

UNIVERSITÉ FRANÇOIS-RABELAIS DE TOURS

‘In Gosforf you go’

The case of TH-Fronting in Newcastle

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Abstract

This thesis is a variationist sociolinguistic study of TH-variation in Tyneside English, a variety spoken in Newcastle.

Focusing on TH-fronting, this study seeks to determine the constraints ruling the use of this variant in Newcastle, while also relying on previous studies on the subject. The study takes a comparative sociolinguistic approach as the results are compared with results from Schlee and Ramsammy's (2013) study entitled "Labiodental fronting of /θ/ in London and Edinburgh: a cross-dialectal study".

The dataset consists of 1251 occurrences of the (TH) variable in conversational data stemming from two corpora - the PVC (1994) and NECTE2 (2007-2010) corpora from the DECTE corpus. The data selected for the statistical analysis from NECTE2 contains 405 occurrences of (TH), with 82 occurrences out of the 405 being TH-fronting.

Study results show that TH-fronting is a new phenomenon in Tyneside's speech and that it is conditioned by speaker gender and phonological contextual factors. These results coincide with most of the findings previously made on TH-fronting.

Keywords: TH-fronting, sociolinguistics, sociophonetics, Tyneside English, Newcastle, DECTE.

Résumé

Ce mémoire propose une étude sociolinguistique variationniste de la variable (TH) en anglais Tyneside, variété parlée à Newcastle.

Tout en s'appuyant sur de précédentes études sur le sujet, celle-ci se focalise sur TH-fronting et cherche à déterminer les contraintes régissant l'utilisation de cette variante à Newcastle. Les résultats sont comparés à ceux de l'étude de Schlee et Ramsammy (2013) *Labiodental fronting of /θ/ in London and Edinburgh : a cross-dialectal study*. Une approche sociolinguistique comparative est donc adoptée.

Les données comprennent un total de 1251 occurrences des variantes (TH) et proviennent de conversations collectées pour deux corpus - le PVC (1994) et NECTE2 (2007-2010) du corpus DECTE. Pour l'analyse statistique, les données sélectionnées de NECTE2 regroupent un total de 405 occurrences de (TH) parmi lesquelles 82 occurrences de TH-fronting ont été relevées.

Les résultats de l'étude montrent que TH-fronting est un nouveau phénomène en Tyneside et que celui-ci est conditionné par le genre des locuteurs/locutrices et des facteurs phonologiques en contexte. Les résultats coïncident avec la plupart des conclusions établies lors de précédentes études sur TH-fronting.

Mots-clés : TH-fronting, sociolinguistique, sociophonétique, Anglais Tyneside, Newcastle, DECTE.

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Abbreviations

DECTE	Diachronic Electronic Corpus of Tyneside English
LVC	Language Variation and Change
NECTE2	Newcastle Electronic Corpus of Tyneside English 2
PVC	Phonological Variation and Change in contemporary spoken English corpus
RP	Received Pronunciation

'did you say it goes *anywhere*?'

'Yep', said Stan proudly, 'anywhere you like, long's it's on land. Can't do nuffink underwater. 'Ere', he said, looking suspicious again, 'you *did* flag us down, dincha? Stuck out your wand' and, dincha?'

'Yes', said Harry quickly. 'Listen, how much would it be to get to London?'

'Eleven Sickles,' said Stan, 'but for firteen you get 'ot chocolate, and for fifteen you get an 'ot-water bottle an' a tooofbrush in colour of choice.'

(J.K. Rowling, *Harry Potter and the Prisoner of Azkaban* 1999:37)

Introduction

This thesis focuses on TH-fronting in Tyneside English, a non-standard variety of English spoken in the city of Newcastle. TH-fronting is a sound change in progress emerging from London, in the south of England, and is reportedly spreading to in cities across the UK (Foulkes & Docherty 1999, Baranowski & Turton 2015:10).

This study adds to existing knowledge around the phenomenon of TH-fronting in British English by studying the variant within the Tyneside variety in the city of Newcastle. Following the approach taken by Schlee and Ramsammy in their 2013 study “Labiodental fronting of /θ/ in London and Edinburgh: a cross-dialectal study”, I analyse the production of TH-fronting through a comparative variationist lens.

This research aims to analyse the development of TH-fronting in a variety of English – Tyneside English – for which the phenomenon has not been extensively analysed. Another objective is to compare the results with previous research findings for other varieties of English. The present study thus seeks to establish how TH-fronting behaves in Tyneside English compared to other varieties, given different pronunciation constraints. Results of the present study suggest that TH-fronting appears in the speech of male speakers, most significantly when in final position of the word and followed by a consonant.

It is hoped that this thesis will contribute to the comparative analyses of regional varieties of English and the development of TH-fronting.

This master's thesis is structured as follows. The first chapter will review the literature on TH-fronting. The data and methods used to conduct this study will be presented in Chapter 2 – specifically, how the data were gathered, coded, and quantitatively analysed. The following chapter (Chapter 3) will present the results of the statistical analysis. In the last chapter (Chapter 4); the findings will be discussed and compared to the results of Schleef and Ramsammy's (2013) study. This thesis will end with a conclusion underlining its limits and suggesting potential analyses that could further be made on the subject.

Chapter 1

TH-fronting in (British) English varieties.

This very first chapter is divided into four points and begins with a presentation of the variety and city on which this study on /θ/ variation was conducted. The next section presents TH-fronting and its evolution throughout the English language, followed by an outline of the claims that explain the apparition of the variant and the constraints that bring about its use. These elements are the foundations for the hypotheses which will be presented in the final part of this review.

1.1 Tyneside English and Newcastle.

Tyneside English is the dialect spoken in Tyne, in the North East of England, and mainly in Newcastle. Also commonly called ‘Geordie’ in an informal context, the term refers to the dialect and those who speak it. Some theories say that the term ‘Geordie’ dates back to 1823, when the term was used as an insult to describe someone as a fool (Kavelar 2009:3). Kavelar adds that the term is also said to be used as “a derogatory word for a coal miner” in the nineteenth century (Graham 2005:4).

This variety is well known amongst English speakers, as it is highly recognizable and different from the Received Pronunciation (RP) of English regarding its pronunciation and intonation; and also different from Standard English regarding its grammar and vocabulary (Kavelar 2009:1). This variety is known to share similarities with Scots dialects that are close to the English border (Maguire 2022:1), which is unsurprising since those dialects are of identical origin. Although Tyneside is mainly spoken in the Tyneside area, other dialects around it share some of its features, making the delimitation of the different areas more complex and unclear (Kavelar 2009:3).

This variety is said to have “favoured the retention of archaic pronunciation” (Watt & Foukles 2017:142), with, for instance, the Northumbrian burr, a distinctive uvular pronunciation of the <r> documented as far back as the 1720s (Watt & Foukles 2017:142). However, this pronunciation is now only used among rural speakers (Beal 1999).

Newcastle-upon-Tyne, or “The Toon” as it is called locally (Beal 1999:34), is considered the capital of Tyne and is well known for its industrial heritage. Its great influence developed with its success in the heavy industry around steel and shipbuilding during the 18th-19th centuries. Since then, the city has been seen as a pole of the North East region. Indeed, the North East was considered “England’s centre of industry” until the Second World War, when it lost most of its prestige. The massive immigration from the heavy industrialization brought new words and phrases characteristic of the region (Kavelar 2009:9).

As Tagliamonte (2012) reminds us, language deeply reflects the society and time in which it is produced. Consequently, social stigmas are often associated with specific structures, words, or pronunciations (2012:6). Gralińska-Brawata found that most of the attitudes and stereotypes around Tynesiders come from the remoteness of Newcastle from the rest of the country (2020:105). Although the city has regained most of its prestige, mainly through tourism and the new interest in the Tyneside variety, some stereotypes still influence how Tynesiders are viewed across England (Kavelar 2009:9, Beal 1999:34).

For the most part, industrialization is what has caused the way Tynesiders are viewed across the country, as the North was associated with the “working class, dirty and poor” (Kavelar 2009:9). These stereotypes have a bad effect on the way Tynesiders are viewed across the country and make them seen as uneducated and not well-spoken to people that are not familiar with the dialect. William of Malmesbury even found Tyneside people “incomprehensible to a civilized southern ear” (Honey 1989:17).

According to Gralińska-Brawata’s findings, Tyneside speakers are “conscious of all the perceptions concerning them, which adds to their feeling of isolation and being marginalized” (2020:105). Beal insists that this sense of isolation is shared by the entirety of the North East (1999:34).

Regional identity is powerful in the North East of England. Tynesiders are deeply proud of their dialect and origin. When talking about the Northumbrian burr, Daniel Defoe said it was for them “a badge of the ‘Antiquity of their Blood’” (Defoe, cited in Watt & Foulkes 2017:143). According to Watt and Foulkes (2017:143), archaic

pronunciations are potentially preserved by this strong sense of regional identity. One crucial factor of their unity is “the dominance of regional over class identity” (Lancaster 1992:66), with Middle-Class Tynesiders having a “posh accent” and a tendency to use words that are not found in Standard English (Beal 1999:35). Although there is a shared sense of regional identity in the Northeast, Tynesiders share a strong sense of identity themselves. It is essential not to mistake whether people come from Sunderland, Middlesbrough, or Tyneside, as it would be “an unforgivable social gaffe” (Beal 1999:34). This strong sense of nationality is mentioned by Beal when Sir John Hall (Chairman of the United Football Club) talks about “The Geordie Nation” (1999:33). The phrase, she states, is deeply associated with Newcastle as it is the heart of the “Nation” and that the word “Nation” is “used in its Native American sense here, suggesting that the Geordies are a tribe with a unique language and culture, threatened and exploited by the colonial power in the Southeast” (1999:33). The phrase is used to talk about the people more than the territory.

At the time of his study, Watts even found that Tynesiders “felt [a] much closer affinity with Scotland than any other part of England” (2002:54, cited in Gralińska-Brawata 2020:105).

It has been observed that the Tyneside variety is ongoing a certain amount of levelling as “some of its broadest features are being replaced by words and pronunciations which are found across a much wider part of Britain, including standard English” (Maguire 2022). Although some levelling is to the profit of RP English, most are directed to a levelling within the Northern dialects. The

monophthongisation of closing diphthongs is, for instance, a common point in the levelling across the North of England (Beal 2008). Discussing the choice of linguistic variants, Kerswill (2003:3) explains that “speakers adopt the new ones by accommodating to other people who may be socially attractive because of their perceived ‘modernity’” and that those variants usually come from a “populous and economically and culturally dominant centre” which is London in this case (Trudgill 1982:52-87, cited in Kerswill 2003:1). Therefore, although Tynesiders have a strong sense of regional identity and are very proud of their dialect, some linguistic features of their variety are being levelled.

Regional dialect levelling can be defined as “large areas [that] become linguistically homogenous” (Holmes-Elliott 2016:85). In other words, some specific linguistic characteristics of dialect are lost to the profit of a broader area (Holmes-Elliott 2016:85), which is the case of TH-fronting that was initially a feature of Cockney English. As previously mentioned, London has a strong influence – culturally and linguistically, and since TH-fronting has been said to be spreading from the South, it is likely that this particular variant is perceived as more “modern”.

In fact, Kerswill claims that. “people in Newcastle (in some sense) are aware of what features are ‘old’ and what features are both ‘modern’ and have a wider geographical distribution” (2003:3).

1.2 The TH-fronting phenomenon.

As London is profoundly influential around England, whether economically, culturally, or even linguistically, it is not much of a surprise that TH-fronting spread beyond the capital where it was first documented. More precisely, the variant emerged in the Cockney dialect, spoken in the east of the city (Wells 1982:328, taken from Stuart-Smith & Timmins 2006), and is said to be “one of the fastest spreading phonological changes in non-standard English” (Trudgill 1999, taken from Baranowski & Turton 2015:9). Comparing three age groups, Holmes-Elliott found that “TH-fronting was an extremely rapid change in Hastings, with rates rising from 10 to 76% across three generations” (2016:87). Indeed, the city was said to be the principal source of linguistic innovations in Britain, as “its working-class accent is today the most influential source of phonological innovation in England and perhaps in the whole English-speaking world” (Wells 1982:301, cited in Kerswill 2003:8). Holmes-Elliott (2016), for instance, holds London responsible of the spread of TH-fronting to Hastings, quoting Trudgill and saying that “the influence of culturally dominant cities plays a key role in this process, particularly in the diffusion of innovative forms” (Trudgill 1983:52-87, cited in Holmes-Elliott 2016:85).

The term TH-fronting, coined by John Wells, describes the “replacement of the dental fricatives [th, dh] by labiodentals [f] and [v] respectively” (Wells 1982:328, cited in Stuart-Smith & Timmins 2006). In this study, the term TH-fronting will only be used to refer to the voiceless variant [f]. According to Trudgill, variation

around /θ/ and /ð/ was to be expected as these consonants are “relatively rare in the world’s languages” (1988:43 from Whisker, Merrison & Swift 2007). Moreover, the acoustic characteristics of [θ] and [f] show many similarities. Blevins (2004:134) categorises TH-fronting as a context-free sound change involving “shifts between sounds which cannot be accounted for in terms of general articulatory variability.” The apparition of the variant was due to a loss of distinction between the phonemes [θ] and [f], which is why this particular phenomenon is neutralizing (Blevins 2004:134). According to Miller and Nicely (1955, cited in Blevins 2004:135), [θ] - [f] and [ð] - [v] are the consonants with the highest confusion rate. For Blevins, such confusion is due to the “slight differences in preceding and following formant transitions” (2004:135).

The apparition of TH-fronting variant dates back to the early 19th century when it emerged in London and spread to Bristol quickly. It then started to spread over the country around a century later (Levon 2014:3-4). TH-fronting is now well established in the Southern part of England. Holmes-Elliott’s (2016) study in Hastings showed that more than half of TH-realizations were using the non-standard variant [f]. Sociolinguistic studies have shown evidence of TH-fronting in many cities like Manchester (Baranowski & Turton 2015), and Edinburgh (Schleef & Ramsammy 2013) and going up to the northeast in Newcastle.

The variant has also been found in ancient British colonies as in Gibraltar (Levey 2008) or Hong Kong (Edwards 2018). Although TH-fronting is low in Gibraltar, its apparition and spread are explained by the number of British visitors and residents coming to Gibraltar. Even though Spanish is widely spoken in everyday life,

English remains the official language. Therefore, the use of TH-fronting shows Britain's influence over this variety of English (Levey 2008). TH-fronting has also been studied in other English-speaking countries such as New Zealand (Wood 2003) or Scotland (Stuart-Smith & Timmins 2006; Robinson 2005; Clark & Trousdale 2009). In the latter, the variant was, for instance, found in the speech of Working-Class adolescents in Glasgow (Stuart-Smith & Timmins 2006), or in Jockney English in Livingston (Robinson 2005).

1.3 Claims and constraints on the apparition of TH-fronting.

Many researchers have looked at the fronting phenomenon and drawn a list of the constraints ruling its apparition amongst the different varieties of English. This part will first present the social constraints, followed by the linguistic constraints found in the different studies on TH-fronting. The last sub-section focuses on dialectal variation.

1.3.1 Social factors

1.3.1.1 Social class.

Socially speaking, TH-fronting has been reported as a variant mostly occurring amongst the Working-Class in all varieties of English. TH-fronting is a variant that speakers seem to be aware of. Indeed, the variant has been associated with the lower classes by British speakers (Levon 2014). Levey (2008:92) states that the variant “has non-prestigious lower-class connotations and may be

associated with poor standards of education”. The variant has been stigmatized for a very long time in England and its colonies and was “negatively evaluated as evidence of the decline of English amongst young people today” (Levon 2014:4). However, it seems that the variant is slowly losing some of its social stigma (Kerswill & Williams 2002, cited in Levon 2014).

TH-fronting is, in the mind of English speakers, a stereotype of Southern English British Varieties (Levon 2014:) and, more precisely with the working-class Cockney English speakers of East London (Kerswill 2003:231, also cited in Holmes-Elliott 2016:84). Scottish speakers think of the variant as an ‘English stereotype’ (Clark & Trousdale 2009:308). For Labov (1972), TH-fronting should not be considered a marker or an indicator but a stereotype.

Indeed, TH-fronting is strongly associated with the working class and masculinity, which would explain why the increasing use of the variant is led by male speakers in most studies. Levon (2014:552) goes so far as to assume that “a salient association between TH-fronting and working-class speech could lead to decreased perceptions of ‘gayness’ and increased perceptions of ‘masculinity’ given popular stereotypes of working-class men as normatively masculine and heterosexual”.

Interestingly, several studies show that TH-fronting is found in the speech of participants of the working-class with the lowest geographical mobility, as reported for Scotland and England (Stuart-Smith & Timmins 2006:171).

1.3.1.2 Age.

TH-fronting is mainly documented in the speech of adolescents, although it is also said to be preserved in early adulthood (Whisker, Merrison & Swift 2007). Indeed, the variant is mainly documented amongst speakers aged 12 to 20 years old (Schleef & Ramsammy 2012, Baranowski & Turton 2015, Levey 2008, Stuart-Smith & Timmins 2006). It is even said to be a change driven by adolescents with, for instance, 78% of TH-fronting amongst that group in Hastings (Holmes-Elliott 2016:86). The phenomenon was even called an “urban youth norm” by William and Kerswill (1999, cited in Baranowski & Turton 2015). In Manchester, Baranowski and Turton (2015) found that some of their youngest participants produced 100% TH-fronting in an interview style. They hypothesized that, since TH-fronting is “truly the fastest phonological change in British English” (2015:13) the reason for its strong use amongst the youngest generation could be that the social stigma associated with it also changed quite rapidly, meaning that the younger generations could probably be less aware of the “non-standard connotations” the variant has had since it was discovered and use it regardless of it. They say this could also be why older speakers sometimes avoid using the variant (Baranowski & Turton 2015:13).

Previous studies concluded that older speakers used TH-fronting at a very low rate (Schleef & Ramsammy 2012:26, Holmes-Elliott 2016) or that it was not used at all (Robinson 2005). Holmes-Elliott (2016:86) found that only 10% of (TH) tokens were realized as the fronting variant for the older-speaker cohort. Though we know TH-fronting is said to be preferred by younger speakers, and more precisely by

adolescents, the variant is still used, though infrequently by other age groups, including older-speakers. TH-variation could be an age-related phenomenon. TH-fronting being a new phenomenon, it is not surprising that adolescents are leading its use. Tagliamonte and D'Arcy (2009:59) state that "The frequency of incoming (i.e., innovative) forms is highest amongst adolescents; preadolescents are consistently found to use incoming forms less frequently, not more frequently, than their immediate elders, while postadolescents also use the same forms less frequently".

1.3.1.3 Gender.

Gender seems to also play its part in TH-variation, with male speakers in the lead of the production of the fronting variant.

In Manchester, fronting first impacted /ð/ before affecting the voiceless fricative /θ/, both appearing in the speech of young males of the working class (Baranowski & Turton 2015:12).

Female speakers have been observed to use the "standard" pronunciation much more than male speakers. This finding coincides with Labov's 2nd principle regarding the linguistic conformity of women, where he states that "for stable sociolinguistic variables, women show a lower rate of stigmatized variants and a higher rate of prestige variants than men" (Labov 2001:266). This was also noticeable in Schlee and Ramsammy's (2013) study in the data collected in London, where TH-fronting is well established. Their results showed that many

non-users of the fronting variant were females. Moreover, gender was revealed as a significant factor in London.

In Hastings, male speakers are visibly in the lead for TH-fronting use, regardless of age (Holmes-Elliott 2016:87), which coincides with the idea of male speakers preferring stigmatized variants. Interestingly, this difference of TH-fronting between male and female speakers was even more pronounced in the old cohort, for male speakers used 17% of fronting compared to 2% for female speakers (Holmes-Elliott 2016:87).

The linguist also found gender to be highly significant in Hastings, but only with the old and middle cohorts (*ibid.*). This contradicts other studies on TH-fronting, even though most of them only focused on adolescents. It is important to note that although gender was a significant factor on TH-fronting within the oldest group of participants, it only represented 10% of (TH)-use. In comparison, TH-fronting represented 78% of realisations for the adolescent participants. Holmes-Elliott found these results to be proof that “while this change is male-led during the earlier stages, this effect neutralizes over time” (2016:87). Schlee and Ramsammy (2013) found gender to be significant in London. However, Holmes-Elliott’s study being on more recent data than Schlee and Ramsammy’s study, it could be evidence that the gender distinction is indeed neutralized over time.

To summarize, the analysis of social factors impacting the production of TH-fronting amongst different dialects of English revealed that TH-fronting was favoured and primarily found in the speech of young male speakers of the working class. Trudgill (1998, cited in Whisker, Merrison & Swift 2007:241) also stated that

male speakers usually used non-standard variants more than females “due to social associations of Working-Class speech and masculinity”. Whisker, Merrison and Swift (2007:241-242), found, contrary to other studies, that women in Hull were leading the change for the cohort of speakers of 2005 born post-1970. This, they say, is “evidence for female innovation as females are seen to be leading the change” (2007:242). This, however, is the only case I found where females were in the lead for TH-fronting since all the other studies insist on the fact that TH-fronting is a male-led change (Schleef & Ramsammy 2012) or that, as we saw with Holmes-Elliott’s (2016) study, TH-fronting was a male-led change at the beginning.

1.3.2 Linguistic factors.

1.3.2.1 Misperception.

Linguistically speaking, several researchers agree that TH-fronting most probably originated out of some misperception effect, in which speakers cannot clearly distinguish between [θ] and [f] (Blevins 2004:134-135). Indeed, both fricatives share acoustic properties that are pretty similar as they are both voiceless. The dental [θ] and labiodental [f] have relatively flat spectra below 10 kHz (Maniwa, Jongman & Wade 2008:2). As voiceless fricatives have less variance than the voiced fricatives, they are more perceptually confusable (Maniwa, Jongman & Wade 2008:10).

The argument of the misperception effect is what Edwards (2018) advances as the main reason for TH-fronting in Hong Kong English. She explains that, unlike other varieties of English, TH-fronting was most likely to exist in Hong Kong

English because of a misperception effect due to acoustic similarities between Cantonese [f] and English [θ] (Edwards 2018:444). She concluded that the fronting realisation of /θ/ was only a “developmental stage” on the acquisition of [θ] amongst the speakers (Edwards 2018:463): “realization of TH as [f] may occur in the initial stages of acquisition of TH, followed by realization of TH as [s] at a later stage of acquisition for some learners of English in Hong Kong” (Edwards 2018:463). Although this particular variation probably emerged from some misperceptions from English speakers, it is not the only reason why TH-fronting is used.

1.3.2.2 Priming effect, lexical frequency, and position in the word.

Clark and Trousdale (2009) found significant evidence of a priming effect on TH-fronting in Scottish English. When a lexical item contains the labiodental fricative [f] before /θ/, the variable is much more likely to be realised as a fricative as well (Clark & Trousdale 2009:51).

Several studies pointed out that lexical frequency was significant in the spread of the variant. While Stuart-Smith and Timmins (2006) show an increase in the use of TH-fronting through the lexicon between their two corpora of 1997 and 2003, the same results were not found by Schleef and Ramsammy (2013). Words like “thing” and “think”, as well as their derivatives, are often pronounced with the fronting variant when the latter is well established in a variety, like in Glaswegian English (Stuart-Smith & Timmins 2006:179)

Amongst the different linguistic factors, the place of /θ/ in the word constrains the production of TH-variation. For instance, it has been observed that most of the glottalization of /θ/ happened word-internally and was significantly found in the pronunciation of the word ‘something’ (Schleef and Ramsammy 2013). Stuart-Smith and Timmins (2006), and Schleef and Ramsammy (2013) found that TH-fronting was to be expected in word-final position, which was the place where most of the fronting occurred.

Glaswegian English, which also has [h] as a variant of /θ/, gives another constraint for [f] apparition. Since [h] cannot be found in word-final position, this gives room for the fronting variant to occur more in this particular position of the word (Stuart-Smith & Timmins 2006:180). However, even though [h] constrains the apparition of [f] word internally, an increase in the use of the fronting variant was observed in Stuart-Smith and Timmins’ (2006) study.

The lexical distribution of the (TH) variable was also analysed in their study, where they found that the words ‘thought’ and ‘three’ had the most frequent use of TH-fronting and that the number of words using fronting increased between 1997 and 2003 (Stuart-Smith & Timmins 2006:180). In addition, Cheshire and colleagues (2008) found in their study that younger speakers showed a very high rate of fronting word-initially, while older speakers showed a significantly lower rate. While this was the case in their study, most findings indicate that TH-fronting usually occurs at the highest rate word-finally (Stuart-Smith & Timmins 2006, Schleef & Ramsammy 2013), followed by word-internal position (Stuart-Smith & Timmins 2006, Baranowski & Turton 2015).

1.3.2.3 Phonotactic context and prosodic position.

Phonotactic context and prosodic position also impact the apparition of TH-fronting. Several studies found that the following consonant favours fronting (Baranowski & Turton 2015, Schlee & Ramsammy 2013). Baranowski and Turton (2015:13), citing Kiparsky (2008), explain that this result is unsurprising as “a following consonant results in the (th) being placed in the coda, and that processes of neutralisation are known to occur in coda position”. Indeed, most studies found that TH-fronting was favoured in coda position.

The fact that TH-fronting is favoured when followed by a consonant is expected when a new neutralisation spreads through a dialect. According to Schlee and Ramsammy (2013:44) “new neutralisations spread to perceptually favourable environments only after they come to apply in less favourable environments”. They add that neutralisation phonemes usually prefer segments in coda position, whether preconsonantal or not.

1.3.2.4 Style.

The variant has also been analysed through different speech styles, whether through casual conversations or reading tasks, as well as different types of registers. Schlee and Ramsammy (2013:33) found that TH-fronting was not suppressed in the reading style and that it appeared more than in the conversational data for both London and Edinburgh. Robinson (2005) found the same results in Livingston where TH-fronting was more frequent in word lists. TH-fronting was also found to decrease when the discussion’s formality increased in Hull (Whisker, Merrison &

Swift 2007). Baranowski & Turton went further in their analysis and looked at data of “casual, careful, wordlist and minimal pair style” for Manchester (2015:13). They found that “TH-fronting is not subject to style shifting” in their dataset (2015:13).

1.3.3 Dialectal variation

While most studies on TH-fronting are centred around the variation within a particular variety of English, Schlee and Ramsammy (2013) look at TH-variation through a comparative approach. Their cross-dialectal study contrasts the progressive lexical and grammatical evolution and diffusion of the fronting variant in London and Edinburgh. That way, they provide “insights into a sound change in progress at two different points of implementation” (Schlee & Ramsammy 2013:26). They analyse TH-variation in both cities amongst 12- to 18-year-old speakers from the upper working class and lower middle class.

Compared to other studies, Morphological Complexity appeared to be the most significant factor for the realisation of TH-fronting. They found that polymorphemic words favoured the production of TH-fronting in both cities. They concluded that TH-fronting could gradually become “dependent on morphological structure” (Schlee & Ramsammy 2013:47), once the variant well established in a variety like in London. This, they concluded, could mean that the spreading of TH-fronting throughout the lexicon is independent of word frequency.

Along with Morphological Complexity, data collected in Edinburgh revealed prosodic and phonotactic factors to be significant as well, which was not the case

for London. According to their findings, /θ/ in the preconsonantal coda position is the place where fronting is most likely to be produced, as it is the “place of articulation [where] cues are difficult to extract accurately from the continuous speech stream” (Schleef & Ramsammy 2013:44).

Once TH-fronting diffuses to a new speech community, the perceptual grounding of the original innovation plays an important role in the lexical diffusion process. Specifically, phrase final /θ/ and prevocalic /θ/ lag behind preconsonantal /θ/ with regard to the lexical diffusion of fronting because the acoustic cues to the [θ]~[f] contrast are more easily discriminated in these contexts. (Schleef and Ramsammy 2013:45)

They concluded that the difference between the two cities, regarding the linguistic factors that influenced the production of TH-fronting, was due to the fact that it is a more established process in London than in Edinburgh. These results and conclusions led them to draw up a model showing the “emergence and diachronic generalization of [the] variable TH-fronting” (Schleef & Ramsammy 2013:45), in which they place London near the end of the evolution and Edinburgh near the beginning.

		Perceptibility of place contrasts					
		a. Preconsonantal position		b. Prepausal position		c. Prevocalic position	
Diachronic generalisation of TH-fronting		$/-\theta_o/[\theta C-]$ ↓ [θC]	$/-f_o/[\theta C-]$ ↓ [fC]	$/-\theta_o/##/$ ↓ [θ]	$/-f_o/##/$ ↓ [f]	$/-[\theta_o-]$ ↓ [θ]	$/-[\theta_f-]$ ↓ [f]
		$/-\theta_o/[\theta C-]$ ✓ \	$/-f_o/[\theta C-]$ ↓ [fC]	$/-\theta_o/##/$ ↓ [θ]	$/-f_o/##/$ ↓ [f]	$/-[\theta_o-]$ ↓ [θ]	$/-[\theta_f-]$ ↓ [f]
		$/-\theta_o/[\theta C-]$ ✓ \	$/-f_o/[\theta C-]$ ↓ [fC]	$/-\theta_o/##/$ ✓ \	$/-f_o/##/$ ↓ [f]	$/-[\theta_o-]$ ↓ [θ]	$/-[\theta_f-]$ ↓ [f]
		$/-\theta_o/[\theta C-]$ ✓ \	$/-f_o/[\theta C-]$ ↓ [fC]	$/-\theta_o/##/$ ✓ \	$/-f_o/##/$ ↓ [f]	$/-[\theta_o-]$ ✓ \	$/-[\theta_f-]$ ↓ [f]

Figure 1: Emergence and diachronic generalisation of variable TH-fronting (reproduced from Schlee & Ramsamy 2013:45).

The time of implementation of the variant in a variety has an impact on the number of constraints governing it. Indeed, the more established the variant is in a variety, the fewer constraints impact its use. Therefore, if their predictions are correct, the prosodic and phonotactic constraints around TH-fronting should disappear, leaving Morphological Complexity as the only significant linguistic constraint.

1.4 Research questions and hypotheses.

The current knowledge around TH-fronting and the Tyneside dialect presented above has raised several questions. It is interesting to observe that Tynesiders adopt a pronunciation coming directly from the South, even though they feel threatened by its power and influence. Studies on the TH-fronting phenomenon

have shown that the constraints on its appearance are similar across the different dialects studied. The main question is whether TH-fronting appears under the same constraints in Newcastle as in these other dialects.

By using the comparative variationist approach, this thesis will hopefully contribute to the comparative analysis of English dialects. In line with Schlee and Ramsammy's (2013) study, the present research looks at the constraints on TH-fronting and its evolution through different dialects of English. In the same prospects as Schlee and Ramsammy (2013), this thesis will, by "comparing constraint hierarchies affecting variation", make "variation itself the focus of statistical analysis" (Schlee & Ramsammy 2013:25).

Since Newcastle is located far in the northeast of the country – and since TH-fronting first emerged and spread from the capital located in the south – the variant should, as for Edinburgh, be at a rather early stage of its evolution in the dialect. Supposing Schlee and Ramsammy's (2013) hypothesis regarding the evolution of the variant is accurate, the data of this study should yield results similar to those found for Edinburgh, where the variant was also at an early stage of its evolution. If so, TH-fronting should be observed to be more prominent in the speech of young working-class males and favoured in cases where (TH) is in the preconsonantal coda position of polymorphemic words. However, gender should not be considered a significant factor in Newcastle, as it was only found to be significant in places where TH-fronting had been established for a long time.

These hypotheses have led to the following questions:

- What are the sociolinguistic constraints governing the use of TH-fronting in Newcastle?
- Are those constraints similar to those found in other varieties of English?
- Can Schlee and Ramsammy's hypothesis on fronting evolution in language account for Newcastle and indicate the current state of the variant in Tyneside English? Can this hypothesis predict its future evolution?

Chapter 2

Data and method

The current study was conducted through a variationist and comparative approach, which is "key to determining similarities and/or differences" amongst different varieties of language (Tagliamonte 2012:164). In this instance, this thesis will reveal how TH-fronting in Tyneside English behaves next to other varieties of English. This approach allows for a comparison of the results found for Newcastle with those of Schlee and Ramsammy (2013) for London and Edinburgh, testing their hypotheses about the diachronic evolution and generalization of the fronting variant against data from Newcastle. Choosing this method also allows for a micro-diachronic comparison, using data from the 1990s and early 2000s.

This chapter shall present how the Newcastle spoken data were collected, and which method and tools were used to conduct this thesis. The first part will present the LVC method. The second part will present the data and how they were collected. The chapter's third and last part will present the statistical tools the data were analysed with.

2.1. Language Variation and Change.

The primary purpose of variationist sociolinguistics is to understand linguistic variation and change. We know that “not all variability and heterogeneity in language structure involves change; but all change involves variability and heterogeneity” (Weinreich, Labov & Herzog 1968:188). Indeed, as Labov (1969:17) states, “Variation is an inherent part of the language.”

As social groups in a society influence which pronunciations are the norm in their group, it is no surprise that the evolution of a variant is deeply linked to the society within which a language is inscribed.

William Labov defines the linguistic variable as “two or more ways of saying the same thing” (Labov 1972:323). The very first step when analysing Variation is noticing said Variation, meaning that the linguist observes that “two (or more) forms are distributed differentially across a community or within the discourse” (Tagliamonte 2006:74). Variation in this study is at the phonological level, meaning alternatives in the pronunciation of the same phoneme. Indeed, each (abstract) variable is realised as a possible set of variants. The different variants, in the case of the present thesis, are the different realisations of (TH) in the speech of Newcastle speakers. Previous studies on the subject have found that (TH) could be realised as [θ], [t], [f], [ʔ], [h], and [∅].

The branch of Language Variation and Change in linguistics is part of the descriptive-interpretative strand of linguistics where variation can only be

described and understood in context, meaning the society it is observed in (Tagliamonte 2012:3). In order to explain this idea, James Milroy (1992:4-13) puts forth three principles. According to him, sociolinguistics is the study of the change and maintenance of a language. In order to explain change, linguists first have to observe language through society, noting that language cannot be observed independently of it. The same goes for the structure of a language. As he explains, society agrees upon the norms a language evolves in. Finally, Milroy insists that to account for change in a language, we need to understand why certain aspects of a language are maintained and why it is so. In that sense, he brings society to the centre of the question, yet again, by saying, “If we pose the more basic question of why some forms and varieties remain stable while others change, we cannot avoid reference to society.” (Milroy 1992:11).

Linking language and society is all the more relevant as “variation is appropriately situated in the idiolect”, which is why looking at an individual’s speech as much as a group or a community is crucial in Language Variation and Change (Tagliamonte 2012:21).

2.1.1 Comparative approach.

The comparative method of Language Variation and Change (LVC) results from three strands of linguistic methods: dialectology, historical linguistics, and sociolinguistics (Tagliamonte 2012:163). Indeed, the Language Variation and Change branch aims to describe language in its environment. Its focus on different

dialects comes directly from dialectology, which aims to compare different varieties – in this thesis, varieties of English.

Variationist Sociolinguistics also relies on the comparative reconstruction of historical linguistics, which examines the relationship between sister varieties to “reconstruct the ancestor language” (Tagliamonte 2012:163).

These methods of dialectology and historical linguistics were first applied to sociolinguistics by Weinreich, Labov and Herzog (1968). They claim that “The key to a rational conception of language change is the possibility of describing orderly differentiation” (1968:100-101). By orderly differentiation, they mean that language change happens “in an orderly manner through space (social, geographical, historical) affecting linguistic structure also in an orderly manner” (Weinreich, Labov & Herzog 1968). Heterogeneity is always structured and varies systematically (Tagliamonte 2012:4). Therefore, a variant always appears under certain constraints, which are simultaneously social and linguistic. Using a quantitative approach, variationist sociolinguistics (as *Language Variation and Change*) analyses these social and linguistic constraints that influence the development and use of a variant within a language.

When doing comparative variationist sociolinguistics, the data must be selected wisely to be comparable. Tagliamonte (2012:163) states that comparison requires conceptualisation, meaning that the data selected must match the criteria it will be compared to.

Tagliamonte (2012:164) presses on the fact that the key notion of the comparative sociolinguistic approach is “conflict site”, which is defined as “a form or class of

forms that differs functionally and/ or structurally and/ or quantitatively across the varieties in question” (Poplack and Meechan 1998:132, cited in Tagliamonte 2012:164). Therefore, although the varieties studied have some similarities, they also differ in many aspects, which is how we can set them apart. Those differences can impact how variation operates in said variety. The similar behaviour of the same variants within different varieties would be proof of a link between those varieties. However, if dissimilarities are observed, those must be contextualized within the variety under investigation. Ongoing linguistic changes can be at different stages of development in different varieties and, therefore, have different constraints (Tagliamonte 2012:164). TH-fronting being an ongoing linguistic change, differences in constraints between varieties can be observed and expected. This was shown by Schleef and Ramsammy (2013) in their comparison of TH-fronting between London and Edinburgh, where the variant is well established in London but a relatively new phenomenon in Edinburgh. That difference ‘transpired’ in the number of constraints that induced fronting in Edinburgh compared to London.

The comparative sociolinguistic approach can be applied to “any situation where the analyst aims to understand the linguistic relationship between two varieties” (Tagliamonte 2012:166), as long as these two varieties are “related (at least putatively) across some external set of criteria according to which they can be assumed to have sociocultural links” (2012:166). If that is the case, some standards for comparison are to be applied. Tagliamonte summarised these standards in a Table presented below (2012:167).

Table 6.1 Standards for comparison.

(a)	Full, explicit descriptions of the grammatical features within each variety, on a quantitative basis, and according to the principles of accountability: i. attend to form and function ii. specify the linguistic environments of occurrence iii. tabulate the frequency iv. interrelationship with other features of grammar • <i>Statistical significance</i> • <i>Constraints and constraint ranking</i> • <i>Relative strength of constraints</i>
(b)	The existence of the grammatical features in question should be as closely limited to the varieties (registers) concerned as possible. • <i>sufficient quantities of valid data</i> • <i>characterize its style and sociolinguistic features</i> • <i>are the target forms screened out of the data?</i>
(c)	Demographic information from the documentary record demonstrates a historical connection between the groups speaking the varieties concerned.

Source: Montgomery, 1989: 240.

Table 1. Standard of Comparison (Tagliamonte 2012:167, taken from Montgomery 1989: 240).

However, the author specifies that “not all linguistic features are useful in establishing correspondence” (Tagliamonte 2012:167). Using the comparative sociolinguistic approach in this thesis will set the criteria for selecting the data so it can be compared with Schlee & Ramsammy’s (2013) study for London and Edinburgh.

The use of LVC and comparative approaches will help answer the research questions presented in Section 1.4.

2.2 Data.

Data used for the present research stem from the Diachronic Electronic Corpus of Tyneside English (DECTE), a corpus digitized by Will Allen, Joan Beal, Karen Corrigan, Warren Maguire and Hermann Moisl between 2001 and 2005 and housed at the University of Newcastle. As per the website description, it consists of “a collection of text transcriptions and audio files of interviews with a wide variety of people from the North East of England dating back to the early 1970s”. The DECTE corpus is divided into three different corpora. The first one, the Tyneside Linguistic Survey (TLS), is the oldest of the three, with data from the 1960s-1970s period. The Phonological Variation and Change in Contemporary Spoken English (PVC) follows with data from the 1990s period. The TLS and PVC form together what is called the NECTE corpus. NECTE2 is the last of the three corpora and the newest addition to the DECTE Corpus and gathers data from 2007 to 2017. Only data from 2007 to 2010 are currently accessible for research.

2.2.1 PVC and NECTE2.

In this research, I used data from both the PVC and NECTE2 corpora. Data from NECTE2 matches the time frame in which Schlee and Ramsammy’s (2013) conducted their study, which is advantageous for comparative purposes. Furthermore, adding data from the PVC brings a micro diachronic aspect that enables us to observe the evolution of the use of the fronting variant within the same speech community.

NECTE2 gathers data from different sources, mainly projects conducted by students for several modules offered by the Newcastle university. Students were asked to record informal sociolinguistic interviews, targeting spontaneous speech productions. The participants selected had to be closely acquainted Tyneside speakers (NECTE2 Handbook 2007:3). The *Handbook to the Newcastle Electronic Corpus of Tyneside English* provides tables explaining the socio-economic class of the participants. However, these tables do not provide the socio-economic status of each participant individually, which means there is no way to identify the socio-economic status of each participant for this thesis. The *Handbook to the Newcastle Electronic Corpus of Tyneside English* also indicates that social information is missing for a number of participants. We know that participants are either from the working or middle class. NECTE2 interviews consist of spontaneous speech and last approximately an hour or more, except those of the ECLS modules, which last around 30 minutes. Participants were matched “as closely as possible for age and social class to lessen any effects of convergence or divergence between speakers” (NECTE2 Handbook 2007:3).

The PCV corpus is a collection of 18 interviews recorded between 1991 and 1994 in Newcastle. Researchers conducted the interviews with groups of two friends, which helped make the conversations less formal and bring out natural speech (DECTE website). No constraints were imposed on participants regarding the topic of discussion, and all recordings were about 60 minutes.

2.2.2 Social and linguistic variables.

To compare the results of the present study to Schleef and Ramsammy (2013), participants were selected based on similar criteria as those used in their study. Tagliamonte (2012:163) emphasises that “the relationship between the entities being compared must be made clear.” Participants were selected accordingly, fitting the same age group and social status as Schleef and Ramsammy’s (2013) participants. The linguistic constraints examined were also aligned with those considered in their study. Essential elements of other studies which are, for the most part, similar to Schleef and Ramsammy’s were also considered.

Using data from both the PVC and NECTE2 corpora allows for a comparison between two close periods. This will help determine if there has been an increase in the use of TH-fronting in the speech of the younger generation between the two periods, similar to what was reported in Stuart-Smith and Timmins’ (2006) study.

How the data were collected in the PVC and NECTE2 corpora matched how Schleef and Ramsammy (2013) collected their data in London and Edinburgh. Participants were recorded by friendship pairs of roughly the same age and social background. The conversation was not constrained so that they could collect spontaneous speech.

Schleef and Ramsammy were also able to collect data from a reading task of 17 sentences in their study, which provided them with different styles of speech to compare. Unfortunately, reading tasks were unavailable in the DECTE corpus, so

this particular element was not retained in this study. The linguistic constraints impacting TH-fronting in Newcastle are expected to be different from those reported for London because TH-fronting was a relatively new variant in the city of Newcastle at the time of data collection. Therefore, the results from the Newcastle data are expected to align with those found for Edinburgh where the variant was also relatively new.

Table 2 presents the social and linguistic factors selected for analysing TH-fronting in Newcastle.

Categorical variables	Factor levels
Speaker Sex	male ~ female
Socioeconomic Status (only for the PCV)	working class ~ middle class
Morphological Complexity	monomorphemic ~ polymorphemic
Word Finality	initial ~ internal ~ final
Prosodic position	onset ~ coda
Preceding Phonological Context	phrase boundary ~ obstruent ~ sonorant ~ vowel
Following Phonological Context	phrase boundary ~ obstruent ~ sonorant ~ vowel

Table 2. Independent variables adapted from Schlee and Ramsammy's (2013:31) table of independent variables.

Schlee and Ramsammy's participants were high school students aged 12 to 18 years old. In the DECTE corpus (the PVC and NECTE2 corpora), participants from 16 to 20 years old were selected for comparative purposes. Most studies point to the fact that working-class youth favours the fronting variant, those participants

usually ranging from 10 to 20 years old. Regarding the socio-economic status (SES), participants from the PVC corpus are of the working and middle classes. It was, according to the DECTE website, “made on the basis of a broadly defined notion of social class that was determined by place of residence within Newcastle” (DECTE Website). As for the NECTE2 corpus, the socio-economic status of individual participants is unknown. However, it is specified that the participants are both Working-Class and Middle-Class.

The morphological complexity of a word is the linguistic variable that turned out to be a crucial constraint on the production of TH-fronting in both London and Edinburgh, where polymorphemic words have a higher rate of fronting than monomorphemic ones. This particular linguistic variable will be analysed in the Newcastle data to see how it compares to the London and Edinburgh data.

Examining the phonological elements before and after <th> is crucial to determine if the surrounding environment affects its potential fronting. Additionally, analysing the prosodic position and the Word Finality of <th> words is crucial for the same reasons. The preceding and following phonological context shall reveal if the following consonants also induce fronting in Newcastle. Word finality will test the hypothesis that TH-fronting appears more frequently at the end of a word than internally or initially. Finally, the Prosodic position will help test the hypothesis that TH-fronting is favoured in a coda position.

Some studies apply a limit on the number of tokens per individual or specific words. None of the above were applied in this thesis as only 20 minutes of each interview, which grouped 2 participants at a time, were coded. Moreover, although words like *thing* or *think* appeared considerably more than other words, it is essential to keep every single occurrence of each word containing <th>. The Preceding Phonological Context and Following Phonological Context vary when <th> is at the beginning or the end of the word, depending on the word which precedes or follows it. As for Morphological Complexity, it is also the number of tokens per category (monomorphemic or polymorphemic) that help determine if that particular linguistic factor is a constraint of [f] use.

Combining these linguistic variables will help reveal if TH-fronting in Newcastle fits the diachronic evolution hypothesis of the fronting variant described by Schlee and Ramsammy (2013). If that is the case, the results should be close to Edinburgh's, as the variant is pretty new and not well-established in both cities.

2.2.3 Data collection.

The corpus compiled for the present study consists of 34 participants. Sixteen are from the PVC corpus, and 18 are from NECTE2, with all participants falling in the 16-20-year-old age bracket.

Table 3 presents the sample of participants selected for the creation of the corpus.

	PCV		NECTE2	Total
	Working Class	Middle Class		
Male	3	4	8	15
Female	5	4	10	19
Total	8	8	18	34
	16			

Table 3. Participant sample.

The PVC corpus contains 7 male and 9 female participants, with 8 participants for each social class, while the NECTE2 corpus contains 8 male and 10 female participants. As previously mentioned, the social class of the NECTE2 participants is unknown and cannot be provided. This gives us a total of 15 male and 19 female participants. The corpus was constructed to achieve a certain balance of participants, with a relatively similar number of male and female participants when the two corpora are combined. Regarding the PVC corpus, participants were also selected according to their social class and gender.

All tokens of the (TH) variable were extracted following the “Principle of Accountability” (Labov 1966:49), stating that “all contexts of a variable must be taken into account, including all contexts in which the variants occurred, as well as those in which they could have occurred but did not” (Tagliamonte 2006:265). They were then coded in an Excel Sheet. The data were reviewed to minimise the risk of mistakes in the coding process. The data extraction process yielded 1251 tokens of (TH), with 711 tokens for the PVC corpus and 540 for the NECTE2 corpus. All realisations of (TH) were identifiable by ear and coded in the corpus. There was,

therefore, no need for acoustic analysis to differentiate the fronted variant from other realisations of (TH). The variations in the realisations of (TH) present in our corpus are [θ], [t], [f], [ʔ], and some elisions.

Sixty-nine tokens could not be clearly identified and were excluded from analysis. For instance, if two realisations of (TH) were undistinguishable, even after the second round of listening, those tokens were excluded. Furthermore, the quality of the audio and the beeping of the names also made some of the inaudible, which led to their exclusion from the analysis. Finally, some misprints were sometimes found in the transcription of the audiotapes. For example, in the PVC corpus, Interview 17, the transcription for participant PVC17 at 22.00 minutes is “you know I’m not both.” However, I do not hear the word “both” but “bad.” Consequently, those tokens were also excluded from the present analysis.

Although this study focuses on the fronting variant of (TH), every variant of (TH) found along TH-fronting in the data were extracted, and each context where TH-variation could have occurred was selected. The analysis included all the data available for participants that used TH-fronting.

Only one participant from the PCV corpus had a rate of TH-fronting above 5% and could be considered a variable user of that variant. The low number of tokens of TH-fronting for the PVC corpus prevented any statistical analysis from being carried out. As for the NECTE2 corpus, two participants never used the fronting variant, and two did not use enough fronting to be selected for this analysis. The data with our 14 participants contain 405 tokens of (TH).

Table 4 presents the participant sample for the statistical analysis.

	NECTE2
Male	6
Female	8
Total	14

Table 4. Participant sample for the statistical analysis.

2.3 Multivariate analysis with Rbrul Shiny.

In the words of Tagliamonte, “Statistical modeling provides a formal mathematical assessment of the relationship between the dependent variable and the independent variables” (2012:121). In other words, statistical testing allows the linguist to assess the significance of the potential constraints ruling the realisation of a specific variant, thus confirming or denying the linguist’s hypotheses. For this thesis, statistical testing will help uncover the constraints under which TH-fronting appears in Newcastle.

Since data comparison requires conceptualization (Tagliamonte 2012:163), datasets and statistical tools similar to Schleef and Ramsammy’s (2013) study of TH-fronting in Edinburgh and London were used to test the use of TH-fronting in Newcastle. I used the newest and more manageable version of Rbrul, called Rbrul Shiny, and the chi-square test.

Rbrul Shiny individually calculates whether the potential constraints are statistically significant at the $p=0.05$ level (Tagliamonte 2006:235).

Thanks to multivariate analysis, Rbrul Shinny also calculates the combination of factors that “best elucidates the behaviour of the variable in the data under investigation” (Tagliamonte 2012:150). Indeed, a multivariate analysis establishes “how a set of factor groups (or independent variables) [systematically] constrain the behaviour of a specific set of variants of the dependent variable” (cf. Paolillo 2002: 23).

A multivariate analysis not only indicates which set of constraints significantly applies on the dependent variable, it also measures the “contribution of each factor to the probability of occurrence of the linguistic variable in question” (Levey 2006). It therefore presents the best model of the constraints impacting the variable from the most impactful to the least, while excluding those that do not favour its use.

In other words, the “three lines of evidence” (Tagliamonte 2006:235) used by the researcher to interpret the results are the statistical significance (or lack thereof) of factor groups on the variable – in the present thesis, (TH) – the magnitude of effect (how these factor groups rank from most to least impactful), and the hierarchy of constraints (which factors in a factor group favour or disfavour TH-fronting). Statistical significance is indicated by a p-value, or probability value. The magnitude of effect is determined by the range, which is the difference between the highest and lowest Factor Weight in each factor group. The larger the range, the strongest the constraint. The hierarchy of constraints (also known as constraint ranking) is the ranking of Factor Weights in a factor group. Factor Weights are measures of the probability of the variant under investigation. When above .50, they are said to favour the occurrence of the variant; those under .50 disfavour it.

In Rbrul Shiny, (TH) was coded as a binomial factor $[\theta] \sim [f]$ with $[f]$ as the application value. The toolkit also allows the data to be analysed with random factors such as participants, which were included in the analysis. This ensures that “the effect of the individual has been ruled out” (Tagliamonte 2012:137)

Rbrul Shiny is used for this thesis in order to reveal whether the independent variables commonly found for TH-fronting are significant in its use in Tynesiders’ speech. It reveals which of these independent variables are favouring or not the use of TH-fronting in Newcastle from the most significant to the least. The use of multivariate analysis on the data also allows for a comparison with Schlee and Ramsammy’s (2013) results for London and Edinburgh.

Chapter 3

Results and discussion

This chapter provides a quantitative analysis of (TH) variation through distributional and multivariate analysis. As explained in Chapter 2, the dataset was collected from two corpora of the DECTE corpus of different periods (PVC and NECTE2). I will first consider the general distribution of (TH) by looking at the entire dataset, comparing it to Schleef and Ramsammy's (2013) results, and then restrict the analysis to participants who use TH-fronting. This will lead me to discuss the distributional and multivariate analysis of (TH) variation to assess the constraints ruling the use of the fronting variant for this subset of participants. I will present and discuss the results throughout the entire chapter with the final part devoted to an in-depth discussion and comparison of the results.

3.1 General distribution of (TH) in Newcastle (PVC and NECTE2 corpora).

Altogether, following the method presented in Chapter 2, a total of 1180 tokens (when taking out occurrences that could not be used, see Chapter 2 section 2.2.3) were extracted from the 34 participants, aged 16-20, of the compiled dataset.

Figure 2 presents the general distribution of the variants of the (TH) variable in the dataset.

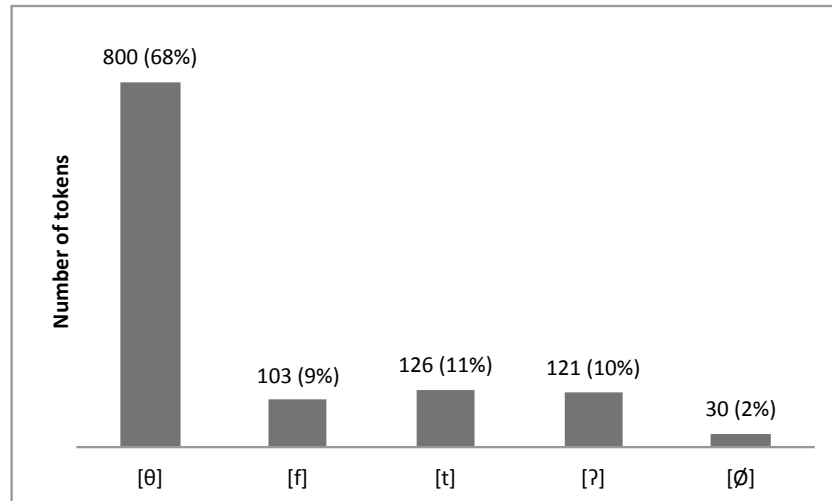


Figure 2. Overall distribution of (TH) variation in the dataset.

The overall distribution of the different realisations of (TH) shows the standard pronunciation [θ] to be the main realisation used by the participants at 68% [800/1180]. The variant [t] is the second most used variant (11%) [126/1180], closely followed by [ʔ] (10%) [121/1180] and [f] (9%) [103/1180]. Following Labov's principle of accountability (Labov 1972:72), every variant of (TH) was coded. However, the participants barely used [Ø] in the entire dataset (2%) [30/1880].

Figure 3 and Table 5 detail the range of realisations for (TH) within the PVC and NECTE2.

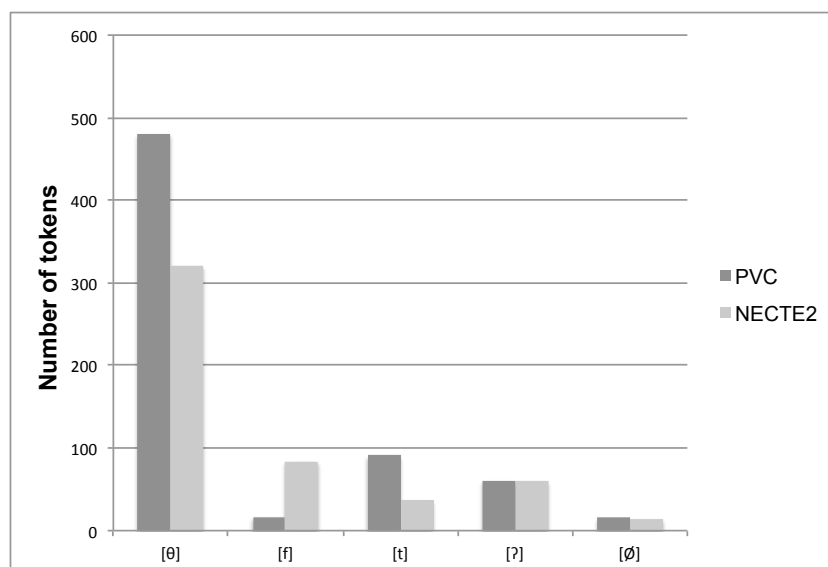


Figure 3. Distribution of each variant of /θ/ in the PVC and NECTE2 corpora.

Source	Tokens extracted										Total
	[θ]		[f]		[t]		[ʔ]		[∅]		
	N	%	N	%	N	%	N	%	N	%	N
PVC	480	72	17	3	91	14	61	9	16	2	665
NECTE2	320	62	84	16	37	7	60	12	14	3	515
Total	800	68	101	9	128	11	121	10	30	2	1180

Table 5. Distribution of each variant of /θ/ in the PVC and NECTE2 corpora.

The results from both corpora show an apparent asymmetry in the use of TH-fronting, with only 3% of [f] for the PVC compared to 16% for NECTE2. Furthermore, while [t] remains the most used variant after the standard pronunciation for the PVC corpus, it is not the same for NECTE2, where the fronting variant is the most used.

The realisation rate of TH-fronting between the two corpora increased notably in the span of around 16 years: the percentage points between the NECTE2 data

collected between 2007 and 2012 and the PVC collected in 1994 increased of 13. This apparent increase in [f]-use is in line with Baranowski & Turton's (2015:13) observation that TH-fronting is "the fastest spreading phonological change in British English".

Results also reveal a decrease in the use of [t] between the two corpora, while the use of [ʔ] and [Ø] remains relatively the same.

3.1.1 Comparison of the distribution of (TH) in Newcastle, London and Edinburgh.

Figure 4 and Table 6 below present the distribution of the different realisations of (TH) in conversational style for three British cities: Newcastle, London and Edinburgh¹. The Newcastle data have been sampled from the PVC corpus and NECTE 2, consisting of conversations from 34 participants aged 16 to 20 years old (cf. Ch.2, Section 2.2.2, Table 2). The London and Edinburgh results come from the conversational data of 24 teenagers in London (Schleef & Ramsammy 2013: 33) and 21 teenagers in Edinburgh (Schleef & Ramsammy 2013: 37), aged 12 to 18 years old, and all upper-working to lower-middle class (Schleef & Ramsammy 2013: 29).

¹ Potential differences due to the socio-economic status of speakers in the different corpora were considered. They did not affect the results, which is why all 34 participants were kept for the comparison with Schleef and Ramsammy's (2013) results for London and Edinburgh.

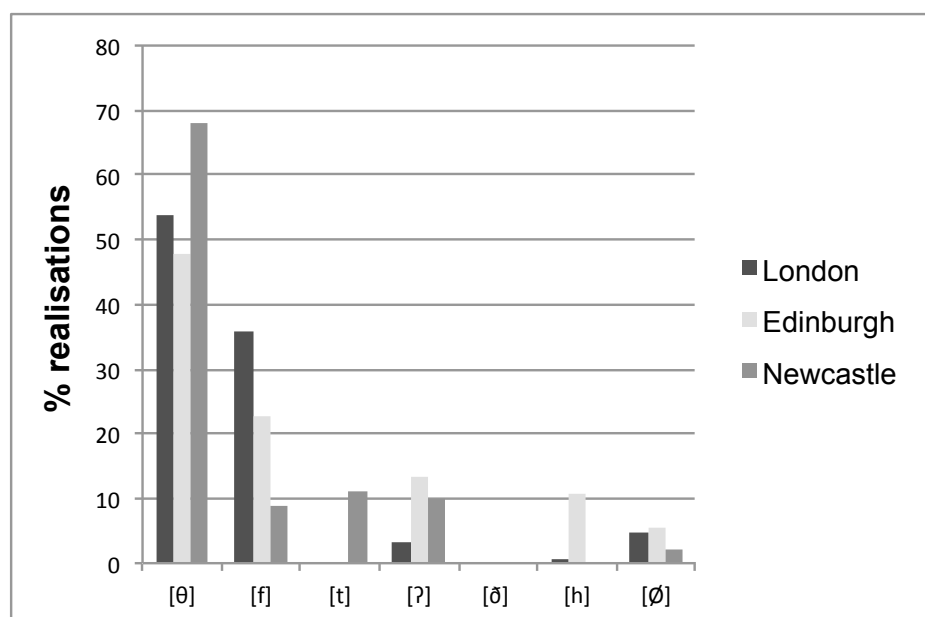


Figure 4. General distribution of (TH) in conversation style for London, Edinburgh and Newcastle.

	London		Edinburgh		Newcastle	
	N	%	N	%	N	%
[θ]	146	53,7	216	47,9	800	68
[f]	98	36	103	22,8	103	9
[t]	0	0	0	0	126	11
[ʔ]	9	3,3	60	13,3	121	10
[ð]	4	1.5	0	0	0	0
[h]	2	0,7	48	10,6	0	0
[Ø]	13	4,8	24	5,3	30	9
Total	272	100	451	100	1180	100

Table 6. General distribution of (TH) in conversation style for London, Edinburgh and Newcastle.

Comparing the overall distribution of (TH) in Newcastle for the conversational data with the results of London and Edinburgh by Schlee and Ramsammy (2013) confirms the hypothesis presented in Chapter 1 (section 1.4) that TH-fronting is a

newer phenomenon in Newcastle than it is in London or Edinburgh. Indeed, TH-fronting is quite established in London. The city has the highest percentage of fronting, followed by Edinburgh and then Newcastle. The percentage of TH-fronting is much higher in London, where the phenomenon appears more advanced than in Edinburgh or Newcastle. This confirms the hypothesis that TH-fronting is less established in Newcastle than in the two other cities.

It is crucial to note that the number of tokens considered for each city is different: 1180 tokens for the Newcastle data, 451 tokens for Edinburgh, and 272 tokens for London – all these tokens stemming from conversational data for the sake of comparability. Although the Newcastle (sub)corpus analysed in the present study has the largest amount of (TH) tokens, TH-fronting is still less present than in London or Edinburgh.

The variant [h] is present in Edinburgh and is rarely used in London. However, it is not used in Newcastle. It is not surprising to find [h] as one of the variants of (TH) in Edinburgh as that pronunciation is a feature of Scottish English (Stuart-Smith & Timmins 2006). Newcastle being geographically very close to Scotland, and Tynesiders feeling a “much closer affinity with Scotland than any other part of England” (Watts 2002:54, cited in Gralińska-Brawata 2020:105), the variant [h] could have been expected to be found amongst the variants of (TH) in the Geordie dialect. However, this is not the case in the dataset.

Interestingly, [t] is only found in the Newcastle data, while [ð] is only found in London, although it is barely used.

3.1.2 Distribution per individual speakers in the PVC and the NECTE2 corpora.

The distribution of (TH) realisation per individual speakers, through Tables 7 and 8, allows us to evaluate if some participants are above or below the general tendencies of use of the different (TH) variants. That way, participants with a categorical or near categorical use of one variant can be excluded from the statistical analysis (Guy 1988: 130-131). All participants of the PCV and NECTE2 corpora are listed by their pseudonyms. Information about their gender and social status are presented for the PVC, while for the NECTE2, only an indication of their gender is available. Speakers whose proportion of use of TH-fronting is equal or above 5% are highlighted in grey.

The number of tokens per individual in the PVC and NECTE2 are varied but reasonably balanced. For the PVC, the average number of tokens between the 16 participants is 41. Tokens per participant vary from 17 to 69 tokens, except for participant PVC17a, who only produced eight occurrences of (TH). NECTE2 participants have an average of 28 tokens, going from 15 to 45 tokens at the highest. Considering this, the number of tokens per individual should not significantly impact the results, especially considering that the participants that produce most of the fronting variant are close to the average number of occurrences per speaker.

	Informant	Gender	SES	[θ]		[f]		[t]		[ʔ]		[∅]		Total
				N	%	N	%	N	%	N	%	N	%	N
1	PVC01a	M	MC	24	86	0	0	0	0	4	14	0	0	28
2	PVC01b	M	MC	15	88	0	0	0	0	2	12	0	0	17
3	PVC06a	F	WC	34	85	1	2,5	2	5	3	7,5	0	0	40
4	PVC06b	M	WC	28	74	1	2	3	8	6	16	0	0	38
5	PVC08b	F	WC	36	75	0	0	4	8	7	15	1	2	48
6	PVC09a	M	MC	36	88	0	0	2	5	3	7	0	0	41
7	PVC09b	M	MC	32	56	1	2	10	18	11	19	3	5	57
8	PVC12a	F	MC	34	70	0	0	6	12	5	10	4	8	49
9	PVC12b	F	MC	35	65	0	0	14	26	5	9	0	0	54
10	PVC13a	F	MC	25	51	0	0	23	47	1	2	0	0	49
11	PVC13b	F	MC	35	66	0	0	9	17	4	8	5	9	53
12	PVC15a	M	WC	47	68	10	15	3	4	7	10	2	3	69
13	PVC15b	M	WC	20	95	1	5	0	0	0	0	0	0	21
14	PVC16b	F	WC	22	76	1	3,5	3	10	2	7	1	3,5	29
15	PVC17a	F	WC	7	88	0	0	1	12	0	0	0	0	8
16	PVC17b	F	WC	50	78	2	3	11	17	1	2	0	0	64
Total				480	72	17	3	91	14	61	9	16	2	665

Table 7. Frequency per individual speaker PVC.

	Informant	Gender	[θ]		[f]		[t]		[ʔ]		[∅]		total
			N	%	N	%	N	%	N	%	N	%	N
1	Y07i001a	F	11	44	8	32	1	4	3	12	2	8	25
2	Y07i001b	F	5	29	1	6	2	12	9	53	0	0	17
3	Y07i007b	F	10	50	1	5	4	20	4	20	1	5	20
4	Y08i002a	M	20	62	2	6	4	13	5	16	1	3	32
5	Y08i002b	M	31	69	3	7	2	4	7	16	2	4	45
6	Y08i003a	M	27	71	7	18	2	10	2	10	0	0	38
7	Y08i003b	M	19	68	1	3,5	2	7	5	18	1	3,5	28
8	Y10i005a	F	18	64	5	18	0	0	5	18	0	0	28
9	Y10i005b	F	21	58	6	17	0	0	9	25	0	0	36
10	Y10i007a	M	8	57	6	43	0	0	0	0	0	0	14
11	Y10i007b	M	9	26	18	53	5	15	1	3	1	3	34
12	Y10i008a	F	23	79	0	0	4	14	2	8	0	0	29
13	Y10i008b	F	23	77	4	13	0	0	1	3	2	7	30
14	Y10i012a	M	28	74	1	3	4	10	2	5	3	8	38

15	Y10i012b	M	9	29	16	51	3	10	3	10	0	0	31
16	Y10i022b	F	13	87	0	0	2	13	0	0	0	0	15
17	Y10i023a	F	16	76	3	14	0	0	1	5	1	5	21
18	Y10i023b	F	29	85	2	6	2	6	1	3	0	0	34
TOTAL			320	62	84	16	37	7	60	12	14	3	515

Table 8. Frequency per individual speaker NECTE2.

The data of individual distribution for each corpus reveal a clear difference in the number of participants using the fronting variant. Participants from the PVC corpus do not or barely use the fronting variant, except for participant PVC15a and participant PVC15b, whose proportion of TH-fronting is at or above 5%. The analysis by individual speakers of the distribution of TH-fronting within the PVC corpus reveals participant PVC15a to be the only one who actively uses the fronting variant. Participant PVC15a is clearly above the general tendency of use of TH-fronting in that corpus. Moreover, since the PVC corpus has only 2 participants using enough fronting and was compiled earlier than NECTE2, these participants were not included in the statistical analysis (to follow).

Contrarily, most of the NECTE2 corpus participants use the fronting variant, with participants Y10i007b and Y10i012b using TH-fronting more than any other realisation. These two participants account for significant [f]-realisation in the dataset.

Other participants, like Y07i001a and Y10i007a, use TH-fronting almost as much as the standard pronunciation. Only 2 out of 18 participants never use TH-fronting, while two others are below the 5% threshold.

Given these findings, only the 14 participants of the NECTE2 corpus using enough fronting are considered for the statistical analyses presented in the remainder of this chapter.

3.1.3 TH-fronting users in the NECTE2 corpus.

Figure 5 presents the overall distribution of (TH) realisation for the 14 participants of the NECTE2, corpus who all display a variable usage of (TH), with TH-fronting representing at least 5% of the variation.

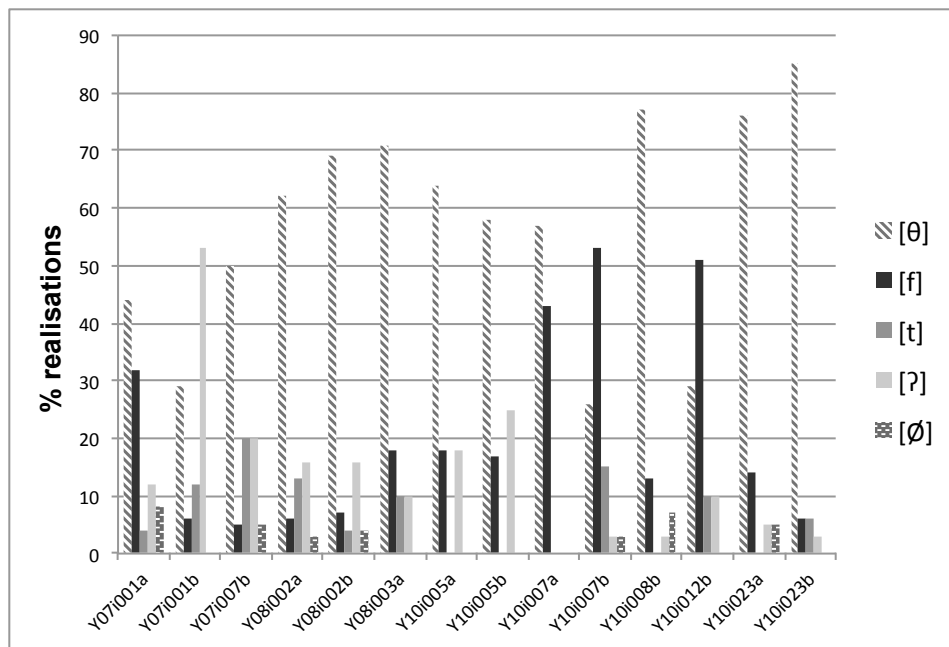


Figure 5. /θ/ realisation of the selected participants.

Just like Table 5, Table 9 presents the overall distribution of each realisation of (TH) but for the 14 participants of NECTE2 that were kept for the statistical analysis.

	N	%
[θ]	237	59
[f]	82	20
[t]	25	6
[ʔ]	51	13
[Ø]	10	2
Total	405	100

Table 9. Distribution of /θ/ for the 14 participants of NECTE2.

Out of the 405 tokens of (TH) which were collected from the 14 selected participants, 40% of (TH) realisations are non-standard variants, with TH-fronting representing 20%. TH-fronting is closely followed by glottalization, though most of its realisation is confined to the word ‘something’, echoing Tollfree’s finding (1999, cited in Schlee & Ramsammy 2013:33). The standard pronunciation [θ] still remains the most used at the time of data collection.

The percentage of glottal realisation of (TH) has the same percentage of realisation as Edinburgh for conversation style, and also coincides with Stuart-Smith & Timmins’s (2006) results for Glasgow, and Robinson’s (2005) results for Livingston.

3.2 Distributional and statistical analysis of the constraints on (TH).

The following presents the results of the distributional analysis, and of the statistical analysis – a multivariate analysis on TH-fronting usage – (cf. section 2.2) and intends to show the impact of social and linguistic constraints on [f]-realisation.

Along multivariate analysis, a chi-square test was run for some of the factors (gender and prosodic position). In order to present accurate results, linguistic and social factors were analysed separately (Tagliamonte 2012:129).

Table 10 presents the different social and linguistic factors which are significant predictors of TH-fronting in the current dataset.

Significant predictors	Weight	N	Proportion of [f]-realisations
GENDER			
Male	0.603	156	0.333
Female	0.397	163	0.184
FOLLOWING PHONOLOGICAL CONTEXT			
Sonorant	0.807	49	0.510
Obstruent	0.272	21	0.190
Vowel	0.479	243	0.210
Phrase boundary	0.411	6	0.333
WORD FINALITY			
Initial	0.341	205	0.220
Internal	0.519	66	0.288
Final	0.641	48	0.375
Not significant	Prosodic Position, Preceding Phonological Context, Morphological Complexity.		

Table 10. Significant predictors for the fronting of (TH) in Newcastle with [f] as the application value (adapted from Schlee and Ramsammy 2013).

Among the different variables analysed, only three were selected as significant. Gender was the only social variable considered for the NECTE2 corpus and revealed itself to be significant (See 3.2.1).

Only Word Finality and the Following phonological Context were significant variables out of the five linguistic constraints tested. Nonetheless, both significant and non-significant factors will be presented in section 3.2.2 as they are essential for the results' interpretation (Tagliamonte 2012:123).

3.2.1 Social factors.

As previously mentioned in Chapter 2 (Section 2.2.2), gender is the only social factor that was selected for this thesis, as our participants were all selected from the same age group for comparative purposes.

Figure 6 and Table 11 show the overall distribution of (TH) regarding gender: TH-fronting represents 27% of the variation in male participants against 14% for female participants. Results from Figure 6 and Table 11 also show that female participants use less TH-fronting than men but more of the standard pronunciation than men.

Schleef and Ramsammy found that non-users of TH-fronting were mostly women (2013:41), which led them to run a chi-square test including the non-users of TH-fronting. This resulted in a remarkable difference in the use of TH-fronting between men and women in London.

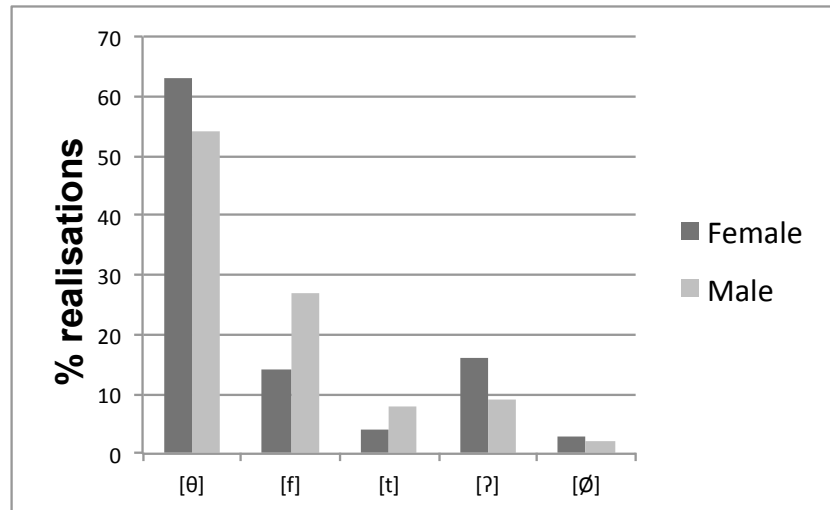


Figure 6. Realisation of /θ/ by speaker sex.

	[θ]		[f]		[t]		[ʔ]		[Ø]		Total
	N	%	N	%	N	%	N	%	N	%	N
Female	133	63	30	14	9	4	33	16	6	3	211
Male	104	54	52	27	16	8	18	9	4	2	194

Table 11. Realisation of /θ/ by speaker sex.

Focusing on the Newcastle data from NECTE2, four participants did not use fronting (or had a negligible use of the variant, that is less than 5% of the variation). They were therefore excluded from the statistical analysis. These four participants are equally divided in terms of gender as two are men and two are women. Therefore, there is no difference in non-users in that regard.

Even though the participants of the PVC were not selected for the statistical analysis, looking into the results of the overall distribution into more details reveals that the two participants using TH-fronting above the 5% rule are men. Although it is important to note that there are more female participants than male participants

in the PVC, it could also be noted that amongst the non-users, as none of the women participants used TH-fronting.

The results of the multivariate statistical analysis show that TH-fronting is constrained by speaker gender, with male speakers favouring its use (Factor Weight = 0.603) (cf. Table 10). This result aligns with almost every finding on TH-fronting in Britain (Schleef & Ramsammy 2013, Baranowski & Turton 2015, Holmes-Elliott 2016), except for Whisker, Merrison and Swift's study (2007:241-242), where they found that female speakers born post-1970 used the fronting variant significantly more than men.

In addition to the multivariate statistical analysis, as did Schleef and Ramsammy for their London data (2013:41), a chi-square test was conducted. It confirms that Gender is a significant factor (X^2 (1, N = 319) = 9.3018, $p=.002289$) on the realisation of TH-fronting, with male speakers being more likely to produce the [f]-variant.

Studies on TH-fronting also found participants' socioeconomic status to be impacting fronting use and showed that working class participants were significantly using TH-fronting (Schleef & Ramsammy 2013, Stuart-smith & Timmins 2006, Baranowski & Turton 2015). Although the data of NECTE2 does not provide the socioeconomic status of the participants, this was the case for the PVC. While our results showed that the percentage of TH-fronting among our participants was relatively low in 1994, it also showed that Middle-Class participants did not use the fronting variant, except for participant PVC09b who

used [f] once. The participants of the PVC who did use TH-fronting were all of the working class. Therefore, data for Newcastle aligns with all the other studies observing that TH-fronting is a phenomenon mostly occurring amongst the working class.

3.2.2 Linguistic factors.

For this thesis, five potential linguistic constraints were selected and analysed. Table 12 presents these linguistic factors. These constraints are organised according to whether they are significant or not. As explained in Chapter 2, section 2.3, Rbrul Shiny helped find the best model of constraints impacting the use of TH-fronting in Newcastle, which is why Range was also indicated to present the magnitude of effect of each significant constraint. Indeed, Table 12 shows that the Following Phonological Context and Word Finality are the two significant factors impacting the use of TH-fronting. The Following Phonological Context is the most impactful constraint with a range of 32, followed by Words finality with a range of 15. Looking at these constraints in detail shows that TH-fronting is more likely to appear when found at the end of a word and followed by a sonorant consonant.

	Weight	N	Proportion of [f]- realisations	Range
Significant predictors				
FOLLOWING PHONOLOGICAL CONTEXT				
Sonorant	0.807	49	0.510	32
Obstruent	0.272	21	0.190	
Vowel	0.479	243	0.210	
Phrase boundary	0.411	6	0.333	

WORD FINALITY				15
Initial	0.341	205	0.220	
Internal	0.519	66	0.288	
Final	0.641	48	0.375	
Non-significant predictors				
PROSODIC POSITION				
Onset	0.427	266	0.237	
Coda	0.573	53	0.358	
PRECEDING PHONOLOGICAL CONTEXT				
Sonorant	0.972	53	0.245	
Obstruent	0.979	69	0.304	
Vowel	0.972	192	0.250	
Phrase boundary	<.001	5	0.000	
MORPHOLOGICAL COMPLEXITY				
Monomorphemic	0.254	185	0.495	
Polymorphemic	0.261	134	0.505	

Table 12. Linguistic constraints analysed for Newcastle.

The following will present the results for each linguistic constraint analysed in this thesis, going from the significant linguistic factors to the non-significant linguistic ones.

Figure 7 and Table 13 present the results for the distributional analysis of Following Phonological Context in the dataset.

The Following Phonological Context is the linguistic factor that emerged as the most significant predictor of fronting from the multivariate analysis with a range of 0.32. Following Schlee and Ramsammy's (2013) study, (TH), when followed by a consonant (the factor weights are 0.807 for sonorant and 0.272 for obstruent in Newcastle; 0,721 for sonorant and 0,615 for obstruent in Edinburgh), is more likely

to be fronted than when followed by a vowel (the factor weights are 0.479 for Newcastle and 0.369 Edinburgh) or a pause (factor weights are 0.411 for Newcastle and 0.293 for Edinburgh). According to their hypothesis of the diachronic generalisation of TH-fronting across the language (Schleef and Ramsammy 2013:45), TH-fronting should first appear in preconsonantal position, then in prepausal position, and finally in a prevocalic position. The results for the Newcastle data are consistent with Schleef and Ramsammy's findings. Still, only 7 occurrences were collected for phrase boundary, which is very low compared to the numbers collected for vowels and consonants.

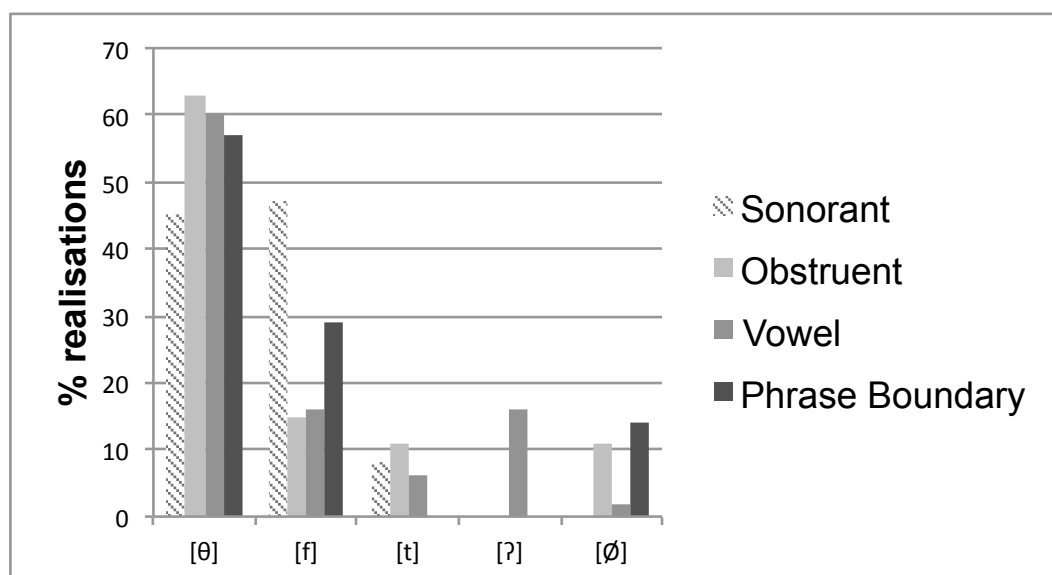


Figure 7. Following Phonological Context

	[θ]		[f]		[t]		[ʔ]		[Ø]		Total
	N	%	N	%	N	%	N	%	N	%	N
Sonorant	24	45	25	47	4	8	0	0	0	0	53
Obstruent	17	63	4	15	3	11	0	0	3	11	27
Vowel	192	60	51	16	18	6	51	16	6	2	318

Phrase boundary	4	57	2	29	0	0	0	0	1	14	7
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Table 13. *Following Phonological Context*

Word Finality is the second most important linguistic factor for TH-fronting with a range of 0.155. Table 14 presents the distribution of (TH) variation within the lexicon and its position within the word. Words where (TH) is realised as [f] 5% or more are highlighted in grey.

The results from the statistical analysis show that <th> in initial position disfavours TH-fronting (0.341) while <th> in final position favours it (0.641)

Words	Initial Position										Total
	[θ]		[f]		[t]		[ʔ]		[Ø]		
	N	%	N	%	N	%	N	%	N	%	
thanks	1	100	0	0	0	0	0	0	0	0	1
theatre	1	100	0	0	0	0	0	0	0	0	1
theme	2	66	0	0	1	33	0	0	0	0	3
thing	16	73	4	18	2	9	0	0	0	0	22
things	17	81	1	5	3	14	0	0	0	0	21
thingy	1	50	0	0	1	50	0	0	0	0	2
think	68	71	12	13	6	6	8	8	2	2	96
thinking	3	60	0	0	0	0	1	20	1	20	5
thinks	1	100	0	0	0	0	0	0	0	0	1
third	1	100	0	0	0	0	0	0	0	0	1
thirteen	2	100	0	0	0	0	0	0	0	0	2
thirteenth	1	100	0	0	0	0	0	0	0	0	1
thirty	8	89	0	0	0	0	1	11	0	0	9
Thorpe	1	100	0	0	0	0	0	0	0	0	1
thought	14	56	7	28	1	4	1	4	2	8	25
thousand	1	50	1	50	0	0	0	0	0	0	2
three	13	62	5	24	3	14	0	0	0	0	21
threeish	1	100	0	0	0	0	0	0	0	0	1

threw	0	0	6	100	0	0	0	0	0	0	6
through	5	38	7	54	1	8	0	0	0	0	13
throughout	0	0	1	100	0	0	0	0	0	0	1
throw	1	50	1	50	0	0	0	0	0	0	2
throws	1	100	0	0	0	0	0	0	0	0	1
thundering	1	100	0	0	0	0	0	0	0	0	1
Thursday	1	100	0	0	0	0	0	0	0	0	1

Internal Position

Words	[θ]		[f]		[t]		[ʔ]		[Ø]		Total
	N	%	N	%	N	%	N	%	N	%	N
athletics	1	50	1	50	0	0	0	0	0	0	2
anything	7	64	2	18	1	9	1	9	0	0	11
birthday	3	75	1	25	0	0	0	0	0	0	4
catholic	1	50	1	50	0	0	0	0	0	0	2
chemotherapy	2	100	0	0	0	0	0	0	0	0	2
Dorothy	2	100	0	0	0	0	0	0	0	0	2
enthusiasm	1	100	0	0	0	0	0	0	0	0	1
ethnic	1	100	0	0	0	0	0	0	0	0	1
everything	8	73	2	18	0	0	1	9	0	0	11
filthy	1	100	0	0	0	0	0	0	0	0	1
months	2	40	0	0	3	60	0	0	0	0	5
Nathan	2	100	0	0	0	0	0	0	0	0	2
Northumberland	0	0	2	100	0	0	0	0	0	0	2
nothing	3	33	6	66	0	0	0	0	0	0	9
pantheon	1	100	0	0	0	0	0	0	0	0	1
pathologist	2	100	0	0	0	0	0	0	0	0	2
pathology	2	100	0	0	0	0	0	0	0	0	2
radiotherapy	3	100	0	0	0	0	0	0	0	0	3
something	5	10	4	8	3	6	37	74	1	2	50

Final Position

Words	[θ]		[f]		[t]		[ʔ]		[Ø]		Total
	N	%	N	%	N	%	N	%	N	%	N
Aerosmith	2	100	0	0	0	0	0	0	0	0	2
both	3	37,5	5	62,5	0	0	0	0	0	0	8
death	1	50	1	50	0	0	0	0	0	0	2
eighth	2	100	0	0	0	0	0	0	0	0	2
fourth	1	50	1	50	0	0	0	0	0	0	2
Gosforth	0	0	4	100	0	0	0	0	0	0	4
month	5	100	0	0	0	0	0	0	0	0	5

north	3	100	0	0	0	0	0	0	0	0	3
sixth	0	0	0	0	0	0	0	0	3	100	3
south	1	12,5	6	75	0	0	0	0	1	12,5	8
thirteenth	1	100	0	0	0	0	0	0	0	0	1
truth	1	100	0	0	0	0	0	0	0	0	1
twelfth	1	100	0	0	0	0	0	0	0	0	1
twentieth	1	100	0	0	0	0	0	0	0	0	1
Tynemouth	0	0	1	100	0	0	0	0	0	0	1
underneath	4	100	0	0	0	0	0	0	0	0	4
worth	2	100	0	0	0	0	0	0	0	0	2
youth	2	100	0	0	0	0	0	0	0	0	2

Table 14. Realisation of /θ/ regarding its position in the word.

Interestingly, the lexicon reveals TH-fronting to appear mainly in a couple of words. As previously mentioned above, [ʔ]-glottalization is mainly restricted to the word ‘something’ (Tollfree 1999, cited in Schlee & Ramsammy 2013:33). ‘Something’ being a polymorphemic word, this explains why the rate of (TH) realisation is so high for polymorphemic words. The majority of glottal realisation of (TH) appeared in word-medial position. Stuart-Smith and Timmins (2006) found that the glottal realisation of (TH) mainly appeared in the words: *something*, *anything*, *nothing* and *everything* (2006:180). What is interesting to observe in the results of this thesis is that the words *anything*, and *everything* were sometimes pronounced with the glottal variant, but not as frequently as in Stuart-Smith and Timmins’ (2016) study. Moreover, the word *nothing* was never pronounced with [ʔ] and was even mainly pronounced with the fronting variant.

Gosforth, *Northumberland*, *threw*, and *Tynemouth* were only pronounced with the [f] variant. The word *Tynemouth*, however, was only used once in the entire data set. The results may be different with more occurrences of the word. Interestingly, three out of the four words that were only pronounced with the fronting variant mentioned above are place names. In line with Stuart-Smith and Timmins' (2006) findings, although [f] was the most frequently used sound in the *think/thing* group, it was not the most common sound overall (2006:180). The words *through*, *nothing*, *both* and *south* were pronounced mainly using the fronting variant.

TH-fronting occurs first in high-frequency items before going to low-frequency items (Schleef & Ramsammy 2013:36). However, our results show that the words *thing* and *think*, which have the highest frequency value according to the BNC (Schleef and Ramsammy 2012:36), are distinctively less fronted than items with a lower frequency rate. This result coincides with what Schleef and Ramsammy (2013) found for the impact of Word Frequency on TH-fronting production.

According to Labov (1994), "TH-fronting constitutes a sound change that is phonetically abrupt and lexically gradual" (1994: 542). Table 15 presents the lexical distribution of TH-fronting in the lexicon in the PVC and NECTE2 corpora.

	[f]		N Total
	N	%	
PVC	7	10	67
NECTE2	24	34	71

Table 15. Lexical distribution of TH-fronting in the PVC and NECTE2.

In 16 years, the spread of TH-fronting in the lexicon raised from 10 to 34%, again showing the rapidity of the linguistic change. Indeed, when only seven words were sometimes used with TH-fronting in the PVC, 24 words encountered fronting in NECTE2. The PVC and NECTE2 data confirm Labov’s assertion that TH-fronting gradually evolves in the lexicon. Similar results were found by Stuart-Smith & Timmins (2006) for their data in Glaswegian. They found that “the proportion of words in which [f] is used increases from 53% to 72% from 1997 to 2003” (2006:180).

Figure 8 and Table 16 take a closer look at the importance of the position of (TH) in the word when it is realised as [f].

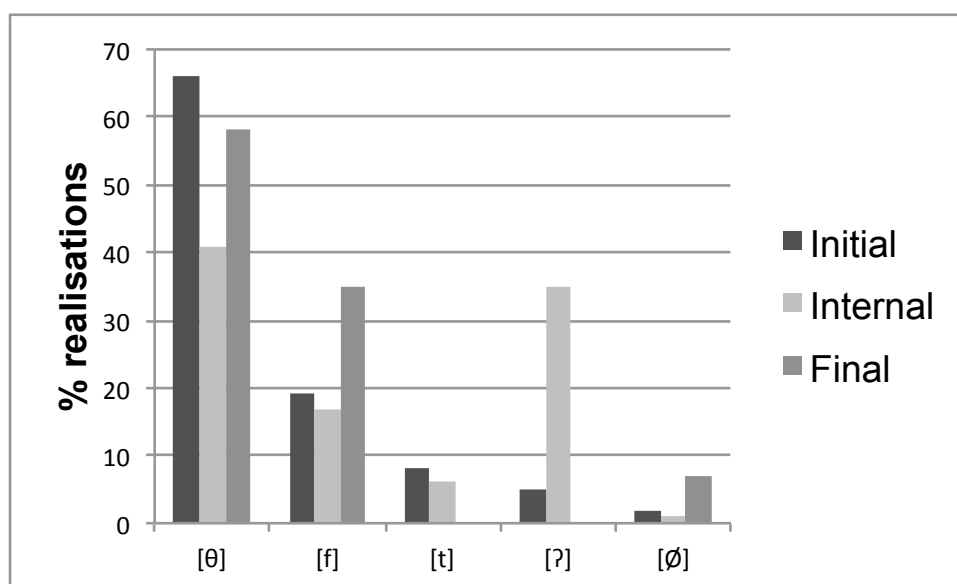


Figure 8. /θ/ realisation regarding its position in the word.

Words	[θ]		[f]		[t]		[ʔ]		[Ø]		Total
	N	%	N	%	N	%	N	%	N	%	
Initial	160	66	45	19	18	8	12	5	5	2	240
Internal	47	41	19	17	7	6	39	35	1	1	113
Final	30	58	18	35	0	0	0	0	4	7	52

Table 16. /θ/ realisation regarding its position in the word.

The distributional analysis of Word Finality shows that [θ] and [f] pronunciations can be found in all positions in the word (which is also the case of [Ø], although the number of tokens is very low for this particular pronunciation). [t]-variation is mainly found in initial position while [ʔ] is predominantly found in internal position.

Further analysis of the position of (TH) in the word revealed a significant change of fronting when <th> is in final position. Numbers are also relatively high when

<th> is in internal position. This finding is consistent with all studies on the phenomenon, which found that TH-fronting is more likely to occur when found at the end of a word.

Let us now consider the non-significant factors. Figure 9 and Table 17 present the distributional analysis of (TH) variation depending on the morphological complexity of the word.

Morphological Complexity was the only linguistic factor selected as significant in Schlee and Ramsammy's (2013) statistical analysis of their London data. The distributional analysis of the data shows that the fronting variant appears somewhat equally between monomorphemic and polymorphemic words (cf. Figure 9 and Table 17). It also shows that monomorphemic words tend to have slightly more fronting than polymorphemic words, which is opposite to what Schlee and Ramsammy found in their (2013) study for both London and Edinburgh.

Even though Morphological Complexity is less pronounced for Edinburgh than for London in Schlee and Ramsammy's (2013) study, it is still significant.

Interestingly, glottalization of (TH) is far more present in polymorphemic words than in monomorphemic words. The cause of this particular result is further explained below.

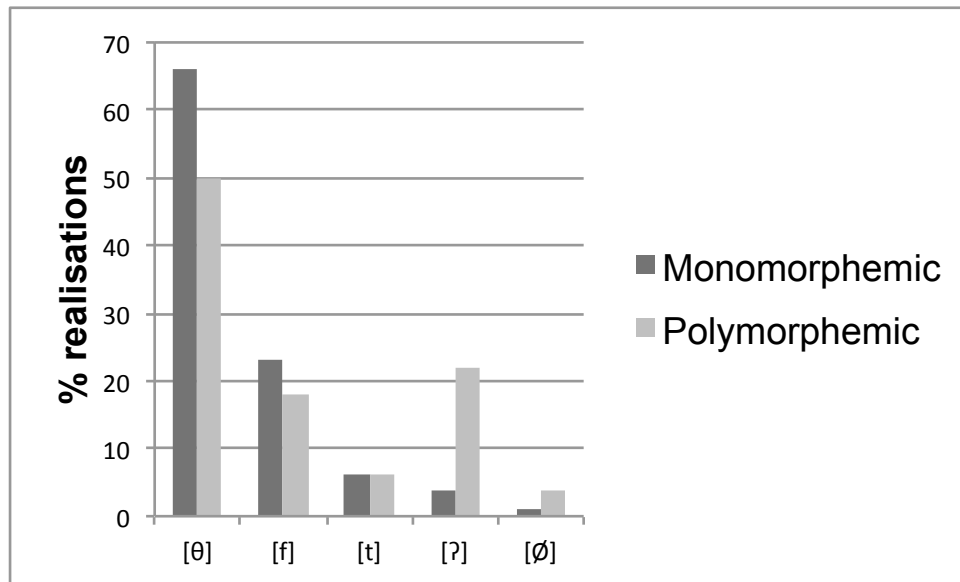


Figure 9. Morphological Complexity in the realisation of /θ/.

	[θ]		[f]		[t]		[ʔ]		[Ø]		Total
	N	%	N	%	N	%	N	%	N	%	N
Monomorphemic	138	66	47	23	13	6	8	4	2	1	208
Polymorphemic	99	50	35	18	12	6	43	22	8	4	197

Table 17. Morphological Complexity in the realisation of /θ/.

The multivariate analysis made with Rbrul Shiny on the current dataset for Newcastle indicated that Morphological Complexity was insignificant. Moreover, though Schlee and Ramsammy (2013) found TH-fronting to be favoured in Polymorphemic words, this is not the case in Newcastle.

Another non-significant factor was Preceding Phonological Context (PPC). This result was expected given that the same factor was not selected as significant on TH-fronting usage for the London and Edinburgh data (Schlee and Ramsammy

2013). The standard pronunciation appears far more frequently than any other variant when considering the phonological context preceding <th>.

Looking at the different phonological contexts where TH-fronting could have appeared shows that the fronting variant never appears when preceded by a phrase boundary (cf. Figure 10 and Table 18). Yet, only seven occurrences were found with phrase boundary as the preceding context out of the 405 occurrences. This low number of tokens for phrase boundary as the preceding phonological context can explain the lack of TH-fronting in the following <th>.

TH-fronting has the second highest percentage out of all non-standard variation, except for glottalization when <th> is preceded by a sonorant, which again, is mostly found in the word ‘something’ in the dataset. Although TH-fronting is the second most used variant in the distributional analysis, the standard pronunciation of TH remains the preferred pronunciation when looking at the preceding context.

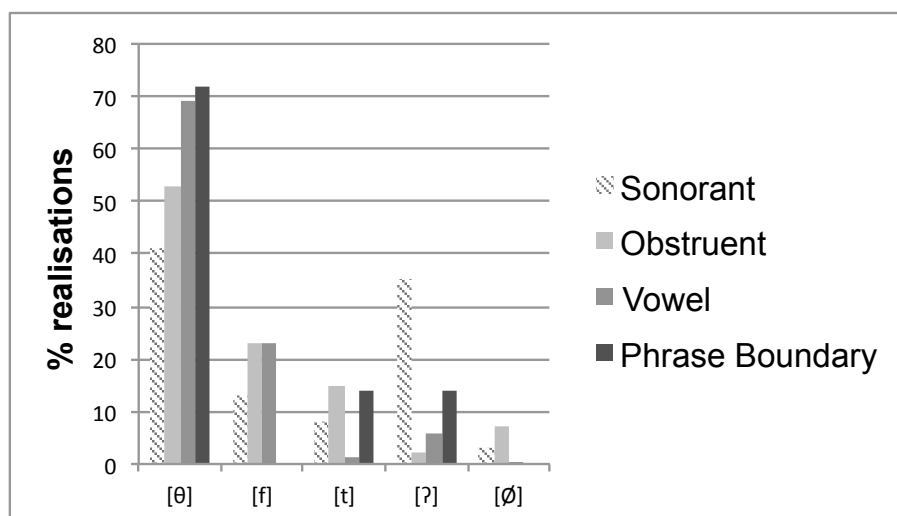


Figure 10. Preceding Phonological Context.

	[θ]		[f]		[t]		[ʔ]		[Ø]		Total
	N	%	N	%	N	%	N	%	N	%	N
Sonorant	40	41	13	13	8	8	35	35	3	3	99
Obstruent	48	53	21	23	13	15	2	2	6	7	90
Vowel	144	69	48	23	3	1,5	13	6	1	0,5	209
Phrase boundary	5	72	0	0	1	14	1	14	0	0	7

Table 18. Preceding Phonological Context.

The multivariate analysis revealed that the preceding context of TH is not significant, therefore not affecting the occurrence of TH-fronting. This coincides with Schlee and Ramsammy's results for London and Edinburgh (2013:34 and 38). According to their findings, the preceding context should stay insignificant even when the variant is more stabilised in the language.

The last linguistic factor not selected as significant on TH-fronting occurrence was Prosodic Position.

Figure 11 and Table 19 look at the potential influence on [f]-realisation of the onset/coda position of (TH).

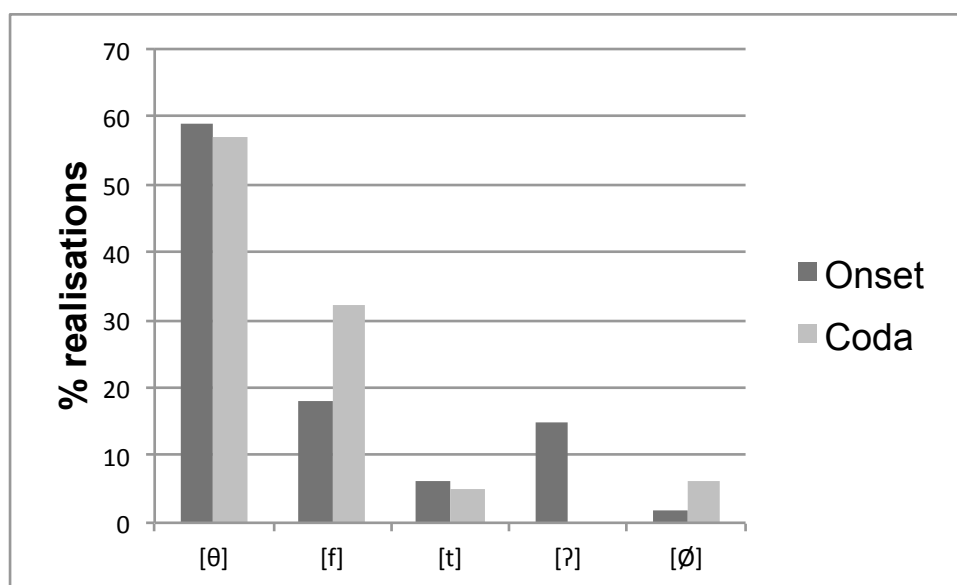


Figure 11. Realisation of /θ/ regarding its place in the word: (onset/coda).

	[θ]		[f]		[t]		[ʔ]		[Ø]		Total
	N	%	N	%	N	%	N	%	N	%	N
Onset	203	59	63	18	22	6	51	15	6	2	345
Coda	34	57	19	32	3	5	0	0	4	6	60

Table 19. Realisation of /θ/ regarding its place in the word: (onset/coda).

The results for the onset/coda position of <th> in the word are similar to those for Word Finality. Indeed, the results show that TH-fronting could be favoured in a coda position in the word. These results are also found in studies like Stuart-Smith and Timmins (2006), and Schleef & Ramsammy (2013).

This particular linguistic variable is interesting since its significance seemed dependent on another linguistic variable. Indeed, the onset/coda and Word Finality variables evaluate quite the same possible constraint: if the place of (TH) in a word is influences the occurrence of TH-fronting.

However, the two variables being similar, it seems that the results of Word finality influence those of the onset/coda constraint as Rbrul shinny would sometimes find it significant but also show the constraints to be more significant without it. A chi-square test of independence of the factors revealed no significant association between the two: $X^2(1, N = 319) = 3.4245, p.064235$.

3.4. Discussion.

This last subsection is an in-depth discussion of the results presented above, by also putting them into perspective with previous findings on TH-fronting. The discussion starts with the linguistic constraints on TH-fronting and then turns to the social constraints. This thesis's findings are then compared to those of Schlee and Ramsammy (2013) for London and Edinburgh, as the method used in this thesis was in line with theirs for comparative purposes. The similarities and differences between the fronting variant for this thesis and the studies mentioned in Chapter 1 are also discussed.

Many elements in the results confirm the novelty of the TH-fronting phenomenon in Newcastle. Indeed, as mentioned in Chapter 1, TH-fronting appeared in the late 18th century in London (Wells 1982:328 taken from Stuart-Smith & Timmins 2006). Its spread occurred only a century later, and Newcastle being on the other side of the country, TH-fronting is expected to have developed later. Moreover, the results presented in this chapter seem to echo Schlee and Ramsammy's findings

on several counts, and to prove TH-fronting to be new in Newcastle. I will present these elements as the discussion progresses.

3.4.1 Linguistic factors.

Out of the five linguistic constraints studied in this thesis, only Following Phonological context and Word Finality turned out to be statistically significant. Comparing these results to Schlee and Ramsammy's (2013) study shows that these results are close to what has been found for the Edinburgh data but not for London.

Indeed, Schlee and Ramsammy (2013) argue that TH-fronting in London is not affected by any phonological contextual factors as the variant is "more synchronically stabilized as a productive phonological process than in Edinburgh" (2013:46). Figure 5 (2013:45) even presents the hypothetical trajectory TH-fronting goes through during its stabilization in the language which, according to them, could explain the "contextual and interregional differences in the use of TH-fronting" between London and Edinburgh (2013:44).

If we follow Schlee and Ramsammy's hypothesis for TH-fronting evolution, further research on TH-fronting on data further along in time could show "equal rates of application across phonological contexts" (2013:47) in Newcastle and Edinburgh. In other terms, TH-fronting in Newcastle should, with time, lose its phonological contextual constraints.

Looking at the order of the constraints ruling TH-fronting in Newcastle and comparing it to Schlee and Ramsammy's (2013) study reveals several of the

hypotheses made in Chapter 1 (Section 1.4) on TH-fronting in Newcastle to be correct. Indeed, the results found for Newcastle are close to those of Edinburgh, as two phonological contextual factors are significant. However, while the Following Phonological Context is significant in both Edinburgh and Newcastle, it is not the case for the Prosodic Position, which is only significant in Edinburgh. Although, as presented above, the results for Prosodic Position in Newcastle for the distributional data might look like it would be a significant constraint for Newcastle, a chi-square test revealed it was not the case. Word Finality is a constraint that is significant in Newcastle but not in Edinburgh, which shows that the results for the two cities are not identical.

Nonetheless, TH-fronting is ruled by phonological contextual constraints in both Edinburgh and Newcastle. This, according to Schlee and Ramsammy (2013), is a sign of its novelty in a dialect.

The results revealed that Morphological Complexity was not a significant constraint on TH-fronting in Newcastle. One may wonder if these results come from the fact that TH-fronting could be even less developed in Newcastle than in Edinburgh. Indeed, Morphological Complexity was a significant factor for both London and Edinburgh in Schlee and Ramsammy's (2013) study. However, when looking at their data, one can observe that "the proportional differences are less pronounced [in Edinburgh] than in London" (2013:39).

In the discussion of their results, Schlee and Ramsammy argue that TH-fronting could become "morphologised in the speech of young adolescents" (2013:47) and that further studies should "examine to what extent different morphological

material either increase or decreases the probability of occurrence of TH-fronting” (2013:47). In the case of this thesis, results on Morphological Complexity do not increase the probability of occurrence of TH-fronting, which again, could be due to the fact that the variant is very new in the variety at the time of data collection.

The distribution of TH-fronting within the lexicon revealed some interesting elements. For instance, some proper nouns are exclusively pronounced with the [f]-variant. Similarly to what was found by Schlee and Ramsammy (2013), the high-frequency items are not more fronted than low-frequency items.

The results for the distribution of TH-fronting within the lexicon also unveiled a similar comparison to what Stuart-Smith & Timmins (2006) found in their study of TH-fronting in Glaswegian: TH-fronting is taking place via a process of lexical diffusion (cf. Stuart-Smith & Timmins 2006:181). Stuart-Smith and Timmins define lexical diffusion as “the gradual spread of sound changes across the lexicon of a language” (2006:172). Although their 2003 data contained a higher number of words than their 1997 data because of a larger sample of speakers, they found the proportion of words in which [f] was used increased “from 53% to 72% from 1997 to 2003”. A comparison of [f]-usage in the lexicon between the PVC and NECTE2 showed an increase from 3% in the PVC to 16% in NECTE2.

Some progressive and regressive assimilation could account for some of the TH-fronting produced. Indeed, sentences like “in the twenty-fourth minute a goal” uttered by speaker Y08i003a, “I met my first boyfriend through work <pause>”

uttered by speaker Y10i005 or “in the South of France near Bordeaux” again by speaker Y08i003a could be proof of progressive and regressive assimilation. Although these sentences can provide some explanation for TH-fronting, there are only eight occurrences in the dataset for which this explanation stands. Overall, assimilation cannot be seen as an effective reason for TH-fronting since there are only very few occurrences ($N = 8$) where it could have happened. Moreover, there are some cases where assimilation could be expected in the dataset, as when participant Y07i001a says, “as I finished sixth-form at quarter past three run back down again because”. Yet, there is no assimilation.

Conversational data were the only style that could be collected from the DECTE Corpus for each participant. Therefore, style was not considered a linguistic factor for TH-fronting in Newcastle (whereas Schlee & Ramsammy 2013 were able to investigate conversation vs. reading styles). Whisker, Merrison and Swift (2007) found that TH-fronting tends to reduce in formal style, although it is not the case in every study that studied style. In Manchester, for instance, Baranowski and Turton (2015:13) analysed “casual, careful, wordlist and minimal pair style”, but “TH-fronting [was] not subject to style shifting” in their dataset. Finally, Schlee & Ramsammy (2013) as well as Robinson (2005) found that occurrences of TH-fronting increased in the reading style.

3.4.2 Social factors.

In the words of Tagliamonte, “women tend to avoid stigmatized forms” (2012:32). TH-fronting being a highly stigmatized pronunciation of (TH) associated with the working class and masculinity (Levon 2014, Trudgill 1998), it is not much of a surprise that women are not in the lead regarding fronting production in our dataset. A key principle of Labov (2001: 266) regarding language and gender is that “for stable sociolinguistic variables, women show a lower rate of stigmatized variants and a higher rate of prestige variants than men”.

Many of the studies presented in Chapter 1 highlighted the fact that TH-fronting was majorly used by young male speakers from the working class (Schleef & Ramsammy 2013, Baranowski & Turton 2015, inter alia). The results extracted from the data of the Newcastle participants align with the majority of findings on TH-fronting in English (varieties), with the exception of Whisker, Merrison and Swift’s (2007:241-242) study who found that women born post-1970 were in the lead of TH-fronting usage in Hull.

Comparing the constraints ruling the use of TH-fronting in Newcastle to those found by Schleef and Ramsammy (2013) for London and Edinburgh is interesting as it reveals that gender appears as a significant constraint in Newcastle and London but not in Edinburgh. Most of the studies around TH-fronting presented in Chapter 1 (section 1.3) found gender to be a significant constraint on TH-fronting. Therefore, it was expected be the case in Newcastle as well.

However, given that TH-fronting in Edinburgh and Newcastle seems to be at the same stage of evolution, Newcastle may have been expected to align with Edinburgh instead of London.

Schleef and Ramsammy (2013) concluded that gender was only significant in London as “TH-fronting is a more established dialect feature in London than in Edinburgh” (2013:49). The variant is classified as being a relatively new phenomenon in Edinburgh, where the two linguists state that the “potential for gendering practice is only just establishing itself” (*ibidem*) while in London TH-fronting is clearly associated with the working class.

Newcastle is a highly industrialised city associated with the working class, which could be the reason why gender is significant there. TH-fronting could be an “ideal feature for the indirect indexing of masculinity” (*ibidem*), as documented for London.

Indeed, although social class is not a factor that could be analysed in this study, it is a constraint that has been found to be significant in many studies (Baranowski & Turton 2015, Stuart-Smith & Timmins 2006). Schleef and Ramsammy (2013) point to the fact that TH-fronting and lower classes are strongly linked by quoting a few studies where gender and social class are significant (2013:49), such as Stuart & Timmins (2006) and Kerswill (2003).

Stuart-Smith and Timmins (2006) also mention their speakers’ lack of geographical mobility. Indeed, TH-fronting is a variant of “dialect contact associated with

geographical mobility” (2006:171). However, they show that participants of their 1997 corpus using TH-fronting are less mobile (ibidem).

Th-fronting is indeed embedded in a certain stereotype in the minds of British speakers. As mentioned above, the variant first evokes a working-class male speaker for British speakers. The change has become conscious in London as even writers use eye dialect for TH-fronting to present their characters a certain way. J.K. Rowling, for instance, in *Harry Potter and the Prisoner of Azkaban*, uses TH-fronting for the dialogues of her character Stan Shunpike, the conductor of the Knight Bus. In chapter 3, he says, “Can’t do nuffink underwater” and “but for firteen you get ‘ot chocolate” (Rowling 1999:37). Interestingly, this character is a young male of around 17-18 years old. The author purposefully resorted to eye dialect. Any British person who read the book probably saw this particular character as a stereotype of the working class. This portrayal of the character is partially conveyed by the use of the fronting variant.

The results of the multivariate analysis on the constraints impacting TH-fronting in Newcastle revealed differences and similarities with other studies, particularly that of Schlee and Ramsammy (2013). The results for Newcastle speakers found <th> in a preconsonantal final position to favour fronting pronunciation amongst male speakers, which coincides with some of the results for Edinburgh. However, neither the Following Phonological Context nor Word Finality are significant in London. According to Schlee and Ramsammy (2013),

this difference in the number of linguistic factors impacting the use of TH-fronting could prove that TH-fronting is at an earlier stage of development in Edinburgh than in London. As the significant linguistic factors for Newcastle are similar to those for Edinburgh, TH-fronting in Newcastle is also likely to be at an early stage of evolution in this variety of English.

If we take into account Weinreich, Labov, and Herzog's (1968) claim that "linguistic innovations move in an orderly manner through space (social, geographical, historical) affecting linguistic structure also in an orderly manner" (cited in Milroy 1992:13), TH-fronting in Newcastle could follow the trajectory proposed by Schlee & Ramsammy (2013) for the evolution of TH-fronting.

Conclusion

With this master's thesis, I have attempted to sketch out an answer to the question of the development of TH-fronting in Newcastle and add to the knowledge already available on TH-fronting.

The data has helped conclude that TH-fronting in Newcastle was a new phenomenon in Tyneside's speech at the time of data collection (2007-2010). TH-fronting in Newcastle has some similar constraints to, although not precisely the same as, what has been previously observed in several cities of England and Scotland. Edinburgh seems to be where TH-fronting constraints are most similar to Newcastle's (Schleef & Ramsammy 2013).

Indeed, TH-fronting in Newcastle was found in the speech of male participants, as was the case for Edinburgh (Schleef & Ramsammy 2013). Linguistically, TH-fronting was also most likely to appear in the final position of a word when followed by a consonant (preferably a sonorant).

Since Schleef and Ramsammy's (2013) hypothesis is that TH-fronting may be on its way to becoming morphologised (2013:46-47), future investigation of TH-fronting in Newcastle could reveal the constraints to be similar to those found by Schleef and Ramsammy (2013) in London, meaning it could show "equal rates of application across phonological contexts" (2013:47). If so, as for London, the phonological contextual factors would not be significant, while Morphological

Complexity would become significant since it is their most significant factor of all. If not, it could mean that the variant operates differently in Newcastle and that their hypothesis might not apply to it as they specify that what might apply to London may differ for other cities (2013:47).

The data available for this thesis (DECTE corpus for 1994 and 2007-2010) only covered the period spanning from the 1990s until the 2010s, which is why further investigation of TH-variation with more recent data could shed more light on the evolution of the variant in the dialect. Specifically, it would unveil if the constraints ruling its use have remained the same or not.

Several constraints analysed in previous studies of TH-fronting could not be included in the present thesis.

Since all studies on the matter found TH-fronting to be used by young participants, and since the aim was to be able to compare the Newcastle data with Schlee and Ramsammy's (2013) study, age was not selected as a social constraint in this thesis. The participants' socioeconomic status could not be used as a social constraint as the NECTE2 corpus data do not provide individual socioeconomic status for each participant.

Style and Register were potential factors on TH-fronting that could not be analysed in this thesis, as only recordings of casual conversations were available. Looking at Style and Register in further research could also deepen the comparison with other varieties.

Finally, although it would have been interesting to look at the influence of the South, and more precisely London, over the different dialects of the country, it is

not a subject that could have been developed in this study as there was no information available on the mobility of the participants selected for this thesis.

The completion of this thesis leads me to believe that a Ph.D. thesis on the subject would be an ideal opportunity to investigate further the questions and hypotheses that remained unanswered here, due to a lack of time and resources.

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