

Chapter 5

The BATH Variable

5.1 Introduction

In southern England there is a distinction between the pronunciation of words belonging to what Wells (1982) refers to as the BATH lexical set, which have a long back vowel /ɑ:/ and words belonging to the TRAP set, which have a short front vowel /a/. In the north of England, words belonging to the standard lexical set BATH are generally pronounced with /a/. This phonemic split that we find in most of the south of England is referred to as the TRAP-BATH split (see Wells 1982). Upton (2008: 272) claims that the BATH vowel “... creates something of a marker of north-south distinction”. It is indeed frequently commented upon as a shibboleth of north and south of England pronunciations. Below, I shall outline a brief history of the processes leading to the incomplete sound change of the TRAP-BATH split.

5.2 The TRAP-BATH split.

The history of the BATH lexical set is somewhat complex. In the words of Britain (2001: 233), “The present day BATH set originates mainly from two classes in Middle English: short **a** (which contained words such as ‘trap’, ‘cat’, ‘back’, ‘bath’, ‘last’ and ‘after’) and **au** (‘dance’, ‘demand’, etc.)”. He goes on to say that a change occurred in regards to usage of the BATH vowel in the late seventeenth century. The ME **a** class, in the south-east of England, split with some words lengthening to [a:] and backing to [ɑ:] in some varieties some time later. Some of the ME **au** class (many of French origin) joined the set of words that lengthened. However, not all words lengthened. Britain concludes that although there is some phonological shape to the set of words that lengthened (mainly /a/ before voiceless

fricatives and nasals + /s t d/) no phonological rule appears to account for the split, given the many exceptions such as *maths*, *cancer* and *asp*.

It is frequently commented upon in the literature, that the TRAP-BATH split is a complex change which is lexically rather than rule governed. Bailey (1996) comments upon the fact that there was much variability by speakers in the late nineteenth century. He claims that for the latter decades of the century, pronunciations in these words varied unpredictably. He claims that there was no intermediate stage with this sound change, rather speakers “jumped” to one or the other realisation. “neither vowel was seen as inherently superior, though the [ɑ] was treated by northerners as more likely to be used by southerner ... But most speakers were unpredictably variable in their usage..” (Bailey 1996:110-11). It would seem then, at this time, that there was an absence of a fixed norm regarding the phonemic change. Neither form was without social evaluation by the writers of the pronunciation dictionaries of the time.

The constant well documented conflict in opinions from authors as to which form was the most ‘educated’ and ‘correct’ did little to secure a dialect norm. William Downes (1984) cited in Mugglestone (2003:80) states “a language change involves a change in norms”. However, as Mugglestone comments, with the conflicting claims from writers of the time, the change involved not only linguistic but social norms. Mugglestone (2003) claims that due to the social correlates “so liberally accorded” to this vowel distinction, this led to some speakers adopting exclusive use of [æ], the prestige form of the time. It also led to the creation of a middle sound according to Longmuir (1873), cited in Mugglestone (2003: 79), used by some careful speakers. “there is a disposition among literary men and public speakers to unite on some *intermediate* sound between the entire broadness of the *a* in *father* and the narrowness of the *a* in *fat* ... ”. This was, according to Longmuir, a strategy to avoid

the lengthening of *a* which offended John Walker, a nineteenth century prescriptivist. Walker claimed that lengthened [ɑ:] was unquestionably the preserve of ‘inaccurate speakers’ (Walker cited in Mugglestone 2003:79). Mugglestone concludes, that despite all the derogatory comment and notions of non-standardness regarding lengthened [ɑ:], it did in fact stabilise as one of the dominant markers of RP and gradually extended its use and distribution in the south of England at the expense of [æ], “though its diffusion in relevant linguistic environments was never complete” (Mugglestone 2003: 79).

Given the history of the BATH vowel, with its linguistic and social complexities, it is little wonder that it is a complex sound change which is still unstable in some locations. Wells (1982) claims that by the 20th Century, the TRAP-BATH split became established, and in Southern British Isles English, [ɑ:], a long, back vowel was being used in the relevant words. Wells (1982: 232) states “...lexical diffusion meant that some lexical items previously said with [a ~ æ] now had a long vowel ([æ: ~ a:] later to become [ɑ:]), while others, although involving an identical phonological environment, retained the short vowel”. Thus, in Southern English we have *pass*, *grass* and *class* with the long back vowel /ɑ:/, but *mass*, *gas* and *lass* with /æ/. Chambers comments upon the fact that this phenomenon is lexicalised rather than rule governed. “One reason for thinking it might be lexicalised rather than rule governed is that its environments are never derived, and so there are no alternations between [ɑ] and [æ]. Another is that there are several words with the appropriate environments that are exceptions, that is, they invariably have the front vowel rather than the back one” (Chambers 1992: 683). He gives examples of words that have not undergone lengthening, but have appropriate environments. These words include *cafeteria*, *classic*, *mass*, *ant*, *cancer* and *pants*. Wells (1982: 233) refers to the messiness of the TRAP-BATH split as “... the ossification of a half completed sound change, which seems to have come to a stop well

before completing its lexical diffusion through the vocabulary which met the structural description of the lengthening rule”.

5.3 Varieties of English and the BATH vowel: the British Isles

5.3.1 England

The situation with the BATH vowel is not as clear cut as having a straight north/south regional division in England. There is variability in realisations of the BATH vowel in the Midlands. (See Smith 2003, Ryfa 2007, Chambers and Trudgill 1998). Despite the Midlands often being classified as the north of England, as Smith (2003:12) states “Birmingham is very close to the isogloss bundle that represents the [æ-ɑ:] split, it would be fair to expect some level of variation amongst realisations of words of this type in the Midlands area”. Wells (1982) comments upon some variability found in the Midlands area. He claims that Birmingham lies between the isoglosses for the words *aunt* and *last*, produced from the SED data, revealing speakers from Birmingham use a long vowel in the former, but a short vowel in the latter (Wells 1982: 354).

The BATH vowel in the West Country is complex. (See Wells 1982: 345-346; Altendorf and Watt 2008: 216; Hughes and Trudgill 1996: 57; Piercy 2010). Wells states that the BATH vowel, and in some areas of the West Country the START vowel typically have the same quality, [a]. He claims that any distinction between words such as *gas* and *grass* would have to depend on duration alone. (Wells 1982). He goes on to say that in a West Country accent “... the phonemic contrast corresponding to RP /æ/ vs. /ɑ:/ is absent or variable” (Wells 1982: 345). He outlines the need for further study in this area, and stresses that not all the West Country follows this pattern, as Southampton and Bristol are dialect areas where the TRAP-BATH split has been adopted. He claims that class is also a factor in BATH vowel

realisations in the West Country. He claims that in Southampton, BATH words “...have [æ:] in working-class speech, varying sociolinguistically with a backer vowel, towards [ɑ:], among the middle class.” (Wells 1982: 646). He goes on to say that certain TRAP words in Southampton have the long vowel and have in effect been transferred from the TRAP lexical set to that of BATH, and that there is difference of opinion as to which TRAP words have the short vowel and which have the long. Piercy (2010), in her study of TRAP, BATH, PALM and START in the West Country poses the question why, if the rest of the south of England has a clear TRAP-BATH split, is this not the case in the West Country? “It seems that it is the presence of lengthened ‘short’ vowels, as well as an overlap in vowel quality in TRAP, BATH, PALM and START, that leads to the question of whether there is a contrast in /a/ and /ɑ:/ ...” (Piercy 2010: 235). She concludes following an auditory and acoustic analysis of her data, that the majority of speakers do realise a distinction in /a/ and /ɑ:/, though apparent time evidence suggests that a change is in progress from a one to two phoneme system.

5.3.2 Ireland

Another area of the British Isles that cannot be described as having a clear TRAP-BATH split is Ireland. Many southern Irish accents have the long vowel in the words that are susceptible to the split (see Hughes and Trudgill 1996), but there is complex variation. Commenting upon Dublin English, Wells (1982) claims “The opposition /æ-a:/ carries a low functional load. The lexical incidence of these words corresponds generally to standard accents in that TRAP words have /æ/ and PALM words /a:/; thus there are minimal pairs *cam* vs. *Calm* ... As far as the BATH words are concerned, the situation is very far from clear.” (Wells 1982: 426). He claims that the quality of /æ/ is commonly around cardinal [a], but [æ] is used by educated Dubliners. He goes on to say that General Dublin English has [æ:] for *gas* and [ɑ:] for *glass*, suggesting a phonetically tenuous distinction between the TRAP vowel in *gas* and

the PALM vowel in BATH words. To further complicate matters, he cites Nally (1971), stating that he transcribes *blast*, *fasting*, *plaster* and *task* with /a:/, but *castle* with /æ/ (Nally 1971 in Wells 1982: 424). Wells concludes, in his discussion of the BATH vowel in Southern Irish English “It may well be the case that the interplay of quality and length is more complicated than is allowed for by a simple opposition of /æ/ vs. /a:/. There is certainly a great deal of variation in this matter, and it has not yet been adequately described.” (Wells 1982: 424). Hickey (1999: 265) claims that “Wells’ BATH lexical set needs some modification in that words such as *dance* and “words with /a:nC#/ have [ɑ:] in RP but [a:] in Irish English, a sociolinguistically sensitive realisation. This item is not given by Wells as a representative of a lexical set in its own right, but it is mentioned in his examples for the BATH lexical set (1982, 2: xviii)”.

Harris (1985) defines the different varieties of Northern Irish English as 3 main categories: Ulster Scots (US), spoken in parts of the north and northeast of Ulster, South Ulster English (SUE), spoken in the extreme south of the province and Mid Ulster English spoken in an area between those of US and SUE, including Belfast. He claims that most varieties have a single phoneme in TRAP, BATH and PALM, /a/, although some speakers have a different vowel in some PALM words such as 'father', 'rather' and 'Palmer', contrasting with /a/ in 'gather' and 'grammar'.

Regarding the history of the BATH vowel in Ulster English, one must take into consideration Aitken's Law and Ulster Lengthening. Aitken's Law was a sound-change that occurred in various Scots dialects in the 16th and 17th centuries. According to Aitken's Law, the length of all (non-high) vowels is predictable according to the phonological context in which they occur. Wells (1982: 400) defines Aitken's law in the following way: “a vowel is phonetically

short unless it is followed by #, a voiced fricative, or /r/, in which case it is long (at least in a monosyllable)”. Wells (1982: 438) claims that in Ulster, as well as in Scotland, there has been “near-complete loss of phonemic vowel length distinctions”. He claims that the sets TRAP and PALM are merged in /a/. He attributes this merger to the outcome of the operation of Aitken’s Law. A further development that he refers to as Ulster Lengthening occurred in Ulster English. Ulster lengthening resulted in the use of long allophones of /e, ε, a, ɔ/ in any monosyllable that is closed by a consonant other than /p, t, tʃ, k/.

5.3.3 Wales

There is instability in BATH words in Wales. According to Penhallurick (2008: 110) “...there is competition between the short forms [a~æ] and long forms [a:~æ:~ɑ:], with [a] the most common realisation, occurring in all regions”. Hughes and Trudgill (1996) claim that in South Wales the distribution of /æ/ and /ɑ:/ is generally as in the north of England, and the contrast between the vowels is of length only. In Wells’ typical vowel system of south-east Wales, he claims that the BATH vowel is /a/ or /a:/. He goes on to say however, that the situation with the BATH words is not altogether clear. Like Hughes and Trudgill (1996), he states that generally, in Wales, the BATH vowel behaves as it does in the north of England. However, he claims that in south east Wales including Cardiff, the long vowel is established in some words such as *class* and *grass*, while in other words such as *chance* and *fast* there is sociolinguistic variation between the long and short vowel (Wells 1982). He claims that in many places in Wales the quality of /a:/ is socially sensitive, with a front /a:/ being stigmatised, compared with a central back [ɑ + :] which Wells describes as RP style. He also claims that an informant from Rhondda made a distinction between the *fast* meaning speed and *fast* as in abstention of food, the former /a/, but the latter example /a:/. It would seem

then that in Wales it is not satisfactory to talk of the presence or absence of the TRAP-BATH split, as the story is more complex.

5.3.4 Scotland

Stuart-Smith (2008) claims that in Scottish Standard English there is usually a single vowel for TRAP, PALM and BATH words, /a/. Hughes and Trudgill (1996) claim that in Edinburgh, TRAP, BATH and PALM words have /a/ but in Lowland Scots words such as *grass* may have /ɛ/. Wells (1982) claims that in Scots, BATH is /a/ in some words but /ɑ/ in others. He goes on to say that the Scots dialect lacks TRAP vs. PALM oppositions, and vowel length tends to vary sharply according to phonetic environment. However, he comments on some speakers having two phonemes, /a/ in TRAP and /ɑ/ in PALM in some environments, most notably before a following nasal. He also claims that many Scottish people have the single phoneme /a/ for PALM, TRAP, BATH and START words, but that its realisation may vary socially as well as allophonically. (cf. Stuart-Smith 2008: 59).

5.4 The BATH vowel in world Englishes

The BATH vowel is also complex in some varieties of English Spoken outside the British Isles. According to Collins and Blair (1989: 263) “For many words in Australian English there is variation between /æ/ and /a/; in a few cases /eɪ/ is also a possibility”. They go on to say that patterns of variation show regional, social stylistic and age differences. The most frequently cited example they claim, is in the word *castle*, which is long /a/ in the word *Newcastle* and short /æ/ in *Castlemaine*. They claim that this variation seems to be “... a vestige of lexical diffusion from /æ/ to /a/ in British English during the period of Australia’s settlement ... As is usual in lexical diffusion, the pattern of variation is different for each word” (Collins and Blair 1989: 263).

In terms of regional and age variation of the BATH vowel in Australia, for words which vary, /a/ is more frequent in Sydney and Adelaide. Speakers from Melbourne, Brisbane and Hobart tend to use /æ/, although /a/ is increasing in the younger speakers of Brisbane. In terms of social sensitivity /a/ is the variant more commonly used in formal styles and b speakers of higher socioeconomic background (Collins and Blair 1989: 263).

Many Australians, who otherwise use the long vowel, use the short vowel in BATH words which are followed by a nasal plus another consonant, e.g. *dance, grant, example*. According to Wells (1982), when /a:/ is used in this subset of words, many Australians from the eastern states consider it affected or snobbish, but in South Australia /a:/ is usual in these words.

Wells (1982) claims that West Indians, New Zealanders and South Africans all have the long vowel in BATH words. Wells states “South Africans can often be readily recognised as such by the very back quality of the /ɑ:/ of START, BATH and PALM. In broad speech it may be weakly rounded, thus becoming qualitatively identical with the /ɒ/ of LOT” (Wells 1982: 615). He goes on to say that this very back variant is stigmatised and therefore alternated depending on style and context with a less back [ɑ+].

In General American, BATH words are realised with the short TRAP vowel. According to Wells (1982), what he refers to as ‘BATH Broadening’, [a: ~ ɑ:] rather than [æ] in words of the lexical set BATH, occurs in New England, the states of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont. Kretzshmar Jr. (2008: 46) claims that “New England preserves the [a] pronunciation *half, glass, class* and has [ɑ] in *aunt*.” (cf. Nagy and Roberts 2008: 52). Wells (1982) claims that there is a change underway

in American English, affecting words that have traditionally been regarded as having /æ/. He states that [æ] is giving way to “... closer, longer, diphthongal qualities in an increasing number of TRAP and BATH words.”(Wells 1982: 477). He also claims that the first phonetician to give detailed attention to this phenomenon was Trager in 1930. “He detected a special allophone of /æ/, phonetically longer, tenser, and slightly closer, used in a range of stressed environments.” (see Wells 1982: 477). Some words affected are in the BATH lexical set, such as *pass* and *past*, along with others which are not including *half*, *cab*, *bad* and *lamb*. Laferriere (1997) cited in Nagy and Roberts (2008: 56) reports “...a productive, phonological process raising TRAP and BATH to [ɛə], demonstrated by her younger speakers”. Labov (1991:12) cited in Nagy and Roberts (2008:56) suggests that “...unified raising of TRAP-BATH/DANCE is a pivot condition for the NCCS.” (Northern Cities Chain Shift. See Labov, Yaeger and Steiner 1972).

There is instability in the BATH vowel in Falkland Islands English. According to Britain and Sudbury (2010), mid long variants were found most frequently, with some more back realisations. Short vowels were found to be used sporadically by some speakers, but there was inconsistency across individual words and individual speakers (Britain and Sudbury 2010: 215).

5.5 Motivations for studying the BATH vowel

My interest in studying the BATH variable in this linguistic setting with no stable dialect model came about for several reasons. Firstly, after researching the existing literature there seemed to be little previous research on BATH in a mixed language and dialect context. Secondly, after listening repeatedly to the recordings, I found lots of variability. This raised certain questions that I wanted to investigate, such as whether peer group affiliation,

ethnicity or number of years in Spain had a link to the use of /a/ or /ɑ:/. Was the TRAP-BATH split only acquired by Non-Anglos that have intense exposure with others who had it in their dialect? Did exposure to the TRAP-BATH split at a certain age have an impact upon whether the informants would ever fully acquire it? Were there any notions of a ‘correct’ form in this kind of setting? In order to try to find the answers to these questions, I undertook an analysis of the BATH vowel in this speech community.

5.6 Social Status of the BATH Variable

In this section I would like to consider whether the BATH vowel is a variable which has social value attached to it. It may be that it previously carried social value, but that notions such as prestige and stigma in present day usage no longer exist. Today it is regionally sensitive. However, as we shall see, in the literature there are still conflicting opinions about the social status of the variable. According to Gupta, the BATH variable " ... seems to have little to do with social status or carefulness of speech" (Gupta 2005:21). However, there is evidence that notions of prestige and stigma surrounding this variable were more prevalent in centuries gone by. Smith (2003: 8) states that by the end of the seventeenth century " ... popular attitudes towards the change were beginning to stigmatise the new, long vowel and to favour the traditionally-used short vowel". She goes on to say that during the eighteenth century speakers became very aware of the social prestige that was becoming attached to certain pronunciations of English. Beal (1999) claims that during this century there was a great increase in the number of pronouncing dictionaries and guides being published. This resulted from concerns, mainly from the growing middle classes, that their pronunciations may be ‘betraying their ‘vulgar’ origins’ (see Beal 1999; Smith 2003).

Lloyd (1895) cited in Bailey (1996: 110) comments upon the confusion surrounding the phonemic split in the nineteenth-century. “... I have never met any speaker North or South, who consistently used either the long or the short vowel in *all* the doubtful words.” Bailey goes on to say that neither vowel was seen as inherently superior, but that is not to say that the variability of speakers was not without social value. By the end of the century [ɑ] was becoming regarded as better than [æ]. Bailey (1996: 111) cites Richard Grant White, an American visitor in 1880 to Britain commenting upon the increase of the use of [ɑ] and its rise in prestige. “At Westminster Abbey I observed that the officiating canon said “commahndment” and “remembrance,” trilling the *r* as well as broadening the *a*; and at King’s chapel, Trinity, Cambridge....my ear was pleased with his “power and comahndment”. Bailey (1996: 110) seems to have his own quite strong opinions as to whether the phonemic split that we find in the south of England today is regarded as the ‘correct’ form, or the one vowel system that we find in the north of England. He describes the TRAP-BATH split as “Southern British prestige speech”. He claims, quite indignantly, that “Imitators of this prestige variety occasionally confuse the high-status and produce *gas* with [ɑ] and *mask* with [æ].”(Although I must say I have never heard the former example). He fails to hide his displeasure at this hypercorrection, referring to it as a *reversed combination*, claiming that it is regarded as “comically aberrant” and “worthy of contempt”. There would seem then, to be a conflict of strength of feeling by different authors towards this variable.

According to Gupta (2005: 23), both Wells (1982) and Mugglestone (1995) attribute social as well as geographical significance to the use of the long or short vowel. Wells (1982) claims that [ɑ:] in BATH words is a feature of RP. However, it is also a feature of most southern British varieties of English, some of which are not considered standard, such as ‘Cockney’. Mugglestone (1995: 90) claims that the realisation of the long vowel [ɑ:] “... now, of course,

functions as one of the primary markers of a non-localised ‘standard’ accent, featuring both in Received Pronunciation (RP) and in many varieties of modified standard speech. Although its role as a salient feature of ‘talking proper’ is now seemingly secure, it is perhaps salutary to remember that this was by no means so well established in the late eighteenth century”.

Gupta (2005: 23) questions Mugglestone’s assertion of the long vowel being standard. “Of course? We shall see ... It is strange that the entire north seems to be classed as non-standard by Mugglestone, while the entire south is represented by only its highest prestige variant”.

Gupta comments upon her north of England informants’ attitudes towards the BATH vowel, regarding notions of correctness. Informants from Boston, Doncaster and Preston identified the short vowel as correct and the long vowel as incorrect "... because there is ‘no r in it’.” (Gupta 2005 :24). Similarly, some of her south of England informants described the long vowel as ‘correct’, ‘better English’ or ‘well-spoken’. Gupta (2005) claims that there are few individuals who will accommodate to the pattern of a new region after relocation, and few of her informants were variable in their use of the BATH vowel. Most of those that did were from on or near the boundary between short and long vowels in SED, or the south west of England. Trudgill (1986: 18) shares this view regarding relocation from the north to the south of England and use of the BATH vowel with his assertion that “Many Northerners, it seems, would rather drop dead than say /da:ns/”.

Gupta (2005) considers whether the BATH variable is a sociolinguistic variable, i.e. a variable that carries social value. She states that few of her informants changed their pronunciation depending on social or geographical circumstances. In my own research, I considered if indeed BATH *were* a socially sensitive variable, would it not be reasonable to assume that it would be sensitive to stylistic context? It wasn’t. When word lists were used

with some informants in my sample, a style I later decided to discard, those who were categorically long or short vowel users remained so, and those informants who were variable remained variable. Gupta also found this in her study, with no respondents who did not live near border zones displaying variability according to stylistic context.

As we can see from the discussion above, there is conflicting opinion regarding whether the BATH vowel is a variable with any social significance. Even if it were the case, that the BATH vowel was socially significant, and that either the long or short vowel were seen as more standard or prestigious, one might question how relevant this would be in the speech community of this international school, given that there is much less pressure from the standard there. One must also consider when one talks about the social status of the BATH vowel, its status in terms of salience. This factor is particularly relevant to BATH in this speech community, given that when linguistic features are transplanted, the role of salience may be turned on its head. The BATH vowel may be salient for example, for an RP speaker from the south of England visiting the north of England. It may also be salient for a speaker from the north of England visiting the south. However, studies of BATH near isogloss boundaries for this variable have shown that BATH is not salient.

Britain (2003), claims that speakers from the central Fens mainly use the long vowel, but some lexical items retain the short vowel, particularly in the older generation of the Fens. “One speaker from Wisbech, for example, consistently used the long vowel, except in the word *plant* (and *plants*, *planted* etc.) which had [a]. However, very few speakers showed robust variability, with the vast majority using either the short vowel or the long vowel in over 80% of tokens. Furthermore, and despite its importance for linguists and dialectologists, variability in the BATH set is locally **unsalient**” (Britain 2003: 16). Britain (personal communication), claims that

this variable behaviour, such as that of the speaker from Wisbech, was not noticed by the speakers themselves.

Another location where there is instability within the use of the BATH vowel is Dorset. Piercy (personal communication), in her 2010 study of the BATH vowel in Dorset found that BATH was not locally salient. Coming from Dorset herself, it was not a feature that she noticed in other speakers as being long or short or variable. Furthermore, when talking to people from Dorset who were born there, or people living there who originated from other areas, Piercy found that the BATH vowel was never mentioned (despite traditionally short vowels being lengthened in some environments) and this phenomenon was being perceived by some people as a stereotypical West Country feature. She also found lexical variation of the same words in her speakers, a trend she claimed that the speakers were unaware of. One must wonder then, (given that BATH is not locally salient in certain areas of England where there is instability with the vowel), despite its regional sensitivity, whether it is at all salient in the L2 setting of the international school in Spain.

5.7 Data collection for BATH

The recordings that I carried out with the teenagers consisted of informal individual recordings with myself as well as peer recordings. The recordings for the BATH vowel tokens were undertaken in a different way for the 8 year old informants. I felt that the techniques used for the adolescent data would not have been appropriate and would not produce sufficient BATH tokens to analyse. In my experience as a teacher, smaller children do not respond well to question and answer interactions, and can view them as testing, with the need for a 'correct' answer. Therefore, for the 8 year old children, I created games and a picture story which elicited tokens of the BATH vowel. Using this technique I managed to elicit approximately 30 BATH tokens from each young informant. Because of the elicitation

techniques that I used to collect data from the younger children, there are more varied tokens and a larger quantity from this age group. (See appendices for BATH games).

5.8 Analytical Issues

All tokens apart from those excluded (see below, 5.8.1 Tokens excluded) were subjected to auditory analysis. For the Varbrul analysis, I used the programme GoldVarb X. The dependent variable was the long vowel. Four variants were initially identified, coded and inputted into the Varbrul token file. These four variants were coded in the following way:

1= [ɑ:] a long open back vowel

2= [a] a short open front vowel

3= [æ] a short open to open-mid front vowel

4= [ɐ] a short open central vowel

For the final analysis, these categories were collapsed. The result file for all informants' usage of the four variants, called 'Result file: four variants plus name' can be found in the appendices. As we can see in the Varbrul result file, there are very few tokens of [æ] or [ɐ].

There were 300 tokens of variant 1, 362 of variant 2, 10 of variant 3 and just 3 tokens of variant 4. Variants 3 and 4 combined made up less than 2% of the total. Therefore, I collapsed and recoded variants 2, 3 and 4 as variant 2, [a]. The coding protocols for the BATH vowel can be found in the appendices. The file is called 'Data coding thesis BATH'.

It was necessary to listen to some of the tokens repeatedly to clarify which variant they were using. In total, the data produced 675 tokens drawn from more than 40 hours of sociolinguistic recordings from 35 pupils from the school. For the auditory analysis I used the audio editing programme 'Goldwave version 5'.

5.8.1 Tokens excluded

I excluded the following tokens from the BATH data:

People's names: e.g. 'Grant'. One of the year 13 pupil's name was Grant. All the pupils, regardless of their ethnicity, pronounced his name with the long BATH vowel. I felt that because the pupils from origins other than those that have the TRAP-BATH split had never heard the name Grant pronounced with the TRAP vowel, it would skew the data. Several informants who otherwise used categorically short BATH vowels only used the long BATH vowel in Grant's name.

Place names: e.g. 'Newcastle' and 'Bath'. Two of the Norwegian adolescent informants discussed the Universities of Bath and Newcastle in their interviews. One student who otherwise consistently used the short vowel used the long vowel in the word 'Newcastle'. The other student, who was variable in her use of the BATH vowel, used the long vowel for Bath University. Neither of them had ever visited England. I felt that they did not have sufficient awareness of the two ways in which the words could be pronounced to include the words in the data. The word 'France' was frequent in the data of both the older and younger kids. I felt that the kids had heard the word 'France' enough to have an awareness of the possibilities of using either vowel. Therefore, I decided to include this word in the data.

Spanish words: Spanish words that some Anglos and Non-Anglos other than Spaniards pronounced incorrectly with the long BATH vowel. e.g. 'mañana', 'La Cala', (nearest coastal resort to the school), and 'la casa' (Spanish 'house') were not included. For the adolescent Anglos in particular, these words were pronounced with long vowel in a very English accent, but in Spanish should be pronounced with a short vowel. Therefore, I decided not to include any of these words. I also decided to exclude other words of foreign origin, such as 'lasagne'.

5.9 The Results

A total of 12 cells were created for the Varbrul analysis of the BATH vowel. These were:

1. Variant
2. Name
3. Age group
4. Ethnicity
5. Friendship Network
6. Years in Spain
7. Years at school
8. Word
9. Preceding environment
10. Following environment
11. Syllables
12. Frequency

Cells 6, 7, 11 and 12 did not yield any correlation with variation of the BATH vowel.

Therefore, they were discarded in the final analysis.

5.9.1 Patterns of usage for BATH vowel all informants

The following tables, Table 5.1 and 5.2 represent the patterns of usage for the BATH vowel for year 12 and 13 informants respectively.

Table 5.1 Percentage of long vowel for year 12 informants

Name	Number of tokens	Percentage of long vowel
Gemma	8	0%
Debbie	5	0%
Clive	23	0%
Neil	30	7%
Nick	7	14%
Jivan	31	23%
Trude	43	23%
Aaron	13	39%
Sam	11	73%
Sky	15	80%
Lisa	11	100%

Table 5.2 Percentage of long vowel for year 13 informants

Name	Number of tokens	% of long vowel
Chantelle	6	0
Annette	24	0
Isaac	6	0
Álvaro	6	0
Jason	14	0
Helena	13	100
Gina	12	100
Shane	10	100
Tom	5	100
Will	5	100
Michael	11	100
Oscar	8	100

If we look at Table 5.1 and Table 5.2, it is evident why I separated year 12 and 13 for results.

The 2 year groups showed quite different patterns of usage for the BATH vowel. None of the year 13 informants were variable and all used categorically long or short BATH vowels.

Possible factors that may contribute to this will be discussed below in 5.20. In contrast to these results, out of the 11 year 12 informants, 7 were variable. Possible factors that may have some impact upon this will also be discussed. We now turn to the patterns of usage for BATH for the young informants. Table 5.3 shows this information

Table 5.3 Percentage of long vowel for young informants

Name	Number of tokens	% of long BATH vowel
Phillippa	29	0
Maddie	26	4%
Pierre	24	25%
Maria	47	28%
Rosario	29	41%
Ronan	34	44%
Guillermo	28	54%
Peter	31	61%
John	28	75%
Gladis	32	88%

Eloise	25	100%
Mandy	25	100%

We can see here, from the information in Table 5.3 that the young informants were more likely to be variable in their use of the BATH vowel than the teenage informants, with 9 of the 12 youngsters variable in their use of the BATH vowel. We shall discuss this in more detail below in the discussion section of this chapter, when the social constraint of age is explored for a possible correlation with variation. We now turn to the teenage informants from the sample who display variability in their use of the BATH vowel.

Table 5.4 Variable informants year 12

Name	% of long vowel	Ethnic group	Schooling	Friendship network
Neil	7%	Spanish	Spanish/International	Spanish
Nick	14%	Northern European	Dutch/International	Anglo
Jivan	23%	Spanish	International	Spanish
Trude	23%	Northern European	Norwegian/International	Anglo
Aaron	39%	Anglo	International	Anglo
Sam	73%	Northern European	International	Mixed
Sky	80%	South African	South African/International	Anglo

Table 5.4 shows all the teen variable informants, their percentage of long vowel use, as well as their ethnic group, friendship group and what type of schooling they have had. The table shows that out of all these variable informants, none have had any experience of going to school in England, a factor that we shall discuss in more detail below in the discussion section of this chapter. Out of the Non-Anglo variable year 12 informants only Jivan and Sam have had a primary education in English and been at St. John's all their academic life. Their percentages of long BATH vowel differ considerably with Jivan favouring the short vowel (23%) and Sam favouring the long vowel (73%). Aaron, the only variable Anglo has also been at St. John's all his academic life.

We now turn to the variable young informants in Table 5.5 below. This table shows the young informants' percentage of long vowel use.

Table 5.5 Variable young informants

Name	% of long vowel	Ethnic group	Friendship network
Maddie	4%	Anglo	Anglo
Pierre	25%	Northern European	Mixed
Maria	28%	Spanish	Mixed
Rosario	41 %	Spanish	Mixed
Ronan	44%	Anglo	Anglo
Guillermo	54%	Spanish	Mixed
Peter	51%	Northern European	Mixed
John	75%	Anglo	Anglo
Gladis	88%	Spanish	Mixed

As we can see here, 9 of the 12 young informants are variable in their use of the BATH vowel, a much higher proportion than the teen informants. 5 of the 9 have attended St. John's all their academic lives. We shall look at possible reasons for this increased variability in comparison to the teenage informants in the discussion section of this chapter.

5.10 Social factors for the BATH vowel

We now turn our attention to social factors which might impact upon patterns of usage of the BATH vowel. Social and linguistic constraints shall be applied where appropriate in order to establish trends within these data. The social factors that we shall be considering include:

- Ethnicity
- Age
- Social network
- Primary education for teenage informants
- Previous school experience for young informants

5.11 Age and ethnicity as social factors

Throughout this thesis I stress the importance of the impact of the social factors for the variables. We now turn to age and ethnicity as social factors, and their possible consequences for the BATH vowel in this speech community.

5.12 Use of the BATH vowel according to age and ethnicity by individual informants

We now look at the individual informants' use of the BATH vowel according to age and ethnicity.

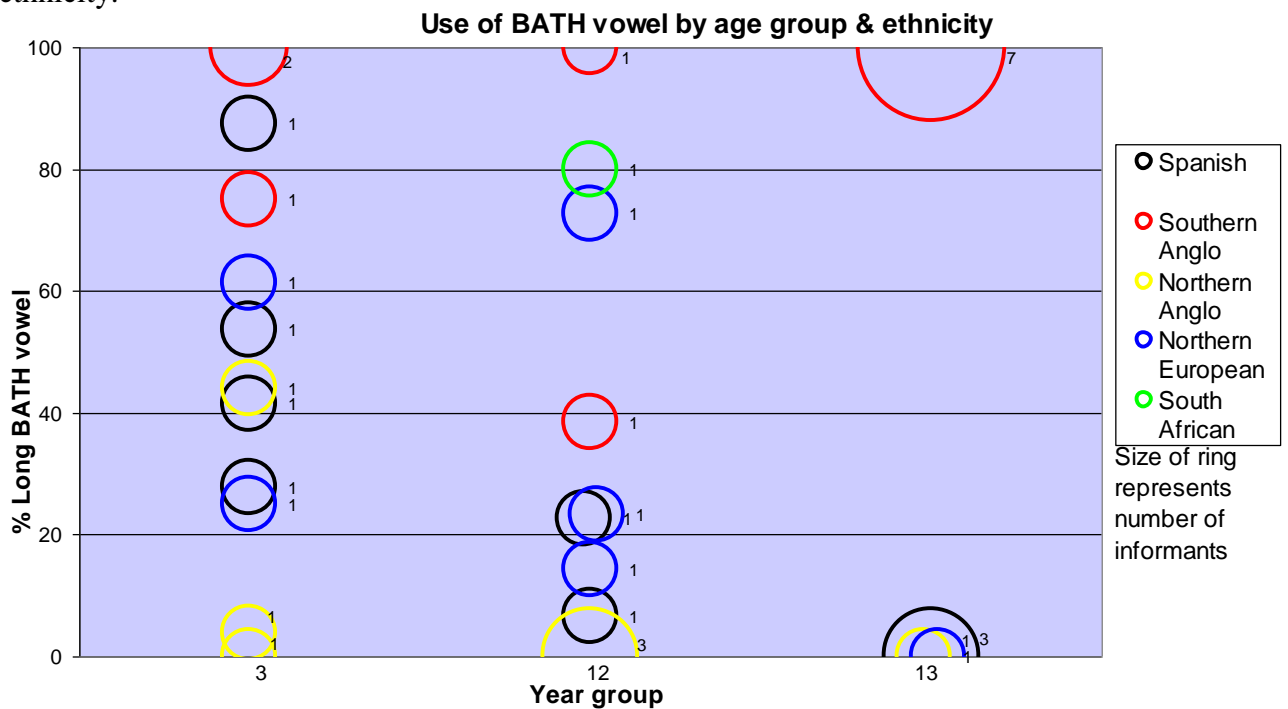


Figure 5.1: Use of BATH vowel by individual informants according to age and ethnicity

We can see at a glance from Figure 5.1 that categoricity of informants' usage of the BATH vowel increases with age. We can see from the chart, as we might expect, that Northern and Southern Anglos are the groups most likely to be categorically short or long vowel users. Teenage Spanish informants all categorically or near categorically use the short vowel. Young Spanish informants are much more variable than Spanish teenage informants. There

seems to be no leaning towards the long or short vowel for the young Spanish informants, percentages of long vowel use range between 28% and 88% for the 4 youngsters. 5 out of the 6 Northern European informants are variable. This is across young and teenage age groups. Only Annette in year 13 categorically uses the short vowel. Apart from Annette, there seems to be no tendency by Northern European informants to favour the long or short vowel. 3 informants favour the short vowel and 2 the long vowel. Adolescent informants of all ethnicities were generally less variable in their use of the BATH vowel than the young informants. The Varbrul binomial run for age, young versus teenagers, showed that age was considerably significant with a significance weighting of 0.002. The Varbrul binomial run with age and ethnicity combined, demonstrated that these were very significant factors for variation of the BATH vowel with $p < 0.001$. (See appendices for Varbrul binomial runs called ‘Binomial run BATH age young and teen’ and ‘Binomial run age and ethnicity’).

5.13 Friendship network as a social factor

The friendship networks of the informants proved to be an important factor for the informants’ use of the BATH vowel. A binomial Varbrul run showed that friendship group was a very significant factor for variation of the BATH vowel with $p < 0.001$. (See appendices for file ‘Binomial run age and friendship network cross-tabulation’). During the extensive fieldwork I undertook at the school, I observed the friendship networks of the informants. I noticed that the kids fell into 3 categories: those that mixed in a solely Anglophone network, and spoke only English in their interactions at school; those that mixed in a solely Spanish network and spoke mostly Spanish in their interactions; those that had a mixed social network, and spoke both languages in their interactions (see 3. Methodological Issues for a fuller discussion of the social networks of the informants).

Figure 5.2 shows the friendship networks of the year 3 children.

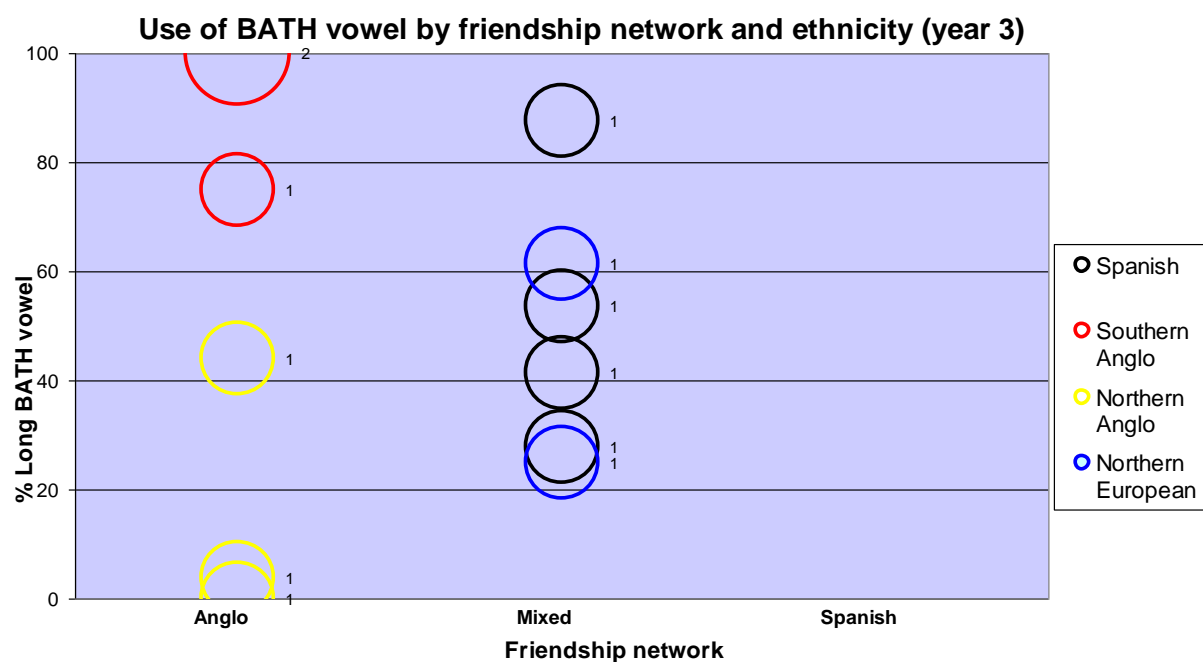


Figure 5.2: BATH vowel according to friendship group by young informants

We can see at a glance from Figure 5.2 that all informants who mix in a mixed friendship network are variable. All young Anglo informants mix in a solely Anglo network. They are the only ethnic group to cluster into their own ethnicity group at this age. Young Spanish and Northern European informants have a mixed friendship network at this age. The young Spanish informants all have a mixed friendship network.

We now look at the use of the BATH vowel for teenage informants according to friendship network and ethnicity.

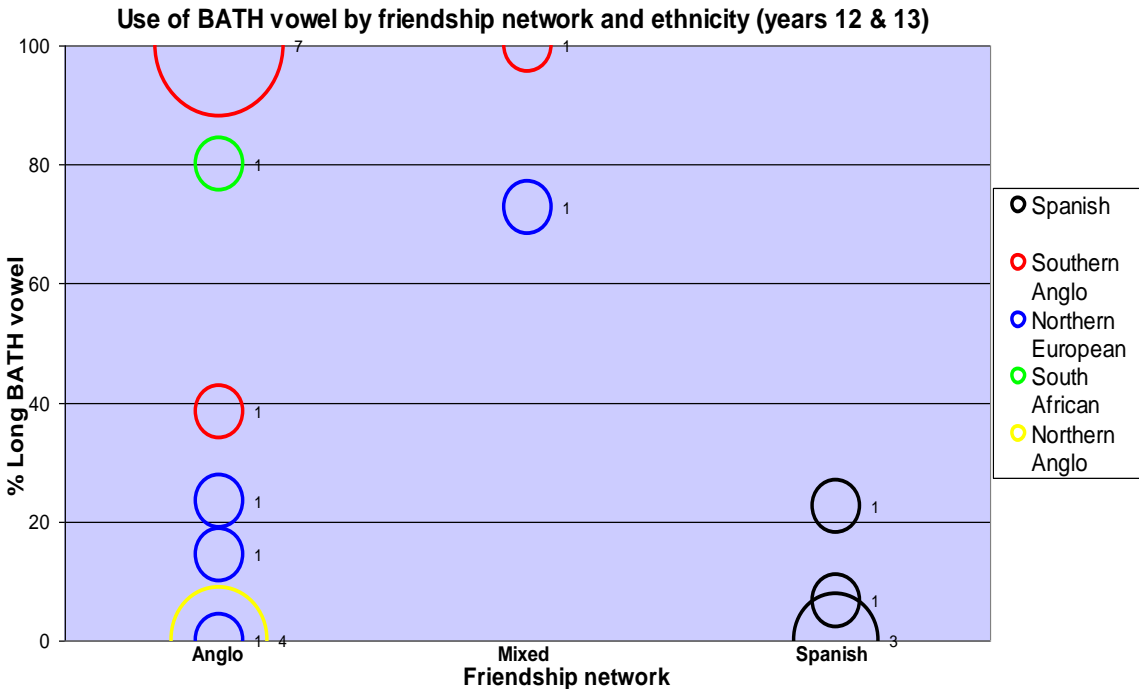


Figure 5.3: BATH vowel according to friendship group by adolescent informants

Figure 5.3 shows year 12 and 13 pupils’ use of the BATH vowel. The chart demonstrates that those that mix in solely Spanish social network are more likely to use the short vowel categorically or near categorically. The tendency for Anglophone informants to cluster in their own ethnicity group that we saw with the young informants is also prevalent with the adolescents. Only one bilingual Anglo adolescent has a mixed friendship network. At this age, the Northern European informants are likely to mix with the Anglo informants. Only Sam, the German boy who speaks Spanish very well socialises in a mixed friendship network. Adolescent informants of all ethnicities are more likely to cluster into distinct ethnicity social networks rather than mixed networks than the young informants. The Varbrul binomial run on age and friendship network demonstrates that friendship network is a very

significant for variation with $p < 0.001$. This run is in the appendices and is called ‘Binomial run age and friendship network’.

5.14 School experience as a social factor

5.14.1 The young informants

I was interested to find out if there may be some correlation between the types of early school experience that the children had had and their use of the BATH vowel. I explored school experience as a social constraint to discover if it might have an impact upon variation of the BATH vowel in this speech community. We shall begin by looking at the young informants’ patterns of usage of the BATH according to their school experience. It was decided to split the young children into three categories, those that had had some school experience in England, those that had spent their whole academic life at St. John’s and those who had spent time at other schools, usually where the language of instruction was not English. Figure 5.4 represents this information.

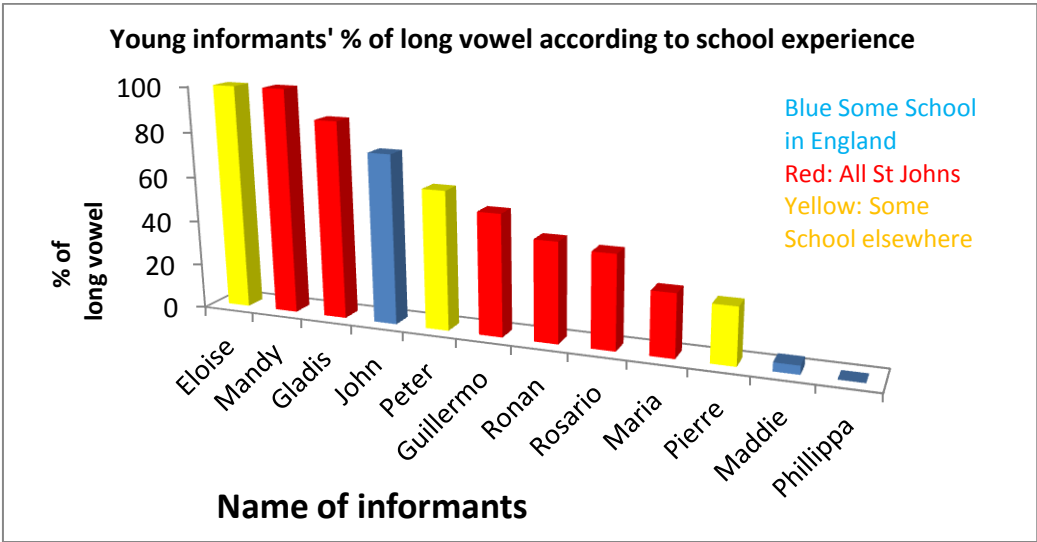


Figure 5.4: Young informants’ use of long vowel according to school experience

As we can see in Figure 5.4, John, Maddie and Philippa are the only children who have had some school experience in England. John is variable which we might expect with his West

Country background (see Piercy 2010). Maddie from Middlesbrough is almost categorically a short vowel user, only using 1 long vowel in the token ‘Master’ (see Beal 1985). Philippa from Cheshire categorically uses the short vowel. The only 2 other young informants who are not variable in their use of the BATH vowel are Mandy and Eloise. Both of them mix in solely Anglo networks. We shall discuss below whether this might have some impact. None of the other variable informants apart from Maddie and John have ever had any primary school experience in England. Eloise, Peter and Pierre have all had some schooling in a setting where the language of instruction is not English. Peter and Pierre are variable in their use of the BATH vowel compared to Eloise who categorically uses the long vowel. As I mentioned in the Methodological Issues section, Eloise spent a year and a half in school in France aged 6-7 years and is bilingual. British English and French are spoken at home. Peter and Pierre differ in that they have spent longer in a school setting in a different language, and neither of them are fully competent speakers of English yet. English is not spoken in the homes of either of these boys.

5.14.2: The teen informants

We now turn our attention to the patterns of usage of the BATH vowel for the teenage informants according to their school experience. Figure 5.5 shows this information.

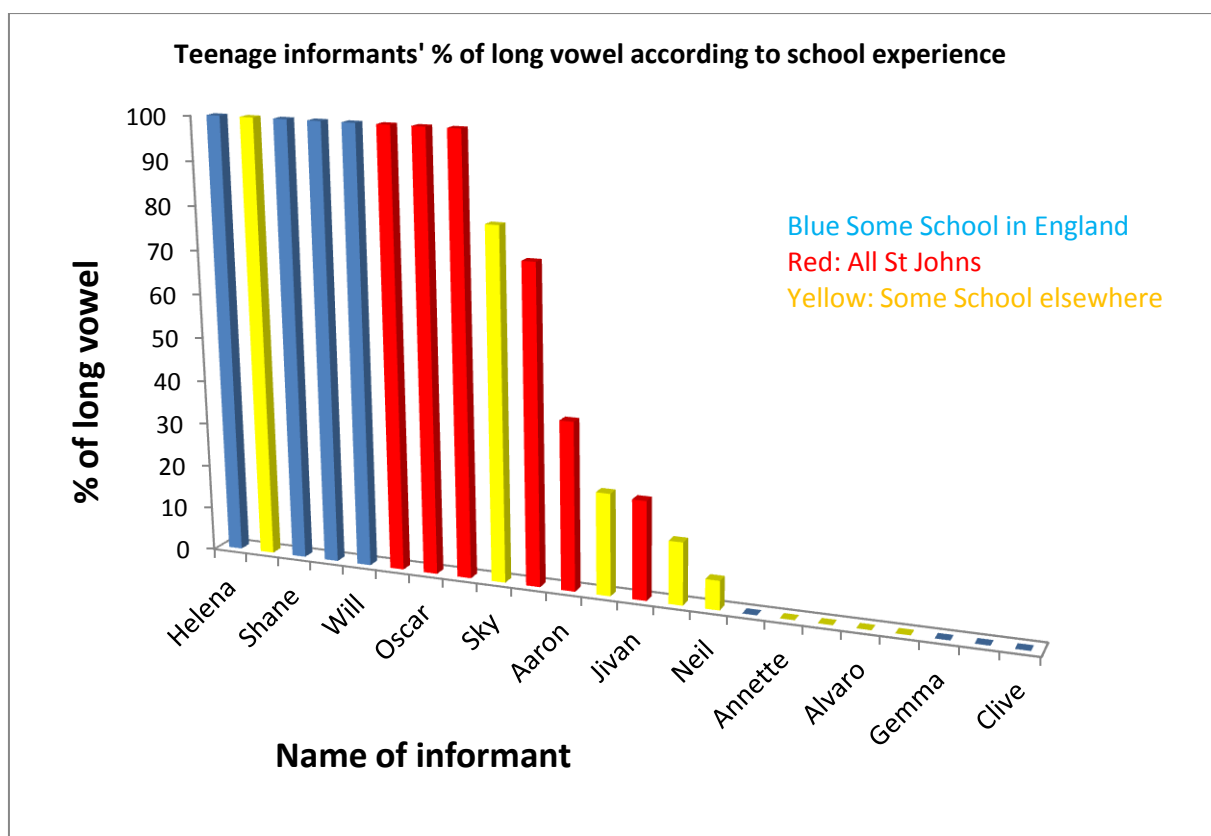


Figure 5.5: Teenage informants' use of long vowel according to school experience

As we can see from the chart in Figure 5.5, all the teenage informants who have had some schooling in England use categorically long or short BATH vowels. All informants who have had a primary education in a language other than English categorically use the short vowel or are variable, other than Gina, who is bilingual English and Spanish. Of the 4 Anglo informants who have had an English primary education in Spain, only 1 is variable, Aaron. Michael, Oscar and Lisa all use 100% long vowels. The 2 Non-Anglo informants, Michael and Sam, who have been at St. John's all their academic life are both variable in their use of the BATH vowel .

To summarise, the social constraints that I have explored for a possible correlation with variation are ethnicity, age, social network, type of primary education and previous school experience.

5.15 The Linguistic Constraints

The results section thus far has concentrated on the impact of social factors for the BATH vowel. I was interested to explore whether linguistic constraints had an impact upon variation in this speech community. I was also interested to see if the patterns of usage used by the different ethnic groups displayed similarities or differences to each other. In addition to this, despite the fact that most of the previous research mentioned in this chapter is very different in terms of both location and cultural context, it was of theoretical interest to examine if any similarities from this study existed. We now turn to the implications of the linguistic factors for the BATH vowel. The linguistic constraints explored here are as follows:

- Distribution of long and short vowel according to preceding phonological segment.
- Distribution of long and short vowel according to following phonological segment.
- Distribution of long and short vowel according to lexical item.

5.15 a: Preceding phonological environment

The figures in Table 5.6 represent the grouped data for all variable informants only for their use of the long or short BATH vowel depending on the preceding phonological environment.

Table 5.6: Use of long and short vowel by variable informants according to preceding phonological environment

Preceding environment	Number of tokens	Number of long vowel tokens	Number of short vowel tokens	% Long Vowel	Varbrul Factor Weightings
[v]	3	3	0	100%	Knockout
[fr]	5	2	3	60%	0.592
[b]	33	19	14	58%	0.667
[p]	33	18	15	55%	0.667
[d]	13	7	6	54%	0.670
[st]	2	1	1	50%	0.592
[pl]	41	18	23	44%	0.497
[gr]	18	8	10	44%	0.659
[f]	7	3	4	43%	0.521
[r]	31	12	19	39%	0.433
[k]	36	8	23	39%	0.480
0	64	25	39	39%	0.495
[gl]	24	9	15	38%	0.501
[l]	55	21	34	36%	0.487
[m]	17	5	12	29%	0.397
[kl]	31	8	23	26%	0.345
[z]	15	2	13	13%	0.182

As shown in the Table 5.6, the preceding segments that were most likely to produce the long vowel were [v], [fr] and [b]. The word *bath* made up a third of the words with the preceding segment [b] for variable informants only. As indicated in the following phonological environment section, the Varbrul factor weighting tells us that words with a following [θ] were considerably likely to be realised with a long vowel. Therefore, it is unclear whether the preceding or following environment is the relevant factor in [b] as a preceding segment favouring the long vowel.

Words with the preceding segments [m], [kl], and [z] were more likely to be realised with the short vowel. The Varbrul factor weightings tell us that these words disfavoured the long

vowel somewhat. All the words with preceding [kl] were *class*, *classes* or *class work*. All tokens with preceding [m], apart from one token *master*, were the word *mask* in this section of the data. We see below in table 5.7 that words with a following [sk] were more likely to be realised with the short vowel. Therefore, it may be that the following phonological environment that is the relevant factor for these words favouring the short vowel. The Varbrul binomial run showed that preceding environment for variable informants was very significant with $p < 0.001$. (See the appendices for the file called ‘Binomial run variable informants preceding environment’).

5.15 b: Following Phonological Environment

The figures in Table 5.7 represent combined variable informants’ use of the long and short vowel.

Table 5.7: Use of long and short vowel by variable informants according to following phonological environment

Following environment	Number of tokens	Number of long vowel tokens	Number of short vowel tokens	% Long Vowel	Varbrul factor weighting
[θ]	33	23	10	70%	0.781
[nt]	28	17	11	61%	0.706
[ns]	26	15	11	58%	0.679
[f]	80	43	37	54%	0.643
[s]	119	44	75	37%	0.477
[st]	60	18	42	30%	0.399
[sk]	52	12	40	23%	0.318
[m]	15	2	13	13%	0.193
[z]	16	1	15	6%	0.094

The Varbrul factor weightings in table 5.7 show that the following environments [θ] and [nt] favour the long vowel. [ns] and [f] also favoured the long vowel to some extent with Varbrul factor weightings of 0.679 and 0.643 respectively.

As we can see, the following environments [st], [sk] [m] and [z] all favour the short vowel.

The only token with the following environment of [z] was *raspberry*. This token was only present in the young children's data, as it was part of one of the games (see appendices for BATH games). The Varbrul binomial run showed that following environment for variable informants was very significant with $p < 0.001$. (See the appendices for the file called 'Binomial run variable informants preceding environment').

5.16 Preceding phonological environment according to ethnic group

We now turn to the different ethnic groups' patterns of usage for the BATH vowel according to preceding and following phonological environment.

Table 5.8: Preceding environment for Spanish informants

Preceding environment	Total number of tokens	Number of long vowel tokens	Number of short vowel tokens	% of long vowel	Varbrul factor weightings
[gr]	7	5	2	71%	0.827
[b]	16	11	5	69%	0.808
[d]	5	3	2	60%	0.827
[pl]	21	11	10	52%	0.678
[r]	12	6	6	50%	0.656
[p]	18	8	10	44%	0.589
0	29	11	18	38%	0.585
[gl]	16	5	11	31%	0.465
[m]	7	2	5	29%	0.433
[fr]	4	1	3	25%	0.389
[l]	22	5	17	23%	0.360
[f]	6	1	5	17%	0.277
[kl]	25	4	21	16%	0.313
[z]	2	13	15	13%	0.228
[k]	20	2	18	10%	0.242

Table 5.9: Preceding environment for Northern European informants

Preceding environment	Total number of tokens	Number of long vowel tokens	Number of short vowel tokens	% of long vowel	Varbrul factor weightings
[b]	6	5	1	83%	0.902
[pl]	7	5	2	71%	0.758
[f]	3	2	1	67%	0.629
[r]	6	3	3	60%	0.652
[gl]	5	3	2	50%	0.738
[p]	11	5	6	46%	0.492
[l]	20	8	12	40%	0.534
[gr]	8	2	6	25%	0.379
[kl]	8	2	6	20%	0.302
0	22	4	18	18%	0.316
[tʃ]	1	0	1	0%	Knockout
[d]	2	0	2	0%	Knockout
[st]	1	0	1	0%	Knockout
[k]	3	0	3	0%	Knockout
[fr]	1	0	1	0%	Knockout
[m]	3	0	3	0%	Knockout

There are similarities from these 2 ethnic groups in that the preceding environments [b] and [pl] promote the long vowel. For both groups, BATH words with the preceding environments [m], [fr], [k] and [kl] are most likely to be realised with the short vowel. The Varbrul binomial runs showed that preceding environment for Spanish informants was very significant with $p < 0.001$. In contrast, preceding environment for Northern European informants was not significant with a significance weighting of 0.846. (See the appendices for the files called ‘Binomial run Spanish preceding environment’ and ‘Binomial run NE preceding environment’).

Table 5.10: Following environment Spanish informants

Following environment	Total number Of tokens	Number of long vowel tokens	Number of short vowel tokens	% of long vowel	Varbrul factor weightings
[θ]	15	14	1	93%	0.891
[nt]	16	11	5	69%	0.794
[f]	28	18	10	64%	0.770
[ns]	13	6	7	46%	0.750
[sk]	26	6	20	23%	0.345
[s]	73	17	56	23%	0.373
[m]	15	2	13	13%	0.213
[st]	30	3	27	10%	0.207
[z]	7	0	7	0%	Knockout

Table 5.11: Following environment Northern European informants

Following environment	Total number Of tokens	Number long vowel tokens	Number short vowel tokens	% of long vowel	Varbrul factor weightings
[nt]	5	5	0	100%	Knockout
[θ]	7	4	3	57%	0.706
[s]	30	13	17	43%	0.565
[st]	21	9	12	43%	0.513
[f]	23	8	15	35%	0.511
[sk]	14	3	11	21%	0.253
[z]	2	0	2	0%	Knockout
[ns]	5	0	5	0%	Knockout

Table 5.10 and Table 5.11 show some similarities in the patterns of usage by Spanish and Northern European informants of the BATH vowel according to following phonological environment. In both cases, following [nt] and [θ] favour the long vowel. For Spanish informants, following [f] and [ns] were also somewhat likely to be realised with a long vowel. For both groups, the Varbrul factor weightings show that words with following [sk] were somewhat likely to be realised with a short vowel, and that [z] was categorically short for both groups. The Varbrul binomial run showed that following environment for Spanish

informants was very significant with $p < 0.001$. However, the Varbrul binomial run for Northern European informants proved not to be significant, with a significance weighting of 0.221. (See the appendices for the file called ‘Binomial run variable Spanish following environment’ and ‘Binomial run Northern European informants following environment’).

5.17 Lexical tendencies

We now turn to the lexical tendencies of the grouped variable informants of all age and ethnic groups.

Table 5.12 Lexical tendencies for variable informants only

Word	% Long vowel	Number of long vowel tokens	Number of short vowel tokens	Total number of tokens	Varbrul factor weighting
Bath/bathroom	92%	12	1	13	0.930
Giraffe	79%	11	3	14	0.811
Plant	68%	15	7	22	0.728
Answer/answered	67%	2	1	3	0.932
Path	61%	11	7	18	0.520
Pass/passing/passed/passport	55%	6	5	11	0.821
Dance/dancing	54%	7	4	11	0.596
After/afterwards	54%	21	18	39	0.652
Laugh/laughing	50%	11	11	22	0.614
Grass	44%	7	9	16	0.438
Basket/basketball	44%	7	9	16	0.434
Fast/faster	43%	3	4	7	0.839
France	40%	2	3	5	0.328
Glass/glasses	36%	8	14	18	0.535
Castle/sandcastle	33%	12	22	34	0.262
Past	33%	1	2	3	0.738
Last	30%	10	23	33	0.579
Class/classes/classwork	30%	8	19	27	0.443
Mask	27%	4	11	15	0.118
Plaster	19%	3	12	15	0.098
Example/examples	13%	2	13	15	0.753
Raspberry	7%	1	13	14	0.018
Ask/asked/asking	6%	1	17	18	0.309

The Varbrul weight of significance shows that lexical item was a very significant factor for variation of the BATH vowel with $p < 0.001$. As table 5.12 shows, certain words favour or disfavour the long or short vowel. *Giraffe* and *bath* favour the long vowel considerably. *Plant* and *answer* also favour the long vowel. The word *raspberry* was almost consistently realised with the short vowel, as were the words *ask*, *asked* and *asking*. The words *example*, *plaster*, *mask*, *class* and *last* also favour the short vowel.

5.18 More linguistic constraints

I attempted to find a correlation between some different linguistic constraints and variation. No significant patterns or findings from any of these cross-tabulations were found. I categorised words into preceding cluster and preceding non-cluster words. I also divided the BATH words into the categories of pre-fricative and pre-nasal (Wells 1982 claims that pre-fricative lengthening gave rise to the TRAP-BATH split. Therefore, we would expect the long vowel more in pre-fricative environments than pre-nasal environments). I also categorised words into those that had /s/ and /z/ cluster as a following segment compared with those that had all other following segments.

I gave a high, medium and low frequency score to BATH words, depending upon how often they occurred in the teenage data. I also divided all the BATH words from these data into words of 1, 2 and 3 syllables. These categorisations failed to produce any strong results. Therefore, they were omitted.

5.19 Summary of the findings

I shall now give a brief summary of the results before we look at them in more detail in the discussion section below.

- Age was a considerably significant factor for variation. Young informants were more likely to be variable than teenage informants.
- Friendship network was a very significant factor variation. Informants in mixed friendship networks were more likely to be variable. Those who mixed in solely Anglo or Spanish networks were more likely to be categorically or near categorically long or short vowel users.
- Age and ethnicity were very significant factors for variation. Teenage Spanish informants were considerably likely to use the short vowel. Young Spanish informants were much more variable. Young informants of all ethnic groups were more likely to be variable than their teen counterparts.
- Informants who have had some schooling in England were more likely to categorically use the long or short vowel.
- All Non-Anglo informants who have had some primary education in a language other than English categorically use the short vowel or are variable.
- Spanish informants and Northern European informants had similar patterns of usage according to preceding and following phonological environment.
- Preceding and following phonological environment were very significant factors for variation for variable informants.
- Lexical item was a very significant factor for variation. The words *bath*, *giraffe*, *plant* and *answer* were considerably likely to favour the long vowel. The words *mask*, *raspberry* and *ask* were considerably likely to favour the short vowel.

5.20 Discussion

To summarise then, we have considered the use of the BATH vowel in this contact situation and looked at the impact of phonological constraints and social factors upon these data. It is difficult to compare other studies of BATH to this research, in that most previous studies

compare BATH between two dialect varieties. This study specifically looks at the effects of contact for the BATH vowel in this rather unique speech community. In a sense, this chapter has been concerned with tracing evidence of dialect focussing. Other studies of BATH may not be relevant here, due to the rather unique nature of the speech community. For this reason, within this discussion I shall at times refer to studies of other variables.

In this discussion section, I shall concentrate on the most salient outcomes from the analysis which are as follows:

- The results from the BATH vowel analysis suggest that focussing is taking place over time;
- Adolescents who had had some school experience in England were most likely to be categorically long or short vowel users;
- Social networks had an impact: those who mixed in solely Anglo or solely Spanish networks were more likely to be categorically or near categorically long or short vowel users than those who mixed in mixed networks;
- Some preceding or following environments favoured or disfavoured the long or short vowel;
- Lexical item was an important factor for use of the BATH vowel.

5.20.1 Age as a social factor for the BATH vowel

We start with the outcome from these data that young informants were more likely to be variable than teenage informants. The data revealed a considerable difference between young and adolescent speakers of all ethnicities. The 8 year old children showed lots of variability. Some year 12 informants were variable, but the variability was heading more towards categorically long or short BATH vowel use. Year 13, the oldest group of informants, were all 100% categorically long or short vowel users.

As a possible explanation for the high variability of the Spanish youngsters' use of the BATH vowel, we might look to what Chambers (2002: 121 -123) refers to as the "Ethan Experience". (See 2.5.3 for a fuller discussion of the Ethan Experience). This theory hypothesises that children whose parents have a non-local accent, are unaware of the non-local accent. Thus, he suggests that these children filter out the non-local accent, even at pre-school age. If we look at the percentages of long vowel use of the 3 young Spanish informants in table 5.14 below, we see that they all use the long vowel to some extent. English is confined to the domain of the school for these children, all of their parents speak Spanish at home. Some of the parents speak English, but with a strong Spanish accent. We might expect that their parents speak English using the short vowel for BATH words, given that the long vowel is not present in their native language. The results from these data show that Spanish teens were much more likely to use short vowels in BATH words than long vowels.

We might look to the Ethan Experience to explain how all of these children are acquiring the TRAP-BATH split to some extent. Perhaps these children are acquiring the language features of their Anglo peers, and failing to hear the foreign-accent features in their parents' speech.

Table 5.13: Young Spanish informants' use of the long BATH vowel

Name	Percentage of long vowel	Number of tokens
Gladis	88%	32
Guillermo	54%	28
Rosario	41%	29
Maria	28%	47

Another factor that we might consider here, regarding all the young Spanish informants acquiring the TRAP-BATH split to some extent, is Chambers' (1992) proposed critical period

for dialect acquisition (see 2.5.2). Chambers places this critical period somewhere between the ages of 7 and 14, beyond which complex rules and oppositions are rarely acquired as dialect features. These young informants have all been exposed to English at school between 4 and 5 years of age. If we compare this to the 3 year 13 Spanish boys who are all categorical short vowel users, they all had a primary education in a language other than English. Therefore, perhaps they had passed the critical period to acquire this complex split by the time they came to the international school.

5.20.2 Social network as a social factor for the BATH vowel

We now consider the finding from these data that informants in mixed networks were more likely to be variable. The results from these data showed that those who mixed in solely Anglo or Spanish networks were more likely to be categorically or near categorically long or short vowel users. Previous research demonstrates that there is a correlation between speakers' social networks and linguistic variation (see Milroy and Milroy 1978; Milroy 1980; Labov 1972; Cheshire 1982; Eckert 2000). It is apparent in this study, that there may be some correlation between the informants' social networks and variation of the variable under examination. The results of the present study suggest that for the young informants, speakers in a mixed ethnicity friendship group were more likely to be variable in their use of the BATH vowel. Young speakers who mixed in solely Anglophone networks were less likely to be variable. The teen speakers were less likely to mix in mixed networks than the young informants, and more likely to mix in solely Anglophone or solely Spanish networks. It may be that this factor inhibited variability of the BATH vowel. For example, Spanish informants who mixed only with other Spanish informants may not have been exposed enough to the long vowel to acquire the split to any extent. Thus, contact may have not been great enough for Spanish informants to even be aware of the split.

Previous studies have found that ethnicity may be overridden by friendship group in terms of linguistic variation. Fox (2007: 191-8), in her study of adolescents in Tower Hamlets which has a predominantly Bangladeshi population, found that Anglos who had the most social interaction with the Bangladeshi boys showed evidence of adopting variants used by their Bangladeshi peers. An example of this from her study is the informants' use of the FACE variant [eɪ]. This variant was, according to Fox, at the time of the study, not a traditional "Cockney" variant. The highest users of this variant were the older Bangladeshi boys. The girls in Fox's sample did not mix with the Bangladeshi boys at all. The analysis showed that the girls did not use this variant. However, the mixed race and white boys all used this variant, with some speakers using it between 31-45% of the time. Fox claims that given that [eɪ] is not a traditional "Cockney" variant, it is "perhaps surprising to find such widespread use amongst the white boys" (Fox 2007: 194). She concludes that it is therefore likely that friendship groups may play a key role in the spread of new linguistic forms.

To demonstrate the point that social network may have had some impact upon acquisition of the TRAP-BATH split in the present study, we turn to tables 5.14, 5.15 and 5.16.

Table 5.14: Year 13 Spanish Boys

Name	Percentage of long vowel	Number of tokens
Jason	0%	14
Isaac	0%	6
Álvaro	0%	6

Table 5.15: Year 12 Spanish Boys

Name	Percentage of long vowel	Number of tokens
Neil	7%	30
Jivan	23%	31

Table 5.16: Year 12 Northern European informants

Name	Percentage of long vowel	Number of tokens
Sam	73%	11
Trude	23%	43
Nick	14%	7

Table 5.14 shows that the 3 year 13 Spanish boys are all categorical short vowel users. Table 5.15 shows that the 2 year 12 Spanish boys use the long vowel to some extent, albeit infrequently. The 3 Northern Europeans have also acquired the split to some extent, as demonstrated in 5.16. We see here then, that increased levels of contact with friends of different ethnic groups may be a contributory factor as to whether informants are acquiring the TRAP-BATH split at all. As discussed in 3. Methodological Issues, Isaac, Jason and Álvaro mix very little with Anglos or any other ethnic group, preferring to stay in their own friendship group, speaking Spanish at all times other than in class. Neil and Jivan, the two year 12 Spanish boys, have greater levels of contact with Anglos and other ethnic groups. As we can see, they both use the long vowel to some extent, albeit infrequently. Sam, Trude and Nick, the year 12 Northern European informants, all mix with other ethnic groups, Trude and Nick mix mainly with the Anglos. Sam mixes mainly with the year 12 Spanish boys, but also mixes with the Anglos. All three informants use the long vowel to some extent. Sam has the highest amount of long vowel usage, with 73%. It may be plausible to suggest that Sam, with his levels of contact with other ethnic groups including Anglos over time, has acquired the TRAP-BATH split quite successfully. The fact that Sam has been at the school all his academic life may also be a factor for his level of success in the acquisition of the split. In contrast, Trude and Nick both had a primary education in a language other than English. Sam's early exposure to English, in comparison to Nick and Trude, who had comparatively late exposure, may explain why he has acquired the TRAP-BATH split to a greater extent. We turn now, to a discussion of type of education as a factor for variation in 5.20.3.

5.20.3 Type of education as a factor for the BATH vowel

We shall now turn to the finding that informants who have had some schooling in England are more likely to categorically use the long or short vowel, and all Non-Anglo informants who have had some primary education in a language other than English categorically use the short vowel or are variable. We might presume, as most of the teenage Anglos who have had some schooling in England have been in Spain approximately 5 years (and therefore spent all or most of their primary education in England), that they have arrived in Spain with their dialects intact. We turn our attention once again to Chambers' (1992) critical period for dialect acquisition. Using a study by Sibata (1958) as an example for this critical period, Chambers claims "A person seven or under will almost certainly acquire a new dialect perfectly, and a person 14 or over almost certainly will not. In between those ages, people will vary" (Chambers 1992: 689).

We might assume then, that because most of the Anglo kids who have had some schooling in England spent most or all of their primary education there until the age of 11, that they have passed the critical period for dialect acquisition that Chambers talks about, and so little or no changes take place in the new speech community for BATH. However, as we know, in the UK the BATH vowel is notoriously "stubborn". The dialectal boundary or isogloss that runs through the middle of England has remained remarkably stable for over two hundred years. In contrast to this, recent research of consonantal features has revealed rapid and widespread accent change in the UK (see Foulkes and Docherty 1999). According to Stuart-Smith (2007: 222) 'Consonantal systems in particular are showing changes which together have been described as 'homogenization' ... such that resulting systems across dialects appear to be more similar'. My point here, is that the critical period can't apply to all variables because of

the nature of the behaviour of different variables. It is impossible to put a specific age upon ability to acquire specific variables, as they are all very different. We know that the TRAP-BATH split is complex, and that the BATH vowel is "stubborn". Therefore, it may be useful for this variable to talk about the critical period. But that is not to say that it would apply to other variables, which may well be less difficult to acquire.

In reference to the earlier point regarding the Non-Anglo informants, i.e. those who have had a primary education in a language other than English are more likely to be categorical or near categorical short vowel users, it would be difficult to postulate reasons for this. One might hypothesise that lack of exposure to the TRAP-BATH split at an early age has led to less successful acquisition of the contrast. However, one must keep returning to the point that there is an absence of a dialectal norm here, in that the school has pupils and staff from long and short /a/ locations. Therefore, even if these Non-Anglo informants had been in the school all their academic life, the outcomes may be the same.

The only 2 Non-Anglo informants who have had an English education in the international school since starting school are Jivan and Sam. Sam, the German boy, in contrast to the other Northern European teenage informants who all favour the short vowel, uses the long vowel 73% per cent of the time. However, one cannot assume that early exposure in Spain to the phonemic split increases usage of the long vowel, or more variation. Jivan, the Spanish boy who has spent all his academic life at the international school, follows the trend of all the other Spanish teen informants, favouring the short vowel with just 23% long vowel. It is impossible to say here, with any certainty, whether ethnicity *or* early exposure to English contribute to acquiring or not acquiring the TRAP-BATH split.

5.20.4 Phonological constraints as a factor for the BATH vowel

Returning to the outcomes from these data regarding phonological constraints, we must consider lexical variation and not presume that it is necessarily the preceding or following environment which is instrumental in favouring or disfavouring the long or short vowel. For example, the word *bath* was realised with a long vowel by 92% of variable informants. This gives [b] as a preceding environment and [θ] as a following environment a strong pattern for favouring the long vowel. (I believe the pattern for preceding [b] is less strong than the pattern for following environment [θ] due to words such as *basket* and *basketball* which favoured the short vowel). Britain (2001) found that his informants showed lexical variation, but individual speakers used the [a] or [a:] consistently for the same words. This is in contrast to my findings. Several informants fluctuated with the long or short vowel for the same word. Variation within the same word was found in the data of both Anglo and Non-Anglo informants in this research. Sudbury (2004) also found this in her Falkland Island English study, suggesting the use of BATH there is not yet stable. She claims that in FIE “Overall, the front variant is the most frequent realisation. Some speakers use a short TRAP-like vowel [a -æ] in certain BATH words. However, the distribution of short vowels in the BATH set follows no clearly distinguishable tendencies in FIE, with several speakers using both short and long realisations for the same word.” (Sudbury 2004: 411).

Piercy (2010) also found this phenomenon in Dorset where BATH is not stable, as did Smith (2003) in her Birmingham study. It might be reasonable to assume then, that where there is absence of a stable norm for BATH, such as in the setting of the present research and in the aforementioned locations here, we should expect to find variation of long and short vowels within the same word. In the case of post-colonial varieties, we might assume that this

variation is a stage towards eventual focussing. "It may be the case that in the Falklands the levelling process for BATH length and quality is still incomplete, in comparison with NZE which has fully focussed." (Sudbury 2004: 411). However, in my speech community, with all the mitigating factors such as turbulence and fluidity coupled with different language inputs as well as dialects, it is doubtful that a dialectal norm would eventually develop.

The strongest results for BATH when phonological constraints were explored for a correlation with variation, were that the following phonological environments [nt] and [θ] promoted the long vowel and that following [st], [sk], [m] [z] and [kl] promoted the short vowel. These findings were consistent across all ethnic groups. Preston (1991: 36) claims that phonological constraints override stylistic and social constraints. He refers to the *status axiom*, claiming that "Variation on the "status" dimension derives from and echoes the variation which exists within the "linguistic" dimension. The Status Axiom looks beyond the performance characteristics of audience (or other factors) which determine the uses speakers make of the social dimension in symbolizing their degree of formality.... The Status Axiom claims that the usual source of the status dimension's variability is the variation space made available by the surrounding linguistic contexts". As mentioned earlier, BATH behaves very differently to some other variables. It may be that for the BATH vowel, phonological constraints are the most important factor for variation, given the similarities of results across the different ethnic groups. Preston (1991: 53) concludes in his paper "Whatever the psycholinguistic reality of variation, the considerable number of empirical studies reviewed here suggests a primacy of linguistic features in variation studies, and that should hardly be surprising. However influencing non linguistic variables may be, they have, after all, only the linguistic substance on which to work their way if their impact is of importance to linguists".

5.21 Conclusions

To summarise, I have compared my findings of the use of the BATH vowel in this speech community to those of other authors here where possible. It is apparent that there are some similarities to other studies, and that the BATH vowel is not immune to patterning when certain constraints are explored. However, as previous research on lexical diffusion of this variable has shown, patterns are irregular and often slight. Due to the nature of the BATH vowel being lexicalised rather than rule governed (see Chambers 1992), it is perhaps to be expected that when one does apply constraints to BATH within such a turbulent and fluid speech community, made up of informants from such differing language and dialect backgrounds, patterns are sometimes irregular or absent.

The strongest factors that showed some correlation with variation were age as a social factor, ethnicity as a social factor, use of the vowel according to friendship group, use of the vowel according to primary education and use of the vowel according to preceding and following phonological environment and lexical item. The results suggested that focusing of the BATH vowel increased with age.

For future research, it would be interesting to return to the field and record the young informants again. A new collection of data from them, with a varied selection of BATH tokens would reveal if, with age, the young informants are moving towards categoricity like many of the teenage sample.

