

A Survey of the Sound Shift in Dublin English

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Abstract

This paper presents the initial results of a study into a possible vowel shift in Dublin English. The study is part of a D-essay project that involves analyses of about 100 informants taken from A Sound Atlas of Irish English (Hickey 2001). Raymond Hickey's claims about the emergence of a new dialect or accent are investigated, focusing on the main feature, i.e. the raising of back vowels. The initial results indicate that females raise their back vowels more than males, and that in some environments they are centralized as well as raised.

Introduction

In his article *Dissociation as a Form of Language* Raymond Hickey presents a variety of Irish English, which he calls *fashionable* Dublin English (Hickey 2000:303-315). In this article he argues that this variety is a result of dissociation, i.e. the modern, urban middle-class population, which has grown rapidly in the past years, is trying to distinguish themselves from the traditional low-prestige Dubliner by adapting the way they speak. Hickey divides Dublin English into two main categories, *local* and *non-local*, where the *non-local* variety includes two sub-types, *mainstream* and *fashionable* Dublin English. These two types are distinctly different from the conservative, low-prestige *local* variety, but relatively close to each other. However, the *mainstream* variety is the closest to the supra-regional variety of the republic. But as *fashionable* Dublin English grows, it by definition becomes more mainstream. This project will focus on *fashionable* Dublin English and the related, potentially supra-regional accent, which Hickey refers to as *New Pronunciation*, or NP for short.

According to Hickey, the development of the Dublin vowel shift is a result of a retracted starting point for the diphthong in *STYLE*, i.e. /ai/. The new realization stemmed from a desire on behalf of the speakers to distance themselves from the stigmatized conservative realization, where the starting point is fronted. Nowadays, the retracted starting point is less common, but the effect it had on the low back vowels is still salient. As the onset of this diphthong moved back, the traditionally low realization of the monophthong in *NORTH* and the diphthong in *CHOICE* moved up. In RP (Received Pronunciation), this phoneme is typically

realized as a mid back vowel, but the Irish English version has traditionally been lower, not unlike like the RP realization of the vowel in *POT* or the similar vowel in General American English *POT*. However, according to Hickey, this sound has now moved up. He states clearly, though, that this is not a result of any desire of the Irish to sound more British, but rather a way for *fashionable* speakers to distinguish themselves from *local* speakers.

Hickey also lists several secondary features of *fashionable* Dublin English, or the supra-regional NP, including fronting of the diphthong in *MOUTH*, retroflex r-sounds, 'dark' l's, rounding of the vowel sound in *SQUARE*, and a few other features. The most salient feature, however, is the raising of back vowels.

Hickey claims that young women seem to be adopting this accent the most, and predicts that *fashionable* Dublin English, because of the vast socio-economical influence of Dublin, will grow to become the new supraregional accent.

Aims

The purpose of this study is to investigate Hickey's claims. The research questions will include: Are the back vowels raised? Are there gender differences? Will acoustic analyses support Hickey's predictions?

Methodology and Sources

The main source used for this study is *A Sound Atlas of Irish English*, which is a corpus compiled by Hickey in the late 1990's. The corpus is available on DVD-rom and also includes a book. The corpus contains samples of over a thousand speakers, with special attention paid to the Dublin area and younger speakers. Hickey approached informants in public settings

such as malls and on the streets. Almost all informants read a set of sentences containing lexical sets designed to capture the realization of specific phonemes. Some informants also read a coherent text. The informants for this study were chosen from the list of locations in *A Sound Atlas of Irish English*. From each location in the Dublin area one male and one female speaker was chosen. If the speakers were of only one gender, only one informant was chosen. Typically, this would be the first person listed, but if there were speakers of varying ages, one young speaker of each gender and all speakers over 30 were chosen. However, of the 42 males and 48 females only 11 were over 30, making any comparisons across generations difficult.

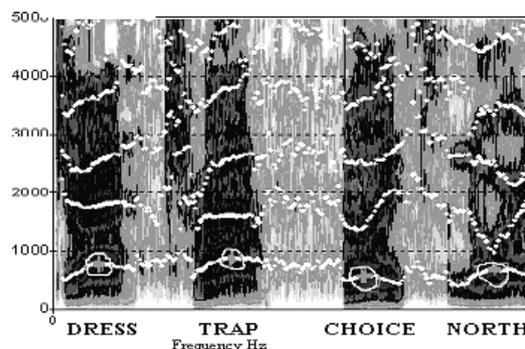
To analyze the samples from the corpus, *Audacity* and *PRAAT* are used. Two test words containing a low front vowel - TRAP - and a mid front vowel - DRESS - have been chosen. Although the vowel shift does affect front diphthongs, the realizations of the front monophthongs are the same across the republic (Hickey 2001). (The exception is the Ulster area and Northern Ireland, which constitute a clearly separate linguistic area and will not be analyzed in this survey.) Because these vowels are more stable than the back vowels, they can be used as reference vowels. Appropriate test words for the back vowels were chosen, i.e. NORTH and CHOICE. According to Hickey, the raising of the vowel sounds is the most salient before the tremulant /r/ concerning the monophthong, and at the onset of the CHOICE diphthong

To make the distinction clearer as to whether a particular informant has a raised realization of the back vowels, and also in order to determine to what extent it is raised, an equation to assign values to the samples has been developed. The aim is to normalize the frequencies and show the individual relationships between the front and back vowels regarding vowel height. The vowel height is established by analyzing the first formant. The higher the frequency of the first formant, the lower the height of the vowel sound (Ladefoged 1993:196).

In the acoustic analysis, the frequencies in DRESS and TRAP were measured at the earliest point after the tremulant /r/. The frequency of the onset of the diphthong in CHOICE was measured at the point where the first formant had the highest frequency and the distance of the first and second formant was the smallest. For NORTH the frequency was measured between

the end of the nasal /n/ and before the tremulant /r/.

Figure 1



Measurement points for the 1st Formant

Explanation for the normalization of the back vowel sound in CHOICE and NORTH

The measurements of F1 in DRESS and TRAP are used as reference vowels to enable comparison of the vowel spaces of the individual speakers. The distance between them is defined as 100 for each speaker. The vowel height in CHOICE and NORTH are then defined on the 0-100 scale, where 0 equals the same vowel height as TRAP and 100 equals the same vowel height as DRESS. Any numbers above 100 signify a realization higher than that of DRESS.

$$((X-DRESS)/(TRAP-DRESS)*100)-100*(-1)$$

X= CHOICE or NORTH

For the survey two tables including one for females and one for males present the results for each informant. For this article statistics will be presented of the data analysed hitherto.

Comparisons with American English and Received Pronunciation

The main source for references concerning vowel height and frequencies of formants for this study has been *A Course in Phonetics*. This book presents typical vowels of American English rather than of RP. However, it is stated that the vowel height of POT in both accents is similar to that of cardinal vowel 5 (Ladefoged 1993:219). In addition, both accents have the same sound for the vowel in BOY (1993:76), corresponding to cardinal vowel 6. Because Hickey refers to realizations in RP when assessing Dublin English, the same has been

done in this paper. The RP back vowels previously mentioned have been assumed to have vowel heights similar to those of the standard American English vowels presented by Ladefoged, although lip rounding and degree of backness may vary. Accordingly, because the DRESS and CHOICE would have the similar vowel heights in American English, it is assumed that they also would in RP, i.e. they would both be mid vowels.

Results

The early results of the study support Hickey's prediction that the female informants will have raised their back vowels more. As can be seen in *Table 1*, the realization of the first formant of the onset of the diphthong in CHOICE has a frequency that is much lower than that of the vowel in DRESS, which means that the vowel sound is significantly higher. The average assigned value on the 0-100 scale was 249 for the women's realization of CHOICE, as compared with the men's 116. The corresponding number for DRESS is 100. This means that the men realized the onset of the diphthong in CHOICE on average slightly higher than they realized the front vowel of DRESS, but the women realized it much higher.

The results for the realization of NORTH are quite different. The vowel is not as raised as it is at the onset of CHOICE, but the women still raise their back vowel more than the men. Their realization is above that of the vowel in DRESS. This would, according to Hickey, constitute a raised vowel, i.e. a mid back vowel, and it roughly corresponds to the vowel height of the RP realization. The average value assigned to the realizations of the women is 210, while the corresponding number for the men is 61. This means that the realization of the back vowel sound in NORTH is significantly higher than that of DRESS for the women, but clearly lower for the men. The following tables summarize the averages in Hz and the averages of the assigned values on the 0-100 scale.

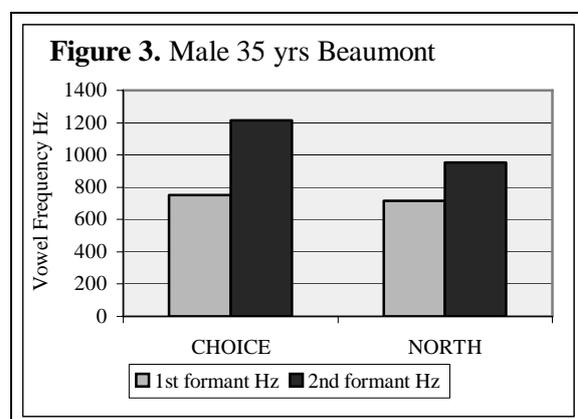
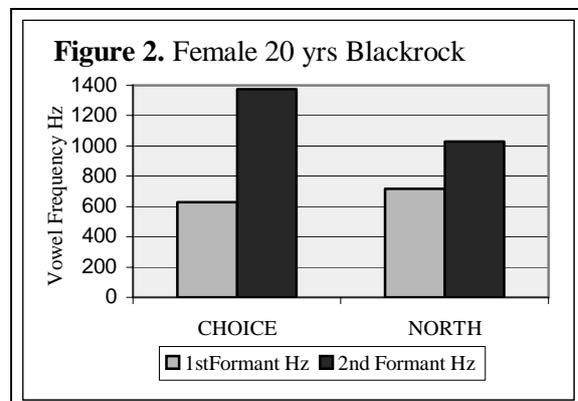
Table 1. Average frequencies of the first formant (Hz)

Phoneme	Women (48)	Men (42)
TRAP	935	796
DRESS	805	653
CHOICE	654	647
NORTH	695	710

Table 2. Average normalized differences for the first formant (Hz)

Phoneme	Women (48)	Men (42)
TRAP	0	0
DRESS	100	100
CHOICE	249	116
NORTH	210	61

Based on these figures it is clear that women have a relatively much higher realization of the back vowels in CHOICE and NORTH. However, CHOICE differs from NORTH because it is a diphthong and some assimilation to the following sound would be expected. During the spectrogram analysis, it was noted that the distance between the first and the second formant was much greater in CHOICE than in NORTH. The distance between the first and second formant indicates whether the vowel is located in the front or the back of the mouth (Ladefoged 1993). The distance was small in the realization of NORTH, confirming it to be a back vowel, but much larger in CHOICE. This means that the sound is not only raised, but also fronted. It has been centralized rather than raised.



According to Ladefoged (1993:197) the mid back vowel in words like *hawed* (pp 194) or NORTH has a difference in frequencies between the first (F1) and the second (F2) formant of around 300 Hz. As *Figure 2* shows, the realization of CHOICE can have a F2-F1 difference of as much as 700. The difference in *Figure 3* is less striking, but nonetheless shows that the onset of the diphthong in CHOICE is clearly centralized as compared to that of the monophthong in NORTH.

Discussion

The result of the study indicates that the back vowel in NORTH is raised. Women raise it more than men relative to their front vowels. However, it is difficult to assess whether this is a result of the women adjusting to the new accent faster than the men, or whether this is something that naturally occurs in female speech production. Hickey's observations predicted that the women would raise their back vowels more, and because the difference is so great between the men and the women in this study it seems plausible that he is right.

Another problem is establishing whether there has been a change, i.e. is this a new accent or has this pronunciation existed for some time? Hickey claims that the traditional realization of the vowel in NORTH is lower, but because the corpus is so new, there are no comparisons to be made. The lack of older informants is a contributing factor to the problem. The vast majority of speakers have a realization of the vowel in NORTH at the same vowel height as would RP speakers. The question is, has this sound been raised from a low back position to a mid back position for a majority of speakers, or is Hickey's perception of the traditional realization as low incorrect? Is it possible that the difference between the new accent and the more traditional one may lie in something like lip rounding? From a more general perspective the issue is; will the researcher's perception of the realization of a particular phoneme be supported by spectrographic analysis?

The diphthong in CHOICE seems to have been centralized rather than raised. This is to be expected because of the adjacent front high vowel, but goes against Hickey's claims of a mid back onset. Because his interpretation of the change here, based on his perception, does not correspond to the acoustic analysis, it cannot be excluded that the interpretation of the vowel in NORTH as being traditionally lower might also

be debatable. It is possible that this diphthong is not part of the vowel shift, or perhaps that the effect is not only raising, but also centralizing. In order to establish this, extensive acoustic analyses of the distance between the first and the second formant would have to be carried out. Another issue is the question of how much assimilation we can expect from speakers generally regarding the onset of diphthongs.

However, the fact that the women not only raised the monophthong in NORTH more than the men, but also the onset of the diphthong in CHOICE, indicates that some raising, as well as centralizing, must have taken place.

Conclusion

The question of the Dublin vowel shift is an interesting one, because its development may inform us about how supraregional accents come about. If Hickey's prediction is true and this new Dublin accent becomes the standard for the republic, there are opportunities to investigate how it spreads and how the encountering of local accents will affect it.

The purpose of this article has been to present the early results of a study investigating the vowel shift in Dublin. The focus has been on the main feature of the raising of back vowels. These early results show that women raise their back vowels to a greater extent than men, and that many of the informants in fact manifest mid back vowels rather than low back vowels in words like NORTH. Concerning the diphthong in CHOICE, the onset has probably been raised as well as centralized, indicating that the vowel shift may have had other effects on diphthongs than on monophthongs, or that this diphthong and possibly others, have not been affected at all.

References

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