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Abstract

This paper examines the phonemic status of the vowels in the lexical sets of TRAP, BATH, PALM and START in the English of the southwest of England. In the reference accent RP there are two phonemes; a short front vowel in TRAP and a long back vowel in BATH, START and PALM. In the southwest of England however, some have previously described this contrast as “absent or variable” or “doubtful” (Wells 1982, Hughes, Trudgill and Watt 2005) while others consider there to be a two phoneme system, akin to RP, but differing phonetically (Wakelin 1986). This paper elucidates the status of these vowels using sociolinguistic interview data from 40 speakers in four age groups from locations across Dorset, a representative dialect of the southwest of England.

An acoustic analysis of the quality and crucially the length of 3800 vowel tokens reveals that a phonemic split is in progress in apparent time with one phoneme becoming two. The split and subsequent phonetic changes are occurring in a non-uniform way: the backing of the ‘BATH lexical set’ appears to be proceeding via lexical diffusion whereas the backing of START, appears to be a regular ‘neogrammarian’ sound change. The analysis also revealed that the ‘short /a/’ phoneme could be realised long before many following environments. Common environments and constraints on lengthened /a/ cross-dialectally, for example, the shared preference for a lengthened /a/ in closed syllables raise the possibility that the tensing and raising of short a in New York City English (Labov 1994, Trager 1940) and Philadelphia English (Ferguson 1972) and the occurrence of lengthened /a/ in Australia (Blake 1985) may have their origins in the southwest of England.

One /a/ or Two?: Observing a Phonemic Split in Progress in the Southwest of England

Caroline Piercy*

1 Introduction

While the distinct status of /a/ (TRAP) and /ɑ:/ (BATH) is not in doubt in the standard accents of England or in those of the heavily populated southeast, and while the North of England does not make such a distinction at all, the status of these vowels in the southwest is very much disputed. In their introductory volume on English accents and dialects, Hughes, Trudgill, and Watt (2005:62) describe the “/a~/ɑ:/ contrast [as] absent or in doubt” for the whole southwest region. Wells (1982: 345), too, writes that in the West Country counties “the phonemic contrast relating to RP /æ~/ɑ:/ is absent or variable,” adding that “this is a matter that has by no means been properly investigated.” This view is confirmed by Peter Trudgill (pers. comm.), who studied a speaker from Bath, a city in the southwest, and found allophonic variation but no phonemic contrast in /æ~/ɑ:/, making *lager* and *lagger* homophones. This is also the view of Kurath and Lowman (1970:19), who write that “in areas where post-vocalic /r/ is preserved,” i.e., the south-western counties, variants of ME /a/ are “positional allophones” and therefore do not have a separate phonemic status. However, compare Wakelin (1986:26), who writes, “I understand this [long-a] as a separate phoneme differentiated by length (and sometimes also by quality) from short /a/.” These quotes serve to illustrate that the status of these phonemes in the southwest is unclear and that an investigation of the relevant vowels in a representative southwest variety will help to elucidate the situation. Applying both auditory and acoustic analysis, it is the ambiguous status of this distinction in the southwest that I explore in this paper: Is there one /a/ or two?

2 The Variable Context

The realization and organization of the phoneme /a/, the variable under analysis in this paper, varies depending on the dialect of English that is being examined. In (1–5) below, the changes that have taken place in southeast England and are present in the reference accent Received Pronunciation (RP) are described to provide the background for the subsequent analyses, with a summary of the distribution of /a/ in other dialects of English given in Table 1 below.

The most common development of Middle English (ME) short ‘a’ is the present day phoneme of /a/; the vowel of the TRAP¹ lexical set. This is most commonly realized as a short front vowel. A second lengthened, and later backed, phoneme, /ɑ:/, “is an innovation of the 17th and 18th centuries” (Beal 1999:105). Although space precludes a discussion of the nuances of this split, the five main sources of this new lengthened phoneme are described briefly below.

- (1) Lengthening and backing of ME /a/ before /r/ followed later by the loss of rhoticity in some dialects e.g., *bar*, *market*, *cart*; the START lexical set.
- (2) The TRAP/BATH split. This occurred in the south of England only in two main phonological environments. First, ME /a/ before the voiceless fricatives /s f θ/ often became lengthened e.g., *grass*, *staff*, *bath*; the BATH (a) lexical set. Secondly, ME /a/ (from the earlier French /au/) often became lengthened in consonant clusters consisting initially of the nasals /n/ or /m/ e.g., *dance*, *example*; the BATH (b) lexical set. It became apparent that this was a phonemic split and not allophonic variation when vowels in identical phonetic environments were left with different realizations. This persists to the present day: compare *pass*, *grant*, *demand* with [ɑ:] to *gas*, *rant*, *stand* with [a].

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¹Wells’ lexical sets will be used throughout this paper to refer to vowel classes which historically have patterned together; see Wells 1982.

- (3) ME /a/ “before /ð/ followed by either /s/² or syllabic /r/ e.g., *father*; *rather*; *lather*; *paths*” (Beal 2004:139); the BATH (c) lexical set.
- (4) “Monophthongization of earlier /au/ associated with loss of /l/ in words such as *palm*, *half* etc.” (Beal 1999:105); the PALM/BATH (c) lexical set. The distinction between BATH (c) and PALM is relevant only for some dialects, such as those in the north of England that realize BATH as /a/ and PALM as /ɑ:/ (see below).
- (5) In loan words which can be nativized as either /a/ or /ɑ:/, for example, *taco*, *mafia*, *pasta*. In these words there is often both intra- and inter-speaker variability and different nativization strategies dependent on dialect area and attitudinal factors (see Boberg 2009, 1999, Hall-Lew, Coppock, and Starr 2010). Words of this type, therefore, can belong to the lexical sets of TRAP and PALM and are termed by Wells (1982) BATH (').

Table 1 shows the distribution of the phonemes of /a/ among different varieties of English. It can be seen that the other varieties of English in England do make a distinction between /a/ and /ɑ:/. In the southeast, TRAP is realized with a short front vowel and BATH, START and PALM with a long back vowel. In the north of England, TRAP and BATH are realized with a short front vowel since the dialects there have not undergone the changes described in (2) above, the BATH/TRAP split, but despite this the dialects still have the long variant in START and PALM. Given that the rest of England has a distinction between /a/ and /ɑ:/, why is there a question about the status of /a/ in the southwest?

One Phoneme Dialects	
/a/ TRAP, BATH, PALM, START	<i>Scottish English</i> <i>Northern Ireland English</i>
Two Phoneme Dialects	
/a/ TRAP, BATH	<i>Northern England English</i>
/ɑ:/ START, PALM	<i>Welsh English</i>
/a/ TRAP	<i>RP</i>
/ɑ:/ BATH, START, PALM	<i>Southeast England English</i> <i>South African English</i> <i>Australian English</i> <i>New Zealand English</i>
/æ/ TRAP, BATH	<i>General American</i>
/ɑ(:)(r)/ PALM, START	<i>Canadian English</i>
Three Phoneme Dialects	
/æ/ TRAP, BATH	<i>New York City English</i>
/æ/ TRAP, BATH	<i>Philadelphia English</i>
*/ɑ(:)(r)/ PALM, START	

*phonetically identical to the vowel of LOT and CLOTH in some dialects.

Table 1: The distribution of the phonemes of /a/ among different varieties of English.

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:/, as Wells (1982:345) writes, “traditionally short vowels are lengthened in many environments [...] since the vowel of BATH and, in some areas, that of START typically have this same quality [a], any phonemic distinction of the type illustrated by *gas-grass*, *carry-starry* would have to depend on duration alone.” Previous descriptions of the accent of Dorset, where the present study was conducted, e.g., Widén (1949) and Orton and Wakelin (1967), describe lengthened /a/ in normally short TRAP environments.

3 Methodology

²[z]

3.1 Dorset

To investigate the realization of these vowels in the southwest of England, a sample of speakers was drawn from Dorset, a county whose dialect is classified (Trudgill 1999:63) as being part of the southwest modern dialect area. Dorset is a rural county characterized by nucleated villages supported by larger market towns. Therefore an individual location was not chosen from which to draw speakers, but all came from an area that could be defined as encompassing the market towns of Dorchester and Wareham, in the south of the county, and their spheres of influence.

3.2 Procedure

40 speakers were recorded in typical sociolinguistic interviews. All the data examined comes from this conversational speech. Speakers were included in the study if they were born in Dorset and had lived there all their lives. The speakers were stratified by sex and four age groups as follows: ‘teenagers’ comprising speakers aged below 18, ‘young adults’ comprising speakers 18–35, ‘middle adults’ comprising speakers 36–64 and ‘retired adults’ aged above 65.

4 Analysis

4.1 Initial Auditory Analysis

The analysis was comprised of two parts. First, an initial auditory analysis was conducted on words in the BATH lexical set only. These tokens were coded as having either a back or a front realization. A binary approach to coding was undertaken at this stage to separate out speakers who used back tokens for BATH, indicating that they almost certainly realized a contrast in /a/ and /ɑ:/, from those that used /a/, indicating that a contrast was in doubt.

In total there were 1,431 tokens of BATH, giving a mean number per speaker of 36. The range was 12–94. Figure 1 displays the results of this analysis with the percentage of front realizations in BATH shown on the y-axis. The mean value for each age group is shown by a square. It can be seen that there is a decline in overall percentage of front realizations for each subsequent age group. This strongly suggests a change in progress in apparent time from front to back realizations of the /a/ in BATH.

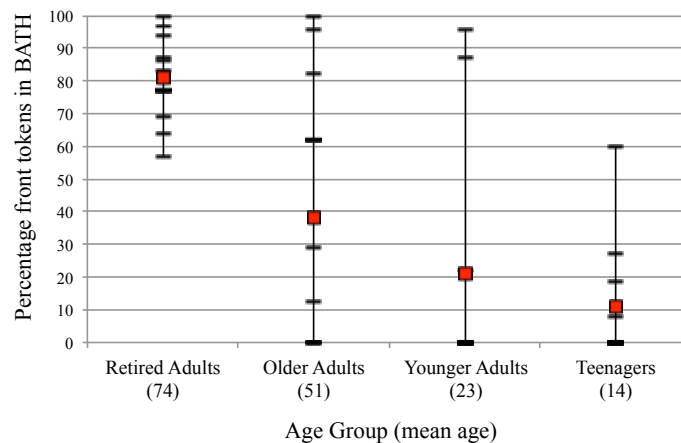


Figure 1: Percentage use of front realizations in words of the BATH lexical set by age group. The square marker shows the mean percentage per age group. The line markers represent the individual speakers. $N = 1431$. From left to right, $N = 385, 480, 367, 199$.

Despite this strong decline in the use of front tokens when viewed by age group, there was actually a substantial amount of variation within each cohort. The large ranges seen in Figure 1 for the individual speakers show this variation. For three age groups, the older adults, middle adults

and teenagers, there were some speakers that used no front tokens in BATH at all. However, despite the overall decline some young adults seemed to go against the trend by using very high percentages of front tokens.

This auditory analysis was complemented with an examination of minimal pairs in the data for each speaker, which revealed that for almost half, 17/40, there was a contrast in /a/ and /ɑ:/. For the remaining 23 speakers further investigation was needed to determine if they too had a contrast. Therefore, an acoustic analysis of the quality and the length of relevant vowels was carried out. However, it is necessary to be cautious when comparing vowel lengths due to the confounding effect of a number of phonetic universals. For instance, the durations of vowels with back realizations are not necessarily comparable to those of vowels with front realizations due to the difference in timing needed to move the jaw and tongue to create a low front vowel. Therefore, only the speakers who had solely or mostly front vowels in BATH were examined by acoustic analysis. This reduces the current sample size to 17 of the 23 remaining speakers.

4.2 Acoustic Analysis of Vowel Quality

The F1 and F2 values of all tokens of BATH and PALM and the first 200 tokens of TRAP and START for each of the 17 speakers were measured. This analysis revealed variation in the realization of the different lexical sets across the speakers and is again strongly suggestive of change in progress in apparent time. Figures 2a–2d show the vowel qualities for four male speakers of different ages chosen as representative of the data as a whole. These figures demonstrate the change in progress. Figure 2a shows the vowels of an 83-year-old male. In this graph it can be seen that the vowel qualities for TRAP, BATH, START and PALM are overlapping. In Figures 2b, 2c and 2d, it can be seen that there are two vowel qualities, one more front than the other. In 2b, a male aged 51, START has backed. In 2c, a male aged 52, PALM has backed along with some BATH tokens. Finally, in 2d, a male aged 15, BATH has backed leaving TRAP separate and BATH, PALM and START merged.

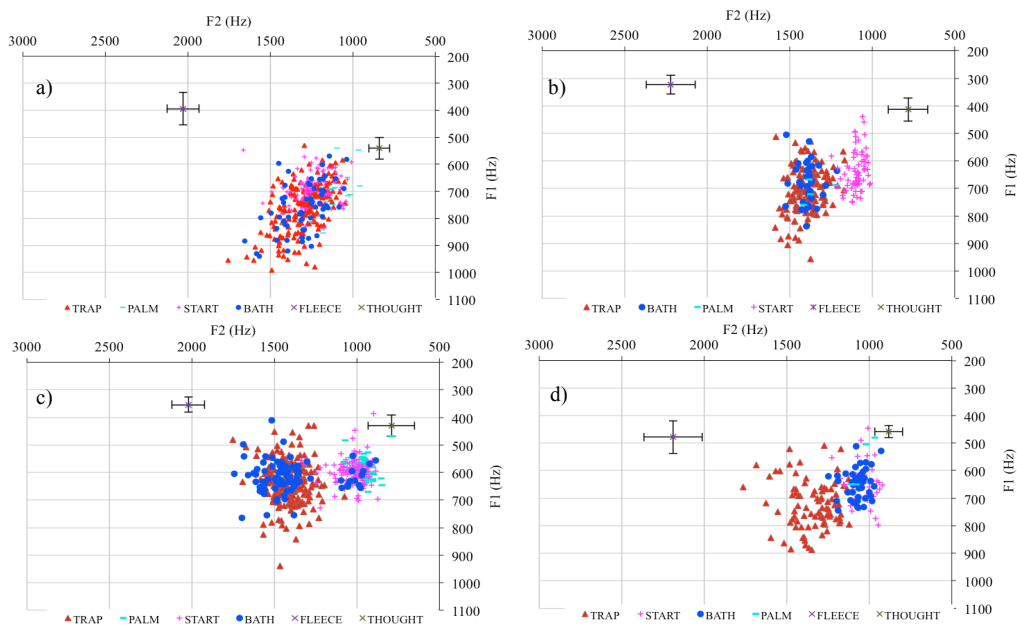


Figure 2: The change in quality of /a/. Each graph represents a different male speaker: a) 83 years old, b) aged 51, c) aged 52, d) aged 15.

Although this series of graphs seems to show a split in progress across apparent time, the formation of /ɑ:/ from /a/ was initially a lengthening process. Therefore, it is crucial to also determine whether the speakers with vowels merged in quality did in fact realize a difference in vowel length.

4.3 Acoustic Analysis of Vowel Length

Raw vowel durations were normalized to account for differences in individual speakers' speech rate to allow both inter- and intra-speaker comparisons to be made. Speech rate was measured in syllables per second by dividing the number of syllables in the intonational phrase (IP) containing the vowel by the duration of that IP in seconds. Each vowel was then normalized for speech rate by multiplying the vowel duration by the speech rate.³

All vowels of TRAP and BATH were classified as being long or short. Whether a vowel was coded as long or short was determined by looking for bimodal Gaussian distributions for each following environment. The coefficient of determination (R^2) was used to determine the best fits for the data. An example of this method can be seen in Figure 3, which shows normalized vowel lengths for /a/ before nasals in the BATH (b) lexical set. In Figure 3 all vowels over 0.8 in length would be classified as being long, whereas all those under 0.8 would be classified as short. These classifications for each following environment were then combined with the acoustic analysis of quality to determine whether speakers realized a contrast in /a/ and /ɑ:/.

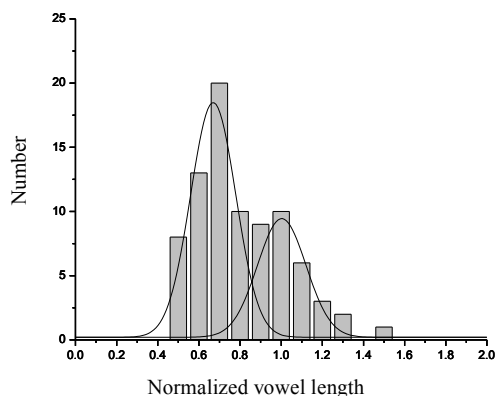


Figure 3: Histogram of normalized vowel lengths in the BATH (b) lexical set showing a bimodal distribution. $R^2 = 0.96799$. $N = 78$.

5 Results

5.1 One /a/ or Two?

In the introduction to this paper a question was raised as to whether speakers in the southwest of England have a contrast in the phonemes /a/ and /ɑ:/. The combined results of the auditory and acoustic analysis of quality and length have revealed that almost all speakers, 35 out of 40, do have a contrast. However, for five speakers there was no contrast in /a/ and /ɑ:/; there were no minimal pairs or distinctions in vowel quality or length across the different following environments and different lexical sets.

Examining the variation across the speakers revealed that five stages of the phonemic split could be established. These are described in Table 2. In summary, it appears that START backing with a later loss in rhoticity leads the change, followed by the backing of BATH and PALM. Looking at these findings across apparent time suggests that a phonemic split is in progress since older speakers are more likely to be placed in the earlier stages and younger speakers are more likely to be placed in the later stages. Long and short variants of all vowels have emerged from this analysis; however, there are no instances of the 'wrong' /a/ vowels having subsequently backed, that is,

³Although normalization normally involves division, in this instance this has the effect of making vowels less comparable since the speakers had very different average speech rates; differing by as much as 53%. Therefore the standard normalization method means that vowels that are short by virtue of a fast speech rate become even shorter by dividing them by a larger number which compounds the effect. In fact, to make vowels comparable, normalization should make vowels said at fast speech rate longer and long vowels, by virtue of a slow speech rate, shorter.

there are no examples of the TRAP lexical set being realized with a back vowel. The changes taking place differ according to lexical set and are examined under subsequent headings below.

Stage	Vowel realizations	Number of speakers
1	Contrast in /a/ and /ɑ:/ in doubt; no minimal pairs or distinctions in vowel quality or vowel length across the different following environments and lexical sets.	5
2	TRAP, BATH and PALM are merged with long and short front variants. START is backed though still rhotic.	8
3	TRAP has long and short variants. BATH and PALM are long but front. START is backed and non-rhotic.	4
4	TRAP is front. BATH and PALM are almost always distinct from TRAP in quality and usually length. START is non-rhotic and backed.	6
5	TRAP is front. START, PALM, BATH are back, long and merged.	17

Table 2: A summary of the different stages identified in the phonemic split of /a/.

5.2 START Backing

The backing of START is a process that has taken place in many English dialects, including south-east English and many northern English varieties. Wells (1982:158) dates the onset of START backing to the early nineteenth century for RP. It seems that in present-day Dorset English this backing of START is also occurring, albeit at a later date. A general trend applicable to all speakers in the data was for the vowel of START to be on average further backed and raised than the vowel of TRAP. In all but 5 speakers, the quality of START is separate from the quality of TRAP and even for speakers who have TRAP and START vowels overlapping in quality, the vowel of START was still on average more back and raised, which suggests a change in quality away from the vowel of TRAP. This ongoing change can be seen in apparent time in Figures 4a and 4b. Figure 4a shows female speakers and Figure 4b shows male speakers for two groups: retired speakers and teenage speakers. In both graphs the mean F2 value for the retired speakers is shown to be greater, that is, more front, than the mean score for the teenage speakers. START backing appears to be a regular sound change; all instances of /a/ before coda /r/ seem to be affected.

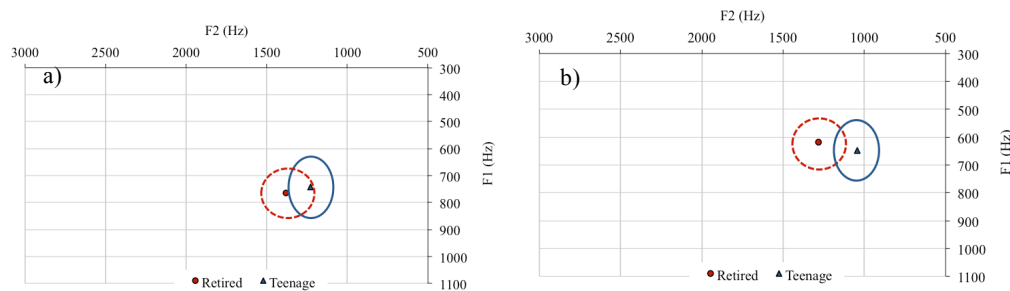


Figure 4: Demonstrating the backing of START in apparent time. a) shows female speakers and b) shows male speakers. The points on the graphs show the mean F1/F2 value for each age group with the ellipse displaying one standard deviation.

5.3 BATH Backing

It seems likely that the TRAP/BATH split which occurred in the southeast of England was the product of lexical diffusion since, as described in Section 2, not all vowels were affected even when they occurred in the same phonological environments as others that backed. The change seems to have come to a halt before all the words with the relevant environments changed from /a/ to /ɑ:/. The following quote from the end of the nineteenth century seems to illustrate this process.

There remains the doubtful *ǎ*(of last, after, &c. Unlike most phonetic difficulties this is not chiefly a question concerning the right sound to be employed, but of the right words in which to employ it. [...] I know many people who oscillate between p[æ]st and p[ɑ:]st, dem[æ]nd and dem[ɑ:]nd and so on. The remarkable thing is that they seem to take this departure, so distant both in length and quality, per saltum; there are no intermediate shades. (Lloyd 1895:53 cited in Bailey 1996)

This quote is illustrative of lexical diffusion since Lloyd remarks that he is unsure of which words have [ɑ:] and which have [æ], indicating that not all words are regularly affected. The quote also provides evidence against a neogrammarian regular sound change since the changes are phonetically abrupt, i.e., “per saltum; there are no intermediate shades” (ibid.).

In the present study the split from TRAP to BATH via lengthening is not amenable to examination since the majority of vowels in the BATH lexical set, particularly the pre-fricative ones, are pronounced with a long variant. However, this present data is able to show that the backing of [ɑ:] to [ɑ:] also appears to be proceeding via lexical diffusion. Figure 2c above illustrates this for one speaker. On this figure it can be seen that the majority of BATH tokens are realized with the front quality of TRAP. However, there are a smaller number of BATH tokens which are realized with the back realization of START and PALM, with no BATH tokens occupying the intermediate vowel space. The BATH tokens that have a back realization are all tokens of *half* and *rather* and one token of *Halfway* which is the name of a local pub ‘The Halfway Inn’. There is also one front token of *half* in the data, indicating that this speaker exhibits some variation. Other speakers also provide evidence of lexical diffusion; for example, one young speaker used back vowels for all BATH lexical items with the exception of the word *last*, in which he used a front vowel.

5.4 Lengthened ‘short a’

A further finding from this present investigation was instances of lengthened ‘short a’ in vowels of the TRAP lexical set. This result was expected given the background of /a/ described in Section 2. Descriptions of RP have also described lengthened /a/ before some following environments. Cruttenden (2001:111) gives the realization of TRAP as [æ:] preceding [b d g dʒ], stating, “lengthening is particularly apparent before voiced consonants.” Cruttenden’s observations mirror those of Jones (1969:235), who wrote some thirty years earlier that the long variant is “most frequently found before voiced consonants but is not confined to these situations,” and Wells (1982:288) who records long /æ:/ before lenis consonants. Blake (1985) also describes lengthening of /a/ before many following environments for Melbourne English in Australia. He details many constraints on the lengthening and describes the /a~/a:/ distinction as phonemic. Lengthened /a/ also occurs in the United States; Labov (e.g., 1994) has made many detailed investigations into the constraints on tensing and raising of /a/ in New York City, and Ferguson (1972) describes tensing and raising of /a/ in Philadelphia English. The lengthening environments for these different studies are summarized in Table 3.

Comparing these lengthened /a/ environments cross dialectally it can be seen that in general the ones that most promote length in traditionally short /a/ are the same across all varieties, namely those that lengthened in the TRAP/BATH split, and voiced consonants more generally. In Dorset, although /a/ can be realized long before many following environments, with the exception of pre-[r], the following environments most promoting of length correlate well with the findings from Philadelphia English (Ferguson 1972), New York City English (Labov 1994) and Melbourne English (Blake 1985) in having lengthened /a/ before /f s θ n m d/.

Dorset English also seems to share the closed syllable constraint on lengthening found in other dialects. In Melbourne English, Philadelphia English and New York City English lengthened /a/ or tensed and raised /a/ generally occur only where the following consonant closes the syllable. In the present study there is some evidence that this rule is in operation too. For example, for /a/ before [d], a long vowel was more likely when the following [d] was a coda rather than the onset of the following syllable. This means that *sad* was realized long but *saddle* was realized short. This was found again in pre-/n/ environments where /a/ before [n] was realized long 43% of the time in closed syllables and just 16% of the time in open syllables. Further evidence that a closed syllable constraint is in operation in the southwest of England comes from Hampshire, a county that bor-

ders Dorset to the east. Fudge (1977) found that when the suffix *-ing* is added to words ending *-ab* and *-ad* long /a/ became short. In these examples a closed syllable becomes an open syllable e.g., *blab* [blæ:b#] versus *blabbing* [blæ:bɪŋ] or *glad* [glæ:d#] versus *gladden* [glæ:dŋ] (ibid., 62). Likewise, abbreviations of words containing normally short vowels could cause /a/ to become lengthened. In these instances the opposite process is occurring, that is, an open syllable becomes a closed syllable. For example, *fabulous* [fæ.bjələs] with a short variant becomes *fab* [fæ:b] with the long variant. It must be noted though that Fudge also records many open syllables as having long [æ:], for example, *manor*, *manner*, *banner* and *badger* (ibid., 58).

Variety	f	s	è	n	m	d	g	ŋ	b	ð	v	f	p	t	k	dʒ	l	r	ʃ	z	
RP (Cruttenden 2001)	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered
South African English (Lass 1990)	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered
Philadelphia English (Ferguson 1972)	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered
New York City English (Labov 1994)	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered
Australian English (Blake 1985)	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered
Hampshire English (Fudge 1977)	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered
Dorset English (Widén 1949)	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered
Dorset English (SED 1967, 1968)	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered
Dorset English (present study)	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered	checkered

Table 3: Cross-dialectal comparison of following environments which can yield a lengthened /a/. Shaded boxes indicate environments where lengthened /a/ occurs. Striped boxes indicate environments that are described as variably lengthened. Checkered boxes indicate environments in which a lengthened /a/ is sometimes or often backed to differing degrees, as these are environments from the TRAP/BATH split.

Ferguson (1972) and Labov (2007) have previously remarked on the cross-dialectal similarities observed for lengthened /a/. Ferguson (1972:271) writes, “the similarity of the distribution is especially striking between RP and Philadelphia English; for example, RP and Philadelphia English agree in having /ā/ or /ǣ/ respectively in words such as *pass*, *class*, *staff*, *laugh*, *path*, *bath*, *can’t*, *demand*, and they agree in having /æ/ in such words as *crass*, *lass*, *gaff*, *hath*, *math(s)*, and” and he makes claims about lengthened /a/ which are common to New York City English, Philadelphia English and RP: “The patterns all seem to agree that the ‘lead environments’ *i.e.* the environments which most favor the change and where it comes earliest, are *s# f# θ# st nt ns*, followed in descending order by *sk sp mp nd*, and last of all the ‘lag environment’ *mb*; the remaining frequent clusters are difficult to rate” (ibid., 271-272).

These similarities between varieties seems to indicate that the English that was transported to the United States already had these lengthened /a/ environments, that is, a TRAP/BATH split or some other allophonic length variation in TRAP, which in the southeast of England, RP, Hampshire English, South African English, and to an extent in Australian English backed to become [a:], whereas in New York City English and Philadelphia English has tensed and raised to be realized /ǣ/; as Labov (2007:363) writes, “if my speculations on the earlier history of the NYC short-a system are correct, it has its origins in the British broad-a system at a time when the British vowel was fronted and it has obviously undergone considerable change from that point.”

However, I argue that the additional environments promoting of length in the southwest for Dorset (in the present study, the Survey of English Dialects 1967 and Widén 1949) and Hampshire English (Fudge 1977) clearly warrant further investigation as potential historical sources of the short-a tensing and raising of New York City English and lengthened /a/ in Melbourne English.

6 Conclusion

This paper examined the phonemic status of the vowels in the lexical sets of TRAP, BATH, PALM and START in Dorset English to determine whether there was a contrast in /a/ and /ɑ:/. An auditory analysis combined with an acoustic analysis for a subset of the speakers revealed that the majority, 35/40, do realize a distinction in /a/ and /ɑ:/, though apparent time evidence strongly suggests a change in progress from one phoneme /a/ to two phonemes /a/ and /ɑ:/. The ongoing changes progress in differing ways; START backing appears to be a regular sound change affecting all tokens whereas BATH backing appears to be occurring via lexical diffusion.

An analysis of normally short TRAP vowels revealed variation in their realization with both short and long variants occurring. In particular, this study and previous ones on English in the southwest of England extend /a/ lengthening into further following environments than those of the TRAP/BATH split. The following environments promoting of length and the closed syllable constraint on lengthening show some similarities with other varieties of English. The lengthening of /a/ in the southwest therefore deserves further investigation to examine its similarities to other dialects of English around the world.

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