

# ETHNOLINGUISTIC DIFFERENTIATION AND THE CANADIAN SHIFT

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## ABSTRACT

The acoustic qualities of the Canadian Shift vowels /æ, ε, ɪ/ were examined among two ethnically distinct populations in Winnipeg, Canada: speakers of Filipino ancestry, and non-Filipino “white” Canadians. Results indicate that ethnic Filipinos participate more strongly in the Canadian Shift, indicated by greater retraction and/or lowering of the relevant vowels, in contrast with white speakers who only just meet the criteria for Canadian Shift. Canadian-born L1 English-speaking children of Filipino immigrants exhibited the greatest degree of retraction and/or lowering, while English L2 Filipino immigrants were intermediary in this respect. These results support the hypothesis that a new ethnolect may be forming within Winnipeg’s large Filipino ethnic community. The divergence of Canadian Shift patterns between ethnic groups in Winnipeg may be viewed within an “Emergent linguistic marketplace” model [7], with implications for further research on Filipino communities in other Canadian locales, and for ethnolinguistic variation more broadly.

**Keywords:** vowels, Canadian Shift, sociophonetics, ethnolinguistics, Canadian English

## 1. INTRODUCTION

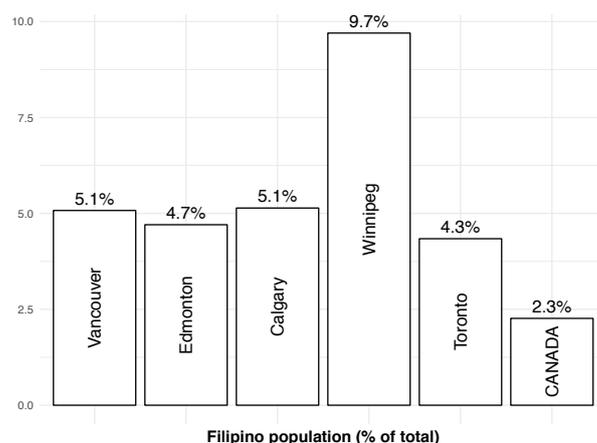
Research on ethnolects in Canada is currently in its infancy. While some studies have documented distinctive features associated with particular ethnic groups in Montreal [2] and Toronto [9], in most of Canada’s smaller cities the state of ethnolectal variation is largely unknown. For the present study, we have chosen to investigate one of the most important ethnic populations in Canada in recent decades, Filipino-Canadians.

Filipino migration to Canada began in earnest in the late 1960s [22] and continues to be strong today. Since that time, the largest per capita concentration of ethnic Filipinos in Canada has come to be located in the western Canadian city of Winnipeg, where ethnic Filipinos comprise nearly 10% of the city’s population [21], roughly twice the proportion found in other comparable cities (Fig. 1). Furthermore, this population is most concentrated in the north-west

quadrant of the city, creating distinct Filipino neighbourhoods.

Given such a substantial and concentrated population, we hypothesized that the Filipino-Winnipegger population should have a strong potential to develop a distinctive ethnolect. To investigate this hypothesis, we selected a hallmark feature of Canadian English, known as the Canadian Shift, a well-known chain shift involving the front lax vowels /æ, ε, ɪ/ (similar to the California Shift, although the relationship between the two is currently uncertain [6; 9]). In most varieties of Canadian English, the vowel /ɔ/ has merged with /ɑ/. The gap in the lower part of the vowel system resulting from the so-called *cot-caught* merger has been argued to be the impetus for /æ/ to retract in Canadian English [4], with /ε/ subsequently lowering and retracting in turn, later followed by a similar trajectory in the position of /ɪ/ in some regional dialects. The Canadian Shift is an ongoing change, with various regions of the country exhibiting subtle differences regarding the degree of retraction vs. lowering of each of the various vowels involved [5; 6; 7; 15].

**Figure 1:** The relative proportions of the ethnic Filipino population in Canada’s four major western cities and Toronto, Canada’s largest city.



The investigation of ethnic differences in Canadian Shift production has produced mixed results: in Montreal no significant production differences were found across several groups [2], while in Toronto significant differences were found which largely differentiated one ethnic group

(Chinese) from several others [9]. The present study aims to add to our knowledge of ethnolectal variation of Canadian Shift by broadening the scope of the investigation both geographically and ethnically through focus on the Filipino community in Winnipeg.

## 2. METHODS

### 2.1. Speakers

50 Winnipeg residents participated in the study. Of these, 21 were ethnically non-differentiated “white”, referred to hereafter by the moniker “Anglo”. The Anglo participants included 10 males and 11 females, all Canadian-born native speakers of English. The 29 remaining participants were ethnically Filipino, 14 male and 15 female, including 17 Canadian-born native speakers of English and 12 immigrants from the Philippines speaking English as a second language. Among the second language speakers, 6 were native speakers of Tagalog [19; 20], 4 of Kapampangan [12, 13], and 2 of Ilocano [23]; each of these languages has a similar, symmetrical 5-vowel system. All participants were recruited and recorded between 2014–2016.

### 2.2. Materials

A list of words was compiled for the purpose of eliciting vowel tokens comprising the full vowel system of Canadian English; the present study will only discuss those tokens relevant to Canadian Shift. Note that while /a/ is not considered to be one of the vowels participating in Canadian Shift per se, as its merger with /ɔ/ has been argued to have provided the initial impetus for the shift, it is included in this study along with the canonical Canadian Shift vowels /æ, ε, ɪ/.

### 2.3. Procedure

Each participant was recorded reading aloud from the prepared word list, presented in a semi-randomized fashion (adjusted to prevent multiple successive tokens of the same vowel). Each ethnic group was recorded by a different in-group field researcher, with distinct recording technology. Filipino participants were recorded with a Sennheiser EK 100G2 wireless lavalier microphone connected to a Zoom handheld recorder. Anglo participants were recorded with an Apogee One microphone connected to a MacBook Pro computer. All recordings were made as 44.1 kHz, 16-bit uncompressed .wav files. In total, 4,452 tokens were obtained from Filipino participants, and 2,697 from Anglo participants, for a combined total of n = 7,150 tokens.

### 2.4. Analysis

Vowel tokens were manually segmented and transcribed in Praat [3] by two trained phoneticians (Authors 1 & 3). Waveforms and transcriptions were uploaded to FAVE [18] which measures formant values at one-third of vowel duration, and normalized under FAVE’s default Lobanov [11] normalization method. The resulting output was exported to R [14] which was used to perform statistical analysis, including mixed effects linear modelling using the lme4 package [1] for R. For this purpose, speaker profiles were coded with demographic information including speaker ethnicity, sex, and first language.

## 3. RESULTS

### 3.1. Canadian Shift vowel thresholds

The Atlas of North American English [10] offers several benchmarks for determining the occurrence of Canadian Shift, listed in Table 1 alongside the corresponding vowel means for the Anglo and Filipino groups. Note that /ɪ/ was not addressed by [10] and so does not have a well-defined benchmark.

**Table 1:** Canadian Shift vowel benchmarks and means (bold indicates that benchmark is met).

Benchmark	Anglo	Filipino
/ε/ F1 > 650 Hz	<b>655 Hz</b>	<b>689 Hz</b>
/æ/ F2 < 1825 Hz	<b>1804 Hz</b>	<b>1801 Hz</b>
/ɑ/ F2 < 1275 Hz	1307 Hz	1387 Hz

As indicated in Table 1, although /ɑ/ does not meet the indicated benchmark among either Winnipeg ethnic group, the benchmarks for the Canadian Shift vowels /ε, æ/ are both met within each group. We take this to indicate that both groups do participate in Canadian Shift, with Anglo speakers lagging notably behind Filipino speakers in terms of the degree of retraction or lowering.

### 3.2. Linear mixed effects models

Mixed effects models indicated that speaker sex was not strongly correlated with differences in formant values; mean differences between the two sexes ranged only from 1–12 Hz for F1 and 8–43 Hz for F2, depending on the particular vowel. In contrast, speaker ethnicity was often correlated with substantial differences in mean formant values. Mean F1 values differed between ethnic groups (Filipino vs. Anglo), with Filipino speakers having F1 values approximately 50 Hz higher on average (lower vowel position) for all vowels. For /ε/ and /ɪ/, the two most recent vowels to be affected by Canadian Shift,

Filipino speakers had lower F2 values (more retracted vowel position) by > 200 Hz; /a/ and /æ/ did not exhibit large F2 differences between ethnicities.

As the Filipino cohort contained both English L1 and L2 speakers, we investigated differences correlated with English language status internal to this cohort, finding that differences in mean formant values were quite variable. The largest mean differences occurred between English L1 and Ilocano L1 speakers, and the smallest between English L1 and Tagalog L1 speakers. Given the small size of the English L2 sub-groups (between 2 to 6 individuals) we did not investigate formant differences between the English L2 sub-groups any further.

### 3.2. Vowel token distributions

Following the mixed effects model results, we focused on exploring the differences in vowel formant output between the two ethnicities, with the Filipino cohort split into two sub-groups, English L1 and (aggregated) English L2 speakers; we refer to the latter two groups as Filipino L1 and Filipino L2, respectively. Per-vowel differences in F1xF2 token distributions between each group are illustrated in Figs. 2–5. Ellipses indicate 50% and 90% confidence intervals for mean token distribution, and shaded circles indicate the mean F1xF2 positions.

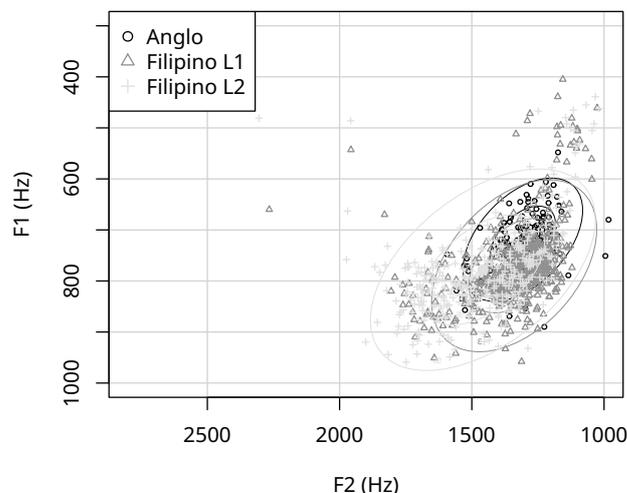
For /a/ (Fig. 2), both Filipino groups exhibit distributions which are somewhat more centralized and lowered than Anglo speakers, but nonetheless there is a great degree of overlap for the central 50% of each group’s tokens, indicated by the smallest, inner ellipses.

For /æ/ (Fig. 3), the degree of overlap between distributions is similar to /a/. The main observable difference concerns the relatively wide spread of F2 values for Anglo speakers, extending in both directions beyond the range of variation attributed to either Filipino group.

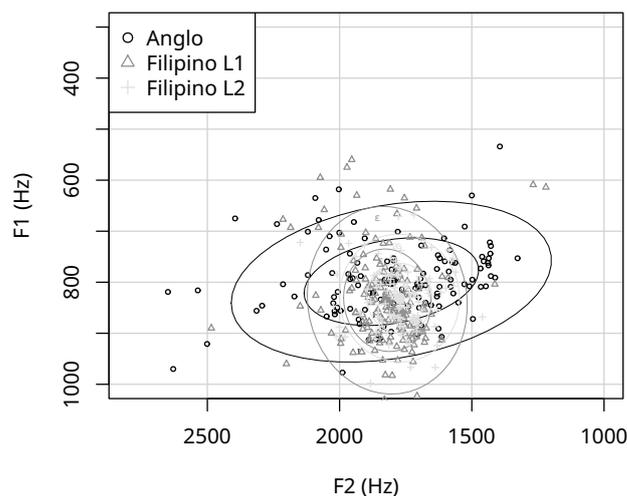
For both /ε/ and /ɪ/ (Figs. 4 & 5), a similar pattern emerges: Anglo speakers have distributions which are relatively high and front, Filipino L2 speakers have somewhat lowered and retracted distributions in comparison, while Filipino L1 speakers extend this trend even further, exhibiting the most retracted (centralized) and lowered distributions of all. This difference is most striking for /ɪ/, as the central 50% of distributions for Anglo and Filipino L1 speakers barely overlap at all.

Mean F1xF2 positions of each Canadian Shift vowel per group are plotted in Fig. 6, where the Filipino vs. Anglo lowering and retracting trend for the vowels /ε/ and /ɪ/ can be clearly observed.

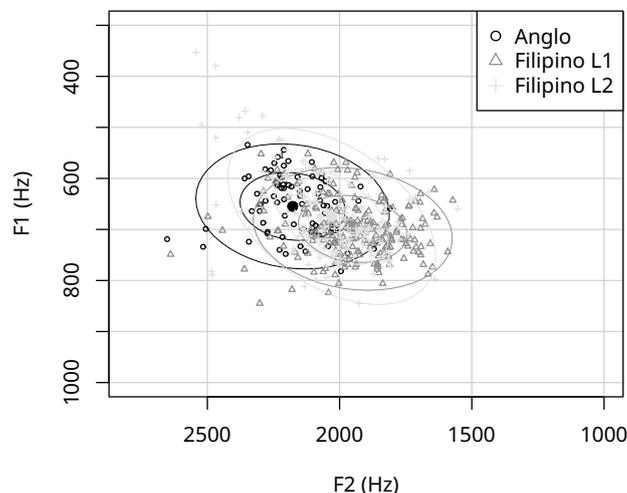
**Figure 2:** /a/ token distributions by ethnolinguistic group.



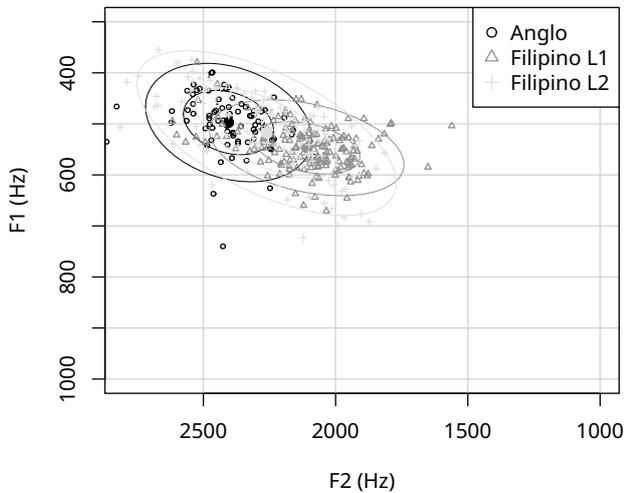
**Figure 3:** /æ/ token distributions by ethnolinguistic group.



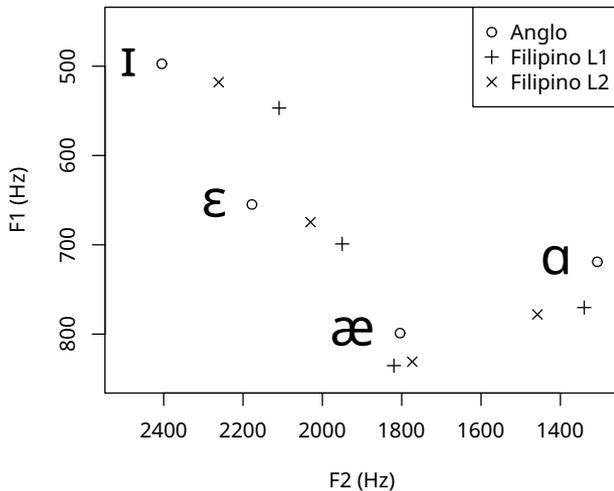
**Figure 4:** /ε/ token distributions by ethnolinguistic group.



**Figure 5:** /ɪ/ token distributions by ethnolinguistic group.



**Figure 6:** Canadian Shift vowels in F1x F2 space.



#### 4. DISCUSSION

The differences in position we have observed for Canadian Shift vowels among Filipino vs. Anglo speakers in Winnipeg have two main implications, one concerning the Filipino ethnic community specifically, and the other concerning the progress of Canadian Shift itself.

For Filipino speakers, our findings indicate that a distinctive ethnolect may be developing within Winnipeg. The phonetic characteristics of this ethnolect, at least in terms of the Canadian Shift vowels, can be attributed to two sources: the local realizations of the relevant vowels among the L2 predecessors to the L1 Filipinos, and the realizations of these vowels in other parts of Canada.

While Filipino L2 group has realizations which are more advanced in terms of Canadian Shift retraction/lowering than Anglo speakers in Winnipeg, this does not necessarily indicate that the L2

realizations served as the most direct model for the subsequent generations of Filipino L1 speakers. However, this becomes more significant when we consider that for Winnipeg generally (that is, undifferentiated for ethnicity), Canadian Shift realizations have tended to lag behind the rest of the country. Previous study of Canadian Shift in Winnipeg, while limited [6], has indicated that (Anglo) Winnipeggers generally did not participate in the shift. While our more recent data shows that the situation has changed somewhat, our Anglo participants only just meet the benchmark criteria for Canadian Shift (see Table 1). Both L1 and L2 Filipinos have stronger indications of participation in the shift, and it can therefore be argued that the Filipino community in Winnipeg more closely follows the national, rather than local trends.

In this respect, Filipino-Winnipeggers may be more cognizant of and adherent to extra-local trends exemplified by communities such as e.g. Toronto where the shift has progressed further. This type of ethnically-differentiated variation may be seen as the exchange of “symbolic capital” on the “Emergent linguistic marketplace” [7]. In other words, because Winnipeg is smaller Canadian city, we hypothesize that there is little social capital to be gained by adhering to its local conservative trends versus the more innovative national pattern of larger Canadian cities with more cultural influence, such as Toronto or Vancouver. This reflects similar findings among Asian communities of San Francisco [7].

Regarding the general progress of Canadian Shift, the differences between the various vowels across ethnolinguistic lines is particularly relevant. While significant ethnolinguistic differences are largely relegated to the vowels /ε/ and /ɪ/, these are the most recent vowels to participate in the shift. Differences in position for /æ/ and /ɑ/ are much less substantial across ethnicities, indicating that these vowels are more stable. This may be taken as an indication that the shift is no longer in progress for /æ/ in Winnipeg generally (/ɑ/ is not argued to actually participate in the shift, being its origin). If retraction and lowering of /æ/ was in fact the initial phase of the shift, then it is expected that it would be the first vowel to have reached a stable position, while the other lax front vowels remain somewhat in flux. This places Winnipeg generally further behind in the progress of Canadian Shift in comparison to more eastern Canadian communities such as Toronto [16], Thunder Bay [15], or Montreal [2], but ahead of e.g. Victoria [17] (in western Canada), where /æ/ retraction is still active.

## 5. REFERENCES

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