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# Acoustic Analysis and Language Attitudes in Detroit

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## Acoustic Analysis and Language Attitudes in Detroit

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In his 1989 paper on Canadian dialects, Jack Chambers says he fears the demise of "the most distinctly Canadian sound – the source of the "about the hoose comments [or Canadian Raising] – from Canadian English." Chambers is referring to the fact that Canadians seem to have replaced the Raising Rule with a Fronting Rule, so that the segments he is referring to (i.e. /aw/) now tend to be pronounced not as [ʌw], but as [æw]. In this paper, it will be shown that while this may be the case in Canada, speakers on the other side of the international border – specifically, those in Detroit, Michigan – are in fact Raising.

Furthermore, while there is Canadian Raising in Detroit, speakers in that area remain unaware of its existence; many speakers continue to think of the phenomena of pronouncing /aw/ as [ʌw] as a distinctly Canadian feature. It will be shown below that it is Detroit women in particular that hold this belief, and in fact are more likely to themselves raise the onset of this diphthong than the men in their community. Many Detroit men, in contrast, seem unaware of Raising in any population.

Finally, it will be suggested that this disparity between the sexes in Detroit is a canonical case of women leading change from below, and confirms the findings from Dailey-O'Cain (1995), which examined this variable in Ann Arbor, Michigan.

### 1 Detroit and the Northern Cities Chain Shift

Detroit is located directly across the Detroit River from Windsor, Ontario. There is a great deal of contact between the residents of both cities, and in fact every one of the people in this study had been to Canada at least once, and most had been there a number of times.

The status of this international border – what Zeller (1993: 179) calls "friendly, interactive, and culturally similar", has led to reciprocal linguistic influences in this area. Zeller (1993) points out a number of lexical influences American English has had on Canadian English, and though it is not uncontroversial, it seems likely that the Canadian raising found in border towns may be due to the influence of Canadian English on American English (but see below).

In addition, Detroit speakers are involved in what has been called the Northern Cities Chain Shift (NCCS). Very briefly, this change involves the shift of peripheral vowels upward, non peripheral vowels downward, and back vowels forward. "Canadian raising," however, is not a part of this shift, although it is occurring in several other areas involved in the NCCS (Labov, Yeager and Steiner 1972).

### 2 Canadian Raising (Chambers 1989)

In very basic terms, Canadian Raising can be described as a process where the diphthongs /ay/ and /aw/ become raised to [ʌy] and [ʌw] before tautosyllabic voiceless consonants:

- (1) /ay/ → [ʌy]  
 /aw/ → [ʌw]
- $$\begin{array}{c} / \_ [-vc] \\ \diagdown \quad \diagup \\ \sigma \end{array}$$

(There are a number of other conditions involved, but they are more fully treated in Chambers [1989]). It may be the result of assimilation, so that the low /a/ assimilates towards the high /i/ or /u/ in the diphthong (the opposite of this is found in dialects where the high vowel completely assimilates to the low vowel, yielding /a:/).

Canadian raising may be a bit of a misnomer, for it is not truly "Canadian," since as mentioned above it has been noted several areas in the United States: Minneapolis, Rochester, Chicago (Vance 1987), North Dakota and other cities on the border (Allen 1989), Martha's Vineyard and other places in the eastern seaboard (c.f. Labov 1966), and Virginia (Chambers 1989), and similar raising phenomena have been observed and discussed in North England (Milroy, this volume), and the Fens (Britain 1997).

This raising has been noted in Michigan as well. For instance, Eckert (1994) notes that such raising may be a marker of identity for adolescents, and she finds it occurs in her 'burnouts' (particularly girls) in certain contexts. More recently, Dailey-O'Cain (1995) found Canadian Raising in Ann Arbor, Michigan (a city of about 150,000 approximately 30 miles west of Detroit).<sup>1</sup>

Because this raising has been found in such diverse (and non-contiguous) areas, Chambers (1989) suggests that it is an independent development, rather than diffusion by contact. It may not be the case, therefore, that it is found in border towns because of contact with Canadians; however, since it *is* found in so many of these cities, it may be that the contact with Canadian English has reinforced its use.

What is important for this study, however, is not where the Raising in Detroiters' speech comes from, but rather, that it is a stereotype that Detroiters hold about Canadian speech.

### 3 Methodology

The subjects for this study were thirty speakers who were born and currently live and work in the Detroit area. Most of them are employed for the Veteran's Administration, and work on one of three floors in a large office building. All the speakers were white, and there were sixteen males and fourteen females. Their education histories were varied: fourteen held at least Bachelor's degree, ten had some college, and six had a high school education only.

The speakers were recorded on digital tape at a 32Khz sampling rate in an empty office in the office building, performing three different tasks. First, they were asked to answer some questions about their education and employment histories into the tape recorder, and I was not present (it was hoped that this would preclude any chance of the speakers accommodating their dialect toward my own, as I am a native of Michigan. I then returned to the office and asked the subjects to read a word list of single words which contained not only the diphthongs in question but several other vowels, and several phrases. Among this list, then, were the items *out, house, loud, night, ride, rice*, and the

<sup>1</sup> Although she found a greater tendency for /ay/ to be raised than /aw/.

phrases *out and about* and *night and day*.<sup>2</sup> Finally, the subjects were given a languages attitudes interview, in which I asked them (among other things) where the closest they could go and hear a dialect different from their own, and whether or not people in Windsor spoke with a different accent, and to describe (or illustrate it) if they could.

Vowel spaces were obtained for each of the speakers from Anaaz Computerized Speech Research Environment (CSRE) equipment, using the Formant Extraction program. The vowel was measured 30ms from its beginning, to avoid effects from preceding consonants (and raising effects from the high off-glides in the case of the diphthongs). The first and second formants were plotted for each speaker as he or she was engaged in the personal question task, and the diphthongs were also analyzed in the word list and language attitudes sections as well. It was hoped that these three tasks would yield slightly different context-dependent variants, and this did turn out to be the case (see below).

#### 4 Results

"Canadian" Raising was found in several speakers in the Detroit area. Presented below are vowel spaces for four speakers who are fairly accurate representatives of the sample.

An /aw/ or /ay/ was counted as closer if it was closer to a speaker's /ʌ/ than his or her /a/. As Figure 1a below shows, this speaker's diphthongs<sup>3</sup> are both higher and farther back than her /a/, making a legitimate case for coding these variants as 'raised.'

<sup>2</sup> The complete list of words is as follows:

beat	boat	house
bite	loud	bead
bet	made	night
right	round	phone
bed	bought	about
bat	boot	car
hut	put	late
tide	pot	father
out and about		
night and day		
far and away		

The words were presented in differing order.

<sup>3</sup> The point plotted on the graph is the center of that vowel's space. In other words, several tokens were plotted, and the point represents the place in the center of those tokens.

**Figure 1a: Female MBA**

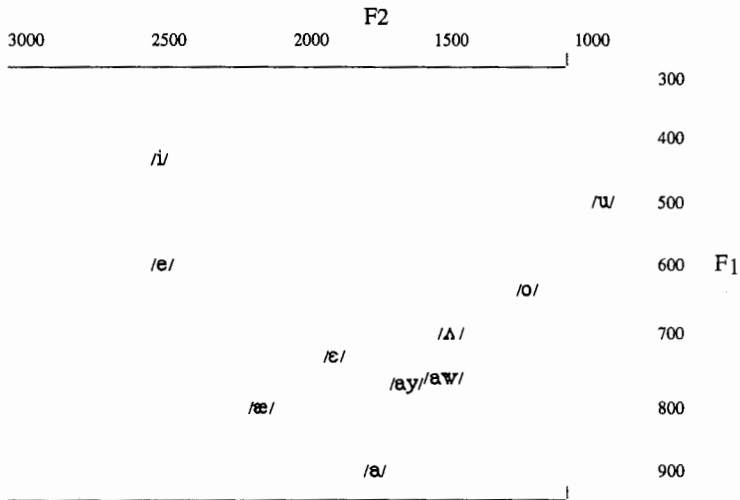
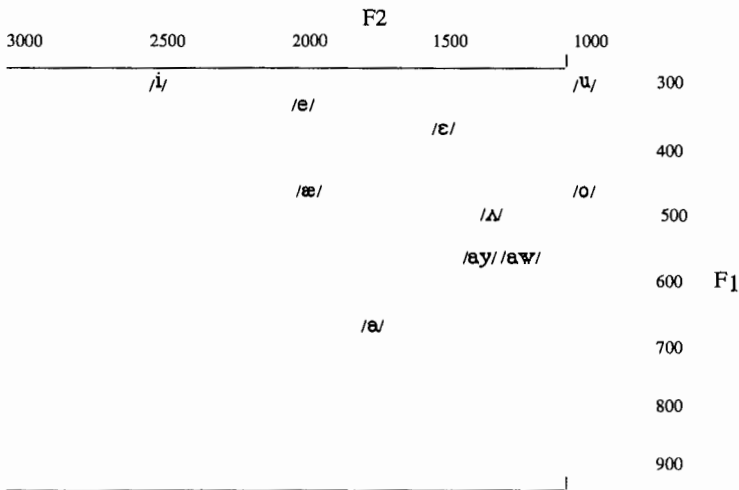


Figure 1b also depicts the vowel space of a speaker who raises. Again, her diphthongs are closer to /ʌ/ than to /a/ in terms of backness, and between the two in terms of height. Note, however, that this speaker's /a/ is quite fronted.

Figures 2a and 2b show vowel spaces for two male speakers from the Detroit area. They show that these males are not raising to the same extent that the female speakers above are. This trend was found for the entire sample (and is examined more fully below). While there may be slight raising, in contrast to the females, the diphthong is closer to /a/ in both of these speakers.

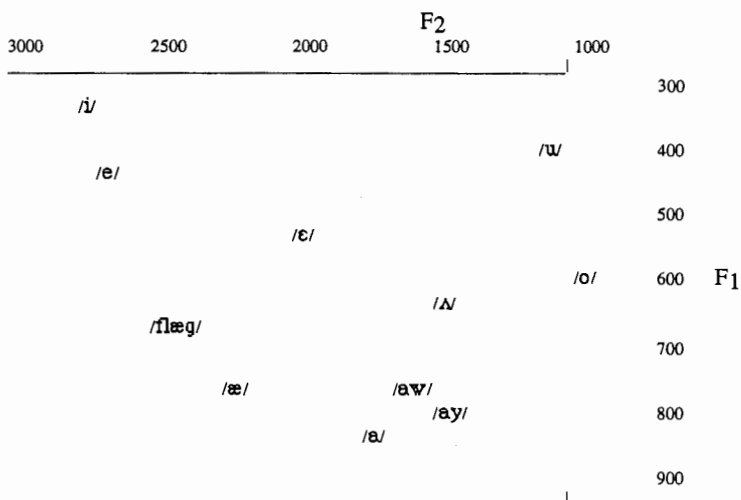
Figure 1b: Female with some college



Each speaker was coded for the amount of raising present in his or her more conversational contexts (as opposed to the word list context). If less than two of the tokens of /aw/ or /ay/ were raised, the speaker was coded as a 'marginal' raiser. If two or more but less than half of a person's tokens were raised, that person was coded as having 'some' raising, and if more than half of a person's tokens of these variables were raised, that person was coded as having 'pronounced' raising. Both education and gender were found to be significant in the distribution of the raised variant.

Table 1 shows the distribution of raising for education, and contains some interesting results. First, all of the speakers that had a high school education only demonstrated pronounced raising, whereas less than half of those with a Bachelor's degree did. In fact, over almost a third of these speakers show very little raising at all.

Figure 2a: Male, MBA

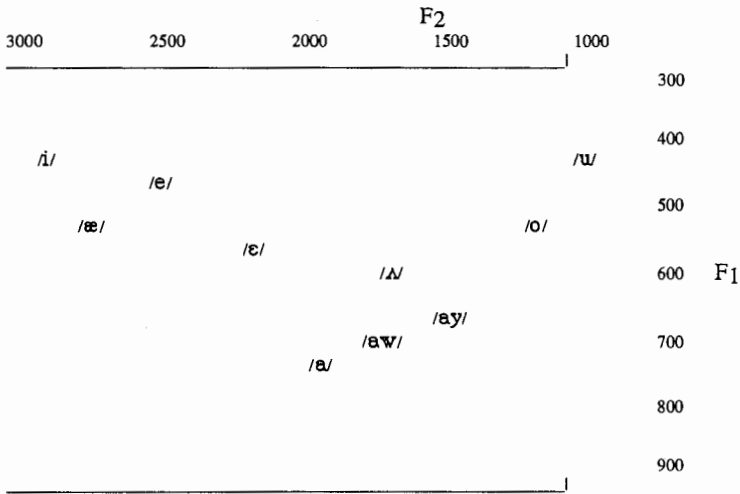


Each speaker was coded for the amount of raising present in his or her more conversational contexts (as opposed to the word list context). If less than two of the tokens of /aʊ/ or /aɪ/ were raised, the speaker was coded as a 'marginal' raiser. If two or more but less than half of a person's tokens were raised, that person was coded as having 'some' raising, and if more than half of a person's tokens of these variables were raised, that person was coded as having 'pronounced' raising. Both education and gender were found to be significant in the distribution of the raised variant.

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Figure 2b: Male, some college



	<u>marginal</u>	<u>some</u>	<u>pronounced</u>	
no	0	0	6	T=6
college	2	2	6	T=10
some	4	4	6	T=14
college				
B.S. +				

Table 1: Degrees of raising according to speaker's education

Although this is a small sample, the results seem to suggest that there is some correlation between education level and amount of raising in more casual contexts of speech.

However, as suggested above, more significant than education seems to be the correlation between raising and gender. Table 2 shows the results of coding the speakers in the manner described above, displayed according to gender.

	marginal	some	pronounced	
Male	3	7	6	T=16
Female	0	2	12	T=14

**Table 2: Degree of raising according to speaker's gender**

As the table shows, all of the women in the study had at least *some* raising in their speech, and most of them had quite a bit of it.

This is in direct contrast to the men in the study: less than half of them were pronounced 'raisers.' Well over half of the men used the unraised more often than the raised variant (recall that 'some' referred to use of the raised variant less than half of the time).

## 6 Language attitudes

Just as the use of the raised variant differed according to gender, so too did the *perception* of the raised variant. Recall that in this portion of the study, subjects were asked, among other things, about their views of Canadian English. The first question on this subject was the following: "Do you notice a difference between your speech and someone from Canada?" Table 3 shows the results of the answer to this question according to speaker gender:<sup>4</sup>

	No	Yes	Total
Male	8	8	16
Female	0	14	14

**Table 3: Perceived differences between subject's own speech and Canadian English by gender**

Thus, about half of the men questioned noted a difference in Canadian versus Michigan English. Most of these men, however, mentioned sentence-final *eh*, or lexical differences, stating that some Canadian words were "British." Only two of the men mentioned sound differences in response to this question.

As Table 3 shows, all of the women noted a difference between a Canadian and a Michigan dialect. Most of the women, in fact, answered the question with a statement like "definitely." Thirteen of the fourteen women mentioned sound differences in their response to this question.

<sup>4</sup> Education was not significant for this portion of the study.

The gender difference was even more pronounced when subjects were questioned specifically about phonological differences. Table 4 shows the results from the question "Do you notice a difference between the way Canadians pronounce things?"

	No	Yes	Total
Male	11	5	16
Female	0	14	14

**Table 4: Perceptions of whether Canadians pronounce things differently from the subject, by gender**

Only five of the men mentioned felt that there were phonological differences. Some of the differences they mentioned were stress patterns of certain words. One subject, for instance, mentioned that hockey players' names were pronounced differently by Canadian and American announcers. Another suggested that Canadians have a "draw" in words like 'car,' although it should be noted that in his answer "We say 'car,' but they say 'car,'" the two instances of 'car' sounded (and looked spectrographically) identical! None of the men offered Raising as a potential difference.

Two men mentioned that French seems to have influenced Canadian English, although both of them said this is only in the "north" of Canada.

As Table 4 shows, all of the women noted phonological differences. Several mentioned that Canadian speech sounds "British" or "French-like," or "more sing-song" than American speech, and one woman said Canadians are "more deliberate and hard with their tongue" than Americans. What is significant for this study is that seven out of fourteen offered raising as an example, without any mention of it from me. One woman stated that "Canadian vowels are really 'oo'-sounding", and some women suggested that Canadians sounded Finnish or Scandinavian when they said 'house' or 'out'.

The subjects were then questioned as to whether they had ever noticed a difference in the way the words 'out' and 'about' were pronounced by Canadians (if they hadn't already noted the difference themselves). Table 5 shows the results from this question:

	No	Yes	Total
Male	14	2	16
Female	0	14	14

**Table 5: Perceived differences in Canadian pronunciation of 'out' or 'about' by gender**

The difference between men's and women's views of what is thought to be a prevalent stereotype of Canadian speech is striking. Only two men out of the entire sample accepted these words as ones that varied in the two varieties of English, and both of these men were avid hockey fans who said they listened to the games all the time on the radio. None of the other men said that there was any difference between Canadians and Americans with regard to these two words.

Conversely, all of the women agreed that these words were pronounced differently on either side of the border, and as suggested above, some women offered this as their main illustration of Michigan versus Canadian speech. (The formant structure of the "raised" variety that the subjects offered for this variable was analyzed, and in most cases, it was similar to the subjects' own /u/. The stereotype exists very strongly for Michigan women, and almost not at all for men.

Why would this be? It may be tempting to claim that men are more aware of the fact that Michigan speakers are raising, and so to them everyone sounds like a Canadian. However, one of the questions on the language attitudes survey asked about whether 'out' and 'about' was pronounced differently from the way Michiganders<sup>5</sup> pronounce them anywhere in the United States. A few of the men mentioned that in Maine, or along the East Coast, one could hear something like /əbut/, and several mentioned a stereotypical Southern pronunciation. But since so few of the men mentioned raising in either the Canadian or Detroit area, it seems more likely that men just are not noticing raising in any speakers.

Women, on the other hand, *do* seem to notice raising – in Canadians. They are unaware of the fact that they themselves (and their female acquaintances) are raising.

## 6 Discussion

It is clear that women are leading this change, and this Detroit data is consistent with Dailey-O'Cain's findings for the change in Ann Arbor. What is not so clear is whether this is a change involving an overtly prestigious variant, or change from below.

Arguments for the former come from results of another question in the language attitudes survey. The subjects who noted a difference in the speech of Canadians and Michiganders were asked if they felt one or the other variety sounded "better or more proper," and each of them stated that there was no such prestige difference. However, it is worth noting that eight out of the fourteen women and one of the men suggested that Canadian English sounded "British" – a variety that has tremendous prestige in this country. This may lead one to conclude that Canadian English does in fact have some prestige in the minds of Detroiters.

However, a number of factors go against this being a typical case of change involving an overtly prestigious variant. First, as Preston (1989) has shown, Michigan speakers demonstrate a high amount of linguistic security. When questioned as to where the most proper variety of American English is spoken, Michiganders are most likely to answer, "Right here."

Second, both Chambers (1993) and Zeller (1993) point out the heteronomy of Canadian English to American English. Zeller, for instance, finds that in cases where there are lexical (and phonological) differences between Canadian and American English, it is much more likely that Canadians will adopt the American variety, rather than the other way around.

Third, there is the complicating factor of Canadian *fronting* of the /aw/ diphthong. Chambers (1993) describes a change taking place in Canadian English in which this diphthong moves towards the variety found in several areas of the United States (although not Detroit). He calls in Canadian Fronting, and in very basic terms, it can be described as follows:

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<sup>5</sup> This really is how we refer to ourselves!

- (2)
- [Δw] or [ɛw]/ \_\_\_\_ [-vc]
- /aw/ ->
- [æw]/ elsewhere

Chambers finds that women are leading this change, and it is the source of his fear quoted in the beginning of this paper: this fronted diphthong may replace the raised diphthong Canadians are noted for.

What this means for this study is that the diphthongs of Michigan women (and to a lesser extent, Michigan men) are not actually moving towards Canadian diphthongs as they currently exist; if they were, the diphthongs would be *fronted*, rather than *raised*. Perhaps the diphthongs are moving towards an earlier version of Canadian English, or perhaps raising is an independent development in the dialect of south-eastern Michigan.

Finally, the raised variant seems to occur in contexts where covert prestige variants occur. In this study, it occurred more frequently in the more casual context (i.e. the conversational portion of the study, as opposed to the word lists). In fact, Figures 3a and 3b show F<sub>1</sub> and F<sub>2</sub> values for the word 'out' as read from the word lists by the speakers from Figures 1a and 1b. It should be apparent that the variant used in this more formal context is considerably less raised than the varieties used in less formal contexts. The raised variety is therefore more of a covertly prestigious variant.

**Figure 3a: Vowel in bold is from the word list**

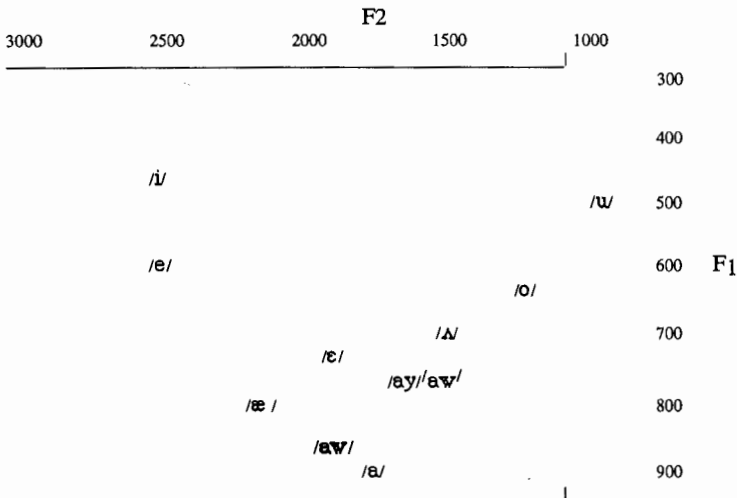
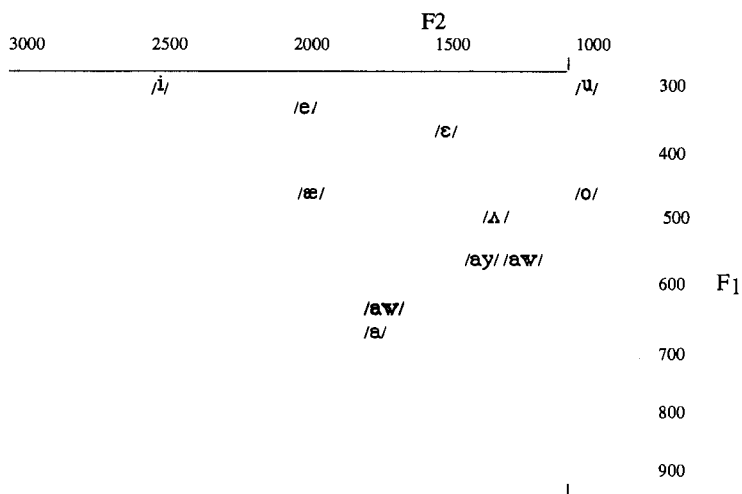


Figure 3b: Vowel in bold is from the word list



Furthermore, the raised variant tends to be used more by speakers with less education, and this is more consistent with a covert prestige variant as well.

On further note: although it may be tempting to view this as change from above, since speakers (at least female speakers) are aware of this variation. However, speakers are not aware of it in their own dialect, and thus it seems more accurate to call this change from below – and to add this to the list of studies that reveal that women tend to lead in change from below.

## 7 Conclusion

Although Canadian Raising has not been noted for the Detroit area in the past, it does seem to exist there, particularly in casual contexts. Female speakers are aware of this variable in Canadian speakers, but are unaware of it in their own speech; male speakers do not notice Canadian Raising in any dialect. In addition, female speakers show greater use of the raised variant, and on the surface, this is consistent with previous findings that show women leading change involving overtly prestigious variants, particularly given the fact that (some) women may view Canadian dialects as overtly prestigious. However, this variant seems to be used in more casual contexts, and by speakers with less education. Thus, this seems to be an additional case of women leading change from below.

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