AN ACOUSTIC STUDY OF AN UNCOMMON VOWEL PRODUCED BY HUNGARIAN-ENGLISH BILINGUALS

Zita McRobbie-Utasi

Department of Linguistics , Simon Fraser University, British Columbia, Canada, V5A 1S6. mcrobbie@sfu.ca

1. INTRODUCTION

One of the uncommon vowels in languages is the low back rounded vowel [Å]. In Maddieson (1984), only five of the 918 languages surveyed are identified as containing this vowel in their sound system. Because of its phonetic characteristics, the articulation of the [Å] sound is rather complex. This vowel represents one of the special features of Hungarian speech. It is difficult for foreigners to produce, and it appears to be vulnerable in a languages-in-contact situation. Of the several "markers" that distinguishes immigrant Hungarian speech from that of Hungarian newcomers, the pronunciation of this vowel definitely qualifies as one of those markers. This fact contradicts earlier research asserting that the pronunciation of first generation speakers is completely Hungarian (Kálmán, 1973).

The hypothesis proposed here is based on universal tendencies. Accordingly, it was expected that the direction of pronunciation change is toward the centre of the vowel continuum, i.e., approximating the pronunciation of the vowel [a]. In the discussion that follows it will be argued that this hypothesis may only be partially upheld.

2. METHOD

Twenty-four speakers (twelve female and twelve male) participated in the experiment discussed below. Out of the twelve female speakers, two came to Canada between 1946 and 1948; four between 1956 and 1958; all except two (who were under the age of six in 1956) were adults at the time of arrival. All six speakers have worked in an English-speaking environment and had only minimal contact with members of the Hungarian community. The other six female speakers have been closely involved with the Hungarian community. Two of these subjects arrived in Canada in 1957, two in the 70s (1972 and 1975 respectively) and two in the early 80s (in 1981 and 1983 respectively).

The twelve male speakers were also selected on the basis of their association with the Hungarian community. Six of the subjects have worked in an English speaking environment, while the other six have been closely associated with the Hungarian community. The first group of male speakers arrived in Canada in 1957 (four, one of them was under the age of six at the time of arrival) and 1958 (two speakers. Of the six immigrants who were in close contact with the Hungarian community, two arrived in the early 70s (in 1973 and 1974), and four in the late 70s or early 80s (1978, 1982 and 1983 respectively).

Recordings were made in in the Phonetics Laboratory at Simon Fraser University. The subjects read twenty words (containing the vowel under examination) placed in a sentence frame presented to them on randomly sequenced filing cards a total of three times The control tape was prepared by recording of one female and one male speaker (both visitors from Hungary) immediately after their arrival.

First and second formant frequency measurements were obtained (Praat program, Version 3.9.13), in order to identify the quality of the vowel produced by the speakers.

3. RESULTS AND DISCUSSION

The acoustic analysis aimed at quantifying the two parameters — tongue height and tongue backing – resulted in acknowledging two separate tendencies in relation to the degree of the speakers' involvement with the Hungarian community. These tendencies are clearly identifiable for female and male speakers alike. The first tendency is observed in connection with those subjects who had minimal or no contact with the Hungarian community, who pronounce the vowel [Å] close to that of the control speakers. On the other hand, the second tendency is related to speakers with strong involvement with the Hungarian community, who appear to produce this vowel with higher tongue position than do the control speakers. Further, those subjects who were children at the time of their arrival in Canada pronounce this vowel with tongue advancement, thus closely approximating the tongue position for the vowel [a]. Figures 1 and 2 present the first and second formant frequency values with respect to those of the control speakers. The arrow points to the formant frequency values obtained from the SB (control) speaker.

First formant frequency (mean) values obtained for female speakers AH'57, AH'70s and AH'80 reveal a tendency to articulate the vowel [å] with a higher tongue position than that of the control speaker. The greatest divergence from the control speaker's pronunciation (F1 = 845 Hz) with regard to tongue height is evident with the A'70 speakers (680 Hz). The three early immigrants appear to be closest to the control pronunciation values (865 Hz, 850 Hz and 840 Hz respectively).

With regard to the measurement (mean) values obtained for the second formant, it can be clearly seen that the early immigrant adult speakers have a comparable tongue position with that of the control speaker : 1200 Hz (SB), 1234 Hz (A'46-'48), 1241 Hz (A'56-'58). The lowest frequency value (1100 Hz) is associated with the two speakers who immigrated in the 1970s and have since been closely associ-

ated with the Hungarian community (A'70). The high second formant value (1392 Hz) observed for the two speakers who immigrated to Canada as children reveals a pronunciation approaching that of the vowel [a].

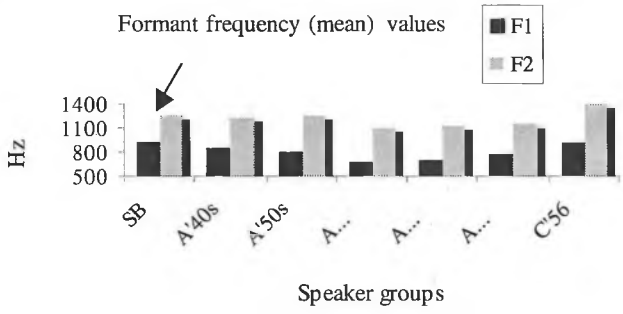

Fig. 1. Mean formant frequency values (female speakers). SB=speaker from Budapest, A=adult speaker, C=child speaker; the dates indicate the year of immigration.

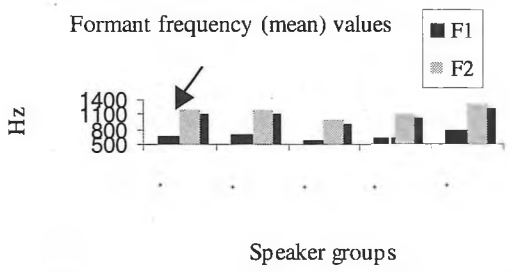

Fig. 2. Mean formant frequency values (male).

First formant measurements (mean values) obtained for male speakers indicate a higher tongue position for those in the AH'70s and AH'80s groups relative to the control speaker (SB = 670 Hz; AH'70 = 580 Hz, AH'80s = 610 Hz). Speakers in the A'57-'58 group have a comparable tongue height with that of the control speaker (700 Hz).

Measurement (mean) values obtained for the second formant for those in the A'57-'58 group show a tongue position similar to that of the control speaker (SB = 1185 Hz, A'57-'58 = 1200 Hz). Speakers belonging to the AH'70s and AH'80s group have 997 Hz and 1100 Hz second formant frequency mean values respectively. The measurements (1326 Hz) obtained for the speaker who came to Canada as a child indicate a more advanced tongue position.

The results presented above reveal the following tendencies, valid for both (female and male) speaker groups : (i) the divergence in tongue height is greatest in the pronunciation of the AH'57, AH'70s and AH'80s (female) and the AH'70s and AH'80s (male)speakers, (ii) the divergence in tongue backing is greatest in the pronunciation of the of the C'56 (female) and C'57 (male) speakers, and (iii) the pronunciation of the immigrant speakers having minimal contact with members of the Hungarian community diverges the least from the F1 and F2 averages obtained from the SB speakers.

CONCLUSIONS

The implications of the experiment reported on here only partially confirm the first hypothesis, i.e., the direction of the pronunciation change is toward the centre of the vowel continuum. This hypothesis may only be upheld for second generation speakers.

With regard to the direction of the sound change and the speaker group leading the change this study has sustained the conclusions reached in the first part of the project (McRobbie-Utasi, 2001).

REFERENCES

Kálmán, B. (1973). Az amerikai magyarok nyelve *Zborník Filozofickej Fakulty Univerzity Komenského. Philologica* XXV (pp. 199-205).

Maddieson, I. (1984). *Patterns of sounds*. Cambridge: Cambridge University Press.

McRobbi—Utasi, Z. (2001). Pronunciation changes in the speech of Hungarian bilinguals. Presented at the *Canadian Association of Hungarian Studies Conference. Québec City.*