was 3015 tokens drawn from more than 40 hours of sociolinguistic recordings.

4.9 Tokens Excluded

I excluded the following tokens from the (t) variable data:

Emphatic tokens:

All emphatic tokens were excluded. Emphatic phrases such as “*not at all*” were often released for emphasis.

T to R rule:

The T to R rule is the phenomenon, found in many types of northern Englishes whereby /t/ is realised as [ɾ] when a vowel follows. E.g gotta becomes [gɒɾə] and better becomes [bɛɾə].

Several of these tokens were present in the Sheffield informant’s data. They were omitted from the analysis.

Words with (t) in word final position where the following word has word initial (t):

These tokens were all excluded, as it was impossible to hear whether a word final (t) was the coda of the preceding syllable or the onset of the following.

Compound words:

Compound words such as ‘football’ were excluded, as it is extremely likely for /t/ to be glottalised in words like this. /t/ can only be released in these words if they are not treated like a compound word.

Total omission:

Tokens where /t/ was totally omitted were excluded. These tokens were only present in the Non-Anglo data, and extremely difficult to detect using auditory analysis.

Word Contractions:

Word contractions such as ‘gotta’ were excluded. These were much more likely to occur in Anglo data. It therefore did not seem appropriate to assume that they were variable across the whole sample.

Words with stress on the final syllable:

Words such as ‘hotel’ ‘return’ ‘deter’ and were excluded, as glottaling is unlikely in words like these. The preceding syllable must have more stress for glottaling to occur.

Numbers:

Words like ‘thirteen’ and ‘fourteen’ through to ‘nineteen’ were also excluded. It is possible to glottalise these words, but these data found it to be unlikely due to the stress on the final syllable. Therefore, they were excluded.

Words ending in –ly:

Words ending in –ly such as ‘completely’, ‘absolutely’ and ‘definitely’ were excluded.

Although the stress is syllable final in these words and it is possible to glottalise them, these words were infrequent in these data and did not provide enough tokens to create a category.

Word internal with preceding l or n:

Words such as ‘winter’, ‘mantle’, ‘melting’ and ‘sprinting’ were excluded. This is because these words were infrequent in these data, and did not provide enough tokens to create a category.

Spanish words:

All Spanish words, some of which were frequently used by the informants, such as ‘Bachillerato’ (post-secondary qualification in Spain) were excluded. The study looks at variation of (t) in English words only.

4.10 Social Constraints

The social constraints explored for a correlation with variation for these data for (t) are as follows. Age group was a social variable. Ethnicity was also employed as a social variable. The informants were divided into broad ethnic groups of Spanish, Northern European and Anglo. Southern Anglos and Northern Anglo were not differentiated in this (t) analysis, as their glottalisation levels showed very few differences from each other in any phonological environment. The social network of each the informant was used as a social variable. These were Anglo, Spanish, mixed or other nationalities. Gender was also employed as a social factor, as were type of primary education and bilingualism versus monolingualism.

4.11 Linguistic Constraints

The phonetic environments in which I examined (t) were as follows: intervocalic word medial, e.g. *butter*, word final preconsonantal e.g. *bit special*, word final prevocalic e.g. *it arose*, turn final which also includes a following pause and /t/ before syllabic /l/ e.g. ‘little’.

4.12 Analytical Issues

The total number of tokens in the final analysis was 3015. In intervocalic word medial position, e.g. *litter*, out of 532 tokens, 158 (30%) were glottalised. In word final preconsonantal position, e.g. *but lovely*, out of 987 tokens, 895 (91%) were glottalised. In word final prevocalic position, e.g. *cut above*, out of 793 tokens, 614 (77%) were glottalised. In turn final/pre-pausal position out of 628 tokens, 485 (77%) were glottalised. Before syllabic /l/, e.g. *little*, out of 75 tokens, 48 (64%) were glottalised. As we can see, some of the levels of glottalisation in certain phonological environments were very high. When certain groups of informants were combined, some cross-tabulations in certain phonological environments produced results of near categoricity of glottaling. The following result section and discussion section will focus on the results that were most cogent in the analysis. Where binomial Varbrul runs were carried out, glottaling levels were compared to all the other variants combined. This was the only way possible to do binomial runs, otherwise there would have been numerous knockouts in the runs, making a binomial run impossible. The Varbrul runs for (t) can be found in the appendices. The coding protocols for the statistical analysis can also be found in the appendices. The file is called ‘Data coding thesis (t)’.

4.13 Results for the (t) variable

4.13.1 Individual informants’ use of (t)

Table 4.1 shows the overall distribution of (t) by the teenage sample. Token numbers and Numbers of function words are included. The overall glottal scores are represented as

percentages of the total number of tokens.

Name	Tokens	Function words	Number of [ʔ]	Number of [t]	Number of [r]	Number of [ɬ]	Total percentage of [ʔ]
Trude	120	38	119	1	0	0	99%
Chantelle	101	24	100	1	0	0	99%
Will	103	33	101	0	2	0	98%
Debbie	100	25	96	1	3	0	96%
Gemma	100	30	95	5	0	0	95%
Clive	93	30	87	2	4	0	94%
Shane	121	38	109	9	3	0	90%
Helena	101	29	91	4	6	0	90%
Nick	100	33	87	7	4	1	88%
Tom	121	33	106	14	1	0	88%
Oscar	103	33	89	13	0	1	86%
Lisa	100	28	85	13	2	0	85%
Aaron	104	29	81	17	6	0	78%
Neil	95	35	72	17	3	3	76%
Isaac	116	42	86	18	0	12	74%
Álvaro	113	48	75	25	2	11	66%
Annette	58	16	37	2	19	0	64%
Gina	83	25	51	19	13	0	61%
Jivan	102	29	61	29	11	1	60%
Jason	100	30	60	25	14	1	60%
Sam	100	29	32	50	7	11	32%
Michael	101	33	28	21	52	0	28%

Table 4.1 Overall distribution of variants of (t) by teen informants

The figures in Table 4.1 show us what the individual teenage informants are doing with the linguistic variable (t). [t] for the teen informants is used most highly by Spanish informants and Anglo informants who have lived their whole lives in Spain, Aaron and Lisa. The dental variant [t̪] is mainly used by Spanish informants, but Sam who mixes with the Spanish boys has 11 tokens of the variant, Oscar who has a Spanish father and is bilingual has 1 token of the variant, as does Nick who is Dutch. We now turn to the teenage informants' levels of glottalisation. The table shows that Trude, the Northern European girl has the highest level of overall glottaling. All those with glottal scores of 80% or above are either Anglos or Northern Europeans. The three Anglos with the lowest are Oscar, Lisa and Aaron, all of whom have

lived in Spain all their lives and attended St. John's throughout their education. Lower still is Gina, who has also lived in Spain all her life and had a Spanish primary education. Lowest of all the informants is Michael, a bilingual Anglo/Dane who has also lived in Spain all his life. All those Anglos who have high overall glottal scores have lived in Spain for 5 years or less and have had a primary education in England.

We now turn our attention to Table 4.2 to see what the individual young informants are doing with the (t) variable.

Name	Tokens	Function words	Number of [ʔ]	Number of [t]	Number of [r]	Number of [ɫ]	Number of [ʔt]	Total Number of [ʔ] in %
Guillermo	66	24	53	11	2	0	0	80%
Maddie	100	28	41	11	2	0	1	79%
John	43	11	33	10	0	0	0	77%
Gladis	74	25	58	15	1	0	0	77%
Eloise	47	20	35	12	0	0	0	75%
Mandy	52	17	71	25	0	0	0	74%
Maria	65	22	47	18	0	0	0	72%
Philippa	48	10	34	13	1	0	0	68%
Peter	44	18	21	19	4	0	0	48%
Ronan	51	19	22	28	1	0	0	43%
Rosario	51	21	17	32	0	2	0	33%
Pierre	41	14	4	35	1	0	0	10%

Table 4.2 Overall distribution of variants of (t) by young informants

The figures in Table 4.2 represent the individual data for the young speakers. An extra variant, [ʔt] is included as Maddie from Middlesbrough used this variant once. Levels of released [t] are quite high for Non-Anglo informants Pierre and Rosario, and for Anglo informants Mandy and Ronan who have lived in Spain all their lives. Levels of [r] are considerably lower than those of the adolescent informants, although Danish Peter, who has only been learning English for 7 months, has 4 flapped tokens. Peter also has the highest level of [ʔ] of the weakest speakers of English from the sample with 49%. There is only one

occurrence of the soft dental [t̪] by Rosario, who differs from the other 3 young Spanish informants in that they speak English to native or near native level and Rosario speaks English with a noticeable Spanish accent. We now turn our attention to the young informants' usage of [ʔ].

Table 4.2 illustrates the young informants' overall levels of glottalisation. One thing that is striking here is that unlike with the adolescent pattern of usage, 3 of the 4 Spanish informants have levels of glottalisation that match or exceed those of the Anglo informants. The 2 weakest speakers of English, Pierre and Rosario have the lowest levels but Peter, the young Danish boy who has only been speaking English for 7 months has quite high overall levels at 49%. Again, this is in contrast somewhat to the adolescents' usage in that Nick, the weakest speaker of the teenagers, has overall levels of glottalisation in line with and exceeding some Anglo informants. The young informants' overall levels are not as high as the adolescents' with Guillermo having the highest levels at 80% compared to 99% for the highest adolescent scores.

4.14 Social and Linguistic Constraints for (t)

During this chapter I shall be focusing upon the patterns of usage for (t). I shall present and discuss the most fecund results from the analysis.

4.14.1 Word Medial Intervocalic Position: teenage informants

Name	Total Number of tokens in word medial intervocalic position	Number of [ʔ]	Number of [t]	Number of [ɾ]	Number of [ɽ]	Total Number of [ʔ] in %
Trude	15	0	0	0	0	100%
Chantelle	21	21	0	0	0	100%
Debbie	35	33	1	1	0	94%
Gemma	14	10	4	0	0	71%
Clive	12	8	2	2	0	67%
Helena	18	9	4	5	0	50%
Oscar	16	8	8	0	0	50%
Will	4	2	0	2	0	50%
Lisa	21	9	12	0	0	43%
Shane	21	9	9	3	0	43%
Nick	11	5	4	2	0	46%
Tom	23	9	13	1	0	39%
Aaron	17	5	12	0	0	29%
Neil	11	3	6	1	1	27%
Annette	7	0	1	6	0	10%
Jason	30	2	20	8	0	7%
Isaac	15	1	12	0	2	7%
Gina	16	1	12	3	0	6%
Sam	24	1	22	1	0	4%
Jivan	26	0	21	4	1	0%
Michael	23	0	3	20	0	0%
Álvaro	17	0	16	1	0	0%
Sky	20	17	3	0	0	0%

Table 4.3 Teenagers' variants of (t) in word medial intervocalic position

Table 4.3 shows the variants of (t) in word medial intervocalic position for all teen informants. There is more disparity with the glottal scores in this position than the overall glottal scores which we shall look at below. A similar pattern emerges for flapping. The informant with the highest flapping score of all the teenagers is Michael, the Anglo/Dane who has lived in Spain all his life. The informants with the next highest flapping levels are both Non-Anglos, Jason and Annette. There are only 4 dental variants [ɽ] in this phonological environment, all by Spanish informants.

We will now focus on the teenagers' use of [ʔ] in word medial intervocalic position. We can see that the range between the glottal scores in word medial intervocalic position is much wider than in the overall glottal scores of the individual informants. The highest and lowest glottalisers remain the same, with Michael as one of the lowest with 0% and once again Trude and Chantelle as the highest with 100%. Spanish informants were unlikely to use glottal stops in this phonological environment, with all of them apart from Neil glottaling less than 10% in this position. The only Anglos whose levels are this low are Gina, who has lived in Spain all her life and had a Spanish primary education and Michael who has also lived in Spain all his life. Sky, the South African girl does not glottalise at all in this position. Aaron and Tom have comparatively low glottal scores in this position, Aaron has lived in Spain all his life and Tom differs from the other Anglos who have lived in Spain 5 years or less in that he had a grammar school education in England. Only Anglo informants who have had a primary education in England have glottal scores higher than 50% in this position. We also see that the four informants with the highest glottal scores are all girls.

4.14.2 Word Medial Intervocalic Position: young informants

I would now like to present the results of the variants of (t) in word medial intervocalic position for the young informants.

Name	Total Number of tokens in word medial intervocalic position	Number of [ʔ]	Number of [t]	Number of [r]	Number of [ɾ]	Total Number of [ʔ] in %
Guillermo	5	0	5	0	0	0%
Gladis	9	0	9	0	0	0%
Rosario	7	0	7	0	0	0%
Pierre	11	0	11	0	0	0%
Peter	8	0	8	0	0	0%
Mandy	3	0	3	0	0	0%
Eloise	9	0	9	0	0	0%
Philippa	11	1	10	0	0	9%
Ronan	11	1	9	1	0	9%
Maria	7	0	7	0	0	0%
John	10	1	9	0	0	10%
Maddie	24	4	20	0	0	17%

Table 4.4 Youngsters' variants of (t) in word medial intervocalic position

It is clear when we examine Table 4.4 that there are quite marked differences between the young informants' distribution of (t) and the adolescents' distribution. Out of the 12 informants, 8 use [t] 100% of the time in this phonological environment. The 4 youngsters who do glottalise in this position are all Anglos. Apart from Ronan, all the Anglo kids who glottalise in this position have had some school experience in England. There is only one instance of [r] by Ronan, the Northern Irish boy. The Spanish and Northern European informants did not glottalise at all in this phonological environment.

4.14.3 Social and linguistic factors: teen informants

We now turn our attention to social factors which might impact upon patterns of usage for (t). Social and linguistic constraints shall be explored where appropriate in order to establish trends within these data. The social factors that we shall be considering are as follows:

- Ethnicity
- Age

- Gender
- Social network
- Primary education
- Bilingualism and monolingualism

4.14.4 Ethnicity as a social factor

The theme throughout this thesis has been to consider if and to what extent social factors have an impact upon the variants used by the sample. We now look at ethnicity as a social factor in this group of informants. A binomial Varbrul run showed that ethnicity was a very significant factor for young and teen informants' variation with $p < 0.001$. (See appendices for file called 'Binomial run age and ethnicity t'). I start by looking at teenagers and their ethnic groups, dividing them into 3 groups, Anglo, Northern European and Spanish. Table 4.5 shows this information with token numbers.

Ethnic group	[ʔ]		[t]		[ɾ]		[t̚]	
	Tokens	%	Tokens	%	Tokens	%	Tokens	%
Anglos	1119	84%	119	9%	92	7%	0	0
Northern European	275	73%	60	16%	30	8%	12	3%
Spanish	354	67%	114	22%	30	6%	28	5%

Table 4.5 Different teenage ethnic groups' variants of (t)

Table 4.5 shows the patterns of usage for (t) for the teenage informants according to their ethnic group. We see that the Anglos are the group most likely to glottalise and the Spanish the least likely, although there is a difference of less than 20% between all 3 groups. The Northern Europeans are the group that are marginally more likely to use [ɾ] with 8% while the Anglo and Spanish informants have quite equal scores for flapping with 7% and 6% respectively.

We now look at patterns of usage for the different ethnic groups according to phonological

environment. The teenage data were analysed for differences according to ethnic group.

Table 4.6 illustrates the results of the teen ethnic groups' variants word medial intervocalic position in percentages with token numbers.

Ethnic group	[ʔ]		[t]		[r]		[ɾ]	
	Tokens	%	Tokens	%	Tokens	%	Tokens	%
Anglos	124	51%	80	33%	37	15%	0	0
Northern European	21	37%	27	47%	10	17%	1	2%
Spanish	6	6%	75	76%	14	14%	4	4%

Table 4.6 Different teenage ethnic groups' variants in word medial intervocalic position

Table 4.6 shows that Spanish informants are more likely to use released [t] and are considerably less likely to use glottal stops in word medial intervocalic position than the other 2 ethnic groups. Once again, Northern Europeans are the most likely of the 3 groups to use flaps.

Still focusing upon ethnic group as a social factor, we now use a different linguistic constraint, (t) in word final prevocalic position. Table 4.7 shows the teenage ethnic groups' variants of (t).

Ethnic group	[ʔ]		[t]		[r]		[ɾ]	
	Tokens	%	Tokens	%	Tokens	%	Tokens	%
Anglos	357	86%	13	3%	45	11%	0	0
Northern European	53	65%	7	9%	18	22%	4	5%
Spanish	97	76%	12	9%	15	12%	4	3%

Table 4.7 Different teenage ethnic groups' variants in word final prevocalic position

With this linguistic constraint applied, the Anglos have the highest levels of glottaling and the Northern Europeans the lowest. The difference between Anglo and Spanish informants' scores are much less than in word medial intervocalic position, with just 10% between the 2 groups here. The ethnic group most likely to flap in this position is the Northern Europeans.

Spanish and Anglo glottal and flapping scores in this phonological environment are quite similar.

Ethnic group	[ʔ]		[t]		[ɾ]		[ɬ]	
	Tokens	%	Tokens	%	Tokens	%	Tokens	%
Anglos	411	97%	8	2%	4	1%	0	0%
Northern European	125	86%	16	11%	0	0%	5	3%
Spanish	163	90%	7	4%	0	0%	11	6%

Table 4.8 Different teenage ethnic groups' variants in word final preconsonantal

position

Table 4.8 shows that all three ethnic groups have high levels in glottaling in this phonological environment. The Anglos use glottal stops nearly categorically here with a score of 97%.

There is only 4% between the Northern European and Spanish informants' levels with scores of 86% and 90% respectively. Word final preconsonantal position shows little difference in glottaling levels for the 3 ethnic groups. Anglos are the only group to use flaps in this phonological environment.

4.14.5 Ethnic group and gender as social factors

We now look at the impact of gender upon the patterns of usage of (t). A binomial Varbrul run showed ethnic group and gender to be very significant factors for variation with $p < 0.001$. (See appendices for file 'Binomial run cross tab young and teen gender'). Table 4.9 compares the patterns of usage of the teenage girls and boys divided into their ethnic groups. Teen Spanish boys are not included as there are no teen Spanish girls for a comparison.

Ethnic group and gender	[ʔ]		[t]		[ɾ]		[ɬ]	
	Tokens	%	Tokens	%	Tokens	%	Tokens	%
Anglo girls	518	89%	43	7%	24	4%	0	0
Anglo boys	601	81%	76	10%	68	9%	0	0
N. European girls	156	88%	3	2%	19	11%	0	0
N. European boys	119	60%	57	29%	11	5%	12	6%

Table 4.9 Teenage ethnic groups' variants of (t) according to gender

We can see here that girls of both ethnic groups are more likely to glottalise than boys and less likely to use [t]. The differences between the Northern European girls and boys with 88% and 60% respectively are greater than their Anglo counterparts with 89% and 81% respectively.

We now turn to the ethnic groups' variants of (t) according to gender in word medial intervocalic position. Table 4.10 shows this information.

Ethnic group and gender	[ʔ]		[t]		[ɾ]		[ɬ]	
	Tokens	%	Tokens	%	Tokens	%	Tokens	%
Anglo girls	83	66%	33	26%	9	7%	0	0
Anglo boys	41	35%	47	41%	28	24%	0	0
N. European girls	15	68%	1	5%	6	27%	0	0
N. European boys	6	17%	26	74%	2	6%	1	3%

Table 4.10 Teenage ethnic groups' variants in word medial intervocalic position according to gender

Table 4.10 shows the grouped teenage data for (t) according to ethnic group and gender. As we can see, girls of both ethnic groups are considerably more likely to glottalise and less likely to use [t] than teenage boys of both ethnic groups. The differences are more noticeable in word medial intervocalic position, with a difference of more than 30% for Anglos and more than 50% for Northern Europeans.

Young Anglo female informants were also more likely to glottalise than their male counterparts. However, young Spanish females were less likely to glottalise than the one young Spanish male, Guillermo. Table 4.11 shows this information.

Ethnic group and gender	[ʔ]		Other variants combined	
	Tokens	%	Tokens	%
Anglo girls	181	75%	61	25%
Anglo boys	236	70%	100	30%
Spanish girls	122	64%	68	36%
Spanish boy	53	80%	13	20%

Table 4.11 Young informants' glottaling levels according to gender and ethnic group

It is impossible to predict whether the outcomes here may have been different had there been more Spanish males. In addition to this, Rosario, one of the least competent speakers of English, has markedly lower levels of glottaling, 33%, than Maria with 72% and Gladis with 77%. Despite these factors, gender was a very significant factor for young informants glottaling with $p < 0.001$. (Please see appendices for file called 'Binomial run young informants only gender'). I was unable to include young male Northern Europeans, as there were no young females. Their levels were amongst the lowest of the young sample. This may go some way towards explaining why the binomial Varbrul run found that gender was a very significant factor.

4.14.6 Primary education as a social factor

We now turn to the possible impact that the primary education of the teenagers may have upon their patterns of usage for (t). Within the teenage sample there are 3 main categories of primary education that the teenagers in the sample have had. These are a primary education in England for those Anglo informants who have been in Spain for approximately 5 years or less, an English primary education in Spain and a primary education in a language other than English. It became evident that there may be a correlation between the informants' patterns of usage of (t) and where and in what language they spent their primary education. To show a clear picture of what is going on in this respect, I decided to separate the adolescents into Anglos and Non-Anglos for this task. Figure 4.1 shows the teenage Anglos' use of [ʔ] according to primary education.

Figure 4.1 Teen Anglos' levels of glottaling according to primary education

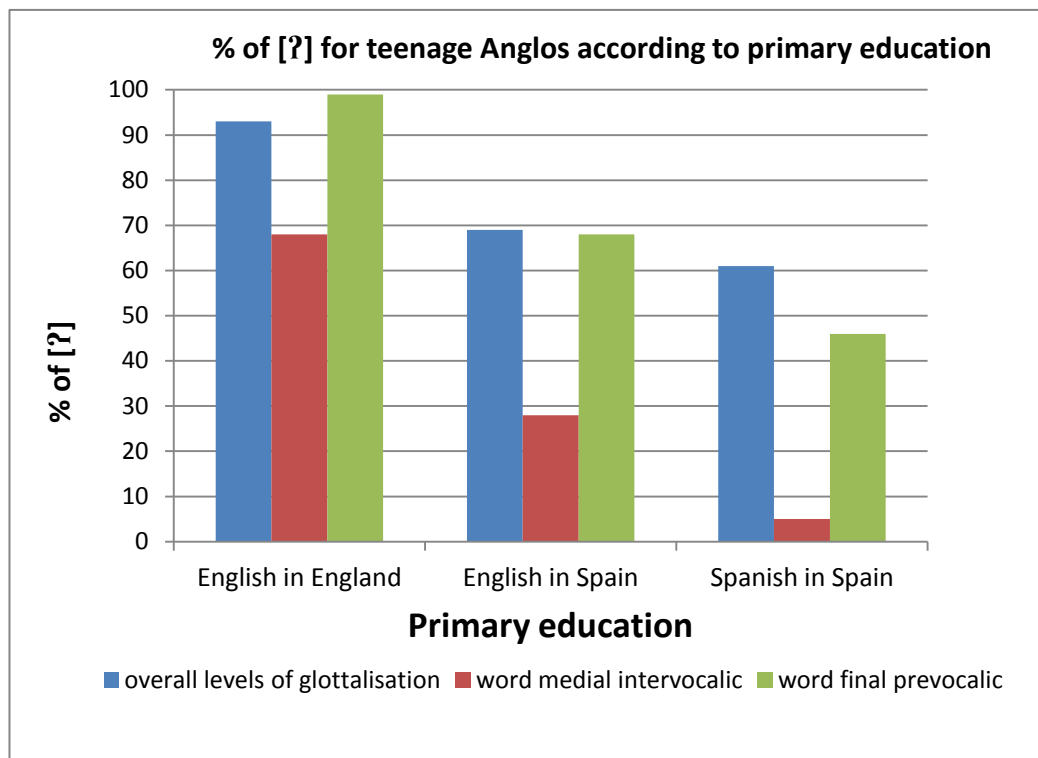
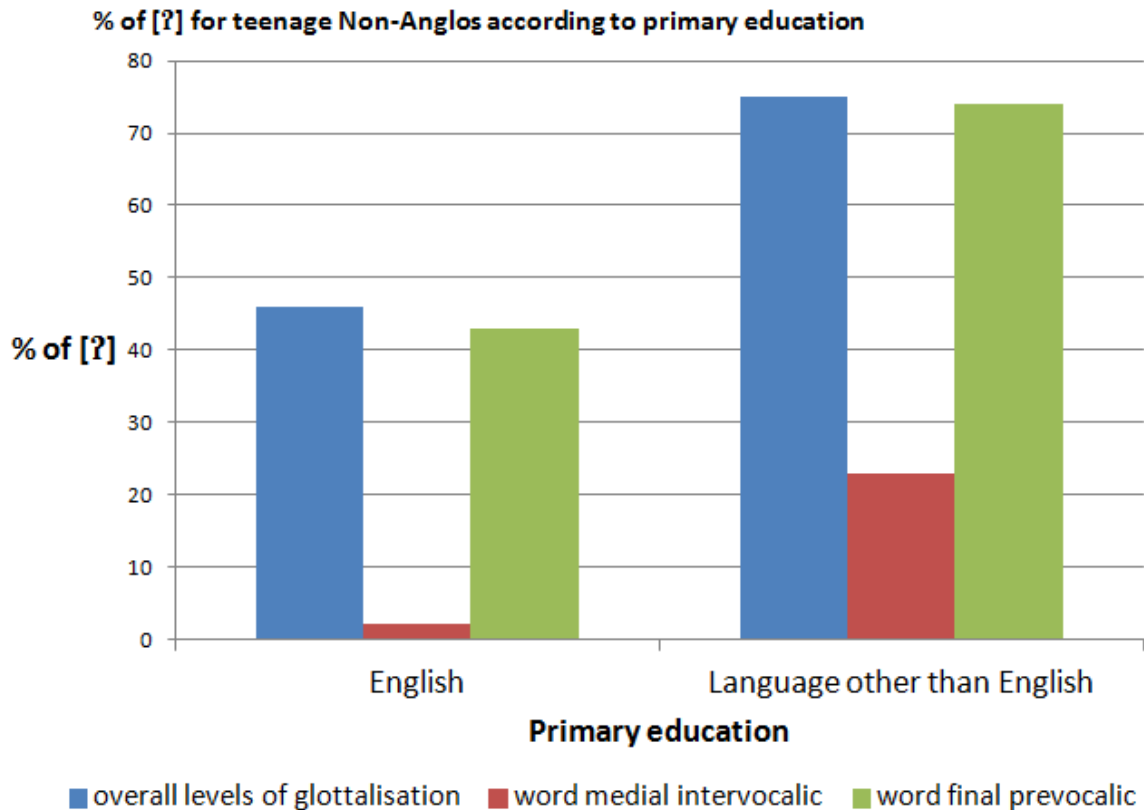


Figure 4.1 shows an interesting pattern of lower levels of glottalisation for those Anglo teenagers who have had no education in England compared to those who have. This happens both with overall levels and when considering (t) in different environments. Those Anglos who have had an English education in Spain are showing midway levels of glottalisation, compared to particularly high levels for those informants who had a primary education in England. The levels decrease even further for the one Anglo informant Gina, who has had a primary education in Spanish. This is in line with the low glottal levels of the Spanish informants in this phonological environment.

We now look at the patterns of usage of (t) for the Non-Anglo teenage informants according to primary education. Figure 4.2 illustrates this information.

Figure 4.2: Teen Non-Anglos' glottal levels according to primary education



The chart in Figure 4.2 shows quite a different picture for the Non-Anglos use of [ʔ] than that of the Anglos. The Non-Anglos who have had an English education all their lives have considerably lower overall levels and lower levels in the different linguistic environments considered than those teenagers who have had an education in a language other than English. If we look at the contrast between the young informants' levels of glottalisation and those of the teenagers' levels, this may provide an explanation as to why those informants who have joined the school and been exposed to English at secondary level are glottaling more than those that joined the school as infants. These informants joined the school at an age when glottaling is found to be high amongst all teenagers of all ethnicities. In contrast, the Non-Anglos who joined the school as infants were immediately exposed to the low levels of glottaling that the young informants have displayed. This possible explanation will be dealt with in more detail in the discussion section of this chapter.

4.14.7 Bilingualism and monolingualism as social factors

It came to my attention (it was commented upon by staff members at the school that Oscar and Gina were more "well spoken" than their Anglo peers) that there may be some correlation between levels of glottalisation and whether the teenage informants were bilingual or monolingual, among both Anglo and Non-Anglo informants. For example, Michael, who is bilingual English/Danish has overall glottalisation levels of more than 50% less than other Anglos. Annette who is bilingual Norwegian/Swedish, Jivan and Jason who are bilingual Spanish/English have overall glottalisation levels somewhat lower than the other teenage Non-Anglos. Sam, the German boy, who is fluent in German, English and Spanish has extremely low overall levels of 32% glottals. A binomial Varbrul run showed bilingualism and monolingualism to be very significant factors for glottaling with $p < 0.001$. (See appendices for file 'Binomial run bilingual v monolingual'). I grouped the data of Anglo informants according to bilingualism and monolingualism and did the same for Non-Anglos in order to compare their levels of glottalisation. Figures 4.3 and 4.4 represent these data.

Figure 4.3 Anglo teen levels of glottaling according to bilingualism/monolingualism

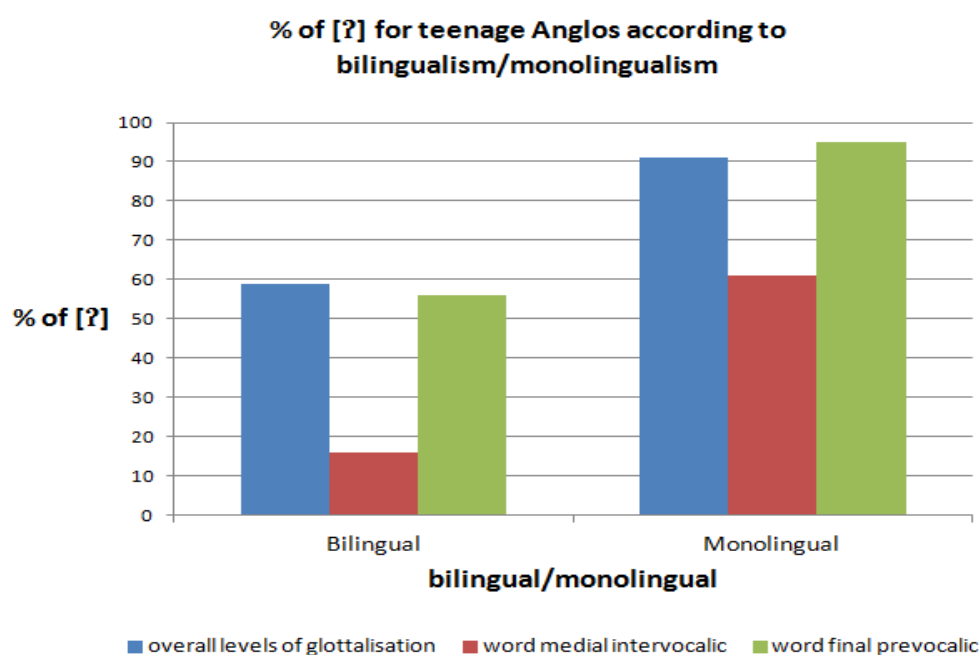


Figure 4.4 Non-Anglo teen levels of glottaling according to bilingualism/monolingualism

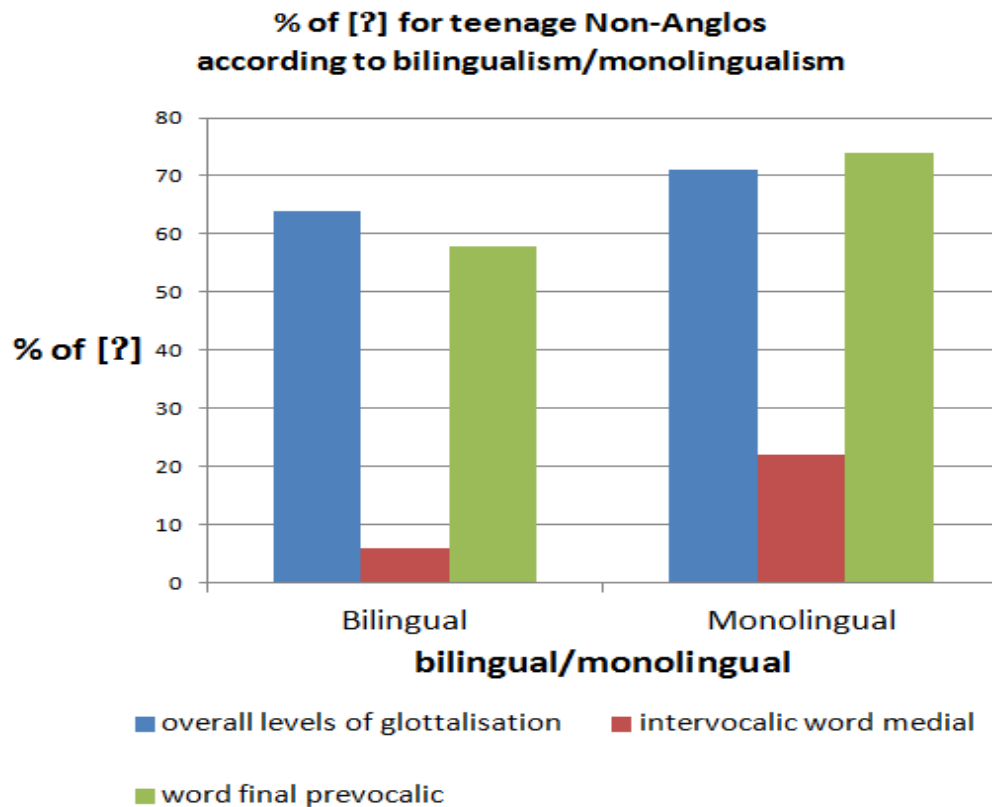


Figure 4.3 shows that bilingual Anglo informants are less likely to glottalise than their monolingual counterparts. Bilingual Anglos are also less likely to glottalise in word medial intervocalic and word final prevocalic position. A similar pattern emerges for the bilingual and monolingual Non-Anglo informants in Figure 4.4. Once again, bilingual informants are less likely to glottalise in the phonological environments considered, particularly word medial intervocalic position.

4.14.8 Social network: teen informants

If we look at the social networks and the glottal scores of the year 12 informants, we see that there may be some correlation between social network practices and variation of (t). (Please see 3.4 Sociogram for year 12 informants' social networks). Tables 4.12 and 4.13 show this information with token numbers and percentages.

Name	Overall levels of glottalisation		Glottalisation in word medial intervocalic position	
Trude	119	99%	15	100%
Nick	100	88%	11	46%
Debbie	100	96%	35	94%
Clive	93	94%	12	67%
Gemma	100	95%	14	71%
Lisa	100	85%	21	43%
Aaron	104	78%	17	29%

Table 4.12: Year 12 Anglo and Northern European informants' glottal scores according to friendship network

Name	Overall levels of glottalisation		Glottalisation in word medial intervocalic position	
Sam	100	32%	24	4%
Jivan	102	60%	26	0%
Neil	95	76%	11	27%

Table 4.13: Year 12 Northern European and Spanish informants' glottal scores according to friendship network

Trude and Nick both mix in an Anglophone friendship network. The friends that they mix with are among the highest glottalisers in the sample. Table 4.12 shows the group's overall levels of glottaling and their word medial intervocalic scores. We see here that Nick and Trude have quite high levels of glottalisation, in line with those Anglos that they mix with. In contrast, Sam, the German boy, who mixes mainly with Spanish boys has comparatively low levels of glottalisation, particularly in word medial intervocalic position. Table 4.13 shows this information. His friends Jivan and Neil also have considerably lower overall levels of glottalisation and word medial intervocalic glottalisation levels than the Anglos and Trude and Nick. This may suggest then, that social network is a factor for variation of (t) in this speech community. A binomial Varbrul run showed social network to be a very significant factor for glottaling with $p < 0.001$. (See appendices for file 'Binomial run glottal v all other variants social network').

Similarities were also present in some of the friendship networks of the year 13 pupils.

Tables 4.14 and 4.15 show this information.

Name	Overall levels of glottalisation		Glottalisation in word medial intervocalic position	
Chantelle	101	99%	21	100%
Helena	101	90%	18	50%

Table 4.14: Year 13 Anglo informants' glottal scores according to friendship network

Name	Overall levels of glottalisation		Glottalisation in word medial intervocalic position	
Isaac	116	74%	15	7%
Álvaro	113	66%	17	0%
Jason	100	60%	11	27%

Table 4.15: Year 13 Spanish informants' glottal scores according to friendship network

As we can see from tables 4.14 and 4.15, the 2 Anglo girls Chantelle and Helena have similar overall glottal scores, just 1% difference. The 3 Spanish boys also have overall glottalscores with just 6% between Isaac and Jason. Social network will be returned to in the discussion section of this chapter.

4.15 Young informants' patterns of usage for (t)

We now turn to patterns of usage of (t) for the young informants. We shall focus upon variation of (t) in the young informants' data, and the impact of the following social constraints:

- Ethnic group
- School experience
- Age

In terms of phonological environment, I looked at the following contexts only:

- Overall levels of glottalisation
- Word medial intervocalic position
- Word final pre-vocalic position

4.15.1 Young ethnic groups

Firstly, we shall look at the young informants' distribution of (t) according to ethnic group.

Table 4.16 displays this information.

Ethnic group	Number of [ʔ]		Number of [t]		Number of [ɾ]		Number of [ʔt]		Number of [ɬ]	
Anglos	236	70.2%	95	28.3%	4	1.2%	1	0.3%	0	0%
Northern European	25	30%	54	64%	5	6%	0	0%	0	0%
Spanish	175	68%	76	30%	3	1%	0	0%	2	1%

Table 4.16 Young ethnic groups' variants of (t)

The results from these data show that young Spanish informants' distribution of (t) is practically identical to the young Anglos' distribution. This is in contrast to the teenage pattern of usage, where Anglos were most likely to glottalise, and Spanish the least likely to do so. Here, the Northern European youngsters are considerably less likely to glottalise. These 2 boys are 2 of the weakest speakers in the young sample, which may go some way towards providing an explanation for the low levels of [ʔ]. We shall examine this factor in more detail in the discussion section below. Levels of flapping are considerably lower than teenage informants' and there are only 2 occurrences of the dental variant. A binomial Varbrul run showed that age and ethnicity were very significant factors regarding young informants' use of the glottal stop with $p < 0.001$. (See appendices for the file 'Binomial run age and ethnicity t').

We now turn to the different ethnic groups' use of (t) in word medial intervocalic position.

Ethnic group	Number of [ʔ]		Number of [t]		Number of [ɾ]		Number of [ɬ]	
Anglos	7	10%	60	88%	1	2%	0	0%
Northern European	0	0%	19	100%	0	0%	0	0%
Spanish	0	0%	28	100%	0	0%	0	0%

Table 4.17 Young ethnic groups' variants of (t) in word medial intervocalic position

Table 4.17 represents the patterns of usage for (t) in word medial intervocalic position for all variants by the young ethnic groups. As we can see, all young ethnic groups disfavour glottaling in this phonological environment. Glottalisation in this phonological environment by the young informants is considerably lower among all ethnic groups than among the adolescents. As we can see, the young Northern European informants use the released variant 100% of the time. Incidents of flapping are also extremely low with just one token by a young Anglo informant. There were no soft dental variants in this phonological environment.

We now turn the young informants' variants of (t) in word final prevocalic position Table 4.18 shows this information.

Ethnic group	Number of [ʔ]		Number of [t]		Number of [ɾ]		Number of [ɬ]	
Anglos	53	77%	14	19%	4%	2%	0	0%
Northern European	4	33%	5	42%	3	25%	0	0%
Spanish	49	77%	14	22%	1	1%	0	0%

Table 4.18 Young ethnic groups' variants of (t) in word final prevocalic position

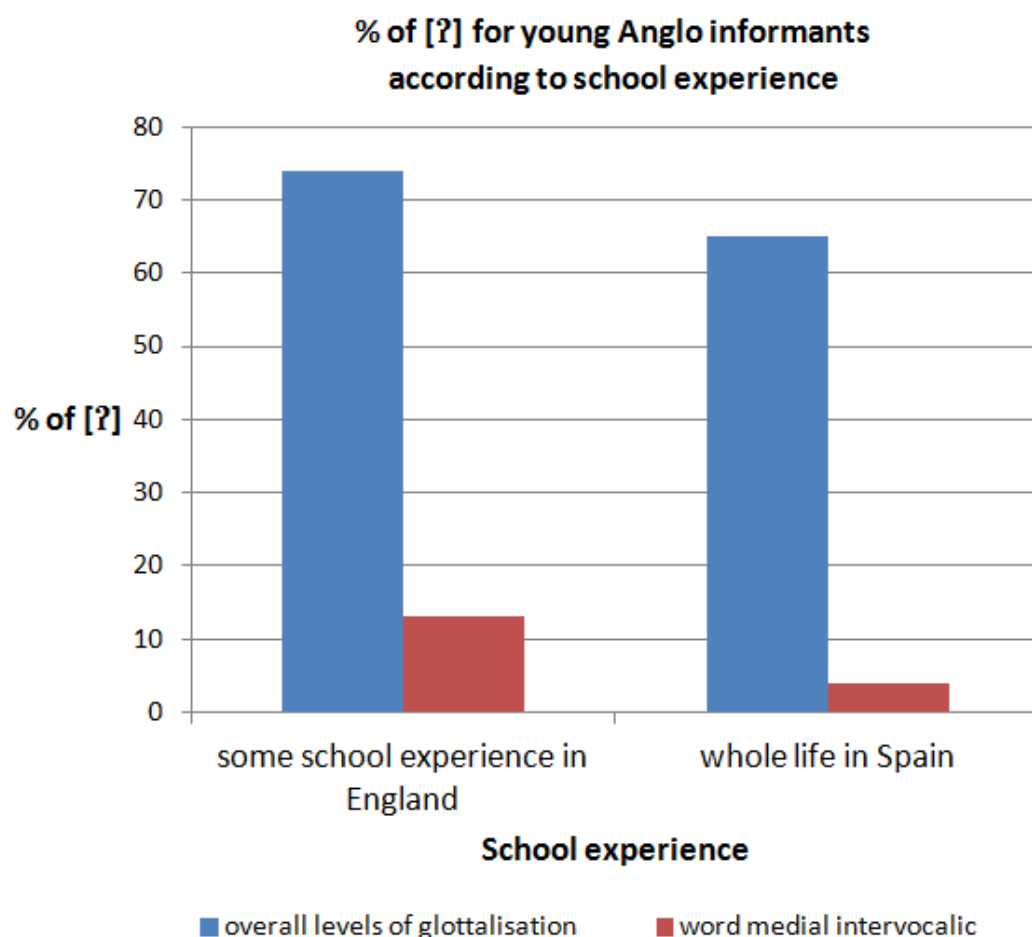
As we can see in this table, young Northern Europeans' glottaling levels were considerably lower than those of their Anglo and Spanish counterparts. Anglo and Spanish levels were exactly the same at 77%. Northern European youngsters were the group most likely to use flaps in this phonological environment. There were no soft dental variants in this phonological environment.

4.15.2 School experience: young informants

We shall now look at the impact of school experience on glottalisation for the young Anglo informants. School experience was found to have some correlation with levels of glottalisation within the teenage sample. The binomial Varbrul run called 'Binomial run primary education' (see appendices) showed that primary education was a very significant

factor that correlated with glottaling for both teen and young informants. Figure 4.5 below shows the youngsters' overall levels of glottalisation and levels in word medial intervocalic position.

Figure 4.5 Young Anglo informants glottaling levels according to school experience



The young Anglo informants fell into 2 categories, those who had had some schooling in England (John, Philippa and Maddie), and those who had never attended school in England (Eloise, Ronan and Mandy). The chart in Figure 4.5 shows the overall glottal scores and word medial intervocalic glottal scores for these 2 groups of children. As we can see, the same pattern emerges for the young children as for the teenagers, in that those who have had some school experience in England have higher overall glottal scores and glottal scores in word medial intervocalic position than those who have never been to school in England. A

binomial Varbrul run showed that primary education was a significant factor for glottaling with $p < 0.001$.

4.15.3 Gender and young informants

Gender proved to be an important factor for glottalisation with the combined young female sample having overall glottalisation scores of 70% compared with males with overall scores of 54%. In terms of individual ethnic groups, young Anglo females glottalised more than young Anglo males, with overall glottal scores of 75% and 70% respectively. Young Spanish females however, did not lead, with combined overall glottal scores of 64% compared to the one young Spanish informant, Guillermo, who had an overall score of 80%. There were no young Northern European girls. Therefore, no comparisons could be made. The file 'Binomial run young informants only' showed that gender is a very significant factor for glottaling with $p < 0.001$.

The file 'Binomial run cross tab young and teen gender' shows that gender is very significant across the whole sample with $p < 0.001$. Combined, the female informants in the sample glottalised 76% of the time compared with the males who glottalised 70% of the time.

4.15.4 Bilingual v monolingual: young informants

As discussed earlier, bilingualism and monolingualism were very significant factors for glottaling for teen informants. The same pattern occurred, (albeit to a lesser extent) with the youngsters in the sample. Combined young bilingual informants had overall glottal scores of 61% compared to their young monolingual counterparts with overall glottal scores of 70%. A binomial Varbrul run (see appendices 'Binomial run young informants bilingual v

monolingual') showed that bilingualism v monolingualism was somewhat significant for youngsters' glottaling with a significance weighting of 0.018.

4.16 Summary of the findings

I shall now present the most salient results from the analyses before we enter into a discussion of them:

- Most teenage informants' overall glottal scores exceed those of their younger counterparts, particularly in word medial intervocalic position;
- Teenage girls of all nationalities have the highest glottal scores in all phonological environments;
- Primary education was an important factor. Anglo teenagers who had had a primary education in England have the highest levels of glottaling in all environments, those who had an English education in Spain have lower levels. There was also a correlation between youngsters' previous school experience and variation;
- All informants use [ʔ] to some extent, regardless of ethnicity and English competency;
- Teenage Spanish informants' overall levels of glottalisation and levels of glottaling in word medial intervocalic position are considerably lower than teenage Anglos' and Northern Europeans'
- Young Spanish informants' levels are in line with those of young Anglos;
- Most teenage Northern Europeans' overall levels of glottalisation are in line with or exceed teenage Anglo scores;
- In some phonological environments glottalisation was almost 100% for some Anglo and Non-Anglos;

- Teenage Anglo informants who had lived in Spain all their lives have lower glottal scores in all phonological environments than those who have lived there 5 years or less;
- Teen Anglo and Non-Anglo bilingual informants had considerably lower levels of glottalling than their monolingual counterparts. Young bilingual informants had somewhat lower levels of glottaling than their monolingual counterparts.

4.17 Discussion of the results

To summarise, we have considered the use of (t) in this contact situation and looked at the impact of phonological and social constraints upon these data. I would now like to discuss the results from the analysis of these data in relation to dialect contact, and in some cases, previous research. However, one might argue that these results from the quite distinct community of the present study are not relevant to work on more stable communities. Therefore, I shall be focussing upon what is relevant to dialect contact here.

4.17.1 Discussion of results in relation to social network

The notion of a correlation between social network and linguistic variation is not new to sociolinguistics. Social network as a variable has been applied to many sociolinguistic studies to date. (See Milroy 1980; Cheshire 1982; Eckert 1988; 1989; 2000; Mendoza-Denton 2008; Fox 2007). Hirano (2008, 2011) applied the social network approach to her study of intervocalic /t/ in a transient Anglophone community in Japan. She considered social network strength as a variable in her long-term accommodation study of native speakers of English from England, the United States and New Zealand, who were working as English teachers in Japan. In her attempt to look at changes in the choice of variants for intervocalic /t/ by the teachers over a period of one year, Hirano presented two hypotheses to the study:

1. A strong social network with NSE from their home country area encourages the use of variants which are commonly used in their own English variety and/or hinders the use of variants more commonly used in other English varieties.
2. A strong social network with NSE from a country other than their own facilitates the use of variants which are more commonly used in the English variety of the other country and/or suppresses the use of the variants commonly used in their own English variety.

(Hirano 2008: 53). (NSE: Native speakers of English).

Using SPSS multiple regression as a tool for analysis, Hirano found the following in her sample of teachers:

1. In terms of speakers from England, a strong British network works to restrict their use of flaps for word-final (t).
2. A strong Australasian network for speakers from England works to decrease their use of glottal stops for word-final (t).
3. As for the American speakers, a strong British network helps to increase their use of glottal stops for word-medial (t).
4. In terms of NZ speakers, a strong Australasian network seems to lead to a decrease in their use of flaps and an increase in their use of glottal stops for word-final (t).

(Hirano 2008: 73).

Hirano concludes that Finding 1 supports the first half of her first hypothesis:

A strong social network with NSE from their home country area hinders the use of variants more commonly used in other English varieties.

She also states that Findings 2 and 3 support her second hypothesis.

A strong social network with NSE from a country other than their own facilitates the use of variants which are more commonly used in the English variety of the other country and/or suppresses the use of the variants commonly used in their own English variety.

If we were to apply Hirano's hypothesis number 1 to my findings, we could say that particularly for the teenage Anglos, who all but one mix with solely other Anglos, it was found that those who have strong social networks with native speakers of English from their own country, the glottal stop was encouraged. Glottal scores for these informants were among the highest in the sample. What's more, the one Anglo boy who did not mix solely in an Anglo network, Oscar, the bilingual Spanish boy, had a marginally lower overall glottalisation score and a considerably lower word medial intervocalic glottal score, 50% lower than the highest Anglo for glottaling in this position. Similarly, youngsters who mixed in Anglo networks had high levels of glottaling.

It would not be possible to apply Hirano's hypothesis number 2, as there were not enough speakers of English from countries other than the British Isles in this sample to be able to put this into practice. One might be able to say though, that for Anglos in *this* study, a mixed social network with different nationalities suppresses the use of the variants commonly used in their own English variety.

In terms of social network, the present study found, that close friends in this speech community often had similar levels of glottaling. At times, this was regardless of ethnicity.

4.17.2 High glottalisation levels in the teen speech community

We now turn to my next point, that the results from my data showed that in some phonological environments, glottalisation was almost 100% for some Anglo and Non-Anglo informants. One must wonder, given these results, about the social status of [ʔ] in this linguistic setting. One factor to consider here is the phonological environment where the levels were particularly high. Levels were high in word final pre-consonantal and turn final/pre-pausal positions. My results showed that the combined teenage informants glottalised 86% of the time in turn final pre-pausal position and 93% of the time in word final pre-consonantal position. The young informants' glottal scores for these phonological environments were also fairly high, at 69% and 90% respectively.

Tollfree (1999) found in her South East London English sample, that glottalisation was near-categorical in pre-consonantal and pre-pausal positions. According to Mees and Collins (1999), in Mees' real-time study of the speech of Cardiff school children in 1976 and 1981, glottalisation (following a pattern of distribution found in RP, Wells 1982: 260-1) appeared to be on the increase. "An analysis of the class, style, gender and timed variation revealed glottalisation of word-final /t/ to be a spreading prestigious feature, with the process of change being led by young middle class females." (Mees and Collins 1999: 195).

Britain (2011) discussed the extremes of variants in pre-pausal/turn final position. He cites Roberts' Vermont study (2006: 237) which found that pre-pausal position had the highest levels of glottalisation. Britain exemplifies in his paper that not just /t/ but numerous other variables have been found to behave in an extreme manner in turn final/pre-pausal position, strongly favouring one variant or another. He summarises that "‘turn-finality’ appears to

behave rather prominently as a linguistic constraint, very often appearing as one or the context in which one variant of a variable is found most (or least)....” (Britain 2011).

Baker (2000: 184), in her study of (t) usage by Kim the Brownie leader found 97% glottalisation for content and function words in pre-consonantal position. We see here then, that is not unusual to find categorical or near categorical glottalisation, particularly in certain phonological environments and word classes.

4.17.3 Stigma and salience of [ʔ] in this speech community

Returning to the consideration of the social status of glottalisation in this setting, we see that in certain phonological environments levels of glottalisation are high. This may lead us to question whether T-glottaling is stigmatised in this speech community. Trudgill (1986) states that the factor that turns variables into markers is salience. He claims that one of four factors must be present to lead to greater awareness or salience, and in turn, attach to a marker and turn a variable into a marker. These are: stigmatisation, linguistic change, phonetic distance and phonological contrast (Trudgill 1986: 11). Kerswill and Williams (2002: 7), discuss salience, drawing upon definitions from other linguists' notions of salience. They conclude that high frequency items are salient, and that there may be negative social evaluation of speakers using a salient non-standard feature.

We must consider, in this mixed language and dialect contact setting of the present research, how do salient, "stigmatised" or "prestige" features of British English transfer to this L2 setting? The ideological stances that we have about certain variables in England may not be shared among the diverse membership of the new community, or even change completely when transplanted to a setting where there is a dominant other language. In addition to this, one might wonder if variables that are salient and markers within the community for speakers

of British English, carry that same value in the new community, and if they are even considered as markers by non-native speakers of English. It would be unrealistic to suggest that Non-Anglos perceive certain variants in the same way that Anglos do, and even in the UK, the locality of individuals plays a role in their attitudes towards certain socially and regionally sensitive variants.

Britain (Britain 2005: 165) poses the question “How was language socially evaluated in the early colonial New Zealand English speech community?” He asks this question, as the social status of language features is often embedded in the locality and section of society that they come from. When transplanted to a new place, social evaluation of language may change, evolve or even have no meaning. Given that in the mid-19th century compulsory education in Britain did not exist and literacy levels were much lower, survival in such austere times was probably more important than good diction for the newcomers hoping to forge a better life in New Zealand. The migration was to a less class conscious society than the one that they had left behind. Therefore, one might question how important a standard dialect was.

Britain talks about the linguistic social evaluations that the migrants may have brought with them from their native Britain, and claims they would have been more locally grounded such as local versus non-local rather than ‘right’ or ‘wrong’. He states “It is difficult to judge how ‘intact’ these locally-oriented evaluations would have remained following the mixing of dialects in colonial New Zealand. Evaluations of the dialect of the next village in Dorset would have become inconsequential when suddenly the neighbours are from Suffolk or London or the Scottish Lowlands or are Maori.”(Britain 2005: 166). In the same way, in the speech community of the present study, one may question how important evaluations of language that Anglophones have brought with them from the UK are, when perhaps their

neighbours around them are Spanish, Northern European or another nationality. They may mix in social networks that are mixed in terms of languages and dialects. Comprehensibility in communication may become more important in this new speech community than conforming to a dialectal norm, as these Anglophones may have done previously in their home towns in the UK.

At the time of the study the range of nationalities and languages spoken in the school included English, Spanish, Dutch, Norwegian, Swedish, Finnish, Russian, German, French, Italian, Portuguese, Danish, Hindi, Sindi and Catalan. Furthermore, several of the pupils came from homes where 2 or more languages were spoken. Some of the kids with Anglo parents had never been to Britain. The British teachers in the school were from all different areas of the British Isles. Given these factors, one wonders how important in *this* speech community "Standard English" is, how it is perceived, and if the kids who have never lived in Britain even have any awareness of it. It is impossible to say I feel, in a speech community as diverse as the one at St John's school, what is important in terms of dialect for these kids, and what role if any, "stigma", "prestige" and notions of "correctness" play here. Any linguistic ideology, not just about Standard English but about any language feature, would be mixed up in such a fluid community. For example, not just that glottalisation is bad, but also that it is good. The same goes for other linguistic features that have social value attached to them in a UK setting. This social value may change or disappear completely when transplanted to a new setting.

4.17.4 Girls are glottaling most

The outcome from these data, that teenage girls of all ethnicities have highest glottal scores in all phonological environments might lead us to look at previous studies of Supralocalisation. Supralocalisation refers to the process "by which, as a result of mobility and dialect contact,

linguistic variants with a wider socio-spatial currency become more widespread at the expense of more localised forms" (Britain 2010: 193). If we look at what is happening with (t) in England in terms of Supralocalisation (see Milroy; Milroy and Hartley 1994; Milroy, Milroy, Hartley and Walshaw 1994; Mees and Collins 1999; Mathisen 1999), we see that glottalisation is indeed rapidly spreading in British English. The above studies also all found young females adopting the glottal stop ahead of young males. In the present study, teenage females of all ethnicities had considerably higher glottal scores than teenage males. Milroy et al. (1994) claim "... that females lead in the change, and that the establishment of the glottal stop (as noted by Wells 1982 and Mees 1987) is dependent on, and secondary to, its establishment in the speech of females. If we follow this interpretation, female patterns of use are hypothesised to be instrumental in bringing about a reversal of the traditional low evaluation of the glottal stop." (Milroy et al. 1994: 26). The suggestion here then, is not that females choose prestige forms, but rather they create prestige forms in that favouring them changes the status of them. One must be tentative in one's suggestions here, as so far we only have evidence of this happening in just a few places, but if this is happening in England, it is plausible to suggest, that for those Anglo adolescents who have come to Spain to this speech community in the last 5 years, bringing their dialects with them, the same processes are now at work in their new speech community. It is also plausible, that with sustained contact, the Non-Anglo adolescents are following this trend, which would explain the particularly high glottalisation levels of the Northern European girls in comparison with the boys of all other ethnicities.

4.17.5 Young children and adolescents: differing levels of glottalisation

We now consider age as a social factor, given the result from these data that most individual teenage informants' overall glottal scores exceed those of their younger counterparts. The

young children in this sample, all eight years old, as well as generally having lower individual overall glottalisation scores than the teens, had particularly low levels of glottalisation in word medial intervocalic position compared to the teens. Only 4 of the 12 young informants glottalised at all in this position, (3 Anglos, all with 1 token apart from Maddie from Middlesbrough with 4 tokens) compared with 19 of the 22 adolescent informants (of the 3 informants who didn't glottalise here, 2 were Spanish boys and 1 was a bilingual Anglo/Danish boy).

The finding from the young informants, that less than half of them glottalised at all in word medial intervocalic position, is in contrast to the teen data. The teens' glottal scores ranged from 28-99% in this phonological environment. Previous studies of dialect acquisition have revealed that certain phonological features may not be mastered by children whose parents are not native to a dialect area (D'Arcy 2000; Payne 1980; Trudgill 1982, 1986). Given that in this study, many kids have parents who do not speak English, and English is not spoken in the domain of the home, this may be an inhibiting factor for the adoption of the glottal stop in word medial intervocalic position. In terms of the young children having a differing pattern of distribution of [ʔ] compared to their teenage counterparts, we shall look at the outcomes of previous studies of young children.

Foulkes (1999) explored the acquisition of variation in pre-school children. He examined glottalisation in 40 children aged 2 to 4 years from Newcastle. He looked at all the range of alternants acquired by the children and concluded that the children were making good progress in mastering the glottal stop pattern. Something unexpected came out of the findings. Acoustic analysis revealed that high degrees of pre-aspiration of (t) was found in the children's speech, including the 2-year-olds, for (t) in utterance final position. This was

adopted by the boys and the girls, but it is a feature found in the speech of young women in Newcastle. This is perhaps a case that shows that the asymmetry of childcare is giving rise to female led changes being adopted by children. Labov (1990) noted the similarity between children's dialect specific productions and those of their mothers. He hypothesised that the early childcare situation which is often female led could lead to a favouring of female led sound changes, and a disfavouring of male led changes. Roberts (1997) examined this hypothesis with Philadelphia pre-school children. (See Roberts' study on short *a* in Philadelphia). She also found that the children favoured the female led changes compared with one male led change. These results all support the theory that input is an important factor in variation, at least in the early learning of socially influenced variables. Therefore, given the different inputs the young children in my sample have both in the domain of the home and the school, it is difficult to say whether they are socially aware of the word medial intervocalic phonological environment being the environment where it is historically less usual to glottalise, or given that only one Non-Anglo young girl glottalises here at all and there is only one token, is the input from the home domain a crucial factor here?

In addition to this, the youngsters have differing social lives to the teen informants' social lives. They are not really a community. Apart from friends coming over occasionally, the language that they have contact with out of school is limited to the domain of the home. Therefore, levels of contact with other Anglos may not be great enough at this point in time to acquire [ʔ] in word medial intervocalic position. For the Non-Anglo youngsters, one must consider the effect of their L1. Moreover, given that [ʔ] is most salient in this phonological environment, and these 8 year olds are still learning to spell, orthography may be a barrier to acquiring the variant more fully in this environment at this stage. One might also consider that given that use of the vernacular is at its highest in adolescence (see 2.5.1 for a discussion

of Adolescent Peak), this may explain why the teen informants are using [ʔ] much more than the young informants in this phonological environment.

4.17.6 Spanish youngsters and teens are unlikely to glottalise in word medial intervocalic position

The results found that Spanish informants used few glottal stops in word medial intervocalic position. Their glottalisation levels in this position are considerably lower than those of the other ethnic teenage groups. The 2 groups of teenage Spanish informants, all boys, are the groups who mix least with teen informants of other ethnicities. They speak Spanish in their interactions out of class, and mix in totally Spanish speaking networks out of school. All of them speak Spanish in the domain of the home. All of them, apart from Jason, are more competent in Spanish than English, and even Isaac admits to having difficulty understanding English at times, despite having an English mother. One might suggest here that for the Spanish teens, contact with the Anglo teens is not intensive enough for these boys to pick up the glottal stop in this position. In addition to this, one must consider the impact of their L1. Spanish does not have [ʔ]. It would not be implausible to suggest that due to limited contact with speakers of English, that these boys have acquired some but not all of the patterns of variation of (t) that their Anglo counterparts display.

The same argument, that contact may be not great enough, may also be applied to the outcome that Spanish youngsters are not glottaling at all or very little in word medial intervocalic position. As we saw in Chapter 3, the young Spanish informants all speak Spanish in the domain of the home. They do not really have social network links out of school with English speaking peers. This may be a factor prohibiting glottaling in this phonological environment.

4.17.7 Primary education: home or away? A possible correlation with glottalisation levels

Primary education was an important factor for distribution of (t) in this contact setting. Anglo teenagers who have had a primary education in England have the highest levels of glottaling in all phonological environments under examination. Teenage Anglo informants who have lived in Spain all their lives have lower glottal scores in all considered phonological environments than those who have lived there 5 years or less. One Anglo girl, Gina, who has had a Spanish primary education, has lower glottal scores, in line with those of Spanish informants. It was also found that young Anglo informants who have lived in Spain all their lives have lower glottal scores in all considered phonological environments than those who have had some schooling in England.

I will argue here, that we may be witnessing a form of interdialect in terms of variability. Those Anglo kids who have had some school experience in England, come to Spain bringing their already established dialects with them, and have noticeably higher glottalisation levels than those who have had no schooling in England. Those Anglo kids who have had an English education in Spain have midpoint levels of glottalisation, a trend that is present in all the phonological environments under examination. Gina, the only Anglo to have had a Spanish primary education, has levels of glottalisation that are in line with those of Spanish informants. I shall exemplify this by presenting tables of the teen Anglos' distribution of (t) (the left hand column for each variant shows the Number of tokens and the right hand column shows the percentages of these variants).

Table 4.19: Anglo informants' distribution of variants according to primary education

Primary education	[ʔ]		[t]		[r]	
	Tokens	%	Tokens	%	Tokens	%
English in England	785	93%	36	5%	19	2%
English in Spain	283	69%	64	16%	60	15%
Spanish in Spain	61	61%	22	22%	17	17%

Table 4.20: Anglo informants' variants word in medial intervocalic position according to primary education

Primary education	[ʔ]		[t]		[r]	
	Tokens	%	Tokens	%	Tokens	%
English in England	99	68%	33	22%	14	10%
English in Spain	21	28%	35	46%	20	26%
Spanish in Spain	1	5%	14	78%	3	17%

Table 4.21: Anglo informants' variants in word final pre-vocalic position according to primary education

Primary education	[ʔ]		[t]		[r]	
	Tokens	%	Tokens	%	Tokens	%
English in England	261	99%	0	0	3	1%
English in Spain	87	68%	9	7%	32	25%
Spanish in Spain	15	46%	4	12%	14	42%

As we can see from these tables, in all the phonological environments under examination, those Anglo informants who have had an English education in Spain have glottalisation levels that are midway between those informants who have had an English education in England and Gina's levels, the one teen Anglo informant who has had a Spanish primary education. Trudgill (1986: 86) discusses the phenomena that he refers to as "social dialect continua". He claims that "dialect contact may give rise to both focussed and diffuse types of language variety...One of the things that may happen in a *diffuse* situation is that two dialects in contact may give rise over time to a dialect continuum with the original dialects remaining

at either end..Subsequently, focusing may take place around a particular point on this continuum". Trudgill (1986: 91-94) discusses Thelander's 1979 Swedish study of the divergent dialect community of Bürtrask. Referring to Bürtrask using the term *divergent dialect community*, this means that it is "an area where there is a considerable amount of linguistic distance between the local and the national standard" (ibid.: 91). Rather than switch dialects, speakers in Bürtrask increase or decrease proportions of different variants. In order to examine if dialect switching occurs in Bürtrask, Thelander distinguishes between *variant switching* or microvariation, and *variety-switching* or macrovariation. Through the examination of 12 variables, all of which have a standard and non-standard variant, Thelander found three major trends. "First, a minority of speakers, in a minority of situations, exhibit co-occurrence of the standard variants of all variables, showing that they are speaking the standard variety. Similarly, some speakers demonstrate co-occurrence of different non-standard variants, showing that they are speaking dialect. Most interestingly, however, a majority of speakers, in a majority of situations, demonstrate a tendency to co-occurrence of the non-dialect variants of dialect indicators with non-standard forms of standard indicators" (ibid.: 93). Thelander argues that the degree of cohesion present between these variants is sufficient to demonstrate the existence of a new intermediate variety between dialect and standard.

I suggest here, that for the teen Anglo informants who have had an English primary education in Spain, focussing has occurred with (t) in that they do not glottalise as much as peers who have come into secondary education in Spain from a primary education in England, but they have intermediate levels on the social dialect continuum between the newer Anglos and those Anglos who have had a Spanish primary education. Like Thelander found, I suggest that we

are witnessing intermediate levels of glottaling, that lie somewhere between standard and non-standard.

Higher levels of glottalisation within the young informants' data were also found for youngsters who have had some education in England. Those that had had some primary education in England displayed higher levels of glottalisation than those Anglos who had been in Spain all their lives and had had all their primary education to date at the international school in Spain.

Table 4.22: Young Anglo informants' distribution of variants according to primary education

Primary education	[ʔ]		[t]		[ɾ]	
Some primary education in England	143	75%	44	23%	3	2%
Whole primary education to date in Spain	141	68%	66	31.5%	1	0.5%

These young informants' results follow the pattern of the teen Anglos' results with higher levels of glottalisation for those who have had some primary education in England.

Contrary to the Anglo informants' results, Non-Anglo teens who had a primary education in a language other than English had higher glottalisation levels in all phonological environments than those Non-Anglos who had a primary education in English at St. John's (see tables 4.23, 4.24 and 4.25).

Table 4.23: Non-Anglo informants' distribution of variants according to primary education

Primary education	[ʔ]		[t]		[r]		[ɾ]	
	Tokens	%	Tokens	%	Tokens	%	Tokens	%
English	93	46%	79	39%	18	9%	12	6%
Language other than English	558	75%	100	13%	62	8%	28	4%

Table 4.24: Non-Anglo informants' variants in word medial intervocalic position according to primary education

Primary education	[ʔ]		[t]		[r]		[ɾ]	
	Tokens	%	Tokens	%	Tokens	%	Tokens	%
English	1	2%	43	86%	4	8%	2	4%
Language other than English	25	23%	61	56%	19	18%	3	3%

Table 4.25: Combined Non-Anglo informants' variants word final prevocalic according to primary education

Primary education	[ʔ]		[t]		[r]		[ɾ]	
	Tokens	%	Tokens	%	Tokens	%	Tokens	%
English	19	43%	8	18%	13	30%	4	9%
Language other than English	131	74%	10	6%	33	18%	4	2%

We might look upon the teens who have spent all their academic life at St John's as the "Founders" of this community. According to Mufwene (2001: 27) "Whenever an empty territory undergoes settlement, or an earlier population is dislodged by invaders, the specific characteristics of the first group able to effect a viable, self-perpetuating society are of crucial significance to the later social and cultural geography of the area, no matter how tiny the original band of settlers may have been.....in terms of lasting impact, the activities of a few hundred, or even a few score, initial colonizers can mean much more for the cultural geography of a place than the contributions of tens of thousands of new immigrants generations later". If we are to look upon the teen levels of glottalisation of those who joined the school at infant levels as the "Founder" levels, according to Mufwene's Founder Principle, the finding that Non-Anglo informants' levels of glottalisation who joined the

school at secondary level are considerably higher goes against this principle. A possible explanation for this, is that if we look at the comparatively low gottalisation levels of the young informants, we see that the Non-Anglos who have been at St. John's for their whole academic life would have entered the school at a time when levels of glottalisation were quite low. I believe that this may have gone some way towards determining the levels of glottaling they display as teens in this study. In contrast, the Non-Anglos who joined St. John's at secondary level, all joined at a time when glottaling in the speech community of their age matched peers was high. Therefore, as we know that the biggest factor for language in adolescence is peer group (see Kerswill 1996), it would not be fanciful to suggest that these Non-Anglos, for many of whom English is a second language, have adopted the high levels of glottaling of their peers at the time that they have entered the school accordingly.

4.17.8 Bilingual or monolingual? The consequences for glottalisation

We now come to our last outcome that these data produced, and that is the finding that Anglo and Non-Anglo bilingual informants had considerably lower levels of glottaling than their monolingual counterparts. It came to my attention that bilingualism may have an impact upon levels of glottaling when I spoke to members of staff at the school about Oscar, a bilingual Spanish and English teenage boy who had lived in Spain all his life. His mother was the deputy head of the school and was from Epping in Essex. Although she had lived in Spain for 27 years, she had a broad Essex accent, and noticeably used glottal stops frequently. His Father was Spanish and spoke no English. Oscar differed from the other Anglos in the sample in that he was the only Anglo who mixed with Anglos and Spanish kids equally. He helped out at times in the school office, and spoke to parents and members of staff alike in Spanish or English accordingly. Members of staff commented upon how he spoke 'better' than his mother, despite the fact that she was his first form of exposure to English. When I looked at

his overall glottalisation scores they were only marginally lower than his Anglo peers.

However, when I looked at his intervocalic word medial glottal scores they were 50% lower than the highest Anglo informant glottal score. Only Aaron, who had also lived in Spain all of his life and Tom, who attended private school in England, had lower glottal scores in this phonological environment. When I looked at the glottal scores of other bilingual teenagers they were similarly lower than their monolingual counterparts, regardless of what languages they were bilingual in.

I found no previous phonological variationist studies of (t), or indeed any variable, which looked at bilingualism as a social constraint. However, Dollinger (2012), in his study of Metro Vancouver, Canada, and adjacent Washington State, found that Vancouver English is characterized as a vernacular that – for the 30 variables studied – is not undergoing Americanization. Dollinger found that non-L1 speakers of English in Vancouver are playing a role in this, in that they are using and helping to preserve conservative forms. "The data for young local residents who were at least raised, if not born, in the target regions provide solid evidence that present-day Vancouver English is best identified as a linguistically more conservative variety than the vernacular of Washington State. Speakers of second-language varieties of English in Vancouver are shown to amplify differences already present in the local population" (Dollinger 2012: 519).

Dollinger (2012: 530) concludes that the results from the Language Use Index that he employed "highlight the non-trivial role of non-L1 speakers of English in the speech pool of Canadian cities with large immigrant populations. In a number of cases the non-L1 immigrants reinforce existing linguistic conservatism in Vancouver and further distinguish it from Washington English. While it may well be that in succeeding generations the

characteristics of multilinguals are not reinforced (and thus become extinct), at least those features that match an existing trend of the local Vancouver population will likely be continued by new generations of immigrants. Prevalent users of non-English have been shown to help maintain Canadian features. Further study is needed to clarify whether the features are actually brought to Canada by non-English L1 speakers (and thus reflect a legacy of historical dominance of British standards in ESL teaching), or whether they represent *in situ* accommodations by non-L1 speakers of English to the tendencies found in the local Vancouver population." We see here then, that the multilinguals in Canada are playing an important role in dialect preservation in that they are maintaining conservatism in Vancouver English.

One might say that the Anglo and Non-Anglo bilingual informants in the speech community of the present study are being more conservative in their language use than the monolinguals, in that they consistently use lower levels of glottalisation. For teenagers, Varbrul found bilingualism to be a very significant factor for variation, and somewhat significant for youngsters. The 9 teen informants with the lowest overall levels of glottaling are all bilingual. It would be difficult to try to explain why bilingual informants are being conservative with their use of [ʔ] in this speech community. Levels in word medial intervocalic position were particularly low, the 10 informants with the lowest levels are all bilingual with only one informant, Neil with 27% having a score of over 10% glottal stops in this position. Given that glottaling in this phonological environment is most salient and stigmatised, might bilingual informants be avoiding using the stereotypically stigmatised English feature? Whatever the explanation may be, I suggest here that bilingualism and monolingualism as social factors in mixed language and dialect speech communities should be explored, as the results, as

Dollinger found, may be of linguistic importance. Their conservatism may play a role in outcomes of language and dialect contact situations.

4.18 Summary

This chapter has provided us with some findings from the data that point to certain social and linguistic factors having an impact upon the distribution of (t) for the informants in this contact setting. These social factors included age, gender, social network, type of schooling and bilingualism and monolingualism. The outcomes were compared to the findings from other studies where possible. Comparisons were not without problems, in that most of the other studies differ quite greatly to this research.

It remains to be seen if these social and phonological constraints could be explored in another language and dialect contact setting and produce similar outcomes. One might question how much these informants' attitudes to language, network affiliations and linguistic repertoires affect their linguistic realisations, and whether the linguistic meaning and significance of variation for informants could be the same in another contact setting as this one. It would be of theoretical interest to undertake similar research in the future, and see if any similar correlations with the social and linguistic factors explored here are found in the results.

