Belief, Attitudes, and Linguistic Accommodation: A Case of Urban Sound Change in Rural Michigan

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1 Introduction

Eckert (2000) points out the necessity of investigating beliefs and attitudes and associating them with linguistic behavior in order to get a fuller understanding of variable linguistic performance. Such examination gives us an excellent opportunity to explore why a particular linguistic variable is more or less frequently used by a particular group of people in a particular community. Labov's (1963) classic study of Martha's Vineyard clearly demonstrates this point by showing the correlation of the centralization of the onset of /aw/ and /ay/ diphthongs with islander loyalty.

In this paper, I report on the degree of accommodation to an urban sound change among speakers in rural central Michigan and how individual differences account for accommodation patterns which otherwise look mysterious. The phenomenon investigated here is a well-known urban sound change in progress, "the Northern Cities Shift" (hereafter NCS), which is most advanced in urban and suburban areas in the northern US.

Previous studies such as Labov (1991, 1994, 1996) and Eckert (1989, 2000) note that six short vowels are rotating as a chain in this shift, without losing their phonological distinctions. The vowels involved in this shift and their chronological order are summarized in Figure 1. Though the chronological order is still debatable, the standard interpretation, i.e., that low front vowel fronting and raising is the first move, is adopted in this study.[2] In our pilot study, Ito and Preston (1998) found that less locally loyal individuals are more advanced in the shift than more locally loyal individuals, based on the analysis of the vowel systems of three mother-teenager pairs from three rural central Michigan towns. The present study is a follow-up to the previous one.

[1] This research was supported by the National Science Foundation (Grant Number SBR 9809868).

[2] Matt Gordon (1997, 2000) offers an alternative account.

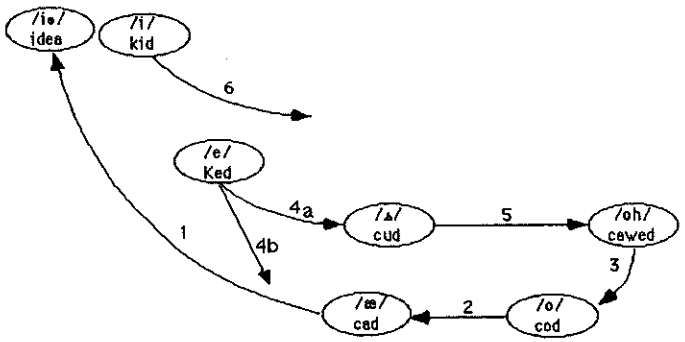
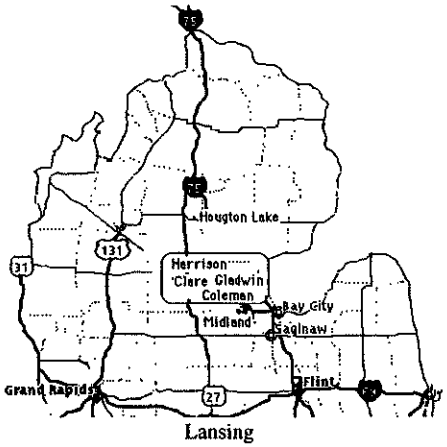


Figure 1: The Northern Cities (Vowel) Shift (based on Labov 1996)

2 Data and Analysis

The data for this study were collected from a rural Central Michigan community, Clare, and its surrounding towns. The location is shown in Figure 2.



Clare and surrounding towns:

- Pop. 3000±
- 150 miles from Detroit
- 80-100 miles from Lansing (state capital)
- More than 98% European-American
- No major industries—farming, small business, and tourism

Figure 2: A partial map of Michigan

These towns are 80-100 miles north of the Lansing/East Lansing area, and the population of each town is approximately 3000. In contrast to urban areas, these small towns exhibit extreme homogeneity: more than 98% of the population is European American, and there are no extensive class differences. Many families have been in the area at least three generations. Those

facts support the idea that this is an ideal community to observe individual differences, for they cannot be immediately explained by standard sociolinguistic classifications. Compared to the model group for this vowel shift, European-Americans in southeastern Michigan, the members of this community differ by only one degree, i.e., their rural residence. In spite of the similarities between these two groups, the rural speakers have not accommodated their speech to the shift as much as we might expect. Due to the infancy of the shift in the area, this study examines just one process in the chain: low front vowel fronting and raising.

The data examined here are based on sociolinguistic interviews with 36 speakers who were born and raised in the area, stratified by age, sex, and class.[3] The examination of the vowel system is accomplished by acoustic analyses derived from word-list performances in which 31 out of 106 words contained (æ) in the stressed position. The F1 and F2 frequency scores, which are associated with the height and front-back dimension of the vowel space, respectively, were extracted by means of an LPC analysis on a Kay Elemetrics Computer Speech Lab. Since the data were not normalized across respondents, index scores were assigned to indicate the position of the vowels on both dimensions.[4] These index scores are based on a comparison of mean scores of (æ) with the mean scores of referenced vowels, such as /ɛ/, as shown in Table 1 and 2.[5] In both dimensions, the higher the index score, the greater the deviation from the pre-NCS system; that is, more accommodation to the shift is taking place. The lowest score ("1") represents the pre-shifted system and the highest score ("5") represents an advanced accommodation to the shift.

F2 Index "Fronting"	1	(æ) is significantly back of /ɛ/
	2	(æ) is not significantly different from /ɛ/
	3	(æ) is significantly front of /ɛ/ but closer to /ɛ/ than /i/
	4	(æ) is significantly front of /ɛ/ and closer to /i/ than /ɛ/
	5	(æ) is not significantly different from /i/

Table 1: F2 (front-back) index scores for (æ)

[3] With respect to age group, 14-20 year olds are classified as younger generation while 39-58 year olds are classified as older. These age groups are targeted in order to compare parent-child generations that show differences in most studies.

[4] Evans and Preston (2000) have justified this procedure in greater detail.

[5] In the F2 dimension, /i/ was used as reference rather than /ɪ/ because /i/ is in "the peripheral track" (Labov 1994), and thus occupies the frontest position.

F1 Index "Raising"	1	(æ) is significantly lower than /ɛ/
	2	(æ) is not significantly different from /ɛ/
	3	(æ) is significantly higher than /ɛ/ but closer to /ɛ/ than /ɪ/
	4	(æ) is significantly higher than /ɛ/ and closer to /ɪ/ than /ɛ/
	5	(æ) is not significantly different from /ɪ/

Table 2: F1 (height) index scores for (æ)

3 Results

Based on index scores for F1 and F2, Table 3 shows overall results. It is striking to find that there is not much variation among the speakers. Thirteen speakers receive index scores of (2,2) and 17 speakers receive (2,3). If we focus on only the F1 dimension, or raising, 31 out of 36 (or 86%) of the respondents receive an index score of 2, indicating their (æ) is raised only as high as /ɛ/. Figure 3 shows a typical speaker's vowel system. We observe that (æ) is in front of /ɛ/, and almost as high as /ɛ/.

Index scores (F1, F2)	Number of respondents
(1,2)	2
(2,2)	13
(2,3)	17
(2,5)	1
(3,3)	1
(5,3)	2

Table 3: Index scores (F1 and F2) — all (æ) tokens

Curiously, no age effect is observed among these speakers. The two most conservative speakers (index score of 1) are young male speakers, and one of their vowel systems is shown in Figure 4. Here, the low front vowel is aligned with /ɛ/ on the F2 dimension, but there is no sign of raising. The two most advanced raisers (index score of 5) are older middle class females.[6]

[6] With regard to the four types I will discuss later, one of them (Linda) has a minimally raised system, Type 2, and the other (Kate) has a more or less advanced system, Type 3. This raises an interesting question on perception. Do we perceive these women's system in the same way? Do we hear a difference between Katen's vowel system and Nina's, whose system is Type 3? The study of perception is an area that we definitely need to explore in the future.

Since the results confirm the usual interpretation that fronting precedes raising, we focus on raising in the following analysis.

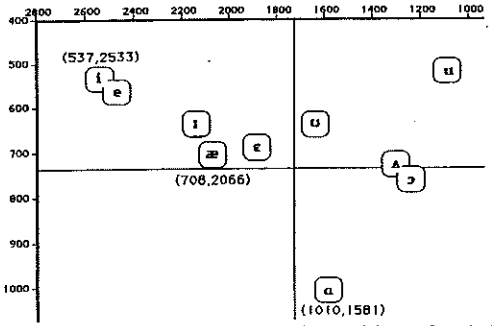


Figure 3: Vowel of Nina (16, working-class) (Index scores: 2,3)

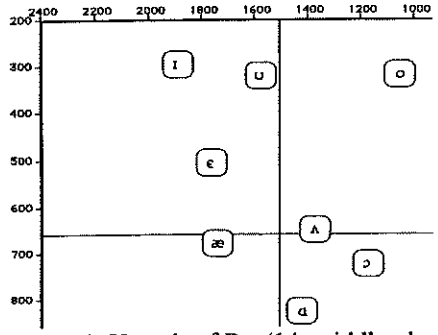


Figure 4: Vowels of Pat (14, middle-class boy) (Index scores: 1,2)

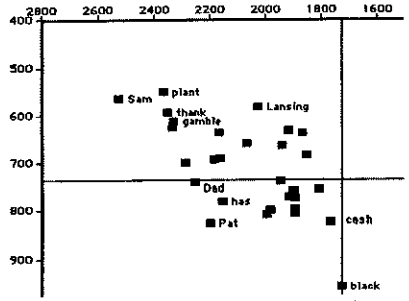


Figure 5: Vowels of Nina, (æ) tokens only

Because (æ) raising is an on-going process in this community, for most speakers, the acoustic range of (æ) tokens is very large, and, in some cases, it covers the entire front half of the vowel space. Figure 5 shows the actual position of (æ) tokens for Nina, a working class girl. The most raised tokens (*Sam* and *plant*) are in the territory of /i/ (mean values 537, 2533, for F1 and F2, respectively) whereas the lowest token (*black*) is in the area of /ɑ/ (mean values 1010, 1581). Observe that tokens with following nasals cluster together at the upper left corner in the vowel space. These observations suggest that the comparison of mean scores might obscure important constraints on this process.

In order to avoid such a risk, a more sophisticated way to evaluate an individual's vowel system was devised. This time the index scores were assigned on the basis of adjacent segments. Both preceding and following segments were examined with respect to manner and place of the articulation. The results confirm that manner of the following segment shows strongest effect for (æ) variation, as described in Labov (1994).

Figure 6 represents vowel systems schematically on the basis of the position of (æ) tokens grouped by manner of the following segment with reference to /ɛ/, and Table 4 summarizes the distribution. As mentioned earlier, 86% of the respondents' (æ) is only as high as /ɛ/, but now we see that there are fine differences among vowel systems of these speakers. There are four types of vowel systems. Type 1, used by 10 respondents, is labeled "not so raised" since the mean scores of (æ) tokens before voiceless fricatives and/or voiceless stops are significantly lower than /ɛ/, although those in other environments (such as voiced obstruents and nasals) are not different from /ɛ/. Type 2 is a "minimally raised" system because all the means of the environmentally sub-divided (æ) tokens are not different from /ɛ/, and thirteen respondents have this type. Type 3, also used by 10 respondents, is a "more or less advanced" system where the mean scores of nasals or voiced obstruents are significantly higher than /ɛ/. Finally, Type 4 is a mixture of 1 and 3, in which (æ) covers a very wide range, and only 3 respondents have such a system.

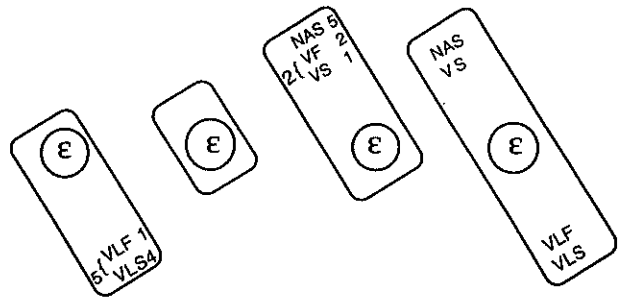


Figure 6: The range of (æ) tokens with respect to following manner with reference to /ɛ/ (mean)[7]

Type	# of respondents	%
1 (not so raised)	10	27.8%
2 (minimally raised)	13	36.1%
3 (more or less advanced)	10	27.8%
4 (mixed)	3	8.3%

Table 4: Degree of (æ) raising on the basis of following manner

This variation is not constrained by traditional social factors such as age and class. Table 5 shows (æ) raising with respect to age. Though more older speakers have Type 2, the minimally raised system, than younger speakers (41.2% vs. 31.6%, respectively), we find no significant difference between these two age groups (X^2 = 1.103, 3df, p = 0.776 (n.s.)). Table 6 shows that class does not reveal any patterns in the distribution of the speakers either (X^2 = 0.701, 3df, p = 0.873 (n.s.)). However, Table 7 shows that the sex of the speaker seems to show some trend, although it is not statistically significant (X^2 = 6.226, 3df, p = 0.101 (n.s.)). Nearly half of the male speakers (8 out of 18, or 44.4%) have the unraised system (Type 1) and only three have the more or less advanced system (Type 3), whereas the majority of the female speakers have, at least, the minimally raised system and only two females have the least raised system (Type 1). This suggests that females are ahead of males in terms of accommodation to this change.

[7] The number in the figure represents the number of respondents. For example, in Type 1, the mean of (æ) tokens before voiceless fricatives (VLF) was significantly lower than /ɛ/ in one respondent's system. Before voiceless stops (VLS) it was significantly lower than /ɛ/ in four respondents' system, and before both voiceless fricatives and voiceless stops were significantly lower than /ɛ/ in five respondents' system.

Type	Young (n = 19)	Old (n = 17)
1 (not so raised)	6 (31.6%)	4 (23.5%)
2 (minimally raised)	6 (31.6%)	7 (41.2%)
3 (more or less advanced)	6 (31.6%)	4 (23.5%)
4 (mixed)	1 (5.2%)	2 (11.8%)

Table 5: (æ) raising with respect to age (X^2 = 1.103, 3df, p = 0.776 (n.s.))

Type	Middle(n = 17)	Working (n = 19)
1 (not so raised)	5 (29.4%)	5 (26.3%)
2 (minimally raised)	7 (41.2%)	6 (31.6%)
3 (more or less advanced)	4 (23.5%)	6 (31.6%)
4 (mixed)	1 (5.9%)	2 (10.5%)

Table 6: (æ) raising with respect to class (X^2 = 0.701, 3df, p = 0.873 (n.s.))

Type	Male (n = 18)	Female (n = 18)
1 (not so raised)	8 (44.4%)	2 (11.1%)
2 (minimally raised)	5 (27.8%)	8 (44.4%)
3 (more or less advanced)	3 (16.7%)	7 (38.9%)
4 (mixed)	2 (11.1%)	1 (5.6%)

Table 7: (æ) raising with respect to sex (X^2 = 6.226, 3df, p = 0.101 (n.s.))

How can these unusual results be explained? While the results confirm suggestions that women are early innovators and adopters of a sound change in progress (Labov 1994, Trudgill 1972), there are no other clear patterns. I would suggest that one way of interpreting these results is to understand them in terms of individual's belief, attitudes, and/or loyalty to the community. It appears that gender differences reflect the urban characteristics of the NCS and the differences in the way it is evaluated by men and women as proposed by Herndobler (1993). In the present study, women's advancement in the shift reflects women's positive evaluation of an urban, fashionable life-style. This tendency is most strongly observed among those who do not mind leaving their community for what they see as a better life in a big city (i.e., less locally loyal individuals). Men's conservative position in the shift reflects their lack of interest in such urban-oriented values. Instead, they enjoy and value the opposite, i.e., their local country-life, and this is especially true for hunters — a stereotypical identity for the "tough guys" in the area. Traditionally overt prestige is achieved by accommodating to the urban sound change, while covert prestige is achieved by avoiding this accommodation. Supporting evidence for this is drawn from interviews where respondents talked about their lives and values.

For example, a lack of cultural events that are available in cities, such as concerts, plays, and shows, was pointed out as a downside to living in the community by several women (both young and old), but none of the male respondents complained about this. Women's desires to be associated with urban life, and the urgent need to "catch up" with trends in urban culture are best illustrated in the following conversation between two young females, Nina and Betsy. Nina has a Type 3 system, the more or less advanced one.

(1) Women's urgent need to "keep up with" the trends in urban culture

R: Do you think people in bi- big cities are different from the people from smaller town?

a→ B: Yes, they have a life, we don't.

b→ N: They they like- They like- They experience a lot more and-

B: Yeah. They have a life, we don't.

N: If you put me somebody from a big city and somebody like me and Betsy, you know. If you're gonna put me and Betsy with somebody like from a BIG city

B: It's hard.

c→ N: We're like reTARded. Not retarded but

B: Yeah.

R: In what sense.

B: That's the thing. You really have to struggle to keep up conversation.

d→ N: Right. I mean it's really hard.

B: To keep up to date with things like fashion and what's in...Just things that are hip and doesn't come to us later. So you really have to struggle and keep ahead of the game. If you have friends and people you meet a lot. Cause like we don't go dancing. We don't, you know. We don't get the newest songs on our radio stations. Our radio stations get songs like AFTer they've been you know played for a while. Just stuff like clothes. We have to like- you really have to watch magazines and stuff to keep up that.

N: Right. So it's kinda like- I mean you considered us actually like retarded I guess but maybe we're not retarded but

e→ B: Really behind times.

N: Cause I guess it's like putting the 60's with the 90's or-

f→ B: Not quite that bad though. I'd say we're about six months behind times.

N: But that's still a LOT.

R: Although you read magazines?

B: Yeah, and stuff but (it's) still hard to keep up with all the-

For these girls, people in big cities "have a life" but they do not, as in line (a). "They [i.e., people in cities] experience a lot more" as in (b). Compared to those in cities, people in small towns are "retarded" as in (c). "It's really hard" to catch up with things that are cool in cities (e.g. fashion, movies, and music) as in (d) and the subsequent turn taken by Betsy. Despite all the effort to catch up, those girls still feel that they are "really behind times" as in (e). And as we find in (f), being "six months behind times" is fatal for those girls, reflecting how fast they believe things are changing in urban culture.

In contrast to (1), fast-paced, urban culture does not appeal at all to locally loyal individuals, especially hunters. This is best described in Colin's comment on hunters from cities. Colin has a Type 1 vowel system, the least raised one.

(2) Hunters (a stereotypical identity for tough guys in the area)
R: Do you think that people in big cities are different from the people from small towns?
C: Oh, yeah. You can always tell during deer season.
R: (Laughter) More aggressive?
a→ C: Oh, they come up and you know they're the guys wearing all brand new clothes, and they'll come in and. They'll be like ((in a different voice)) Yeah, I was out there for half an hour, and I didn't see any deer so I came back in.
R: What do you expect. (Laughter)
b→ C: And you'll hear 'em. You'll always- you can always tell the city guys, cause they'll have the 50 pound deer. They'll have these little tiny deer and they'll be showing 'em off because they can't wait for any bigger ones. When you're talking to people, you can tell.

According to Colin, the behavior of hunters from cities is totally wrong because they wear brand new clothes, do not have any patience, shoot small deer, and are proud of themselves as expressed in lines (a) and (b). One of the other hunters told me that hunting is not just shooting a deer. He said it involves "appreciation of nature" and "patience," and that the tradition has been passed on from father to son. Local hunters sense that such values are entirely ignored by hunters from cities. Thus, hunters from cities are nothing but annoying visitors who know nothing about the essence of hunting. Local hunters are proud to be "real" hunters, a symbolic role characterizing the "tough" values of masculine covert prestige. I suspect that being a "hunter"

in this area is as important as membership in the "Poker players" group as outlined by Wolfram and Schilling-Estes (1995) in their study of Okracoke English.

In these two examples, people from cities, who are characterized by local people as having opposing values, are anonymous outsiders. However, those who wish to affiliate with urban culture form a distinct group; they are even locally recognized as "city people," and their identity and style clearly differ from "country people," at least in the local high school. This is revealed by Jamie as shown in (3). According to Jamie, differences in orientation are "practiced" (Eckert and McConnell-Ginet 1999) by two opposing groups — the way they dress, the choice of activities they are involved in, and their general attitude.

(3) City vs. country people within the community (in the local high school)
J: You can say there's mainly...there's probably- probably three groups. The one group would be like the city people...who ah- mainly care for fashion, looking good and all that stuff. And there's another group which is country people who talk about like hunting, paintball, um.. cars, bikes and all that stuff. Then there's another group which is mainly a low percentage which are the people who hang around each other that probably do drugs and stuff like that.

J: Yeah. Yeah. The more of the city people more tend to be more involved with like basketball. Seems to be their main sport. It's like...It's like you gotta be good at basketball.
R: Not football?
J: Football is a more of a city sport mainly played by people who live in the country.
P: Cause it's rougher and people who live in the city, normally don't like to-
J: To play rough sports.

R: So how- suppose I go to your school then how can I identify them? The way they dress?
J: The way they dress. Most of the city people have probably gold necklaces, wear sports clothes, basketball jerseys and then the um Nike stuff and stuff like that. And then the country people more like wear like boots and blue jeans and stuff like that. Most of them
a→ have shorter hair. .... Practically all the girls are in the city group. Like all of them.
P: Yeah, yeah.

J: They are all... JUST in the latest fashion.
R: Hmmm. But city people don't mean that they are from the city of-
J: Most of them are. You see like most of the people who hang around the city group who live right next to each other. They all live on, what road is that.
P: I don't know. I don't think anybody knows. It's kind of referred to as snob-knob.
J: Yeah, because most of the city people are more like stuck up and snooty to people. Think they're better than everybody else, things like that.

These differences in orientation help to explain the pattern in accommodation to the sound change. Due to the small number of respondents in each cell, the following analysis is still rather exploratory, but I believe that it gives us a foothold to a fuller account of these rather mysterious results.

Table 8 shows /æ/ raising with respect to orientation. If we consider hunters the hard core of locally loyal individuals, a clear pattern emerges. While hunters have more conservative vowel systems, such as Type 1 or 2, the majority of less locally loyal individuals has a more or less advanced system (i.e., Type 3). Moderately locally loyal individuals fit somewhere in-between those two groups.

Table 9 focuses on older speakers. As no older speakers are less locally loyal, they are categorized into three groups. Again, hunters have a more conservative system. It is hard to evaluate the other two groups, but women appear to be ahead of men because at least none of the women have the least raised system.

Table 10 focuses on younger speakers, and we see the same pattern. Young hunters are the most conservative speakers; in fact, as conservative as older hunters, whereas all three less locally loyal females have Type 3, the more or less advanced system, and are more advanced than older females. Male non-hunters (n=4) include two less locally loyal individuals: one has Type 2 system, and the other has Type 3. The remaining two speakers are locally loyal non-hunters: one has Type 1 and the other Type 2. The most interesting results are found among locally loyal females. Here, two respondents have Type 1, the least raised system. This fact provides some evidence for their strong preference for being "country girls." One of them clearly stated that she does not like cities. The other girl expressed her joy of living in a rather isolated farming neighborhood and her having no intention of moving away from the community. Her comment on urban life was very cynical. If "practically all the girls are in the city group" is generally true in the area among young people, as Jamie pointed out in line (a) in (3), country

oriented girls are an extreme minority among their peer group. Their affiliation to the local community is expressed by their conservative pronunciation —as conservative as male hunters—so that they can differentiate themselves from the rest of the girls, especially from less locally loyal girls, who are leading the innovative sound shift in the community.

Type	Hunter (n = 10)	Locally Loyal (except hunter) (n = 21)	Less Locally Loyal (n = 5)
1	6 (60.0%)	4 (19.0%)	0 (0.0%)
2	3 (30.0%)	9 (42.9%)	1 (20.0%)
3	0 (0.0%)	6 (28.6%)	4 (80.0%)
4	1 (10.0%)	2 (9.5%)	0 (0.0%)

Table 8: (æ) raising with respect to orientation (all speakers)

Type	Hunter (n = 5)	Non-Hunter Male (n = 4)	Locally Loyal Female (n = 8)
1	3 (60.0%)	1 (25.0%)	0 (0.0%)
2	1 (20.0%)	0 (0.0%)	6 (75.0%)
3	0 (0.0%)	2 (50.0%)	2 (25.0%)
4	1 (20.0%)	1 (25.0%)	0 (0.0%)

Table 9: (æ) raising with respect to orientation (older speakers only)

Type	Hunter (n = 5)	Non-Hunter Male (n = 4)	Locally Loyal Female (n = 7)	Less Locally Loyal Female (n = 3)
1	3(60.0%)	1 (25.0%)	2 (28.6%)	0 (0.0%)
2	2(40.0%)	2 (50.0%)	2 (28.6%)	0 (0.0%)
3	0 (0.0%)	1 (25.0%)	2 (28.6%)	3(100.0%)
4	0 (0.0%)	0 (0.0%)	1 (14.1%)	0 (0.0%)

Table 10: (æ) raising with respect to orientation (younger speakers only)

4 Conclusion

From these results, I conclude that individual orientation plays an important role in explaining the difference in the degree of accommodation to the NCS in this socio-economically flat and ethnically homogeneous rural community. Orientation toward country or urban life is crucial for those speakers, partly due to the group's extreme internal homogeneity. Individuals who desire to be associated with urban fashionable culture and do not mind leaving the community (i.e., the less locally loyal) tend to accommodate their speech more to the NCS, and thus tend to have more raised low front vowels. Individuals who enjoy local country life and plan to stay in the area (i.e., the

more locally loyal), however, tend to fail to accommodate. The former tend to be young females and the latter tend to be young males, especially hunters. The age effect was masked because of this opposite direction in their accommodation pattern.

This finding thus supports Trudgill's (1986) proposal that linguistic accommodation is important in the diffusion process and that diffusion takes place at the level of individuals. This means that attitudinal factors play a major role in diffusion at the micro level. It is hoped that this line of research, that focusing on individuals will add a piece in our understanding of the' big' picture of the direction and inner workings of this sound change.

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