

The Melky Way

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One of the chains in the putative chain-shift called the Canadian Shift is the movement of high lax front /ɪ/ to mid /ɛ/. The other chain is the movement of mid /ɛ/ to low /æ/. One of the factors about Canadian English phonology that make the chain-shift explanation enticing is the retraction of low front close /æ/ toward a more open, centralized /a/, a change that John Esling was perhaps the first to study systematically (Esling and Warkentyne 1993). In theory, the retraction of /æ/ stimulates a pull-chain by creating a void in the low front vowel space that allows the mid vowel to lower (ɛ tends toward æ) which in turn allows the high vowel to lower (ɪ tends toward ɛ).

Later studies of the Canadian Shift cast doubt upon the chain shift scenario. In particular, studies that use meticulous methods, including Boberg (2005) in Montreal and Roeder & Jarmasz (2010) in Toronto, have failed to find (ɪ)-lowering, that is, the top link in the chain. Though (æ)-retraction and (ɛ)-lowering are fairly robust in these studies, preserving the possibility of a two-part chain shift, the phonetics gets complicated by concomitant (æ)-lowering and (ɛ)-retraction, so that the chain-shift along the peripheral vowel tract is sometimes compromised by centralization of the lax vowels. Hall (2014) shows that (ɛ)-lowering takes place mostly in relatively formal styles, a finding that is consistent with movements along the peripheral tract, where vowels are more distinct. It is also entirely consistent with casual observations of (ɛ)-lowering in public announcements and broadcasts.¹

The (ɪ)-lowering phase is not completely absent but is at best sporadic. Furthermore, its occurrence is compromised by a few lexical variants that seem to be the output of (ɪ)-lowering but actually antedate the Canadian Shift by many years. Chief among these is the word *milk*, pronounced by some people as *m[ɛ]lk*. One of the early discussions linked the *milk/melk* variation to the Canadian Shift by taking as its title the colloquial expression “One of us says *milk* and the other says *melk*,” with the subtitle “Lax Vowel Lowering in Canadian English” (Meechan 1996). The paper did not otherwise mention *milk/melk*, but the title resonated as a well-known observation of a pronunciation variant that had been around for many years. If *milk/melk* had been given due consideration, it would undoubtedly have been excluded from the variants such as *since* as *s[ɛ]nce* and *six* as *s[ɛ]x* that make up the data for variable (ɪ)-lowering. Unlike these variants, as we will show, *melk* for *milk* is lexicalized and

¹ This finding belies the inference that the change is nonstandard, as claimed in some early impressionistic discussions of the Canadian Shift. It appears instead to be a reflex of careful, monitored speech.

invariant in the speech of those who say it. It is recognized by non-linguists and often commented on by them (in statements like the one that serves as the title above). By comparison, the (ɪ)-lowering variants are infrequent and largely unnoticed and have only been reported by linguists since 1995 (Clarke, Elms and Youssef 1995).

A personal account of the sociolinguistics of *melk* came to light, fortuitously, when an undergraduate student at the University of Toronto, Sherry Hucklebridge, intrigued by the linguistic variation she was learning about in class, resolved to solve the mystery of what she calls “one seemingly unexplainable aspect of my speech that has always puzzled me: for one reason or another, I almost never pronounce /ɪ/ [in *milk*] in casual speech.”² Her pronunciation *melk*, she goes on to say, draws attention so that “many of my non-linguistically-bent, Toronto friends regularly comment on it.” Searching for clues that might explain her *melk* pronunciation, Sherry revisited several of her formative environments (a conservative Christian grade school, a horseback-riding academy, a coterie devoted to anime, among others). “None of these early childhood influences provide an obvious answer to the question of /mɛlk/,” she says, “and so I turned next to my sociolinguistic inheritance.” She took pains to elicit the word “milk” colloquially from her three younger siblings, her parents and her grandparents, including her 90-year-old maternal grandmother who seemed a good prospect with her “notable Northern Ontario accent.” Every one of them, without exception, said /mɪlk/. As a last resort, she considered the physiological hypothesis that a slight underbite “might make a high vowel like /ɪ/ more difficult to pronounce.” It was easily refuted, of course, by the fact that she pronounces /ɪ/ in *silk*, *mill*, *billow*, *philodendron* and hundreds of other words with utter, unselfconscious ease. The mystery of *melk* remains.

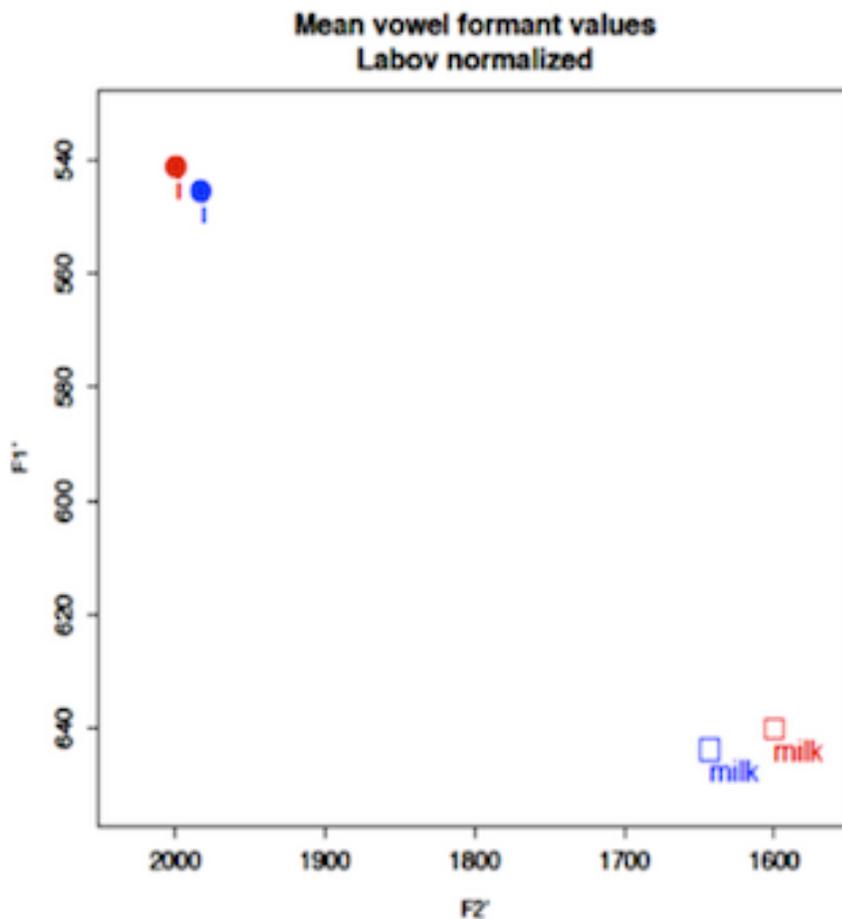
The mystery of *melk* remains not only for Sherry Hucklebridge but for dozens, perhaps hundreds, of other Canadians. We now know that it persists hardily among young adults. Hall (2014) interviewed 60 young people for a study of the progress of the Canadian Shift, 30 women and 30 men, aged 18-28, all raised in the Greater Toronto Area from ages of 8 and 18 or longer. She specifically included the word *milk* in the reading passage (RP) in order to test its congruity against the statistical norms established by other variant words in the sample. Looking at it systematically in the context of other items was intended to provide evidence for it as part of the phonological shift or, instead, as an idiosyncratic lexical development.

In order to examine whether or not the shifted vowel in *melk* may be lexicalized for this word, speaker means for F1 and F2 of the vowel in *milk* from the reading passage (RP) were compared with means for the other /ɪ/ vowels in the RP, for both sexes. Figure 1 shows that all speakers produce *milk* with a lower and more retracted vowel than other /ɪ/ items in the RP. Comparison with the F1 and F2 values for all words indicates that the vowel in *milk* is closer to /ɛ/ than to /ɪ/. T-test results confirm that both F1 and F2 of *milk* are significantly different from the other /ɪ/ tokens (F1: $t = -11.3928$, $p < 2.2e-16$; F2: $t = 17.6864$,

² We are grateful to Sherry for allowing us to cite her comments.

$p < 2.2e-16$). Figure 1 separates males and females (F1 males: $t = -9.3766$, $p = 6.846e-11$; F2 males: $t = 15.3165$, $p < 2.2e-16$; F1 females: $t = -7.0826$, $p = 2.404e-08$; F2 females: $t = 10.4306$; $p = 1.324e-14$). Females have slightly higher F1 values than males for *milk*, while males have slightly lower F2 values, but these differences are not significant (F1: $t = -0.2604$, $p = 0.7955$; F2: $t = -1.2374$; $p = 0.221$).

Figure 1: F1 and F2 of the vowel in milk as compared with speaker means for the other /ɪ/ vowels in the Reading Passage, by sex (women in red, men in blue). Sex differences are not significant.

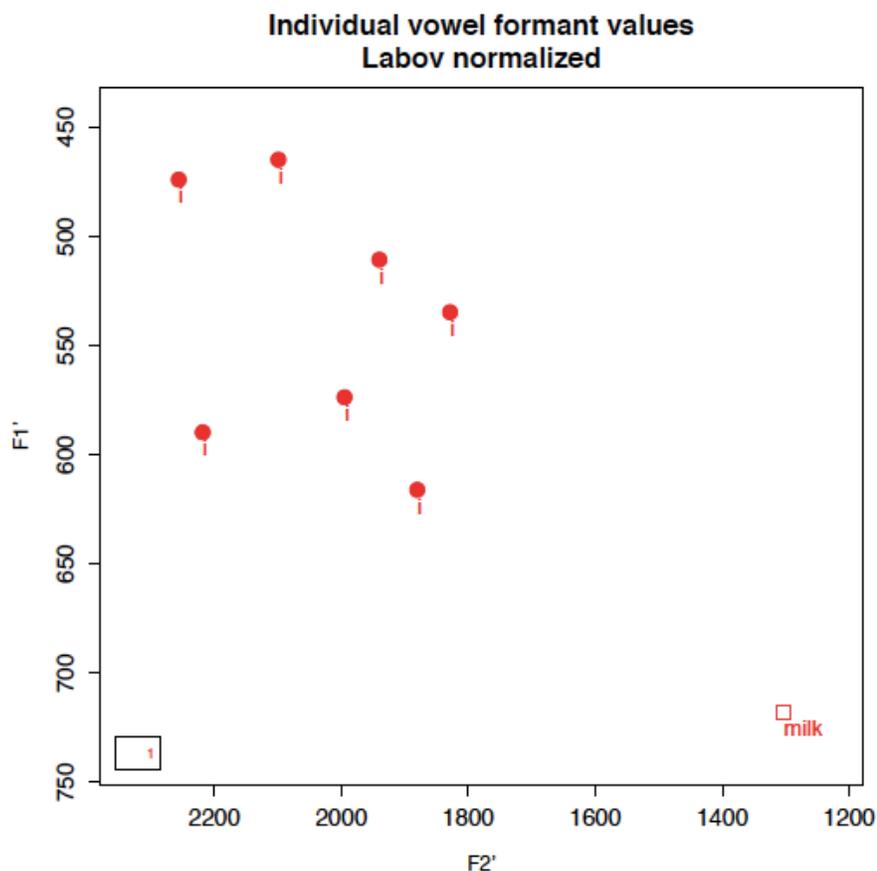


Following liquids are associated with significantly lower F2 values for /ɪ/, and therefore it is not surprising that these speakers appear to show more retracted vowels in *milk*. However, the difference in F1 cannot be explained by

linguistic conditioning, as following liquids were not found to favour lowering of /ɪ/, except of course in *milk*.

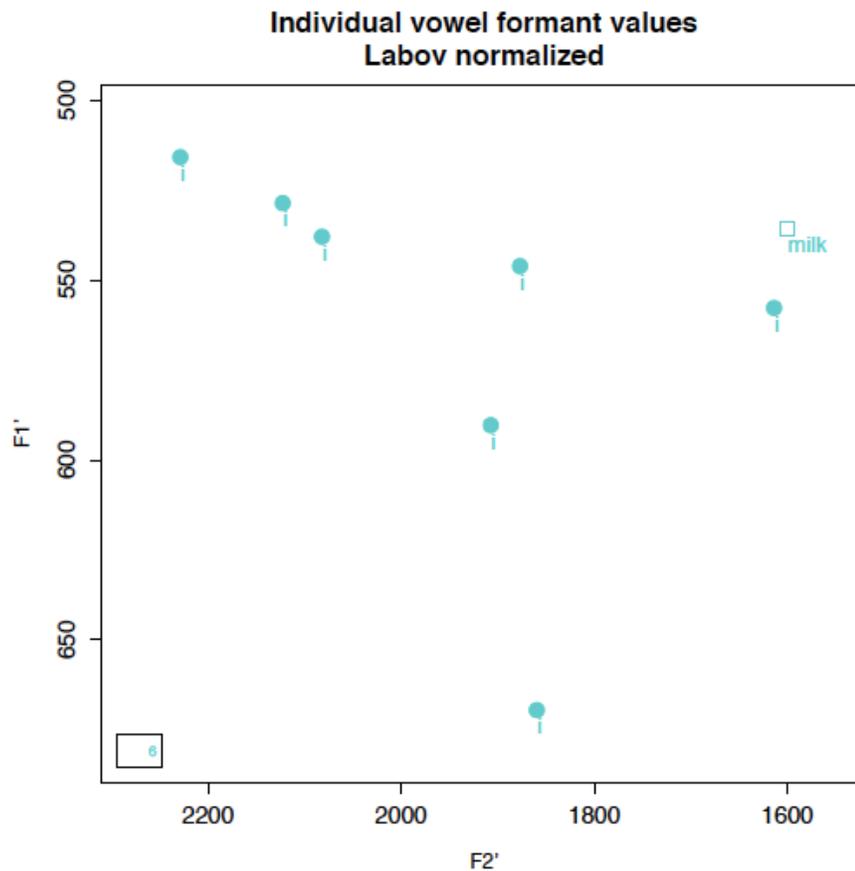
Figure 1 aggregates all speakers in the sample and shows that the mean vowel values are significantly lower and more retracted in *milk* than in the other /ɪ/ words. Needless to say, certain individuals show this tendency more than others. In order to investigate individual differences, each participant's /ɪ/ vowels from the RP were plotted using NORM (Thomas & Kendall 2009). In examining the vowel plots for each individual speaker, two distinct patterns emerged, as expected: many speakers showed a clear difference in F1 between *milk* and the other /ɪ/ tokens, indicating a lower vowel in *milk* than in words like *hit* and *sick*, while others did not lower the vowel in *milk* to the same degree. Figures 2 and 3 illustrate these two different patterns by plotting the /ɪ/ vowels for representative speakers from each group.

Figure 2: Speaker 1's RP vowels containing /ɪ/ as compared with *milk*



In Figure 2, Speaker 1's F1 value for *milk* is clearly lower than those of his other /ɪ/ words, while in Figure 3 for Speaker 6, the F1 of *milk* falls within the range of most of her other /ɪ/ tokens.

Figure 3: Speaker 6's RP vowels containing /ɪ/ as compared with *milk*



Each speaker's vowels were further examined statistically by comparing the 95 percent confidence intervals for the F1 values of /ɪ/ with his or her F1 value for *milk*. This analysis showed that of the 60 speakers sampled, 44 have F1 values for *milk* that are significantly higher than the upper range of F1 values for their other /ɪ/ words. The remaining 16 speakers for whom the F1 of *milk* falls within the range of their other /ɪ/ tokens do not appear to share any characteristics that might explain their lack of shifting of *milk*; nine are females and seven are males, and ten are in the lower age range (18-22) and six in the upper (23-28), making them a reasonably representative selection of the larger sample.

These findings provide empirical confirmation, for the first time, of the anecdotal observations about *milk*, and add some further information as well: first, some speakers do indeed pronounce *milk* with a significantly lower vowel than others; second, these speakers, the *melk* group, appear to be randomly distributed in the population, as neither sex nor age nor any other attribute correlates with *melk* usage; and third, the retracted quality of the vowel in *milk* may have originated in the general tendency for following liquid consonants to cause retraction of /ɪ/, though why it advanced further and became lexicalized in this word only and for some speakers but not others remains a mystery.

So now we know something with absolute certainty about the *melk* variant of *milk*. We know that it is not part of the variable output of the (ɪ)-lowering aspect of the Canadian Shift. Our casual observations suggest that it antedates the Canadian Shift, and its occurrence in the speech of 60 subjects indicates that it is more common in the *melk* form than the variants that undergo the rule. In fact, *melk* may not be a variable at all for most people who use it. Certainly, none of the 44 subjects in the sample who lowered the vowel in the direction of *melk* appeared to make any effort to avoid it or ‘correct’ it, even in the relatively self-conscious reading passage. For them, it seems to be an invariant, lexicalized alternative to the standard form *milk*.

Even though that is more than we knew about it until now, we have hardly solved its many mysteries. Linguistically, we know what it is *not*— it is *not* a variant form that results from (ɪ)-lowering. It is *not* a dialect form because it is not associated with any particular region. It is *not* a sociolinguistic variant because it does not occur in the speech of any particular age group or sex group or ethnic group. Even in families, the most basic social unit, it can occur in the speech of one family member and no others. It is *not* phonologically conditioned. It occurs before dark /l/ and after nasal /m/, but neither of those contexts is either necessary or sufficient. It is not attested in any historical record that we know of, and it has no provenance.

What is it? It is a variant pronunciation, nonstandard, that occurs in the speech of many people, sporadic in its distribution and apparently spontaneous in its dissemination. Come to think of it, we have always known that.

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