

Women and sound change: Conservative and innovative behavior by the same speakers

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ABSTRACT

In this article we address Labov's claim that sound changes that are not stigmatized are led especially by young women who are the "movers and shakers" in the community, people with energy and enterprise. Such young women, at the same time, are conservative with respect to sound changes or stable linguistic variables that are stigmatized. We investigated this claim by comparing the pronunciation of the non-stigmatized front vowels /ɪ/, /ɛ/, and /æ/ with that of the stigmatized diphthongs /ai/ and /au/ in New Zealand English. When we considered the pronunciation of each variable, the young women did not unequivocally support Labov's claim. However, when we examined the behavior of individual speakers across the two sets of variables, Labov's claim was supported. This result leads us to emphasize the importance of considering the behavior of individual speakers in a more holistic way rather than focusing only on the averaged data for single variables.

Many sociolinguistic studies have looked at the behavior of groups of speakers in relation to a single linguistic variable or a set of variables (see, e.g., Chambers & Hardwick, 1986; Gregersen & Pedersen, 1991; Labov, 1972; MacLagan & Gordon, 1998; Milroy & Milroy, 1978, 1985; Trudgill, 1974). Where more than one variable is under consideration, it is often difficult to tell how individual speakers behave across them. One particular group of women may, for example, behave conservatively with one variable and not behave conservatively with another (Holmes & Bell, 1992; Milroy 1987; Milroy & Milroy, 1978, 1985; Trudgill, 1974). However, unless data is available for individual speakers across variables, there is no way of knowing the extent to which individuals within the group are behaving consistently across the variables. In this article, we report on the production of certain variables by different groups of speakers and examine how the individuals in these groups behave across variables (i.e., how one variable is treated relative to another variable). The purpose of the study was to investigate

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the behavior of contemporary New Zealand speakers in relation to variants of the diphthongs /ai/ and /aʊ/, which are stigmatized in New Zealand English, and to the front vowels /ɪ/, /ɛ/, and /æ/, which are involved in a non-stigmatized ongoing sound change. The aim was to discover whether those who had conservative diphthong pronunciations would also have conservative front vowel pronunciations or if there would be a differentiation, with women in particular using conservative diphthong variants but innovative front vowel variants (see Holmes, 1997; Labov, 1990, 1994; Woods, 1997).

BACKGROUND

In New Zealand we are in the fortunate position of having both written and spoken data available for the investigation of earlier forms of our variety of English. The written sources such as newspaper articles, letters to the editors of newspapers, and the reports of school inspectors are largely in the “complaint tradition” (see Gordon 1983, 1998). This material gives us a useful guide to what was stigmatized in earlier New Zealand English (NZE) and what was not. Without question, the closing diphthongs (outgliding diphthongs)¹ (/ei, ai, aʊ/) were identified as a principal feature of the much maligned New Zealand “colonial twang” identified in written sources at around the turn of the century. For example:

We are always waging war against the colonial accent . . . The particular vowels which are so badly treated are ‘a’, ‘i’ and ‘o’. A great many children in Wellington talk about ‘Dy’s By’ [Day’s Bay]: ‘time’ is ‘toime’ and ‘flour’ is ‘fleour’. They twist the vowel sound. . . I know this impurity of pronunciation is in some cases a deterrent to better class people sending small children to the primary schools. (Margaret Lorimer, Principal of Nelson Girls’ College, submission to the Cohen Commission on Education, 1912 [AJHR, E–12:637])

There are no references in the written records to the raised front vowels, which are now known to be in evidence in early NZE (Gordon, 1998; Trudgill, Gordon, & Lewis, 1998).

Spoken data have been obtained from an archive of recordings collected in 1946–1948 by the Mobile Disc Recording Unit of the National Broadcasting Service, which traveled to country districts in parts of New Zealand collecting, among other things, pioneer reminiscences. In this archive are over 250 interviews of people born in New Zealand between the 1850s and 1890s (Lewis, 1996). Auditory and preliminary acoustic analysis (Trudgill, Gordon, Lewis, & MacLagan, submitted; Trudgill et al., 1998; Watson, MacLagan, & Harrington, 1998) of some of the oldest speakers in this archive have shown that many of them used partly raised /ɛ/² and /æ/ as well as diphthong-shifted and/or glide-weakened forms of /ai/ and /aʊ/. However, the centralized /ɪ/, which today is probably the most salient feature of NZE, is noticeably absent.³

For some time now we have observed that young women, especially those in the service industries (e.g., secretaries, flight attendants, shop assistants, teachers, nurses, etc.) seem to have remarkably close front vowels, so that *bad* can be

confused with *bed* and *bed* with *bead*. Their closing diphthongs are unremarkable. Young men of similar age and social group appear to have unremarkable front vowels, but use the closing diphthong variants that have been adversely commented on in New Zealand for nearly a century. This informal observation coincides with the view expressed by Labov (1990, 1994) that young women tend to lead sound changes that are not stigmatized, but tend to be conservative in sound changes or with stable sociolinguistic variations that are stigmatized. Labov (personal communication, 1996) talked about sound changes being led especially by young women who were “movers and shakers” in the community, people with energy and enterprise (see Coates, 1993, for a somewhat different view).

Just as the diphthongs were commented on and the short front vowels were ignored at the turn of the century, so a similar situation exists today. Occasional complaints can be heard in New Zealand about the diphthong shift, which is still taken as the main marker of social class in New Zealand (see Bauer, 1986; Bayard, 1987; Maclagan & Gordon, 1996; Woods, 1997). The raised front vowels and centralized /ɪ/ are a constant source of comment from visitors to New Zealand, especially from Australia. They form the basis of the material in the humorous little book *Kiwese* by the Australian Alex Buzo (1994), described as “a ductionary—New Zealand-speak made easy” (e.g., “Fush = marine creature” [i.e., *fish*], “Text = levied by the government” [i.e., *taxed*]). However, the front vowels are not a source of comment or amusement within New Zealand, where most people are hard-pressed to know what the fuss is about. From this we can say that in New Zealand the raising of the front vowels is mostly below the level of consciousness, whereas the shifting of the closing diphthongs is above the level of consciousness and is stigmatized.

The closing diphthongs /ai/ and /aʊ/ are particularly susceptible to variation in different regional and social types of speech (Gimson, 1970:127) and are often social markers (see Labov, 1972; Wolfram & Schilling-Estes, 1998). Labov (1972) demonstrated variation for both diphthongs in Martha’s Vineyard, and Mitchell and Delbridge (1965) similarly showed it for both vowels in Australian English. Wolfram and Schilling-Estes (1998) showed different treatment for the two vowels in Ocracoke, Eckert (1996) showed variation for /ai/ in Detroit, and Chambers and Hardwick (1986) found variation for /aʊ/ in Canadian English. The NZE diphthongs are therefore behaving in ways that parallel other varieties of English. The upward movement of the front vowels in NZE is less usual. When Labov formulated his principles of vowel shifting, Principle II initially stated that, in chain shifts, short vowels fall (1994:116). This principle was revised partly because of the behavior of the front vowels in NZE and Australian English, so that lax nuclei are said to fall on a non-peripheral track and tense nuclei to rise on a peripheral track (Labov, 1994:176). NZE /ɛ/ and /æ/ are regarded as tense and peripheral (Labov, 1994:212). Acoustic analysis (Cox, 1996) has indicated that not all Australian English front vowels have continued their previous raising. In the 36 years between Bernard’s analysis of Australian English (1970) and Cox’s analysis, /ɪ/ has continued to raise, /ɛ/ has remained stationary, and /æ/

has fallen. A similar comparison of early and more recent acoustic analyses of NZE indicates that NZE /ɛ/ and /æ/ have continued to raise, and that /ɪ/ has remained stationary (Maclagan, 1982; Watson, Harrington, & Evans, 1998). The present study sheds further light on the ongoing movement of the NZE front vowels.

A note about terminology is required here. The situation observed in NZE today with regard to the diphthongs /ai/ and /aʊ/ may well indicate relatively stable sociolinguistic variation rather than ongoing changes, so the terms “conservative variants” and “innovative variants” are therefore not necessarily strictly correct. However, these terms have been used for the sake of comparison with the short front vowels, and there is some justification for doing so. First, the diphthong variants that are stigmatized are those associated with a relatively recent shift, which, while it may have occurred in Britain and been brought to New Zealand by settlers, was certainly not as widespread in early NZE as it is today (Trudgill et al., submitted). Second, the situation for /ai/ and /aʊ/ is complicated; while these diphthongs seem to have represented stable sociolinguistic variation for some time, as evidenced by the long history of complaints indicated earlier, the pattern nevertheless seems to have shifted over time. As our results show, there are now very few [ai] variants of /ai/ or [aʊ] variants of /aʊ/ which earlier would have represented the most conservative, least stigmatized variants of the diphthong. Similarly, the first elements of the stigmatized variants have raised over time. For these reasons, the terms “innovative” and “conservative” are used both for front vowel and diphthong variants.

METHOD

The speakers were recorded over a period of four years by students taking the advanced NZE course at the University of Canterbury, as part of an ongoing project to record present-day NZE (Gordon & Maclagan, 1995). Between 1994 and 1997, over 200 subjects were asked to take part in the study, using selection criteria of sex, age, and social class. The aim was to include equal numbers of men and women from two age groups and two social class groups. The age groups selected were 20–30 years and 45–60 years. For social class, individuals were approached who it was believed would fit well into one of two categories, which we have labeled “professional” (i.e., higher social class speakers) and “non-professional” (i.e., lower social class speakers).⁴ Social class categorization of individuals was done on the basis of education and occupation (and parents’ occupations where relevant for the younger speakers). The three-way division of subjects by age, sex, and class gave eight groups of subjects in all.

Table 1 gives the number of speakers in each category and presents group scores for age and for the education and occupation measures. These measures were not applied in selecting the subjects; rather they were used to check the validity of the social class categories. A score for occupation was arrived at for each speaker using a 6-point scale derived in 1990 from the Elley-Irving codes

TABLE 1. *Profile of speakers*

Speaker Category	Number	Age	Education	Occupation	Overall Social Class
FOP	24	49.5 (5.77) ^a	2.6 (0.71) 3 ^b	2.2 (0.98) 2	2.4 (0.86) 2
FON	27	51.6 (7.79)	5.2 (1.11) 6	5.4 (0.78) 6	5.3 (0.95) 6
MOP	26	50.4 (4.66)	2.5 (1.61) 2	1.7 (1.03) 1	2.1 (1.39) 2
MON	25	51.5 (6.65)	5.2 (1.18) 6	4.3 (1.11) 4	4.8 (1.20) 5
FYP	23	24.0 (3.41)	2.7 (0.91) 2	2.3 (1.24) 2	2.5 (1.07) 2
FYN	26	24.7 (4.06)	4.8 (1.01) 5	5.0 (0.85) 5	4.9 (0.92) 5
MYP	27	26.6 (5.05)	2.3 (0.88) 2	2.1 (1.09) 2	2.2 (0.98) 2
MYN	27	23.48 (3.19)	4.6 (0.93) 5	4.6 (1.22) 5	4.6 (1.06) 5

Note: M = male, F = female, Y = younger, O = older, P = professional, N = non-professional

^aMean (standard deviation).

^bMedian.

for census occupations (Elley & Irving, 1985; New Zealand Ministry of Education, 1990). The lower the number, the higher the social class rating of the occupation. A 6-point scale along similar lines was devised to code the speakers' educational attainments (see Gregersen & Pedersen, 1991, for a similar way of assessing social class).

The mean overall social class rating for each of the four groups of professional speakers is between 2.0 and 2.5. For the non-professional groups of speakers, it is between 4.6 and 5.3. The men have consistently higher overall ratings than the women. The older professional men's mean occupational rating of 1.7 and the older non-professional men's mean rating of 4.3 probably reflects the higher occupational categories still achieved by men in New Zealand society (New Zealand Ministry of Women's Affairs, 1997:3–5, 1998:37–41).

The socioeconomic scores of the speaker groups, as shown in Table 1, support our view that the professional individuals in our study are not from the highest social class in New Zealand but fall most neatly into the group that Labov (1990) called the second-highest social class, the class most involved in language change (see Maclagan & Gordon, 1996). This is not surprising, as the very exclusivity of the highest social class means that its members may not be easily recruited for sociolinguistic studies (Kroch, 1996).

Many researchers prefer to use data from casual speech rather than from read material or word lists (e.g., Gregersen & Pedersen, 1991, Labov, 1972; Trudgill, 1974). Other researchers use word lists and read material in order to facilitate

exact comparisons between the pronunciations of different speakers in the samples (e.g., Di Paolo & Faber, 1990; Gordon & Maclagan, 1989, 1995; Habick, 1980). Milroy (1987:172–182) thoroughly discussed the pros and cons of read material versus casual speech, indicating that there are problems with both types of data. Both word list and read material is included in the data collected for our ongoing study of NZE. Only our analysis of the word list data is presented in this article because we wish to make exact comparisons between the speakers. Specifically, the following words, taken from a much longer list used in the study, are relevant here.

/ɪ/: hit, hid, hint
 /ɛ/: bet, bed, beck, beg, Ben
 /æ/: bat, bad, back, bag, ban
 /ai/: tie, tied, tight, pie, pine
 /aʊ/: loud, lout, how, cow, town

The first author made an auditory analysis of the individual words used by each speaker and transcribed them using a narrow IPA analysis. Randomly selected speakers were re-analyzed six months later, and a small group of speakers was analyzed by phoneticians at University College London in order to check for consistency of IPA usage. There was an agreement of greater than 90% among the analyses.

Tokens for each vowel were classed as conservative, neutral, or innovative with respect to NZE. Speakers usually produced the same variant for all words on the word list bearing the same phonemic vowel; therefore each speaker is coded once in the tables. The exception to this is /aʊ/. Speakers tended to use different variants of this diphthong in different words. Each word was therefore coded individually, giving larger numbers in the cells of the /aʊ/ table.

RESULTS

Group results for the front vowels and for the closing diphthongs are presented and discussed first. Next, the results for one set of variables (the diphthongs) relative to the other set (the front vowels) are presented and discussed. This second analysis is designed to reveal whether individuals within the speaker groups behaved differentially with respect to the two sets of variables. To illustrate this behavior, the results for some representative individuals are reported in addition to the grouped results.

Front vowels

In present day NZE, /ɪ/ is relatively central and approximately half-close (close-mid). This contrasts with Received Pronunciation (RP) /ɪ/, which is above half-close and considerably further forward. Tokens of /ɪ/ were classified as conservative if they were front of central ([ɪ]), neutral if they were central and

TABLE 2. Pronunciation of /ɪ/ by speaker group

Speakers	Number	Front [ɪ]	Central [ə]	Central/Open [ɘ]	Back [ɤ]	Back/Open [ɚ]	Total
FOP	24	8	11	3	2	0	24
FON	27	6	14	2	3	0	25
MOP	26	5	16	2	3	0	26
MON	25	4	16	3	1	0	24
FYP	23	2	16	4	0	0	22
FYN	26	1	12	9	3	1	26
MYP	27	4	18	2	3	0	27
MYN	27	1	17	7	2	0	27

Note: There were no productions of /ɪ/ that were both front and open.

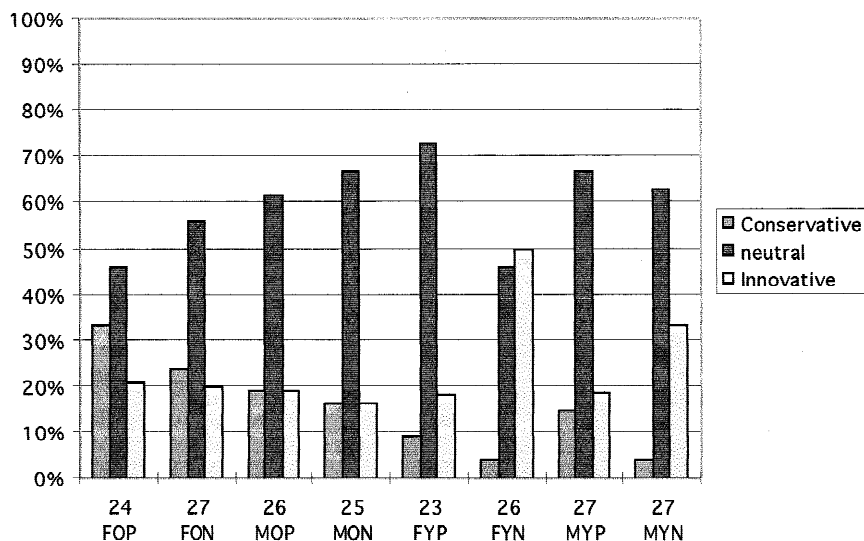


FIGURE 1. Percentage pronunciation of /ɪ/ by speaker groups.

approximately half-close ([ɘ]), and innovative if they were back of central ([ɤ]), below half-close ([ɚ]), or both back of central and below half-close ([ɚ]). Speakers who produced a conservative, fronted sound for /ɪ/ never produced versions below half-close. Table 2 and Figure 1 present the results for /ɪ/.⁵

From Table 2 and Figure 1 it can be seen that most speakers in most groups use the neutral central sound for /ɪ/. Some older speakers, both male and female, still use the more conservative, fronter sound. The innovative variants are used by the younger non-professional speakers, especially females, who use more of the open schwa-like pronunciations.

TABLE 3. *Pronunciation of /ɛ/ by speaker group*

Speakers	Number	Conservative [ɛ̄]	Neutral [e]	Innovative [ɛ]	Total
FOP	24	2	14	8	24
FON	27	3	13	11	27
MOP	26	3	16	7	26
MON	25	0	15	10	25
FYP	23	1	4	18	23
FYN	26	0	7	19	26
MYP	27	2	10	15	27
MYN	27	1	3	22	26

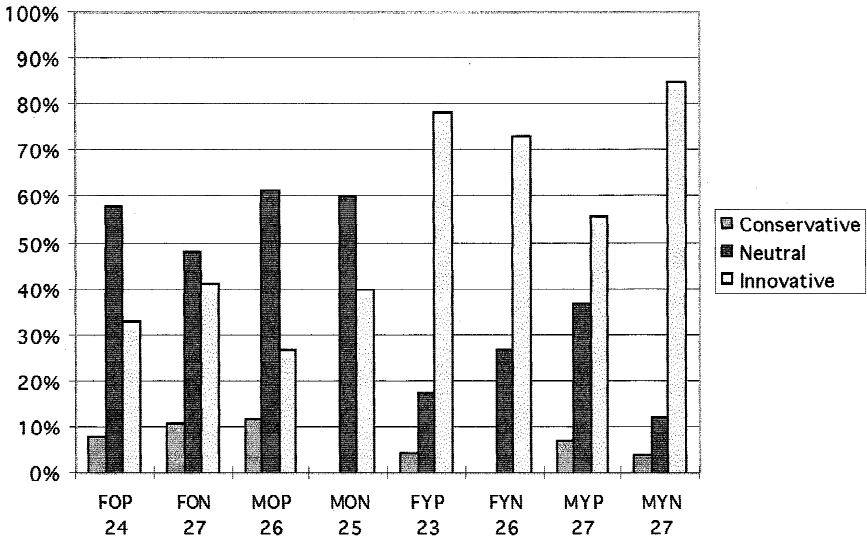


FIGURE 2. Percentage pronunciation of /ɛ/ by speaker groups.

In NZE, /ɛ/ is raised considerably more than in RP, usually being produced close to Cardinal 2 ([e], a front, close-mid vowel). Tokens of /ɛ/ below Cardinal 2 were classified as conservative, those approximately at Cardinal 2 were regarded as neutral, and those above Cardinal 2 were regarded as innovative. No examples of the more centralized versions of /ɛ/ suggested by Bell (1997a) were found in this data set. Table 3 and Figure 2 give the results for /ɛ/. It can be seen that conservative pronunciations, below Cardinal 2, are rare. The older speakers prefer the neutral Cardinal 2 pronunciation. The younger speakers prefer the closer, innovative pronunciation, with the younger professional males showing a weaker trend than the other younger speakers.

TABLE 4. *Pronunciation of /æ/ by speaker group*

Speakers	Number	Conservative [ɛ̃]	Neutral [ɛ]	Innovative [ɛ̃]	Total
FOP	24	13	6	5	24
FON	27	9	7	9	25
MOP	26	15	8	3	26
MON	25	14	7	4	25
FYP	23	7	8	8	23
FYN	26	5	12	9	26
MYP	27	13	11	2	27
MYN	27	6	10	11	26

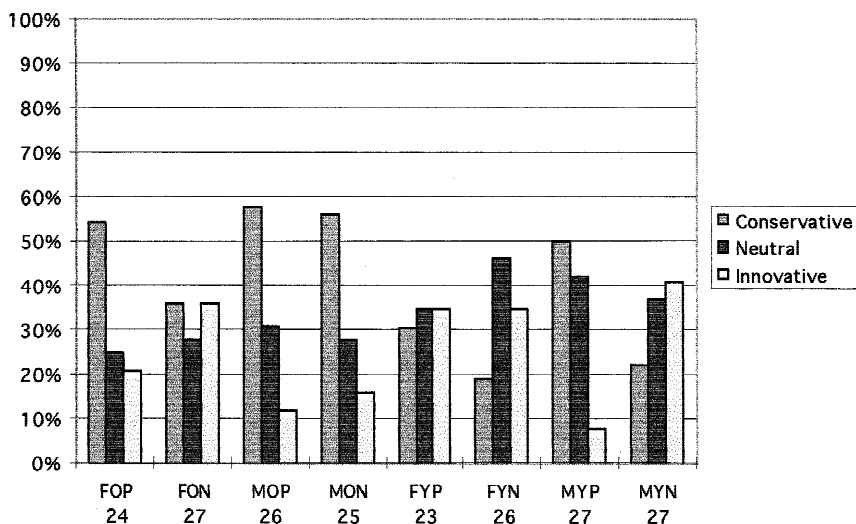


FIGURE 3. Percentage pronunciation of /æ/ by speaker groups.

As with /ɛ/, NZE /æ/ receives relatively closer realizations than in RP, with younger speakers producing even closer versions. Tokens of /æ/ were classified as conservative if they were below Cardinal 3 ([ɛ̃], a front, open-mid vowel), neutral if they were approximately at Cardinal 3 ([ɛ]), or innovative if they were above Cardinal 3 ([ɛ̃]). [ɛ̃] was used to describe the more open variants rather than [æ] because very few of the speakers had tokens as low as [æ].

As can be seen in Table 4 and Figure 3, relatively more speakers use conservative versions of /æ/ than of /ɪ/ or /ɛ/. More older speakers use conservative variants. Younger speakers, except the young male professionals, use neutral and innovative realizations. Within each age group, male speakers tend to use conservative versions, and female speakers tend to use the neutral or innovative forms.

TABLE 5. *Pronunciation of /ai/ by speaker group*

Speakers	Number	Conservative [æ] + [æ̃] + [æ̃]	Neutral [ɐ̃]	Innovative [ɔ̃]	Total
FOP	24	16	7	1	24
FON	27	6	15	5	26
MOP	26	12	11	2	25
MON	25	1	16	7	24
FYP	23	3	19	0	22
FYN	26	1	18	6	25
MYP	27	5	20	2	27
MYN	27	2	9	15	26

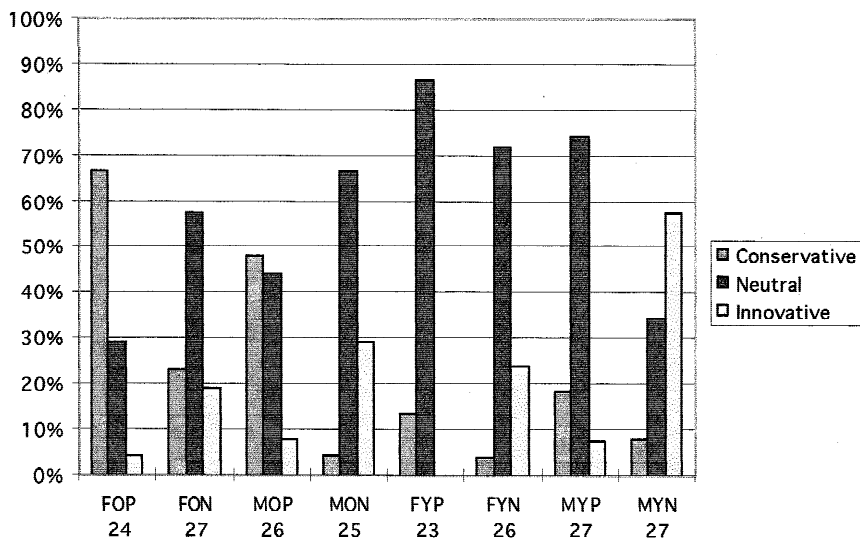


FIGURE 4. Percentage pronunciation of /ai/ by speaker groups.

Closing diphthongs

In NZE, the first target of /ai/ is progressively more retracted and rounded by speakers of lower social classes (see Bauer, 1986; Bayard, 1987; Maclagan & Gordon, 1996). In this study, tokens with an unrounded first element ([æ], [æ̃], and [æ̃]) were classed as conservative, tokens with rounded onset ([ɐ̃]) were classed as neutral, and tokens where the first element was both rounded and raised ([ɔ̃]) were classed as innovative.⁶

Table 5 and Figure 4 show the results for /ai/. Five out of the eight groups of speakers use the neutral pronunciation the most. The older professional men and

TABLE 6. *Pronunciation of /aʊ/ by speaker group*

Speakers	Number	Conservative		Neutral		Innovative		Total
		[aʊ]	[aə]	[æʊ]	[æə]	[ɛʊ]	[ɛə]	
FOP	24	46	31	27	17	0	0	121
FON	27	15	0	64	36	9	6	130
MOP	26	42	14	53	22	3	1	135
MON	25	0	5	28	59	9	24	125
FYP	23	13	5	50	35	8	3	114
FYN	26	0	1	37	66	9	16	129
MYP	27	38	6	28	55	0	8	135
MYN	27	5	7	29	56	14	16	127

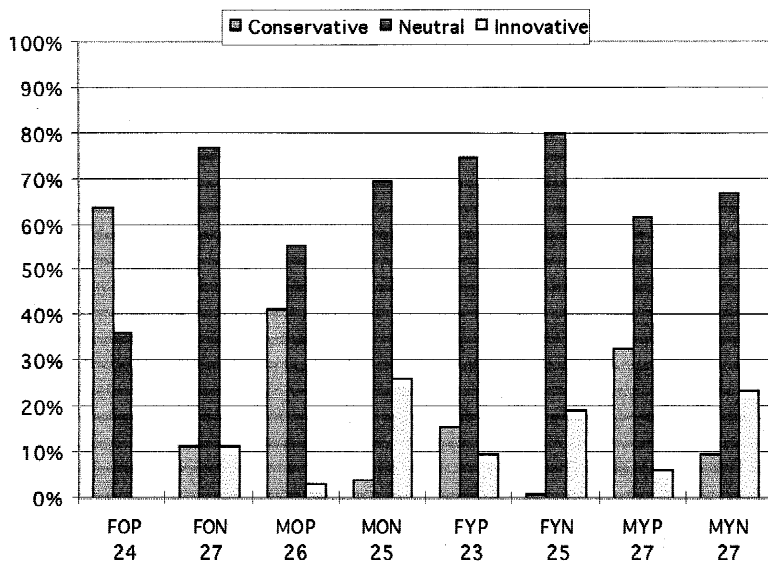


FIGURE 5. Percentage pronunciation of /aʊ/ by speaker groups.

women again use the conservative pronunciation, and the younger non-professional males were the only group to use the innovative pronunciation the most.

In New Zealand, the first target of /aʊ/ is typically progressively fronted and raised by lower social class speakers. Tokens with a relatively open first target ([aʊ]) were classed as conservative, those that started on [æ] were classified as neutral, and those with raised first targets ([ɛ]) were classified as innovative. The few tokens with open, retracted initial targets ([ɑʊ]) were included in the conservative grouping. The results are presented in Table 6 and Figure 5.

TABLE 7. Percentage [ʊ] and [ə] as second element in the diphthong /aʊ/

Speakers	Number	Conservative [ʊ]	Innovative [ə]
FOP	24	60	40
FON	27	68	32
MOP	26	73	27
MON	25	30	70
FYP	23	62	38
FYN	26	36	64
MYP	27	49	51
MYN	27	38	62

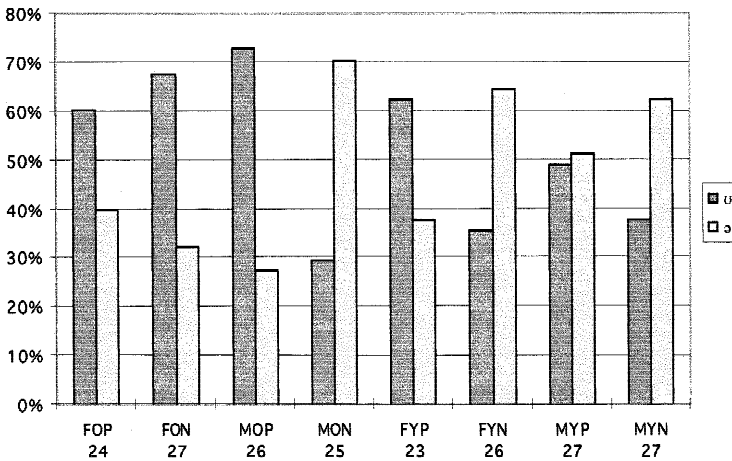


FIGURE 6. Percentage [ʊ] and [ə] as second element in the diphthong [aʊ].

For most of the vowels, speakers tended to produce the same variant for all words on the word list, so each speaker is only coded once in the tables. For /aʊ/, speakers tended to use different variants in different words. Each word was therefore analyzed individually for /aʊ/, giving larger numbers in the cells of Table 6. It can be seen that most speakers use the neutral pronunciation most often. Non-professional speakers are the greatest users of the innovative form, but still only to a limited extent. Older professional men and women use the conservative forms more than other speakers. Again the behavior of the younger professional males appears more akin to that of their older counterparts. The results in Figure 5 are presented solely in terms of the first target of the diphthong. As indicated in Table 6, many speakers of NZE use a central, unrounded second target rather than a rounded target. Table 7 and Figure 6 give the percentages for the rounded and unrounded second targets for /aʊ/.

The results do not fall into a completely clear pattern. The basic distinction is that older speakers (except the non-professional males) tend to use the rounded version and younger speakers (except the professional females) the unrounded version.

DISCUSSION OF GROUP DATA

Front vowels

When we consider the front vowels, we find the older speakers of both social classes using relatively more conservative versions and the younger speakers using relatively more innovative versions for all the vowels. This reflects the ongoing nature of the front vowel raising and /ɪ/ centralizing/lowering in NZE. Because innovative pronunciations of the front vowels are not stigmatized, Labov's sociolinguistic analysis would lead us to expect more women to use innovative versions. Because the raising of the front vowels is not toward a socially prestige form, Coates's (1993) reanalysis of Labov's work would lead us to expect the lower class men to be in the lead. We find that the young non-professional women are most innovative for /ɪ/, and that both groups of young women are innovative for /ɛ/ and /æ/. This is in accord with Labov's expectations and supports our contention that the front vowel raising is still non-stigmatized in NZE. However, a slightly greater percentage of the young non-professional men produce innovative versions for /ɛ/ and /æ/, providing support for Coates's analysis and perhaps suggesting that innovative pronunciations of the NZE front vowels may become stigmatized in the future. The results for /ɪ/, where fewer young professional than non-professional women are innovative, may indicate that innovative versions of /ɪ/ are starting to become stigmatized.

From Figures 1, 2, and 3, it can be seen that relatively more speakers use innovative forms for /ɛ/ than for /ɪ/ and /æ/. This may partly reflect the acoustic values for NZE vowels. Figure 7 shows the mean format frequencies for the NZE vowels according to work by Maclagan (1982) (see also Watson, Harrington, & Evans, 1998).⁷ It can be seen that both /ɛ/ and /æ/ are raised so that /ɛ/ is relatively close to /i/ and /æ/ is almost midway between /i/ and /a/. The auditory analyses used in the present article were based on the auditorily equidistant IPA Cardinal vowels. Most NZE /ɛ/ tokens are raised above the half-close (close-mid) position and sound relatively close. Fewer /æ/ tokens sound close because fewer of them are raised above the half-open (open-mid) position.

The greater number of innovative tokens of /ɛ/ could indicate that /ɛ/ is currently moving more than either /ɪ/ or /æ/. Woods (1997), Bell (1997a, 1997b), and Batterham (1995) all made analyses of the front vowels of NZE. As their analysis categories do not correspond exactly with those used in the present study, it is difficult to make precise comparisons, but some comments can be made. Woods did not analyze /ɪ/, but her analyses of /ɛ/ and /æ/ agree with the present study in that she found relatively greater raising for /ɛ/ than for /æ/. Batterham also found more conservative realizations for /æ/ than for /ɪ/ or /ɛ/.

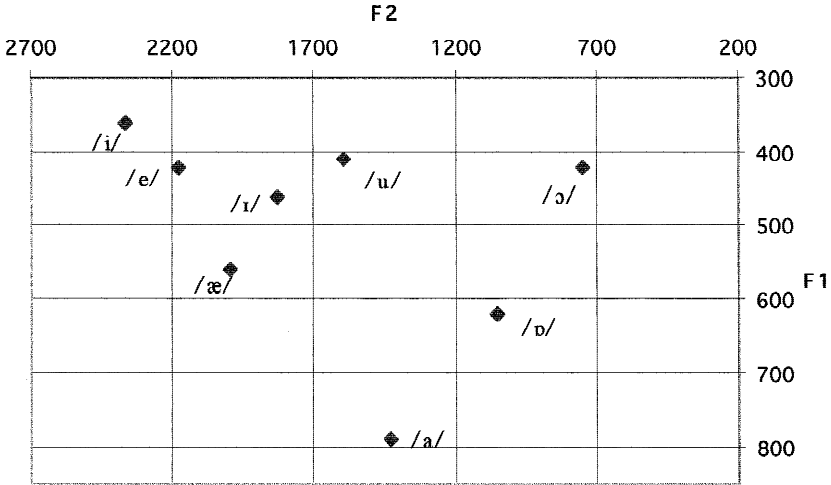


FIGURE 7. The vowels of NZE, plotted according to their first and second formant values (based on Maclagan, 1982).

We agree with both Bell and Batterham that the majority of tokens of /ɪ/ are centralized for NZE. Batterham suggested a cyclic movement of the NZE front vowels, with the lowered /ɪ/ now moving towards the front.⁸ She did not specify who would lead this movement, but we could expect it to be the younger speakers. Bell (1997a) did not suggest such a cyclic pattern for the NZE front vowels, given that fewer younger speakers than older speakers in his corpus produced more open, fronted versions of /ɪ/.⁹ Our data do not give any indication that innovative versions of /ɪ/ are fronting. The present study has the majority of NZE /ɪ/ productions at the half-close (close-mid) position, [ɘ], whereas Bell and Batterham had most productions lower, at [ə]. Some support for a closer position for /ɪ/, parallel to that given in the present study, comes from recent kinematic analysis (Watson, Harrington, & Palethorpe, 1998), which showed that, although the tongue is retracted for NZE /ɪ/, it is not appreciably lowered.

Closing diphthongs

When we consider the closing diphthongs, we would expect women, especially professional women, to use conservative rather than the socially stigmatized innovative pronunciations for the diphthongs /aɪ/ and /aʊ/. Indeed, this happens with the older professional women, who overwhelmingly use conservative pronunciations for both diphthongs and avoid innovative ones. The pattern is much less clear for the younger women, who use many more neutral variants than conservative ones. In fact, the male professional speakers, younger as well as older, use relatively more conservative tokens than do the younger

professional women. Taking these results in isolation, it looks as though the diphthongs are considerably less stigmatized for the younger professional females, perhaps indicating a lessening of their traditional significance as social markers.

Woods (1997) analyzed /aʊ/ for two generations of speakers, the older of whom were born in the second half of the 19th century. Both generations of her speakers were older than the oldest speakers in the present study. Woods found that the starting points for the oldest women were closer (more innovative) than for the men. For her younger speakers, the men had much closer starting points, and the women had more conservative starting points than even the older women. The older professional women in the present study use more conservative versions of /aʊ/ than the men, continuing the pattern observed by Woods and reinforcing the interpretation that /aʊ/ has been a social marker for NZE. The younger professional women do not appear to continue the pattern.

From the group data of the present study, the only indication that /ai/ and /aʊ/ may still be social markers in present-day NZE is that the young female professional speakers are the only younger group who use more of the conservative rounded than unrounded second elements for /aʊ/. In order to test whether certain diphthong variants are still stigmatized for the younger professional female speakers and thus still act as social markers, we investigated the behavior of individual speakers across the two groups of sounds.

SPEAKER BEHAVIOR ACROSS VARIABLES

The results presented so far reflect data on single variables, but in this study the results for variables relative to each other are also considered. In order to do this, the data for the individual speakers were reanalyzed, with the front vowels taken as one set of sounds and the two closing diphthongs as another set. The aim was to see if individuals treated both sets of sounds in the same way, producing conservative, neutral, or innovative tokens for both sets, or whether they produced different sorts of tokens for the two sets of sounds. According to our initial hypothesis, professional women should use more conservative versions of the diphthongs than of the front vowels. On the other hand, if the innovative variants of the diphthongs are no longer particularly stigmatized for younger speakers, all the younger women could be expected to use equally innovative versions for both sets of sounds.

Each speaker's front vowels as a set were rated as conservative, neutral, or innovative. In order for a speaker's front vowels to be classified as conservative or innovative, a majority of the tokens for two out of the three front vowels had to fall into the appropriate classification. The diphthongs were similarly rated as a set. In order for a speaker's productions to be classed as conservative or innovative, the majority of productions of both diphthongs had to fall into the appropriate class. This analysis thus underrepresents rather than overrepresents the number of speakers who favor conservative and innovative pronunciations.

TABLE 8. *Pronunciation of typical speakers: Diphthongs relative to front vowels*

Speaker	Group	/ɪ/	/ɛ/	/æ/	/ai/	/aʊ/	Diphthongs vs. Front Vowels
Barbara	FOP	[ɪ]	[ɛ]	[ɛ]	[äe]	[ɐʊ]	equal
Flora	FON	[ə]	[ɛ]	[ɛ]	[ɒe]	[æə]	equal
Anna	FYP	[ə]	<i>[ɛ]</i>	<i>[ɛ]</i>	[ɐe]	[aʊ]	more conservative
Tracy	FYN	<i>[ə]</i>	<i>[ɛ]</i>	<i>[ɛ]</i>	[ɒe]	[æə]	more conservative
Bob	MON	[ə]	[e]	[ɛ]	<i>[ɔe]</i>	<i>[ɛə]</i>	less conservative
Karl	MYN	<i>[ə]</i>	<i>[ɛ]</i>	<i>[ɛ]</i>	<i>[ɔe]</i>	<i>[ɛə]</i>	equal
Neville	MOP	[ɪ]	[e]	[ɛ]	[ɒe]	[æə]	equal
Stephen	MYP	[ə]	[e]	[ɛ]	[ɒe]	[æə]	equal

Note: “Equal” indicates that the diphthong and front vowel variants are equally conservative, neutral, or innovative. Other labels refer to diphthongs relative to front vowels. Symbols in boldface represent conservative pronunciations; those in italics represent innovative pronunciations.

Results for representative individuals across variables

An examination of how individual speakers treated the diphthongs and the front vowel relative to each other produced all possible different relations between the two sets of sounds. Some speakers used conservative or innovative variants for both sets of vowels. Others used relatively innovative variants for the front vowels but relatively conservative variants for the diphthongs, and others used relatively conservative variants for the front vowels and relatively innovative variants for the diphthongs. By way of illustration, Table 8 presents the results for some typical speakers.

Barbara, an older professional woman, uses one neutral variant for the front vowel /æ/ and conservative variants for all other vowels. For her, both sets of vowels are conservative. For Flora, an older non-professional woman, both sets of vowels are neutral. Anna, a younger professional woman, uses one neutral and two innovative variants for her front vowels but conservative variants for her diphthongs. Her diphthongs are thus conservative relative to her front vowels. Tracey, a younger non-professional woman, uses innovative variants for all the front vowels and neutral variants for the diphthongs. Even though Tracey uses more innovative diphthongs than Anna, nevertheless Tracey’s diphthongs are conservative relative to her front vowels.

By contrast, Bob, an older non-professional man, uses neutral variants for his front vowels but innovative versions for his diphthongs. His diphthongs are therefore less conservative relative to his front vowels. Karl, a younger non-professional man, uses innovative variants for all his sounds. Neville, an older professional man, uses a conservative variant for the front vowel /ɪ/ and neutral variants for all the other sounds. Finally, Stephen, a young professional man, uses neutral variants for all sounds. Like Karl, these two professional men, older and younger, treat all the sounds in similar ways.

TABLE 9. Number of speakers in each speaker group for whom the diphthongs are more conservative than, equal to, or less conservative than the front vowels

Speakers	Number	Diphthongs More Conservative	Diphthongs Equal to Front Vowels	Diphthongs Less Conservative
FOP	24	16	7	1
FON	27	7	13	5
MOP	26	8	13	4
MON	25	2	13	9
FYP	23	15	4	3
FYN	26	9	13	4
MYP	27	11	11	5
MYN	27	3	18	6

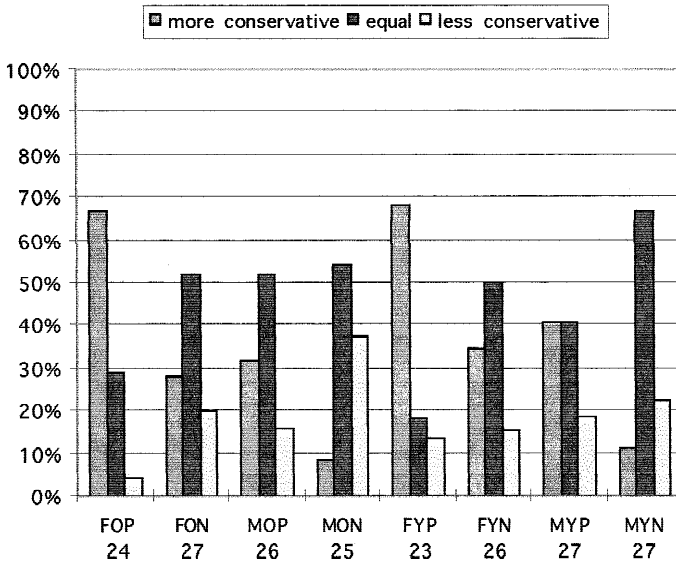


FIGURE 8. Percentage of speakers in each speaker group for whom the diphthongs are more conservative than, equal to, or less conservative than the front vowels.

Results for groups of speakers across variables

Table 9 and Figure 8 present the results for the speakers’ diphthongs relative to their front vowels, collated by speaker group. The professional women, both younger and older, stand out from the other speaker groups. The majority of them produce diphthongs that are more conservative than their front vowels, a behavior that we have labeled “relatively conservative.”¹⁰ Relatively few of the pro-

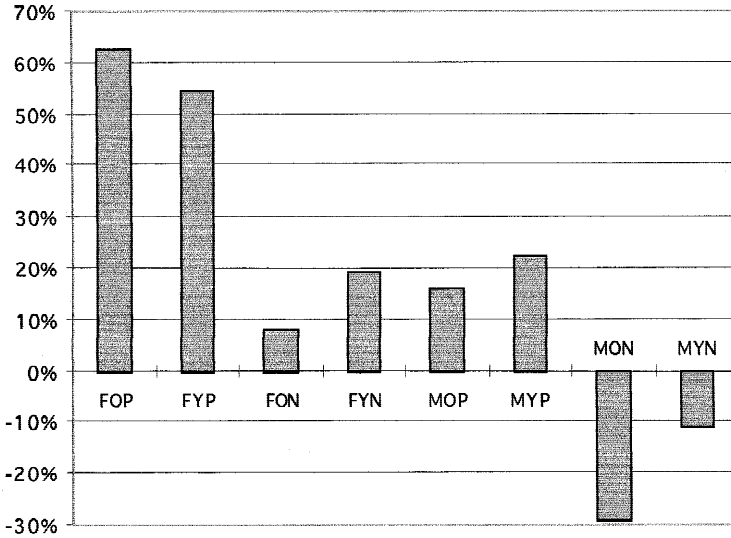


FIGURE 9. Relative percentage of speakers for whom the diphthongs are more conservative than the front vowels for each speaker group.

professional women produce diphthongs that are less conservative than their front vowels. Of the young professional males, 41% are classified as conservative because their diphthongs are more conservative than their front vowels, and 41% are classified as neutral because they produce diphthongs that are similar to their front vowels in terms of degree of conservatism. For the other speaker groups, the greatest number of speakers produce diphthongs and front vowels that are equally conservative or innovative. These speakers are therefore classified as neutral in Table 9 and Figure 8.

The patterns can be demonstrated more clearly by removing the neutral speakers, whose diphthongs and front vowels are equally conservative or innovative. Figure 9 represents a measure of relative conservatism: that is, it shows the percentage of speakers in each group whose diphthongs are more conservative than their front vowels, minus the percentage of speakers whose diphthongs are less conservative than their front vowels. Clearly the professional females are more relatively conservative than any of the other groups. The non-professional males are less relatively conservative than the other groups, particularly the older non-professional males. The professional females are therefore at one end of the scale of relative conservatism and the non-professional males at the other. The young professional males who seem to be different from the other groups in Figure 8 no longer stand out in Figure 9.

These results were confirmed by a stepwise multiple regression analysis. The dependent variable was the degree of relative conservatism for each speaker,

where relatively conservative was coded as -1 , neutral as 0 , and relatively innovative as $+1$. The independent variables were age, sex, and social class. The results showed that females are more conservative than males ($p < .0001$), and that professional speakers are more conservative than non-professional speakers ($p < .0001$). Age did not have a significant effect, and there were no significant interactions.

These results confirm the view that, even though the diphthongs and the front vowels per se are clearly changing over time, age is not significant in predicting how conservative the diphthongs and front vowels will be relative to each other. Rather, the role of the closing diphthongs as a social marker continues to be significant, as will be discussed shortly.

DISCUSSION OF RESULTS ACROSS VARIABLES

In the initial analysis of the diphthongs (see Tables 5 and 6 and Figures 4 and 5), it was noted that the younger women, regardless of social class, were not markedly conservative in their pronunciation, favoring neutral variants. This raised the question of whether certain variants of the diphthongs were still stigmatized and thus functioned as social markers for these speakers. However, an examination of the behavior of individual speakers across variables allows a different pattern to emerge. The results (see Figures 8 and 9) show that the diphthongs /ai/ and /aʊ/ are more conservative relative to the front vowels for both older and younger professional women, indicating that the diphthongs continue to have variants that are stigmatized for professional women. The only groups that tend to use relatively innovative forms of the diphthongs are the non-professional men, older speakers more so than younger ones.

As a group, the young male professionals are conservative for /æ/ and /aʊ/ and use somewhat more conservative variants for /ai/. In spite of using conservative first elements for /aʊ/, however, they use slightly more of the innovative /ə/ forms for the second targets. For these variables, therefore, they present with mixed results, using some conservative and some innovative features. From Figure 9, however, it can be seen that, when the behaviors of the individual speakers across variables are examined, many young professional men do not differentiate between the two sets of variables. That is, as individuals they are not usually any more conservative regarding the stigmatized diphthong variants than they are regarding the non-stigmatized front vowel variants. When the behavior across variables is examined, these young professional men are not notably different from their older male counterparts.

Labov (1972) made a distinction between linguistic forms that act as social indicators, social markers, and social stereotypes (see also Wolfram & Schilling-Estes, 1998). Forms that are social indicators show consistent patterns across social classes, do not usually show stylistic variation, and are below the level of awareness for the speakers concerned. Forms that are social stereotypes receive

overt comment from speakers and show stylistic variation. Forms that are social markers receive some overt comment and show some stylistic variation. Because of the tradition of complaint about the closing diphthongs in NZE outlined earlier, these sounds have traditionally been social markers and almost social stereotypes. The results presented here indicate that, despite the appearance of the simple group data, the closing diphthongs still show social variation and therefore still function at least as social indicators. It is likely that they still function as social markers and perhaps as social stereotypes. Because the work reported here does not include data from different speech styles, it is not possible to make direct comments about the extent to which the closing diphthongs now function as social markers or social stereotypes. When the casual speech data is analyzed, we will be able to make more definite statements.

CONCLUSIONS

The data presented here support Labov's (1990) claim that female speakers from the second-highest social class tend to be conservative in stigmatized changes and innovative in non-stigmatized changes. Our older professional women (whom we equate with Labov's second-highest social class) use the expected conservative pronunciations of the stigmatized closing diphthongs and relatively more innovative pronunciations for the non-stigmatized front vowels. However, somewhat less expectedly, our younger professional women as a group do not produce markedly conservative variants of the diphthongs, preferring rather neutral variants. Even more unexpectedly, our younger professional men as a group show some patterns similar to those of the older professional women.

These results appear to indicate that the diphthongs are no longer stigmatized for the younger generation and hence no longer a social marker. However, an examination of the behavior of individual speakers across variables produces a different picture. Although young professional men produce conservative tokens of the diphthongs, for only 22% of this group (compared with 55% of the young professional women) are these tokens relatively more conservative than their front vowel tokens. In this data set, as would be predicted by Labov, it is only the professional women whose diphthongs (with greater potential for social stigma) are significantly more conservative than their front vowels (with less potential for stigma). This analysis allows for the possibility that the NZE pronunciation of the diphthongs /ai/ and /au/ is changing over time, but that what is regarded by each generation as the most "extreme" innovative version of each diphthong is still avoided by professional women—the same people who are in the forefront of the non-stigmatized changes in the short front vowels.

Looking at the data according to the behavior of individual speakers across variables can thus produce different results from those obtained when the group data for single variables is considered. This is an area that needs to be taken into consideration in future studies and will certainly warrant further research.

NOTES

1. American- and British-trained phoneticians have traditionally used slightly different terminology. In this article we have used British terminology, giving the American equivalent in parentheses the first time a term is used.
2. In deference to international readers, we have used the symbol /ɛ/ for the vowel in such words as BET, BEG, BEN, etc. This is not the usual practice in New Zealand because the NZE vowel is considerably closer (typically [e]) than the vowel of, for example, British Received Pronunciation (RP).
3. Bell “hypothesise[d] that the centralisation of the KIT vowel occurred during the last decades of the 19th century and first decade of the 20th” (1997b:266). He based this hypothesis on evidence gained from speakers born during the 1920s. The evidence from speakers recorded by the Mobile Unit who were born in the latter part of the 19th century challenges Bell’s hypothesis.
4. Traditionally, New Zealand was perceived as a classless society (see Pitt, 1977). Our use of the labels “professional” and “non-professional” respects the continuing New Zealand reluctance to use class labels that are commonly used elsewhere. We have observed that the term “professional” is used in the media to describe what might overseas be called “white collar” or “middle class”; for example, recently this province’s major newspaper carried an item in which the police were said to have “caught a 27-year-old professional man” (*The Press*, 11/27/98, p.1)
5. Total numbers of tokens do not always equal the number of speakers in the tables because of misreadings and/or recording problems.
6. For NZE, the second element of the diphthong /ai/ typically reaches [e] rather than [ɪ]. This is reflected in the phonetic symbols used in the text and the tables.
7. Figure 7 is based on an analysis of 25 male speakers who produced the relevant vowels in the carrier phrase “Please say /h–d/ again.” The vowels were analyzed on a Kay Sonagraph model 7071B. No normalization was used.
8. Batterham’s thesis deals mainly with EAR/AIR and with the diphthongization of /ɛ/ before /d/. Her comments on the front vowels are based on one token of *pit*, *pet*, and *pat* for each of her 88 speakers.
9. Bell’s (1997b) more detailed analysis does not separate older and younger speakers.
10. An anonymous referee suggested that the pattern of Figure 9 could be obtained if the women of the second-highest social class were conservative with the diphthongs but showed no preferences with the front vowels. Because the majority of the younger professional women use mainly neutral variants of the diphthongs (see Figures 4 and 5), most of these women must also use innovative variants for the front vowels in order to produce the patterns observed in Table 9 and Figures 8 and 9. If they used neutral variants of the front vowels as well as of the diphthongs, the results for the young professional females would look like those for most of the other groups of speakers rather than those for the older professional women, whom they resemble closely.

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