

# The Acquisition of Native and Local Phonology by Russian Immigrants in Philadelphia

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## 1 Introduction

In this study, we examine the acquisition of local phonological features by immigrants. The community that we investigate is that of immigrants from the former Soviet Union to Northeast Philadelphia, who are native speakers of Russian<sup>1</sup>. In particular, we explore whether it is possible for speakers with obvious foreign accents to have acquired the same regional dialect features that native speakers do. Conversely, we consider whether L2 speakers who are successful in attaining native-sounding accents necessarily acquire accents in English that are more local to the area to which they immigrated. We reject the notion suggested by some authors that such speakers simply acquire a more standard, “general American” accent. Finally, we explore which social variables are favorable to acquiring both a native and a local accent.

## 2 Previous Work

An obvious study to consider in terms of the acquisition of local features is Payne’s work in King of Prussia, a suburb of Philadelphia (1976, 1980). Payne found that native English-speaking children who moved to Philadelphia were successful in acquiring most of the Philadelphia dialect features and that the degree of acquisition of the Philadelphia variables correlated with age of arrival in Philadelphia. However, the children did not tend to acquire fully the complex conditioning of the Philadelphia short-*a* pattern, to be discussed in more detail below. In fact, even native Philadelphians with non-Philadelphian parents did not always fully acquire the short-*a* pattern.

Several other studies have examined the nativeness of foreigners’ accents in English. To our knowledge, the only such study looking specifically at Russian immigrants is that by Thompson (1991). Thompson

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<sup>1</sup> For brevity, we will refer to these simply as our “Russian” subjects.

found that foreignness of accent correlated with age of arrival in the United States. Thus, we find both localness and nativeness of accent have been correlated with age of arrival.

Given these findings, we now consider work that examines the localness of foreigners' L2 phonology. There are few studies specifically addressing this issue. One such study is Lee's (2000) dissertation on Korean immigrants in Philadelphia. Lee found that foreign immigrants do not acquire a local variety of English, but rather a "general" variety, which is not characterized by the most distinct regional features. However, the only local Philadelphia feature that Lee examined was short *a*, which, as we noted above, is not as readily acquired as other features. Payne's (1976, 1980) work, as well as that by Roberts and Labov (1995), has shown that even native Philadelphians who are not fully immersed in the Philadelphia phonological system may not fully acquire this pattern. Lee's work leaves open the question of whether other Philadelphia variables were acquired by the immigrants she studied.

In contrast to Lee's (2000) findings, Blondeau et al. (2002), in considering a number of phonological, morphosyntactic, and lexical features of Montréal French, found that Anglophone Montrealers (for whom French is their L2) did acquire some local features, although only the most immersed acquired native-like distributions of these features.

Thus, we take issue with Lee's (2000) claim that nonnative speakers do not acquire regional features. Rather, we argue that nonnative speakers may acquire regional features, even without losing their foreign accent.

### 3 Methodology

Our data were collected from in-depth sociolinguistic interviews with residents of Northeast Philadelphia. This study focuses on the data from four female Russian-speaking immigrants to this area. These interviewees are presented in Table 1.

<u>NAME<sup>2</sup></u>	<u>AGE OF ARRIVAL</u>	<u>AGE AT TIME OF INTERVIEW</u>
Marina	12	25
Gulya	12	18
Felixa	14	18
Alyona	17	34

Table 1: Our Subjects

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<sup>2</sup> All names included here and elsewhere are pseudonyms.

In addition to the Russian subjects, we analyzed our interviews with four native Philadelphians from the same neighborhood—Ethan, David, Baila, and Judith—to determine the variety of English to which the immigrants would have been exposed on arrival. We also analyzed data from an interview with one additional Russian immigrant, Dasha, who had lived in quite a few places in North America, but who had lived in Philadelphia for less than a year at the time of the interview. The interviews were digitized, vowels were measured in Praat, and complete vowel systems were plotted in Plotnik for these speakers.

#### 4 The Philadelphia Variables

To determine to what extent our speakers exhibit phonological features specific to Philadelphia, we examined several Philadelphia variables which are discussed in detail in Payne (1976), Labov (1995), and Conn (2005), *inter alia*. We focused on five such variables:

- the fronting and raising of /aw/
- the fronting of /ow/
- “Canadian raising” of /ay/ before voiceless consonants
- the raising and backing of /ahr/
- the Philadelphia split short-*a* system

We found little variation regarding the first four of these variables in the speech of our native-speaker informants. The fronting and raising of /aw/, as in *about* and *now*, most extreme when adjacent to a nasal, is a widespread Midland feature. The fronting of /ow/, as in *go* and *boat*, is also a Midland feature, which involves quite complex, if continuous, conditioning: /ow/ does not front before /l/; it fronts the least in closed syllables, notably between *h* and *m*; and it fronts the most in open syllables and after apical onsets (Labov, forthcoming). So-called Canadian raising, *i.e.*, raising of /ay/ before voiceless consonants, in words such as *like* and *fight*, is a fairly widespread feature throughout northern North America, including Philadelphia. The raising and backing of /ahr/ as in *part*, and its separation from /o/ as in *pot* is a feature found in several regions but which is particularly extreme in Philadelphia; for some Philadelphians, this /ahr/ achieves the same height and backness as /oh/, as in *caught*.

Finally, we will consider the well-known Philadelphia split short-*a* system. As first described by Ferguson (1975), short *a* is tense (raised, fronted, and diphthongized) in Philadelphia before tautosyllabic nasals, voiceless fricatives other than /sh/, and in three additional lexical items:

*mad*, *bad*, and *glad*. However, short *a* is lax in function words and irregular past tenses, and in all other environments. As we will discuss later, our young native-speaker subjects from Northeast Philadelphia do not exhibit this pattern; only Judith, our 91-year-old informant, displays it.

## 5 Our Subjects and the Philadelphia Variables

Now we turn to how our four Russian subjects pattern with respect to the variants. We assume that phonological behavior that mimics that of native Philadelphians constitutes the acquisition of a local pattern, since there is no aspect of the Russian vowel system that would favor the local variant of the variables considered. We leave aside the discussion of short *a* until the next section and consider the other four variables here. Table 1 above includes demographic information on each of the speakers.<sup>3</sup>

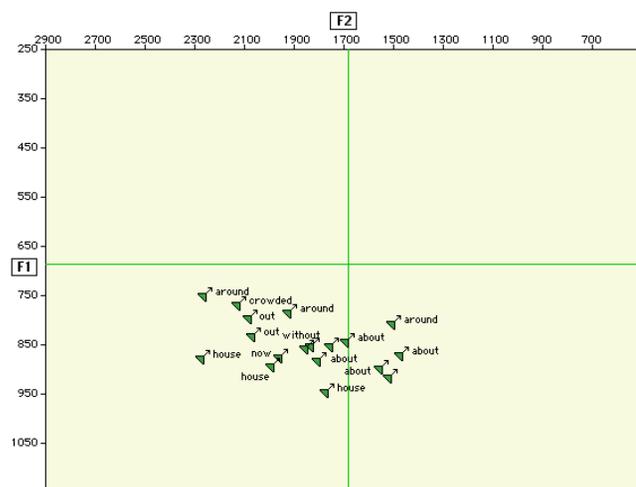


Figure 1a: Marina's /aw/

Marina has Philadelphia features for all four of these variables, shown in Figures 1a–d. She has fronting of /aw/ but not raising (1a); this is similar to a conservative Philadelphia pattern, and she is the only one of our Russian subjects to have acquired this variant. She has a distribution

<sup>3</sup> Due to space constraints, we only display the full vowel distributions for Marina, the most Philadelphia of our speakers. Charts of the other speakers' vowels can be viewed at <http://www.ling.upenn.edu/~dinkin/Russian/>.



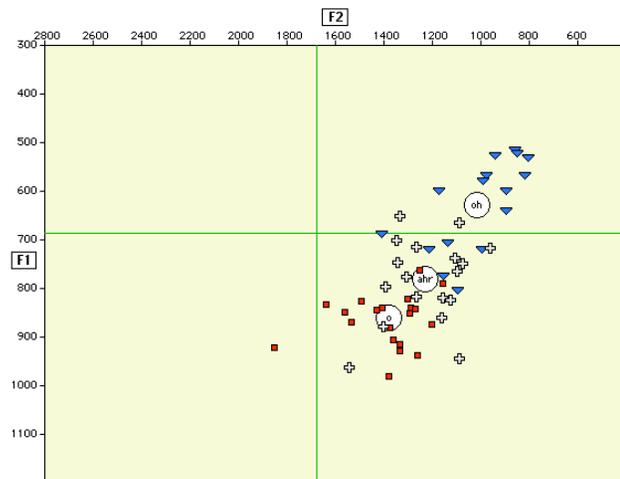


Figure 1d: Marina's /ahr/

Gulya's vowels are less Philadelphia than Marina's, but she still has most of the Philadelphia features. She exhibits clear Canadian raising, and her /ahr/ is raised with respect to /o/. On the other hand, her /aw/ is central, not fronted as would be expected for a Philadelphia. Her /ow/ shows the Philadelphia conditioning pattern, frontest in open syllables with apical onsets and backest before /l/ and in *home*, but she has no tokens front of center; we regard this as partial acquisition of the Philadelphia /ow/ system.

Felixa has acquired only some of the Philadelphia features. Her /aw/ is mostly back of center and not at all Philadelphia. Whether her /ow/ is Philadelphia is unclear; there is some fronting, but she does not appear to show the characteristic conditioning (some of her frontest tokens are in *home*). She exhibits Canadian raising, but not categorically: her /ay/ before voiceless consonants has a significantly lower mean F1 than in other environments, but tokens of the two classes overlap noticeably in the F1 dimension. Finally, she has acquired the Philadelphia /ahr/, higher than /o/.

Alyona's vowels are the least local in the data. Her /aw/ is consistently back of center. She has few tokens of /ow/ that are front of center and exhibits no difference in frontness between /ow/ in open and closed syllables. She also does not exhibit Canadian raising. The only one of the variables that we consider for which Alyona appears to exhibit the local variant is that her /ahr/ is higher than /o/.

Our findings for all four speakers are summarized in Table 2, in which a check mark (√) denotes a Philadelphia feature that is fully acquired and an X denotes one not acquired at all.

	Age of arrival	Age at interview	/aw/	/ow/	/ay/	/ahr/	Phila. features
Marina	12	25	√	√	√	√	4
Gulya	12	18	X	PARTIALLY ACQUIRED	√	√	2.5
Felixa	14	18	X	PARTIALLY ACQUIRED	√	√	2.5
Alyona	17	34	X	X	X	√	1

Table 2: Our subjects and the variables

The results found here suggest an implicational scale of acquisition of the variables considered, which can be schematized as follows:

/ahr/-raising < /ay/-raising < /ow/-fronting < /aw/-fronting

As we shall see, short *a* falls at the far right end of the hierarchy. This scale correlates for the most part with complexity of the rule: /ahr/ is raised in all environments; /ay/ is raised in the fairly easy-to-learn pre-voiceless environment; /ow/ is fronted according to a complex system of constraints; and the short-*a* pattern is likely the most complex Philadelphia variable. /aw/-fronting constitutes an exception to this tendency. It should be fairly easy to learn, and yet it is only acquired by one of our subjects. This finding may reflect the fact that this is a stigmatized variant in Philadelphia (noted by Labov 2001). We will take this topic up again later in our discussion of other predictors of localness.

## 6 The Short-*a* Pattern

The complex conditioning of the Philadelphia short-*a* pattern was described in Section 4 above. Another short-*a* pattern that is frequently found in the United States is known as a “nasal pattern” (Payne 1980). Speakers with a nasal short-*a* system tense /æ/ before all nasals, whether tautosyllabic or not. Elsewhere, short *a* is lax. Looking again at our speakers, we find that they tend to exhibit this nasal pattern.

Marina exhibits a clear nasal pattern with little overlap between her prenasal and non-prenasal tokens (see Figure 2). A *t*-test shows significant differences in both F1 and F2 between these two groups of tokens. Particularly non-Philadelphian are her back, low tokens of *laugh* and *classes*,

and her high tokens of *and* and *anniversary*. Gulya also exhibits a nasal pattern similar to Marina's. Although she has more overlap between the classes, she has significant differences in F1 and F2 between prenasal and non-prenasal tokens.

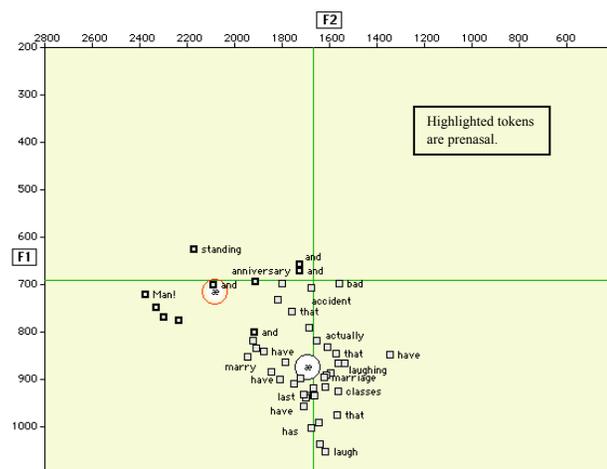


Figure 2: Marina's /æ/

Felixa and Alyona, on the other hand, do not exhibit any discernable short-*a* patterning. For Felixa, *t*-tests for F1 and F2 reveal no significant difference between prenasal and non-prenasal tokens, nor does she exhibit a Philadelphia pattern. Once a few anomalous tokens are excluded, Alyona also exhibits no significant difference in F1 or F2 between prenasal and nonprenasal tokens<sup>4</sup>.

There are several possible explanations for the nasal short-*a* pattern we observe among some of our Russian subjects. Before we consider these, however, it is important to see what type of short-*a* pattern our native speakers of the same age group exhibit.

Our three 25-year-old native Northeast Philadelphians have not acquired the Philadelphia short-*a* pattern. Instead, they seem to have a nasal pattern themselves, as shown for Ethan in Figure 3. All three exhibit some overlap in tokens, but *t*-tests reveal no significant difference between ex-

<sup>4</sup> Initially, a *t*-test for Alyona yielded a significant difference in F2. When a few very back tokens of *after* and *practice* were excluded, this significant result disappeared. We believe that Alyona may place these two lexical items in the broad-*a* (/ah/) class of the word *father*.

pected tense and lax /æ/ according to the Philadelphia pattern, and yet in all but one case F1 and F2 are significantly different in prenasal and non-prenasal environments for these three speakers<sup>5</sup>.

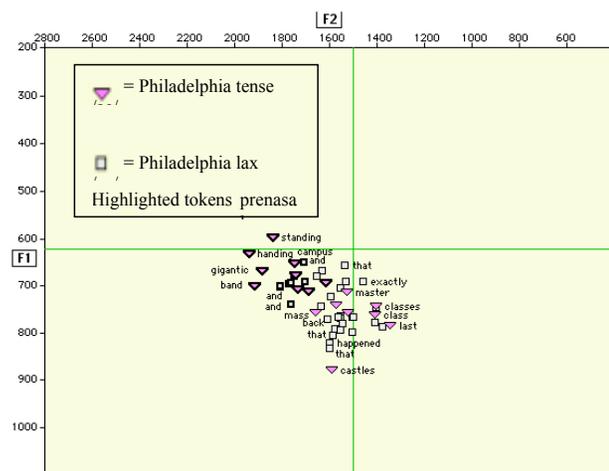


Figure 3: Ethan's /æ/

Studies of Philadelphia have heralded short *a* as one of the prime unifying factors of the European American Philadelphia speech community<sup>6</sup>, regardless of neighborhood or social class (e.g., Labov 1989, Kroch 1996). The following question thus arises: how do we reconcile this with our findings among native Northeast Philadelphians? Are these speakers *not* members of the Philadelphia speech community, despite the fact that they exhibit many other Philadelphia variants?

We outline here a few possible explanations for this result. One possibility is that this is an expected outcome for communities with ties to both Philadelphia and New York, as the result of contact between two distinct, complex short-*a* patterns. The part of Northeast Philadelphia where our subjects reside has very large Jewish and Russian populations, many of whom have family in New York or go there frequently to shop for authentic products. This neighborhood is also quite far from Center City Philadelphia (approximately 15 miles away) and has a suburban feel. Ash (2002) found that many communities outside of Philadelphia in New

<sup>5</sup> For Baila, only the difference in F2 achieves significance.

<sup>6</sup> See also Henderson (1996) on short-*a* in middle class African American Philadelphians.

Jersey and Delaware exhibit a nasal short-*a* pattern. Some exploratory work done in Pennsylvania suburbs of Philadelphia had yielded a similar result (Labov, p.c.). Given Payne's (1976, 1980) and Roberts and Labov's (1995) findings, it is also possible that our native speakers have not acquired a short-*a* system because their parents did not have one. This is possible for Ethan and David, who both have at least one immigrant parent. However, Baila's parents are both Philadelphian, and yet she, too, exhibits a nasal pattern. Ash (p.c.) has suggested that a nasal system may be the default "general American" pattern that falls out from some other aspect of the American vowel system.

Thus, it is not surprising for immigrants or those with mixed input to acquire a nasal system. In any case, given that three of our native Philadelphians have a nasal pattern, the Russians who acquire a nasal pattern may actually be acquiring the local pattern of their community. It is unclear, then, whether a nasal short-*a* pattern can be considered "local," but it is certainly more local than not acquiring any short-*a* conditioning at all.

## 7 Our Pilot Survey

As we have shown, our speakers do acquire several local Philadelphian patterns (Table 2 above). There is a tendency for speakers who arrived at the earliest age to exhibit the most Philadelphia features; however, it is not absolute. On the other hand, impressionistically, our speakers differ in how "thick" their accents are.

We designed a pilot survey to corroborate our impressions of accent and to see whether local features would be detectable to native Philadelphians even in a speaker with a thick foreign accent. We selected twenty-six sound clips drawn from eight female speakers—our four Russian subjects, the additional non-Philadelphian Russian interviewee, two Philadelphian native English speakers<sup>7</sup>, and one non-Philadelphian native English speaker. The speakers range in age from 18 to 34. Subjects were asked to rate the sound clips on a five-point scale for two qualities: to what degree the speakers sounded like native English speakers, and to what degree they sounded as if their English-speaking years had been spent in Philadelphia. We surveyed 26 native English speakers from the Greater Philadelphia area between the ages of 18 and 50. The results more or less confirmed our impressions, as shown in Table 3.

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<sup>7</sup> The Philadelphian speakers are Baila from Northeast Philadelphia and an additional speaker from South Philadelphia.

All native speakers were given high ratings for nativeness, and both non-Philadelphian speakers were given low ratings for localness. This confirms the reliability of the respondents' judgments of localness and nativeness. Subjects were able to make these judgments accurately even though the sound samples were not specially selected to include Philadelphia features. In Table 3, subjects are listed in order by localness, with Marina being judged the most local amongst the Russians, followed by Felixa and Gulya, and finally Alyona. Alyona was judged to be the least native, followed by Marina and Felixa, and finally Gulya.

	<u>Age of Arrival</u>	<u>Age at Interview</u>	<u>Localness</u>	<u>st.dev</u>	<u>Nativeness</u>	<u>st.dev</u>
PHILA. NATIVES	N/A	18, 25	<b>4.13</b>	1.00	<b>4.55</b>	0.87
Marina	12	25	<b>3.93</b>	0.92	<b>2.06</b>	1.26
Felixa	14	18	<b>3.32</b>	1.03	<b>2.44</b>	1.36
Gulya	12	18	<b>3.03</b>	1.07	<b>3.59</b>	1.30
Alyona	17	34	<b>2.75</b>	0.89	<b>1.35</b>	0.71

Table 3: Pilot survey results<sup>8</sup>

Thus, the respondents' judgments of nativeness echo our judgments of nativeness. Their judgments of localness also match up more or less with our analysis of speakers' features<sup>9</sup>. Most importantly, Marina was judged to be as Philadelphian as a Philadelphian: there was no significant difference between Marina's localness ratings and those of the Philadelphia natives<sup>10</sup>. This result supports our claim that nonnative speakers can acquire Philadelphian features without losing their foreign accents, and it also shows that Philadelphian accents are detectable even in speakers with noticeable foreign accents: respondents did not automatically give lower localness ratings to foreign-sounding speakers. Nativeness has no apparent first-order effect on informants' judgments of localness or non-localness<sup>11</sup>; the two least native-sounding Russians (Marina and Alyona) were judged respectively to be the most and least local.

<sup>8</sup> Dotted lines indicate a difference that is not statistically significant.

<sup>9</sup> Although Gulya and Felixa are similar in number of Philadelphia features acquired, there is a small but statistically significant difference between their localness ratings. This may be due to Gulya's attention to the standard language (see below), which may have manifested itself in other aspects of her speech which we did not measure.

<sup>10</sup> Marina was, in fact, judged to be slightly more local than Baila.

<sup>11</sup> Although non-nativeness does not apparently affect whether a speaker is judged as local or non-local, it does have a strong effect on respondents' *confi-*

## 8 Conclusions and Further Work

Our first important discovery is that nonnative speakers *can* acquire local features. Though we provide confirmation for Lee's (2000) finding that nonnative speakers do not acquire the Philadelphia short-*a* system, this is not particularly problematic: the pattern is difficult to acquire and may not have been exhibited by many of the native speakers in their community. The patterning of the other variables demonstrates that a speaker can acquire local dialect features even while retaining an obviously foreign accent. Further, we find that nonnative speakers' localness of accent is independent of their degree of foreign-accentedness. Both of these features correlate somewhat to age of arrival, but clearly other factors must come into play. Examining what these other factors may be is our direction for further research.

Nativeness of accent is likely to differ according to individual aptitude at learning languages, in terms of phonetic perception, ability to reproduce sounds, and degree of reliance on comparison to the L1. Whether or not the "critical period" has passed is also likely to be important<sup>12</sup>.

Both nativeness and localness may correlate to length of time spent in Philadelphia. They may also relate to the degree of maintenance of Russian. Finally, as will be explored below, they both might correlate to the percent of daily contacts that occur in English.

As far as localness, social networks and sensitivity to the norm may be relevant factors. Marina is an extremely gregarious, central member of her social network, while Alyona is a peripheral member with few social contacts. Gulya talks in her interview about making a conscious effort not to pick up street talk or "bad grammar." Such comments imply that the Russian immigrants are aware of the social evaluations assigned to the different L2 variants, a suggestion supported by the fact that /aw/ fronting and raising is the least acquired Philadelphia feature among our subjects, only exhibited by Marina, who seems also to be the least self-conscious of our Russian interviewees.

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*dence* in their judgments of localness. The native speakers received localness scores of 5 or 1 in 41% of cases (75/182), while the Russian speakers received 5 or 1 in only 18% percent of cases (88/494).

<sup>12</sup> That Alyona came to the United States at age 17, thus well after most estimations of the "critical period," may explain why her accent is noticeably more foreign than the others' despite her having been in the United States for a greater number of years than any of the other subjects.

On the other hand, degree of contact with native speakers, found to be a relevant factor in localness by Blondeau et al. (2002), does not seem to make the right predictions for our data with regard to localness. We rated speakers on a six-point scale according to degree of daily contact with English or Russian based on information gleaned from the interviews. The results are shown in Table 4. According to this scale, however, Felixa and Gulya would be predicted to be the most local—not Marina. Felixa and Gulya, are, however, the most native-sounding. Thus, this initial examination suggests that degree of daily contact with English seems to be a better predictor of nativeness of accent than of localness.

	<u>High School</u>	<u>Higher Education</u>	<u>Friends</u>	<u>Family</u>	<u>Religion</u>	<u>Work/Volunteer</u>	<u>Degree of English Contact</u>
Marina	ENG	ENG	RUS	RUS	N/A	RUS/ENG	2.5
Gulya	ENG	ENG	ENG	RUS/ENG	ENG	ENG	5.5
Felixa	ENG	ENG	ENG	RUS/ENG	ENG	ENG	5.5
Alyona	RUS	ENG	RUS	RUS	N/A	ENG	2.0

Table 4: Language of Daily Interaction

Our supposition with regard to localness of accent is that having stronger social networks means more daily interactions overall, and thus more English use. While a smaller *percentage* of Marina’s daily interactions are in English than those of Felixa or Gulya, in absolute terms, if Marina speaks to more people overall, she uses more English *and* more Russian. This hypothesis might also predict that Marina’s Russian would have undergone less attrition. This is an interesting question which we did not investigate in the present study.

In this section, we have outlined some possible explanations for our results, but the ultimate testing of these hypotheses must be reserved for further work. Our main finding is what we have demonstrated: not only can nonnative speakers acquire features of a local dialect without necessarily losing their foreign accent, but native speakers of the same dialect can tell the difference between those immigrants who do and those who do not acquire local features.

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