Language Variation and Change, 9 (1997), 309–332. Printed in the U.S.A.

A rural/metropolitan split in the speech of Texas Anglos

ERIK R. THOMAS
North Carolina State University

ABSTRACT

The migration of people to the Sunbelt in the United States constitutes a major demographic shift, but has received little attention from language variationists. In Texas, this migration has led to a split of the Anglo population of the state into two dialects, a rural dialect and a metropolitan dialect. Evidence from a random-sample survey of Texas and from a systematic set of surveys of high schools in the state shows that young rural Anglos preserve two stereotypical features of the Texas accent, monophthongal /ai/, as in *night*, and lowered onsets of /e/, as in *day*, while young Anglos from metropolitan centers lack these features. This difference, which is absent among middle-aged and older native Texan Anglos, appears to have resulted from the fact that in-migration from other parts of the country is concentrated in metropolitan centers, especially suburbs.

Much of the research on linguistic variation in Texas has concentrated on the distribution of regional dialect features, especially Southern and South Midland forms, across the state (see, e.g., Atwood, 1962; Bailey & Dyer, 1992; Bailey, Wikle, & Sand, 1991; Bailey, Wikle, Tillery, & Sand, 1991, 1996; Bernstein, 1993; Carver, 1987; DiPaolo, 1989; Tarpley, 1970; Walsh & Mote, 1974; Wheatley & Stanley, 1959), or on features of minority varieties, such as African American Vernacular English (e.g., Bailey & Maynor, 1985, 1987, 1989), Chicano English (e.g., Bayley, 1994; Galindo, 1988; Garcia, 1976; González, 1976; Hamilton, 1977; Merrill, 1987; Sawyer, 1959, 1964; Thomas, 1993; Thomspon, 1975), or both (McDowell & McRae, 1972). However, another factor seems to have led to a dialectal division in Texas as well. Urbanness appears to be a vital influence. Bailey and Maynor (1989) noted some morphosyntactic differences between urban and rural African American children, but there are starker differences between Anglos from large metropolitan centers and those from rural areas in the production of certain vowels, particularly /ai/, as in *night*, and /e/, as in *day*. The result is the creation of dialect islands in Texas where the large metropolitan centers lie. This article seeks to test three hypotheses. First, and most important, is the hypothesis that this metropolitan/rural split for /ai/ and /e/ exists among

I wish to thank Guy Bailey for providing me with the raw data from the Texas Poll and the recordings from the high school surveys on which this study is based. Collection of the Texas Poll data was supported by National Science Foundation grant BNS-8812552. I also wish to thank Walt Wolfram, Guy Bailey, and the anonymous referees for their helpful comments and suggestions. Any remaining errors, of course, are my own.

Anglos. The other hypotheses test when and how the split developed. The second hypothesis is that the split is a recent development. The third hypothesis is that demographic movement to the Sunbelt (mostly from Northern Frostbelt states) was the impetus for the split.

Demographic movements and dialect islands

Migrations of people sometimes cause speakers of one dialect to form isolated colonies where they are surrounded by speakers of a different dialect. Examples described within the English-speaking world include relatively small-scale movements, such as the New Englanders who migrated to Marietta, Ohio (Clark, 1972), the Kentuckians who migrated to the Galena Lead Region of northwestern Illinois (Shuy, 1962), and the Jamaicans who migrated to London (Wells, 1973). They also include larger scale movements, such as the Great Migration of African Americans to Northern cities (see, e.g., Ellison, 1974; Grossman, 1989; Katzman, 1991; Wesley, 1927) or the movement of people from Scotland and England to form the Ulster plantations of Northern Ireland in the 17th century (Leyburn, 1962). In all of these cases, but especially for the large-scale ones, the result was a dialect island within an area dominated by another dialect (see, e.g., Deser, 1990; Edwards, 1992, 1996; Labov, Cohen, Robins, & Lewis, 1968; Wolfram, 1969, on African American Vernacular English; see, e.g., Gregg, 1972; Milroy, 1980, on Ulster English). A more recent large-scale demographic movement is the migration, mainly of whites, from the Northern Frostbelt to the Southern Sunbelt in the United States (see Abbott, 1987; Weinstein, Gross, & Rees, 1985). In one Sunbelt state, Texas, the influx of outsiders to metropolitan centers has resulted in the emergence of islands of a dialect quite different in its vowel variants from the stereotypical Texas accent. The children of the immigrants have failed to adopt the Texas accent in these areas, at least with regard to vowels.

Vowel variants of the Texas accent

Vowel variations are among the most often recognized aspects of the dialect popularly associated with the Anglo (i.e., non-Hispanic white) population of Texas. Humorist Jim Everhart's depictions of the Texas accent, for instance, include "lacked" as the Texas pronunciation of *liked*, "prod" as the Texas pronunciation of *pride*, and "fire and squire" as the Texas version of *fair and square* (Everhart, 1967). These particular forms illustrate the monophthongization of /ai/, as in *like* and *pride*, to [a:] and the lowering of the onset of /e/, as in *day* and *fair*, to produce an [æi] diphthong.[1] Monophthongal /ai/ and lowered /e/ are certainly not the only features of the Texas accent. Other features depicted by Everhart include the lowering of pre-engma [I] to [æ] (*thing* and *drink* pronounced "thang" and "drank") and low /ɔr/ (*lord* pronounced "lard"). Monophthongal /ai/ and lowered /e/ are, however, two of the most salient and most common features.

None of these features, of course, is confined to Texas. All are widespread in the South, and at least one—low /ɔr/—is known outside the South (Cook, 1969). In addition, the stereotypical Texas vowel variants have never typified all seg-

ments of the Texas population. Hispanics in Texas (90% of whom are Mexican American) seldom show either monophthongal /ai/ or lowered /e/ (Bernstein, 1993; Thomas, 1993). In fact, their /e/ is often a monophthongal [e:]. African Americans show monophthongal /ai/, but normally do so only when /ai/ is word-final, as in *by*, or precedes a voiced consonant, as in *pride*. They rarely show monophthongal /ai/ in pre-voiceless contexts, such as in *like* and *night*, and they seldom show much lowering of /e/. Elderly Anglos and some middle-aged Anglos show a pattern of /ai/ and /e/ similar to that of African Americans. Clearly, the stereotypes reflect the usage of only some Texans—in short, that of certain Anglos.

Monophthongal /ai/ and lowered /e/ are especially well known as traits of Southern American English (SAE). Observers as early as Greet (1931), Edgerton (1935), and Hall (1942) all reported offset lowering of /ai/ (resulting in an [aɛ] diphthong), while Evans (1935) argued that /ai/ is monophthongal in SAE. In fact, both forms occur (Thomas, 1995). Many subsequent observers, most notably Kurath and McDavid (1961), have also described offset lowering or monophthongization of /ai/ in SAE. The lowering of /e/ appears to be a more recent trend in SAE. Armour (1983) and Buckingham (1983) described it from a small town in Texas, Feagin (1986) from Alabama, and Mock (1991) from southwestern Missouri. Labov, Yeager, and Steiner (1972) and Labov (1991) described it from several regions of the South. The latter two studies suggested that monophthongal /ai/ and lowered /e/ are related, perhaps because the monophthongization of /ai/ allows /e/ to be lowered without causing perceptual confusion between /ai/ and /e/. Lowered /e/ has not been reported from Western states, with which Texas is often associated culturally, and, except for a reference by Hartman (1985:lix) that may reflect usage only in pre-liquid contexts (e.g., *mile*, *fire*), neither has monophthongal /ai/.

Both of these variants are frequent among Texas Anglos, such as the high school student from Kilgore, Texas, a lifetime resident of Kilgore who is representative of younger rural Texans; her vowels are plotted in Figure 1. This speaker was interviewed as part of a series of surveys of schools in Texas, which is described more fully in the section on the school surveys. Mean values of acoustic measurements for 16 of her tokens of /ai/ and 8 of /e/ are shown on the plot. Methods of formant measurement are also explained in the discussion of the school surveys. The mean values of 8 of her tokens of /i/, as in *see*, 7 of /æ/, as in *hat*, 10 of /ɑ/, as in *cot*, and 4 of pre-/l/ /u/, as in *pool*, are included as reference points. Arrows indicate the gliding of diphthongs. All of these tokens were taken from a reading passage. This speaker's /ai/ is essentially monophthongal, but her /e/ shows a long gliding motion, starting at a point near /æ/ and reaching a point near /i/.

Dialect islands in Texas

The processes affecting vowels like /ai/ and /e/ in Texas English have provided insights into how vowel shifting occurs (see Labov, 1991, 1994; Labov et al.,

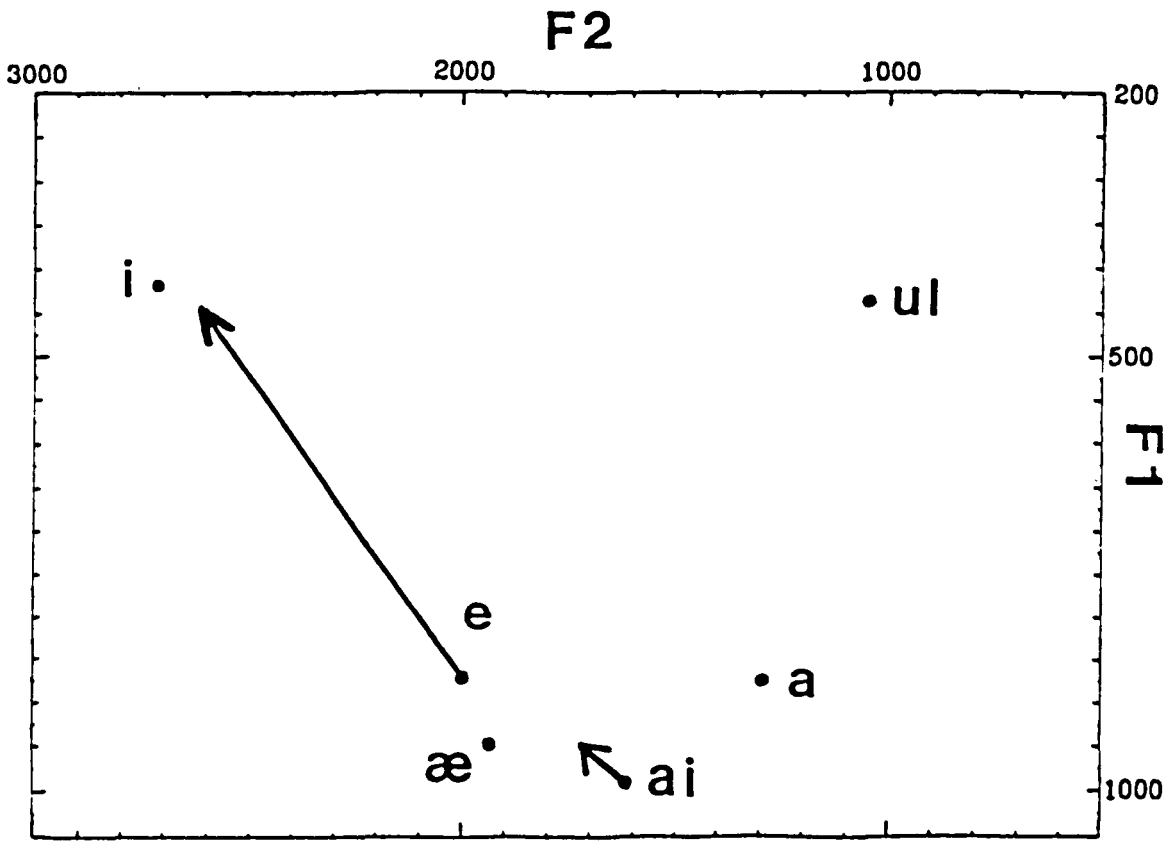

FIGURE 1. Formant plot of vowels of a student from Kilgore, Texas.

1972). Nevertheless, the heavy influx of non-native Anglos into Texas is affecting the speechways of the state. These "Yankees," about whom native Texans sometimes complain, have largely settled in the metropolitan centers of the state, especially in suburbs. There, they have mixed with and sometimes outnumbered the native Texans. As a result, the Anglo children who grow up in metropolitan centers tend not to use the vowel variants that form the stereotypical Texas accent, even though they often adopt regional lexical items, such as *y'all* (Montgomery, 1996) and *fixin' to*, and some regional pronunciation variant, such as *insurance* with the first syllable stressed. They use a diphthongal variant of /ai/ (i.e., [ai] or, more accurately, [ae]), and a non-lowered variant /e/ (i.e., [ei]). Figure 2 plots the vowels of such a speaker from Plano, Texas, a suburb of Dallas, who is the same age as the speaker from Kilgore. She was interviewed in the same series of school surveys as the Kilgore student. The points represent the mean values of the same words used for the Kilgore student. Unlike the speaker from Kilgore, her /ai/ shows a long gliding motion, and her /e/ starts much higher than /æ/.

Montgomery (1993) discussed the possibility that immigrants from the Midwest and Northeast have influenced Southern speechways, suggesting that many non-linguists think that such influence is causing Southern accents to disappear. He dismissed this notion, arguing that many of the Northerners are military personnel or retirees who have little influence on the speech of young people. How-

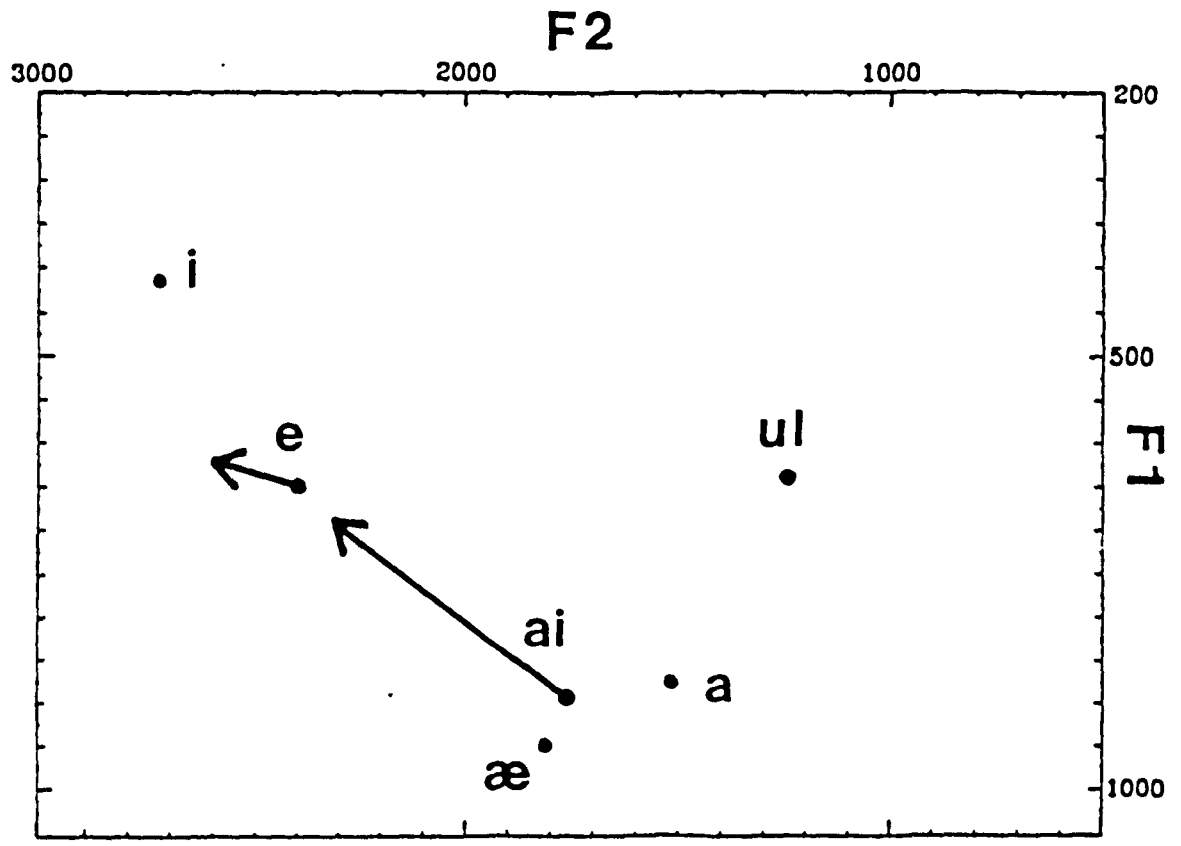

FIGURE 2. Formant plot of vowels of a student from Plano, Texas.

ever, in Texas there is compelling evidence that the influx of Northerners has influenced the speech of young Anglos in metropolitan centers. The resulting dialect, though it may retain such Southern features as *fixin' to*, lacks typically Southern (or Texan) vowel variants. Instead, the vowel variants that occur in this dialect are like those that are most widespread in the United States.

EVIDENCE FROM THE PHONOLOGICAL SURVEY OF TEXAS

To support the hypothesis that there is a divergence between Texas Anglos from rural areas, who exhibit vocalic features of the Texas accent, and those from metropolitan areas, who do not exhibit those features, I present two kinds of evidence. The first is the results from a random-sample telephone survey of households in Texas, the Texas Poll. The second is acoustic readings from a series of school surveys. Both of these sources are components of the Phonological Survey of Texas (PST), described by Bailey and Bernstein (1989).

THE TEXAS POLL

Because the Texas Poll data consist of a random sample, they provide an ideal means of investigating whether different subsets of the Texas population, such as different ethnicities or people from different levels of urbanness, truly differ for

linguistic variables. Thus it is well suited to testing the hypothesis that a metropolitan/rural split has developed among Texas Anglos. Since another way the sample can be divided is by age group, the Texas Poll data also shed light on the second hypothesis, that the metropolitan/rural split is a recent development.

Subjects and methods

The Texas Poll is conducted four times a year at the Public Policy Resources Laboratory at Texas A&M University. It samples 1,000 randomly selected households in Texas. Since the poll surveys households instead of people per se, the questionnaire is administered to the adult in the household with the most recent birthday. This practice counteracts the bias produced by the fact that women are more likely to answer the telephone than are men. The sample from the January, 1989, Texas poll, which included several questions eliciting phonological items, consisted of 73.6% Anglo respondents, 8.6% African Americans, and 13.0% Hispanics. The proportion of Anglo respondents is higher than the proportion of Anglos in the statewide population, and the proportions of minorities (especially Hispanics) are lower; the reasons for these differences are that minority households are more likely to lack telephones, and that minorities tend to have more adults per household. The interviews from the January, 1989, Texas Poll were tape recorded, and the phonological items that were elicited were transcribed by linguists. Analyses of the results have appeared in Bailey, Wikle, and Sand (1991), Bailey, Wikle, Tillery, and Sand (1991), Bailey and Dyer (1992), and Bernstein (1993).

Results and discussion

One of the phonological questions elicited the word *night*; responses to this question were coded as diphthongal (i.e., [ai]) or monophthongal (i.e., [a:]) based on impressionistic transcriptions. Several demographic factors were correlated with the pronunciation of *night*. Urbanness shows a relationship with pronunciation of *night* among Anglos who are lifelong residents of Texas; for young Anglos, the incidence of respondents with monophthongal /ai/ decreases with increasing urbanness, as I describe later. Other factors also show a relationship with the pronunciation of *night*. Ethnicity and nativity both show such a relationship. Monophthongal [a:] occurred among 9.6% of the African American respondents, 13.1% of the Hispanic respondents, and 26.6% of the Anglo respondents. Among Anglos who had lived in Texas their entire lives, 33.7% produced monophthongal [a:]. Thus, monophthongal /ai/ in *night* is primarily a feature of Anglo speech, especially the speech of Anglos who are native Texans. Age is another factor that appears to show a relationship with the pronunciation of *night*: monophthongal [a:] is more common among the younger cohorts (Bailey, Wikle, Tillery, & Sand, 1991).

The Texas Poll codes respondents into three categories of urbanness: very large metro, metro, and towns and rural. The very large metro category includes respondents living in the counties that lie within the Standard Metropolitan Statistical Areas (SMSAs) of Houston, Dallas, Fort Worth, and San Antonio. The

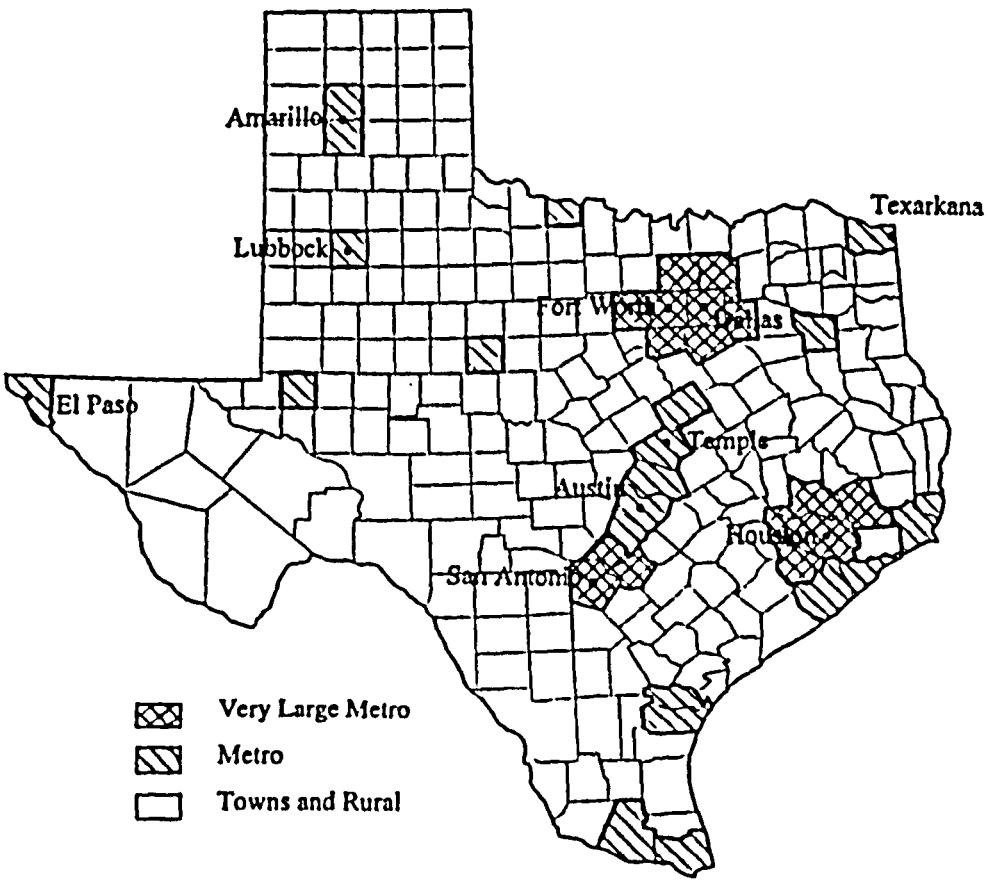

FIGURE 3. Urbanness classification of Texas counties by the Texas Poll.

metro category includes respondents living in the SMSAs of smaller cities. The towns and rural category includes respondents residing in all other counties. These counties are delineated on the map in Figure 3. Figure 4 plots the percentages of lifelong Texas resident Anglo respondents with monophthongal /ai/ for each level of urbanness by age group. Differences among urbanness levels are small for the three oldest age groups, except for the metro category of the 45- to 61-year-olds, which turned out to be a statistically non-significant deviation, based on a one-way ANOVA, $F(2, 78) = 2.19$, n.s. However, urbanness differences widen abruptly for the youngest group, the 18- to 29-year olds. The 18- to 29-year olds in the towns and rural category show the highest proportion of monophthongal /ai/ of any group, with 60%. Those from the metro category follow closely behind with 55%. In contrast, the 18- to 29-year olds from the very large metro category show a low proportion of monophthongal /ai/, with only 19%. It appears that the incidence of monophthongal /ai/ has increased in areas covered under the towns and rural label at the same time that it has declined in areas covered under the very large metro label, assuming the apparent time construct that observed generational differences represent real changes over time (Bailey, Wikle, Tillery, & Sand, 1991; Labov, 1972:163). This pattern supports the hypothesis that the metropolitan/rural split is a relatively recent phenomenon in Texas.

Raw data for the pronunciation of *night* by Anglo Texas Poll respondents who had lived in Texas their entire lives is presented in Table 1. The number of respondents who produced diphthongal and monophthongal /ai/ is given for each

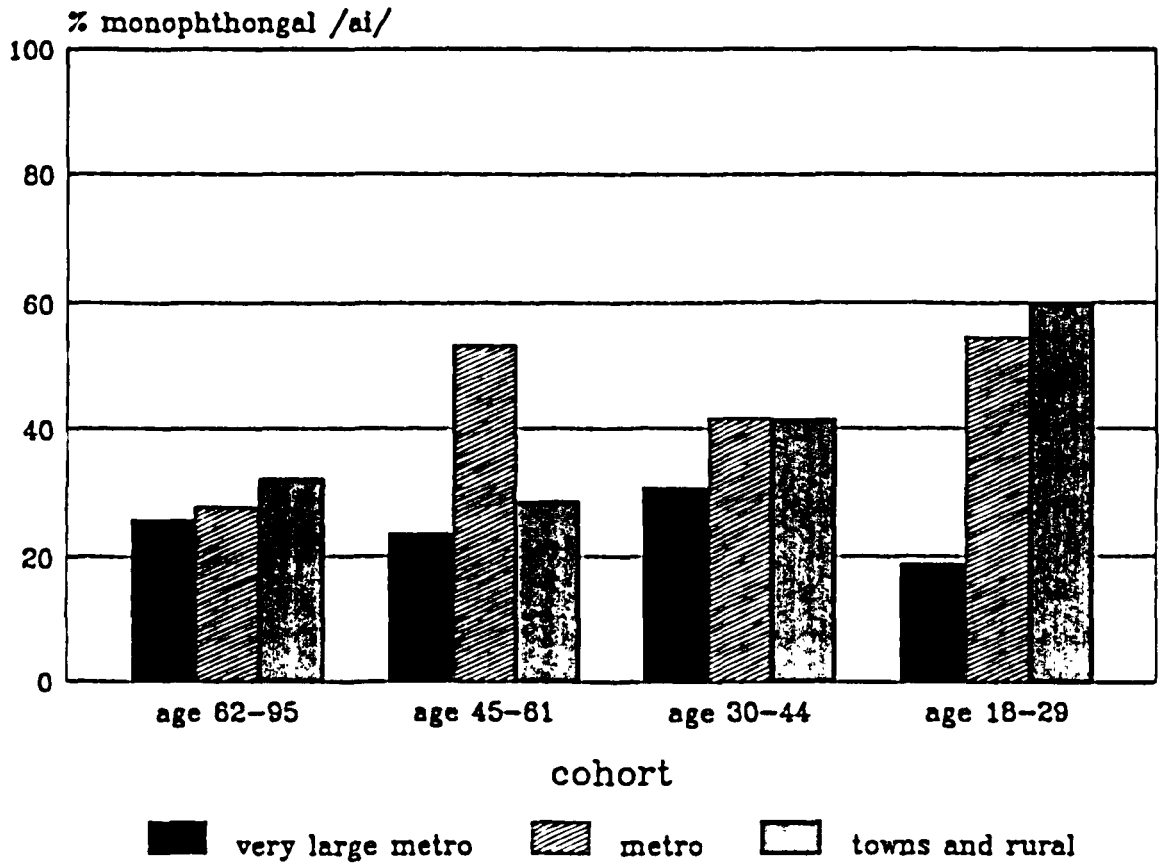

FIGURE 4. Percentages of monophthongal /ai/ of Anglos who had lived in Texas their entire lives.

level of urbanness, separated by age group. Table 2 shows the results of a VARBRUL 2 analysis (see Cedergren & Sankoff, 1974; Sankoff & Labov, 1979) for the raw data given in Table 1. An instance of diphthongal /ai/ counts as an application, while an instance of monophthongal /ai/ counts as a non-application. Because diphthongal versus monophthongal /ai/ is a binary variable, a factor with a value greater than .5 favors diphthongal /ai/, while a factor with a value less than .5 disfavors it. Table 2 shows that urbanness is the primary factor in predicting the pronunciation of *night*. Residence in very large metro areas favors diphthongal /ai/, while residence in metro and towns and rural areas disfavors it. The difference between the metro and towns and rural categories is not statistically significant. At first glance, age appears to be a factor in pronunciation of *night*, since diphthongal /ai/ is favored less with each successive cohort. However, the relationship between the pronunciation of *night* and age is weak; the stepup/stepdown procedure in VARBRUL knocked out age. This result indicates that age is not an important factor by itself and may function only as an interacting factor.

The VARBRUL analysis of the Texas Poll data clearly supports the hypothesis that there is a split among Texas Anglos along urbanness lines, with monophthongal /ai/ being more frequent in towns and rural areas than in the very large metro centers (Houston, Dallas, Fort Worth, and San Antonio). The smaller cities that are included in the metro category appear, according to the VARBRUL analysis, to group with the towns and rural areas instead of with the very large

TABLE 1. *Numbers and percentages of Anglo Texas Poll respondents who had lived in Texas their entire lives producing diphthongal versus monophthongal /ai/ in* night

Age Cohort	Towns and Rural	Metro	Very Large Metro	Total
62–95 [ai]	21 (68%)	13 (72%)	23 (74%)	57 (71%)
[a:]	10 (32%)	5 (28%)	8 (26%)	23 (29%)
Total	31	18	31	80
45–61 [ai]	20 (71%)	7 (47%)	29 (76%)	56 (69%)
[a:]	8 (29%)	8 (53%)	9 (24%)	25 (31%)
Total	28	15	38	81
30–44 [ai]	17 (59%)	14 (58%)	38 (69%)	69 (64%)
[a:]	12 (41%)	10 (42%)	17 (31%)	39 (36%)
Total	29	24	55	108
18–29 [ai]	8 (40%)	10 (45%)	34 (81%)	52 (62%)
[a:]	12 (60%)	12 (55%)	8 (19%)	32 (38%)
Total	20	22	42	84
Total [ai]	66 (61%)	44 (56%)	124 (75%)	234 (66%)
[a:]	42 (39%)	35 (44%)	42 (25%)	119 (34%)
Total	108	79	166	353

metro areas. Metro is, in fact, a heterogeneous grouping, including cities ranging in size from Texarkana (pop. 31,656) and Temple (pop. 46,109) to Austin (pop. 465,622) and El Paso (515,342). It also includes cities associated with large military bases (El Paso, Temple, and Texarkana) and cities with large universities (Austin and Lubbock), for which many of the residents aged 18 to 29 are likely to be transient. The tape recordings of college students included in the PST from various parts of Texas, the high school surveys of El Paso and of Leander/Cedar Park (suburbs of Austin), and my own observations of students while a substitute teacher in Austin public schools for two years all suggest that Austin and El Paso follow the very large metro dialectal pattern, while the smaller cities follow the dialectal pattern of the towns and rural category.

It seems likely that the decline of monophthongal /ai/ occurred at different rates in the different metropolitan centers involved, considering their various economic bases and population origins. Monophthongal /ai/ may never have been as prevalent in San Antonio and El Paso as in the culturally more Southern cities of Houston, Dallas, Forth Worth, and Austin. However, the sample sizes within the Texas Poll data are too small for such a comparison of these metropolitan centers. At any rate, the end result in each center seems to be the same: a low incidence of monophthongal /ai/.

Although the Texas Poll did not include a question to elicit a token of /e/, the tape recordings of the Texas Poll provided evidence of a metropolitan/rural split for /e/ as well. In Thomas (1989), I transcribed tokens of /e/ for a subset of the Texas Poll tapes. The results showed that, among the youngest age group, Anglo respondents who had lived in Texas their entire lives were more likely to exhibit lowering of the onset of /e/ if they lived in rural areas than if they lived in large metropolitan centers.

TABLE 2. *VARBRUL analysis for diphthongal /ai/ in* night *in the Texas Poll data for Anglos who had lived their entire lives in Texas*

	VARBRUL Probabilities
Urbanness	
Towns and rural	.43
Metro	.39
Very large metro	.60
Age Cohort	
62–95	.57
45–61	.53
30–44	.47
18–29	.45
Input Probability	.67
Total $\chi^2 = 7.939$	χ^2/cell = .662

THE SCHOOL SURVEYS

The Texas Poll results show that young Anglo residents of metropolitan centers and young Anglo residents of rural areas differ in their pronunciation of /ai/. Nevertheless, they do not show whether people who had grown up in metropolitan and rural areas differ because many of the respondents may have moved since attaining adulthood, and the Texas Poll did not ask respondents where they grew up. To confirm that the divergence occurs between natives of the two regions, I turned to another facet of the PST, the series of surveys of schools around the state.

Subjects and methods

The communities surveyed are mapped in Figure 5. They include four rural communities (Silsbee, Kilgore, Snyder, and Perryton) and four metropolitan communities (Plano, Leander/Cedar Park, Laredo, and El Paso), distributed widely around the state. These surveys were carried out in the period from 1989 to 1991. All were surveys of high school students except Laredo, which was of Laredo Junior College (now Laredo Community College); but since the Laredo survey did not include any Anglos who were natives of Laredo, it does not contribute to the analysis. Students who were interviewed were volunteers. Although the school surveys included students from all ethnic backgrounds and both natives and nonnatives of the local community, I examined only the speech of Anglo students who had lived in the community since starting the first grade. With these criteria, the corpus encompassed 7 students from Kilgore, 5 from Perryton, 14 from Silsbee, 4 from Snyder, 9 from El Paso, 5 from Leander/Cedar Park, and 8 from Plano. The total numbers of students interviewed in each survey were 11 in Kilgore (8 of them Anglos), 13 in Perryton (11 Anglos), 48 in Silsbee (29 Anglos), 12 in Snyder (8 Anglos), 17 in El Paso (10 Anglos), 12 in Leander/Cedar Park (11 Anglos), and 16 in Plano (14 Anglos).

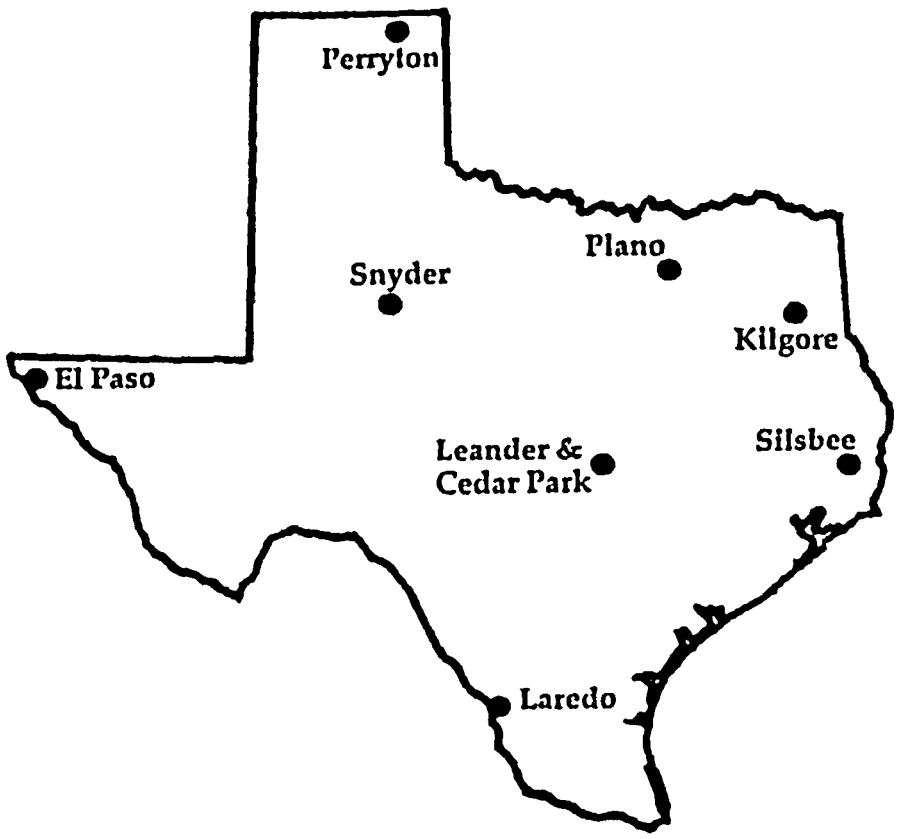

FIGURE 5. High school and junior college survey communities.

The protocol for these surveys involved having each student read a list of sentences and a story. Since all the respondents read the same items, I was able to use the same 24 words for each speaker: 8 of /e/, 8 of /ai/ in pre-voiced contexts, and 8 of /ai/ in pre-voiceless contexts.[2] I separated /ai/ into pre-voiced and pre-voiceless contexts because /ai/ offsets behave differently in those contexts in many Southern dialects. Using the same words for each speaker served as a control on the investigation because the phonetic contexts of the vowels being measured would be exactly the same for each respondent. Acoustic measurements are sensitive enough that differences in phonetic context could have a dramatic impact on the results.

I measured formant values of each token with a Kay Computerized Speech Lab, Model 4300B, in the Linguistics Laboratory at North Carolina State University. This equipment converts signals from analog to digital form. Using spectrograms of the digitized speech with a 100-point transform, low-pass filtering at 4 kHz, and enhancement of higher frequency sound, I determined points 25 ms from the beginning of the diphthong (for the onset) and 25 ms from the end (for the offset) and took readings of the first three formants at those places with a linear predictive coding program. After taking all the formant readings for a speaker, I computed that speaker's mean formant values for the /e/ onset, pre-voiced /ai/ offset, and pre-voiceless /ai/ offset.

After computing mean formant values for each speaker, I calculated normalized values of the means. This procedure is necessary because differences in vocal tract sizes of speakers produce different scalings of formant values. The

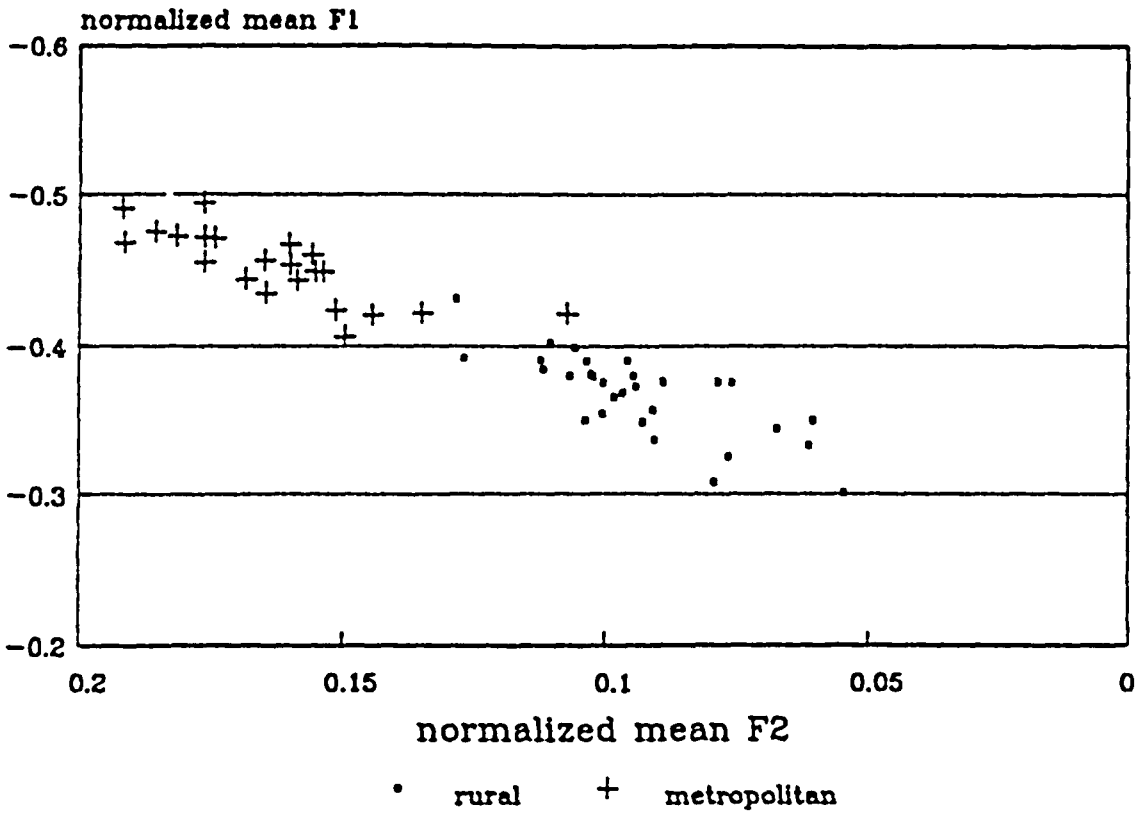

FIGURE 6. Normalized mean /e/ onset value of high school survey students.

normalization technique that I employed, developed by Iri (1959), involves the following formula:

$$\text{normalized } F_n = \log \frac{F_n}{\sqrt[3]{F_1 \times F_2 \times F_3}}$$

Because this technique involves normalization with only a single vowel reading (or, as I employ it, a mean value for a vowel) instead of using a comparison with the whole range of a speaker's vowels, it is well suited to cross-lectal comparisons. The reason is that different lects may have the distribution of vowels skewed (e.g., with more or fewer back vowels) or may use the periphery of the vowel envelope to a greater or lesser extent (Disner, 1980).

Results and discussion

Figures 6 through 8 show scatterplots of normalized mean formant values of the rural and metropolitan respondents from the high school surveys. Figure 6 shows the results for /e/ onsets, Figure 7 shows those for pre-voiced /ai/ offsets, and Figure 8 shows those for pre-voiceless /ai/ offsets. High normalized F_1 values typify low vowels. High normalized F_2 values may indicate that a vowel is front, but because the vowel envelope produced by the normalization procedure does not correspond exactly with traditional vowel features (i.e., front/back, high/mid/low), a high normalized F_2 value may also indicate that a vowel is high. Thus, in Figure 6, the difference in normalized F_2 values between rural and met-

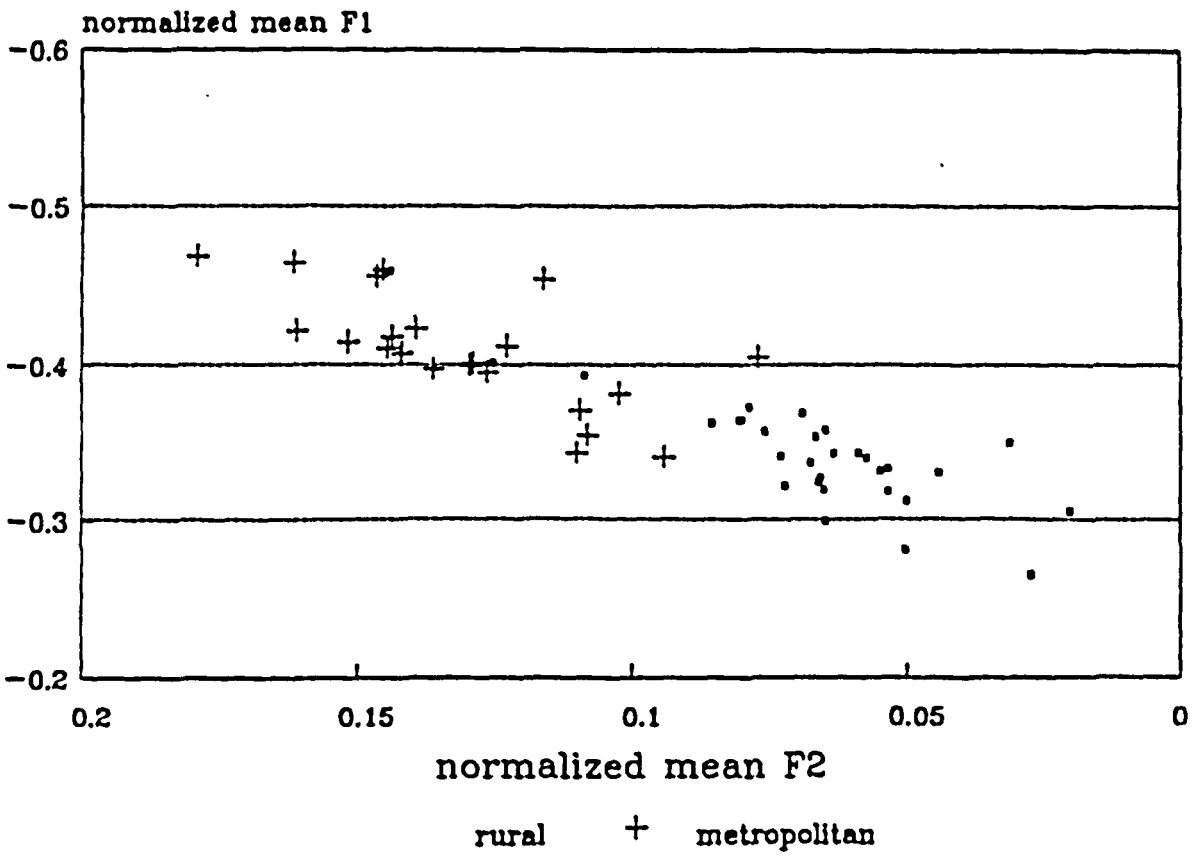

FIGURE 7. Normalized mean pre-voiced /ai/ offset value of high school survey students.

ropolitan respondents simply indicates that the metropolitan respondents have higher /e/ onsets than do the rural respondents, not that there is any difference in backness between the two groups.

The disparity in /e/ onsets and /ai/ offsets that appears in Figures 6, 7, and 8 between rural and metropolitan respondents is striking. Rural students consistently show lowered /e/ onsets, whereas metropolitan students show non-lowered /e/ onsets. Rural students show low /ai/ offsets, with a phonetic value roughly of [a] (i.e., about the same as the /ai/ onset, thus indicating a monophthongal or nearly monophthongal [a:]) with almost equal consistency. Metropolitan students categorically show higher /ai/ offsets, producing a diphthong with a phonetic value of [ae], roughly speaking. This [ae] diphthong is the same as the variant of /ai/ that I have found in many Northern communities (Thomas, 1989 [1993], 1991, 1995, 1996). The old-fashioned Southern pattern of monophthongal /ai/ in pre-voiced contexts and diphthongal /ai/ in pre-voiceless contexts did not appear in these data; individual students produced either monophthongs categorically or diphthongs categorically in the reading passage.

Table 3 lists results of one-tailed *t* tests for the difference between rural and metropolitan students for the normalized values of the /e/ F_2, pre-voiced /ai/ F_2, and pre-voiceless /ai/ F_2. For every comparison, the difference was significant at the $p < .001$ level. I have not given statistical comparisons for the normalized F_1 because the arithmetic of the normalization technique causes the normalized val-

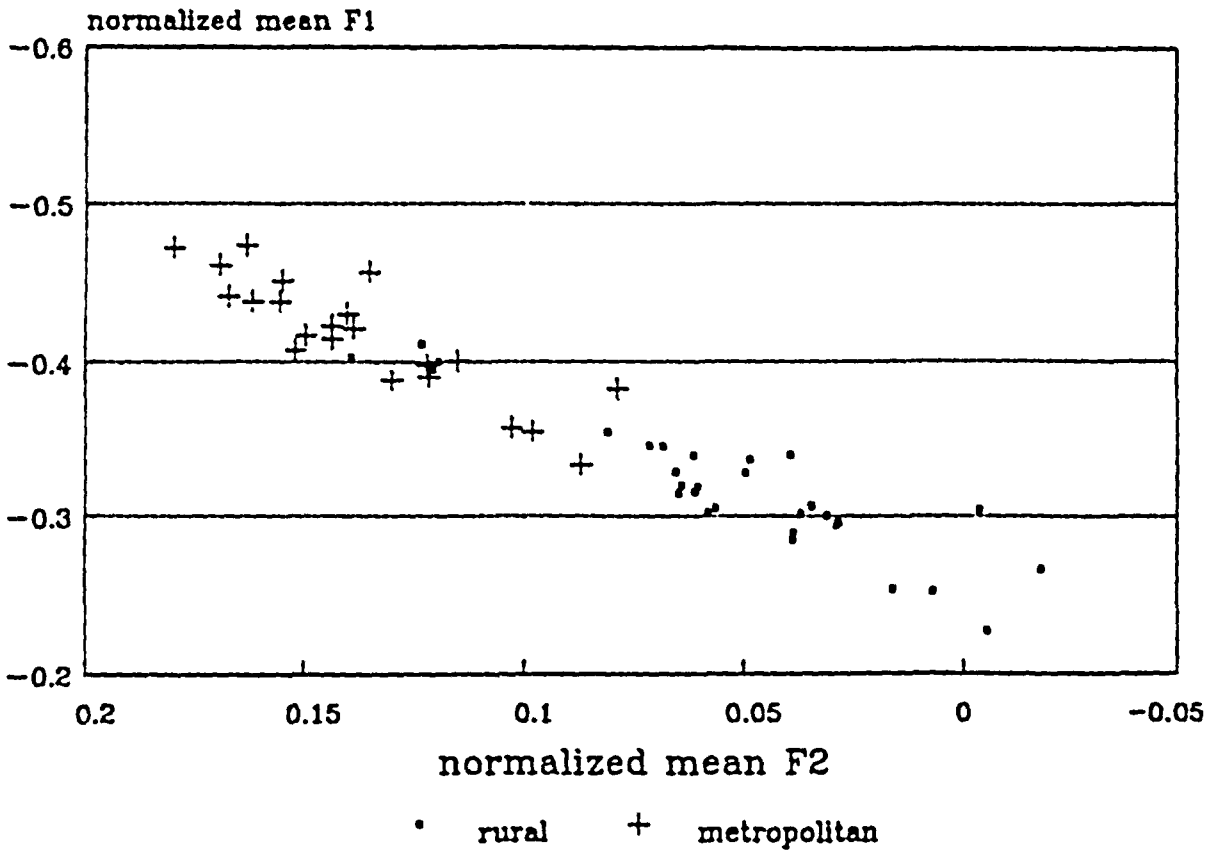

FIGURE 8. Normalized mean pre-voiceless /ai/ offset value of high school survey students.

ues of F_1 and F_2 not to be independent of each other. For instance, if F_2 and F_3 are kept constant but F_1 is increased, the normalized value of F_2 decreases. However, all the comparisons would still be significant at $p < .001$ had I used the normalized F_1 values instead of the normalized F_2 values. What is important is that the differences between metropolitan and rural students are statistically significant. The level of significance of these results suggests an even stronger dialectal split than the Texas Poll data included.

CONCLUSIONS FROM THE PST DATA

The Texas Poll data and the high school surveys were conducted quite differently. The Texas Poll data came from a random-sample survey and were transcribed impressionistically. The high school data came from a nonrandom, but systematic series of surveys of selected communities and were measured acoustically. Nevertheless, they both confirm the first hypothesis, that young Anglos from large metropolitan centers in Texas have come to speak a different dialect than that of young Anglos from rural areas. The Texas Poll data also support the second hypothesis, that this split originated recently, a conclusion corroborated by the absence of such a split in the Texas field records of the Linguistic Atlas of the Gulf States (Pederson, Leas, Bailey, & Basset, 1981).

TABLE 3. *t tests for significance of differences of normalized mean formant values between rural and metropolitan students in the high school surveys*

	F_2
/e/ onset	Rural mean = .0937, n = 30 Metropolitan mean = .1627, n = 22 t = 13.14 $p < .001$
Pre-voiced /ai/ offset	Rural mean = .0673, n = 30 Metropolitan mean = .1306, n = 22 t = 9.03 $p < .001$
Pre-voiceless /ai/ offset	Rural mean = .0531, n = 30 Metropolitan mean = .1369, n = 22 t = 8.84 $p < .001$

THE SOURCE OF THE METROPOLITAN/RURAL SPLIT

The PST data prove that young Anglos from Texas are divided into two dialects, one typical of large metropolitan centers and the other of rural areas. They also support the notion that this split is recent. How, then, did the split begin? The third hypothesis, as stated earlier, is that demographic movement to the Sunbelt was the impetus for the split.

Patterns of population movement in Texas

Two factors point to migration to the Sunbelt as the cause of the split. First, the timing of the rural/metropolitan split—among Texans born after about 1960—coincides with the post–World War II population shifts that brought many Northerners to the Sunbelt. Second, it is the metropolitan centers that have received most of the in-migration from outside Texas. Table 4 shows the percentages of Anglo respondents in the Texas Poll from the very large metro, metro, and towns and rural areas who reported having lived in Texas their entire lives, more than 10 years but not their entire lives, and less than 10 years. It is clear from Table 4 that the towns and rural areas have a much higher percentage of native Texans than the very large metro or metro areas. In-migrants are far more likely to settle in an urban area than in a rural area. In fact, approximately half of the Texas Poll respondents from the very large metro and metro regions have lived outside of Texas.

The fact that Anglos moving to Texas tend to move to urban parts of the state mirrors the overall patterns of demographic movement in Texas. While urban centers have grown rapidly since World War II, growth in rural areas has been stagnant, and some rural areas have lost population. The eight communities in which the PST school surveys were conducted illustrate this point vividly. Table 5

TABLE 4. *Length of residence of each urbanity group among Anglo respondents from the Texas Poll*

	Very Large Metro	Metro	Towns and Rural
Entire life	183 (51.4%)	92 (50.5%)	122 (63.9%)
Over 10 years, not life	105 (29.5%)	63 (34.6%)	49 (25.7%)
10 years or less	68 (19.1%)	27 (14.8%)	20 (10.5%)
Total	356	182	191

Note: Percentages may not sum to 100 because of rounding.

shows the populations of each community in censuses from 1960 through 1990. Of the rural communities, Snyder and Perryton have lost population, and Kilgore and Silsbee have barely grown. On the other hand, all four metropolitan communities have at least doubled their population since 1960. The population of Plano has increased 34-fold. In 1960 Cedar Park did not even exist, and Leander was little more than a rural railroad station, but since 1970, when their populations were first recorded, they have collectively grown 7-fold. Although most of the growth in Laredo and El Paso has been in the Hispanic population, such is not the case for Plano, Leander, and Cedar Park, which, according to the 1990 census, are 85.4% Anglo, 84.9% Anglo, and 87.8% Anglo, respectively. Thus, rural and metropolitan parts of Texas differ vastly in their growth patterns and in the origins of their populations. Most rural communities have been established for a long period and have relatively stable populations, whereas metropolitan communities attract many outsiders and include many recently established suburbs and suburban neighborhoods.

Dialect mixture and new towns

The expanding suburban parts of the metropolitan centers of Texas, which contain most of the metropolitan Anglo population, represent new communities where mixtures of dialects could produce new dialects. So-called new towns have attracted some attention from European language variationists. Trudgill (1986) described case studies of a new town in Norway, Høyanger, and of newly formed communities of Hindi speakers in Fiji and Trinidad. Based on these and other case studies, he provided an outline for what happens during contact between distinct dialects. First, speakers of the different dialects accommodate their speech to each other, producing what he termed an interdialect. Then, gradually, the number of variants present in the community is reduced as the community focuses on particular variants through koineization. Koineization is the formation of a new dialect through leveling, by which marked and minority variants are lost, and simplification, by which linguistic distinctions present in the original dialects may be lost. Finally, the remaining variants are sometimes assigned sociolinguistic functions such as high status versus low status.

Paul Kerswill's detailed studies of two communities in which dialect mixture has taken place—Bergen, Norway (Kerswill, 1994a), and the preplanned new

TABLE 5. *Populations of high school and junior college survey communities, 1960–1990*

	1960	1970	1980	1990
Kilgore	10,092	9,495	10,968	11,066
Perryton	7,903	7,810	7,991	7,607
Snyder	13,850	11,171	12,705	12,195
Silsbee	6,277	7,271	7,684	6,368
El Paso	276,687	322,261	425,259	591,610
Laredo	60,678	69,024	91,449	122,899
Leander and Cedar Park		1,232	5,653	8,559
Plano	3,695	17,872	72,331	128,713

Note: 1960 population figures for Leander and Cedar Park are unavailable.
Source: 1960 Census of Population, 1970 Census of Population, 1980 Census of Population, 1990 Census of Population.

town of Milton Keynes, England (Kerswill 1994b, 1995)—have added further insights into the processes that affect dialect contact. Milton Keynes is of particular interest here because, demographically, it resembles metropolitan Texas communities like Plano, Leander, and Cedar Park, having grown rapidly as people from a wide range of localities moved in and swamped the few original inhabitants. In Milton Keynes, Kerswill recorded children whose parents came from various parts of Great Britain as they grew older and found that they gradually settled upon a dialect that included features of southeastern England in general, but which differed from the dialects of the parents and from the original local dialect. Based on their findings, Kerswill and Williams (1994) listed a number of principles of dialect contact that might apply to any such situation. These principles build on Trudgill's model. Those that are relevant to the formation of the metropolitan dialect in Texas are:

1. Phonologically and lexically simple features are adopted.
2. Majority rather than minority forms found in the mix win out.
3. Marked regional forms are disfavored.
4. There is a move from diffusion [i.e., diffuseness] to focusing.
5. There is no normal historical continuity with the locality, either socially or linguistically. As a result, all first generation speakers are oriented towards language varieties originating elsewhere.

All of these except principle 3 are part of Trudgill's model. The third principle, which Trudgill did not overly state, figures prominently in the formation of the metropolitan dialect of Texas.

Dialect mixture in Texas

As previously noted, suburban communities in Texas closely resemble the new towns of Europe in their recent origin and diverse population. These recently established suburban areas, which include both suburbs like Plano and suburban

sections of the actual cities such as the north side of Dallas, are the centers of the Anglo population of Texas metropolitan centers. The older parts of the cities have become increasingly dominated by African Americans and Mexican Americans as Anglos have moved away from the central parts of cities. Thus, relatively few Anglos live in long-established metropolitan neighborhoods, which may reduce the continuity of metropolitan Anglos with the historical Anglo dialect of the cities.

As new suburban neighborhoods were established, a mixture of people moved into them. Many of these people were native Texans from other parts of the state. Others were from other states, such as Oklahoma or the Midwestern states. The parents of the 16 students interviewed in Plano (including those who had moved to Plano since the first grade) provide an example. Of the 32 parents of these children, 15 were from Texas, though from such widely scattered places as Orange (in the southeastern corner of the state), Amarillo, and San Antonio. Only 2 were from the Dallas/Fort Worth metroplex, within which Plano lies. Not a single one had grown up in Plano itself. Of the remaining parents, 5 were from Oklahoma, 3 were from Midwestern states, 3 were from Southern states, 2 were from Western states, and 4 were from foreign countries.

Such mixtures of people would bring a variety of dialects with them. Most of the non-native Texans would lack monophthongal /ai/, lowered /e/, and other stereotypical Texas features, such as *thing* pronounced "thang." The native Texans would not necessarily have been dialectically uniform. In the post–World War II period when the metropolitan Texas dialect was originating, some of the Texas natives would have had monophthongal /ai/ in all phonetic contexts and lowered /e/. Others would have had the old-fashioned Southern pattern, which includes monophthongal /ai/ only in pre-voiced and word-final contexts and does not include lowered /e/.

Trudgill's model of koineization sheds some light on what has happened in Texas. Leveling may have led to the disappearance of lowered /e/ and monophthongal /ai/ in pre-voiceless contexts, since these variants would probably have been used by a minority of the Anglos living in the metropolitan centers. However, leveling cannot account for the disappearance of monophthongal /ai/ in other contexts because almost all of the native Texans as well as immigrants from other Southern states would have had monophthongal /ai/ in those contexts. It might appear that simplification could account for this disappearance; the phonologically conditioned difference between monophthongal /ai/ in pre-voiced and word-final contexts and diphthongal /ai/ in pre-voiceless contexts is the sort of rule that simplification would eliminate. Simplification may have operated in metropolitan centers in other ways: for instance, the loss of the distinction between /ɑ/, as in *cot*, and /ɔ/, as in *caught*, now widespread among younger Texans, seems to have gained an early foothold in the Dallas/Fort Worth metroplex (Bailey, Wikle, & Sand, 1991). Nevertheless, the picture is more complicated for /ai/. Non-Southerners show a process whereby /ai/ offsets approximate a high front vowel more closely in pre-voiceless contexts than in other environments (Thomas, 1991, 1995). Thus, *tight* is pronounced [t^{h}ait], and *tide* is pronounced [t^{h}aed]; the offsets differ even though the onsets may be the same. Most of the

metropolitan Texas students seem to show this configuration to some extent. Simplification does not explain why the Southern patterns should give way to this configuration.

An explanation lies in the notion of linguistic salience: for example, the extent to which people are aware of a variant. Trudgill (1986:125) discussed salience of variants as a possible reason that some variants remain as socially marked forms in some dialect contact situations instead of only one variant remaining. Salience may also have to do with the disappearance of monophthongal /ai/ in the metropolitan dialect of Texas. There is reason to think that monophthongal /ai/ is an especially salient variable. Johnson (1928) noted that, in his day, it was already a widely known stereotype that Southerners pronounced *I* as "ah" and *my* as "mah." Students in Ohio whom I have interviewed readily recognize monophthongal /ai/ as a feature of Southern speech. Bailey, Wikle, Tillery, and Sand (1996) noted that monophthongal /ai/ in *night* correlates with a speaker's rating of Texas as a place to live—those rating Texas more highly are more likely to show monophthongization—suggesting that Texans use it to signify Texas identity. Intensified use of a linguistic variant to enhance local identity is well known (see Labov's 1963 study of Martha's Vineyard; Milroy's 1980 study of Belfast; and Wolfram and Schilling-Estes's 1995 and 1996 studies of Ocracoke, North Carolina). In addition, three of the four students in Figure 8 from rural communities who show /ai/ offsets in the cloud occupied by metropolitan areas had college-educated parents, suggesting possible overt prestige associated with diphthongal /ai/ (i.e., its spread could be a change from above, as defined by Labov, 1966).

Kerswill and Williams's third principle of dialect contact, that marked regional forms are disfavored, states succinctly what all of the evidence about the salience of monophthongal /ai/ points to. Monophthongal /ai/ was recognized as a regional feature by many of the Anglos who populated the growing metropolitan centers of Texas after World War II. In rural areas, monophthongal /ai/ became more common than it had been before because it served as a marker of Texas identity. In metropolitan centers, however, where there was less historical continuity, the new mixtures of people may have seen monophthongal /ai/ differently, causing its use to decline. Just as local features present in the speech of Milton Keynes parents disappeared in the speech of their children, the marked regional feature of monophthongal /ai/ declined among the Anglo children growing up in the large metropolitan centers of Texas.

Although the koineization model works well for most of the large metropolitan centers of Texas, the objection could be raised that El Paso's settlement history and contact with the Hispanic majority in El Paso are the reasons for the absence of monophthongal /ai/ and lowered /e/ among Anglos there. With regard to settlement history, the Anglo population of El Paso has always had Southern and South Midland connections, as evidenced by Atwood's (1962) finding of such terms as *branch* 'running stream', *carry (you home)*, and *tow sack* in El Paso. With regard to contact with the Hispanic majority, the Anglo students in the El Paso high school survey consistently showed centralized /o/, as in *coat*, and /u/, as in *do*, and raised pre-nasal /æ/, as in *hand*, which are rare among Hispanic

students in the survey (see also Thomas, 1993). Therefore, contact with Hispanics cannot fully explain the absence of monophthongal /ai/ and lowered /e/. The vowels of the Anglo students from El Paso are indistinguishable from those of the Anglo students from Plano and Leander/Cedar Park.

CONCLUSIONS

Recent demographic upheaval has led to a dialectal split of Texas Anglos between those from rural areas (and, apparently, small cities) and those from large metropolitan centers. This demographic upheaval—the migration of large numbers of people to Sunbelt states like Texas and the subsequent formation of many new suburban communities—is part of the large-scale relocation of people that has occurred since World War II. In Texas, the Sunbelt migration has caused the decline of monophthongal /ai/ and lowered /e/ and probably of other regional vowel variants in metropolitan centers. The general relocation of people since World War II is already known to have led to the decline of some older features of Southern speech, such as /ar/ in words like *lord* and *for* (Thomas & Bailey, 1992), *r*-lessness among Anglos (Lambert, 1995), and the old-fashioned [æi] diphthong in words such as *past* and *half* (Berni, 1995).

How long this rural/metropolitan split will last remains to be seen. Three outcomes are possible. The first is that the features predominant in rural areas could retake the metropolitan centers. Although cases of rural features spreading to cities are known, this possibility seems unlikely here. The momentum is currently in the opposite direction. Furthermore, demographics put the rural features at a disadvantage. The SMSAs of the cities with metropolitan vowels—Houston, Dallas, Fort Worth, San Antonio, Austin, and El Paso—contain 56.4% of the Anglo population of Texas (*1990 Census of Population*). Even though these SMSAs contain some outlying rural communities that still have rural vowels, such as Royse City in the Dallas SMSA (according to PST data), it appears that the rural Anglo dialect is rapidly becoming a minority dialect in Texas. Both the continued growth of the metropolitan centers and the growth of the Hispanic population are contributing to the shrinking presence of the rural Anglo dialect.

The second possibility is that the features found in the metropolitan centers will spread out to the countryside and wipe out the traditional Texas accent. This scenario matches the long-held notion of dialectologists and language variationists that cities serve as focal centers from which linguistic innovations spread (e.g., Callary, 1975; McDavid, 1958; Trudgill, 1974). This notion has been challenged recently by Bailey, Wikle, Tillery, and Sand (1993), who found that, in Oklahoma, features have spread from rural areas to metropolitan centers as well as vice versa. Thus, it is by no means inevitable that the rural features are doomed.

A third possibility is that the rural/metropolitan split will stabilize. Metropolitan Anglos could continue to use their dialect, while rural Anglos continue to use theirs. This possibility might happen if ruralities continue to view monophthongal /ai/ and perhaps other rural vowel variants as identity markers. Sounding

"country" could become an important marker of rural identity in Texas; indeed, Johnstone (1996) found that it already is.

At this point there is no means of knowing which of these scenarios will occur. It is clear, though, that language variationists should pay closer attention to the effects that migration to the Sunbelt is having on the speech of Americans. Like other large-scale migrations that have occurred in America and elsewhere, it has caused dialect mixture. In Texas, it has led to the split of the Anglos of the state into two dialects, one predominantly rural and the other metropolitan. Language variationists should watch for similar trends in other fast-growing Southern metropolitan centers, such as Atlanta, Charlotte, and Raleigh.

NOTES

1. The quality of monophthongized /ai/ varies from speaker to speaker; some have it as front as [æ] while others have it as backed as [ɑ], but most have it between those extremes. Although some researchers, such as Labov (1991), consider /e/ to undergo a backing process to become nonperipheral before it becomes lowered, the most obvious accoustic correlate of /e/ in the Texas accent is the lowering. Because the issue of the backing process is irrelevant to the subject of this article, I refer to the form of /e/ found in the Texas accent as lowered.
2. I did not include any words with final /ai/, such as *high*. Although these words usually pattern with pre-voiced environments, they are problematic because, in connected speech, they may be followed by a word beginning with a voiceless consonant. The following words were used: for /e/, *day*, *made*, *eight*, *safety*, *Abe*, *May*, *bake*, and *favors*; for pre-voiced /ai/, *I've*, *ride*, *eyes* (two tokens), *dried*, *fried*, and *pies* (two tokens); and for pre-voiceless /ai/, *mice*, *ice*, *fights*, *right*, *tightly*, *fight*, *light*, and *knife*.

REFERENCES

Abbott, Carl. (1987). *The new urban America: Growth and politics in Sunbelt cities* (2nd ed.). Chapel Hill: University of North Carolina Press.

Armour, Malcolm. (1983). The social stratification of (e) in Midlothian, Texas. In Jerold A. Edmondson (Ed.), *Pilot studies in sociolinguistics: Variation, use, and attitudes*. (Research Papers of the Texas Summer Institute of Linguistics 13.) Dallas: Summer Institute of Linguistics. 2–21.

Atwood, E. Bagby. (1962). *The regional vocabulary of Texas*. Austin: University of Texas Press.

Bailey, Guy, & Bernstein, Cynthia. (1989). Methodology for a phonological survey of Texas. *Journal of English Linguistics* 22:6–16.

Bailey, Guy, & Dyer, Margie. (1992). An approach to sampling in dialectology. *American Speech* 67:1–18.

Bailey, Guy, & Maynor, Natalie. (1985). The present tense of *be* in Southern black folk speech. *American Speech* 60:195–213.

_____ (1987). Decreolization? *Language in Society* 16:449–473.

_____ (1989). The divergence controversy. *American Speech* 64:12–39.

Bailey, Guy, Wikle, Tom, & Sand, Lori. (1991). The focus of linguistic innovation in Texas. *English World-Wide* 12:195–214.

Bailey, Guy, Wikle, Tom, Tillery, Jan, & Sand, Lori. (1991). The apparent time construct. *Language Variation and Change* 3:241–264.

_____ (1993). Some patterns of linguistic diffusion. *Language Variation and Change* 5:359–390.

_____ (1996). The linguistic consequences of catastrophic events. In Jennifer Arnold et al. (Eds.), *Sociolinguistic variation: Data, theory, and analysis*. Stanford: CSLI. 435–451.

Bayley, Robert. (1994). Consonant cluster reduction in Tejano English. *Language Variation and Change* 6:303–326.

Berni, Mary. (1995). *The distribution of [æl] in the American South*. Master's thesis, University of Memphis.

Bernstein, Cynthia. (1993). Measuring social causes of phonological variables. *American Speech* 68:227–240.

Buckingham, Andrew. (1983). The stratification of the sociolinguistic variable (e) in the speech of residents of Midlothian, Texas. In Jerold A. Edmonson (Ed.), *Pilot studies in sociolinguistics: Variation, use, and attitudes*. (Research Papers of the Texas Summer Institute of Linguistics 13.) Dallas: Summer Institute of Linguistics. 22–36.

Callary, Robert E. (1975). Phonological change and the development of an urban dialect in Illinois. *Language in Society* 4:155–169.

Carver, Craig M. (1987). *American regional dialects: A word geography*. Ann Arbor: University of Michigan Press.

Cedergren, Henrietta, & Sankoff, David. (1974). Variable rules: Performance as a statistical reflection of competence. *Language* 50:335–355.

Clark, Thomas L. (1972). Marietta, Ohio: The continuing erosion of a speech island. *Publication of the American Dialect Society* 57:1–55.

Cook, Stanley J. (1969). *Language change and the emergence of an urban dialect in Utah*. Doctoral dissertation, University of Utah.

Deser, Toni. (1990). *Dialect transmission and variation: An acoustic analysis of vowels in six urban Detroit families*. Doctoral dissertation, Boston University.

DiPaolo, Marianna. (1989). Double modals as single lexical items. *American Speech* 64:195–224.

Disner, Sandra Ferrari. (1980). Evaluation of vowel normalization procedures. *Journal of the Acoustical Society of America* 67:253–261.

Edgerton, William. (1935). Another note on the Southern pronunciation of "long i." *American Speech* 10:190.

Edwards, Walter F. (1992). Sociolinguistic behavior in a Detroit inner-city black neighborhood. *Language in Society* 21:93–115.

Edwards, Walter F. (1996). Sex-based differences in language choice in an African-American neighborhood in Detroit. In Edgar W. Schneider (Ed.), *Focus on the USA*. (Varieties of English around the World, general series 16.) Amsterdam: Benjamins. 183–194.

Ellison, Mary. (1974). *The Black experience: American Blacks since 1865*. New York: Harper and Row.

Evans, Medford. (1935). Southern "long i." *American Speech* 10:188–190.

Everhart, Jim. (1967). *The illustrated Texas dictionary of the English language, Volume 1*. Houston: Creative Books of Houston.

Feagin, Crawford. (1986). More evidence for major vowel change in the South. In David Sankoff (Ed.), *Diversity and diachrony*. Amsterdam: Benjamins. 83–95.

Galindo, D. Letticia. (1988). Towards a description of Chicano English: A sociolinguistic perspective. In Kathleen Ferrara, Becky Brown, Keith Walters, & John Baugh (Eds.), *Linguistic change and contact. Proceedings of the Sixteenth Annual Conference on New Ways of Analyzing Variation in Language*. (Texas Linguistic Forum, 30.) Austin: Department of Linguistics, University of Texas. 113–123.

Garcia, Juliet Villareal. (1976). *The regional vocabulary of Brownsville, Texas*. Doctoral dissertation, University of Texas at Austin.

González, Gustavo. (1976). Some characteristics of the English used by migrant Spanish-speaking children in Texas. *Aztlan* 7:27–49.

Greet, W. Cabell. (1931). A phonographic expedition to Williamsburg, Virginia. *American Speech* 6:161–172.

Gregg, Robert J. (1972). The Scotch-Irish dialect boundaries of Ulster. In M. F. Wakelin (Ed.), *Patterns in the folk speech of the British Isles*. London: Athlone. 109–139.

Grossman, James R. (1989). *Land of hope: Chicago, Black Southerners, and the Great Migration*. Chicago: University of Chicago Press.

Hall, Joseph S. (1942). The phonetics of Great Smoky Mountain speech. *American Speech* 17:1–110.

Hamilton, Westley H. (1977). Phonological variations observed in San Antonio, Texas. *Journal of the Linguistic Association of the Southwest* 2:83–93.

Hartman, James W. (1985). Guide to pronunciation. In Frederic G. Cassidy (Ed.), *Dictionary of American regional English, Volume 1*. Cambridge, MA: Belknap. xli–lxi.

Iri, M. (1959). Mathematical models in phonetics. *Gengo Kenkyu* 35:23–30.

Johnson, H. P. (1928). Who lost the Southern r? *American Speech* 3:377–383.

Johnstone, Barbara. (1996, October). *Rural and urban speech forms as symbolic resources in contemporary Texas*. Paper presented at NWAVE-XXV, Las Vegas.

Katzman, David M. (1991). Black migration. In Eric Foner & John A. Garraty (Eds.), *The reader's companion to American history*. Boston: Houghton Mifflin. 114–116.

Kerswill, Paul E. (1994a). *Dialects converging: Rural speech in urban Norway*. Oxford: Oxford University Press.

———— (1994b). Babel in Buckinghamshire? Pre-school children acquiring accent features in the New Town of Milton Keynes. In G. Melchers (Ed.), *Nonstandard varieties of language*. Stockholm: Almqvist and Wiksell. 64–83.

———— (1995). Children, adolescents, and language change. In Paul Kerswill, Richard Ingham, Yan Huang, & Linda Shockey (Eds.), *Reading Working Papers in Linguistics* 2. Reading: Department of Linguistic Science, University of Reading. 201–222.

Kerswill, Paul E., & Williams, Ann. (1994). A new dialect in a new city: children's and adults' speech in Milton Keynes. Final report submitted to the Economic and Social Research Council.

Kurath, Hans, & McDavid, Raven I., Jr. (1961). *The pronunciation of English in the Atlantic states*. Ann Arbor: University of Michigan Press.

Labov, William. (1963). The social motivation of a sound change. *Word* 19:273–309.

———— (1966). *The social stratification of English in New York City*. Washington, DC: Center for Applied Linguistics.

———— (1972). *Sociolinguistic patterns*. (Conduct and Communication 4.) Philadelphia: University of Pennsylvania Press.

———— (1991). The three dialects of English. In Penelope Eckert (Ed.), *New ways of analyzing sound change*. San Diego: Academic. 1–44.

———— (1994). *Principles of linguistic change. Volume 1: Internal factors*. Oxford: Blackwell.

Labov, William, Cohen, Paul, Robins, Clarence, & Lewis, John. (1968). *A study of the Non-standard English of Negro and Puerto Rican speakers in New York City*. (Cooperative Research Project 3288.) Philadelphia: U.S. Regional Survey.

Labov, William, Yeager, Malcah, & Steiner, Richard. (1972). *A quantitative study of sound change in progress*. Philadelphia: U.S. Regional Survey.

Lambert, Sage. (1995). *The /r/-ful truth of the matter*. Master's thesis, University of Memphis.

Leyburn, James G. (1962). *The Scotch-Irish: A social history*. Chapel Hill: University of North Carolina Press.

McDavid, Raven I., Jr. (1958). The dialects of American English. In W. Nelson Francis (Ed.), *The structure of American English*. New York: Ronald. 480–543.

McDowell, John, & McRae, Susan. (1972). Differential response of the class and ethnic components of the Austin speech community to marked phonological variables. *Anthropological Linguistics* 14:228–239.

Merrill, Celia Dale. (1987). *Mexican-American English in McAllen, Texas: Features of accentedness in the English of native Spanish bilinguals*. Doctoral dissertation, University of Texas at Austin.

Milroy, Lesley. (1980). *Language and social networks*. Oxford: Blackwell.

Mock, Carol C. (1991). Impact of the Ozark drawl: Its role in the shift of the diphthong /ey/. In Penelope Eckert (Ed.), *New ways of analyzing sound change*. San Diego: Academic. 233-250.

Montgomery, Michael. (1993). The Southern accent—alive and well. *Southern Cultures*: Inaugural Issue 47–64.

———— (1996). The future of Southern American English. *The SECOL Review* 20:1–24.

1960 Census of Population. General Population Characteristics: Texas. (1961). Washington, DC: Bureau of the Census, U.S. Department of Commerce.

1970 Census of Population. General Population Characteristics: Texas. (1971). Washington, DC: Bureau of the Census, U.S. Department of Commerce.

1980 Census of Population. Characteristics of the Population. Number of Inhabitants: Texas. (1982). Washington, DC: Bureau of the Census, U.S. Department of Commerce.

1990 Census of Population. General Population Characteristics: Texas. (1992). Washington, DC: Economics and Statistics Administration, U.S. Department of Commerce.

Pederson, Lee A., Leas, Susan, Bailey, Guy H., & Bassett, Marvin H., (Eds.). (1981). *Linguistic atlas of the Gulf states: The basic materials*. Ann Arbor: University Microfilms.

Sankoff, David, & Labov, William. (1979). On the uses of variable rules. *Language in Society* 8: 189–222.

Sawyer, Janet B. (1959). Aloofness from Spanish influence in Texas English. *Word* 15:270–281.

———— (1964). Social aspects of bilingualism in San Antonio, Texas. *Publication of the American Dialect Society* 41:7–15.

Shuy, Roger W. (1962). The Northern-Midland dialect boundary in Illinois. *Publication of the American Dialect Society* 38:1–79.

Tarpley, Fred A. (1970). *From blinky to blue-john: A world atlas of Northeast Texas*. Austin: University of Texas Press.

Thomas, Erik R. (1989). *A phylogenetic analysis of the Southern Shift*. Master's thesis, Texas A&M University.

———. (1989 [1993]). Vowel changes in Columbus, Ohio. *Journal of English Linguistics* 22: 205–215.
———. (1991). The origin of Canadian raising in Ontario. *Canadian Journal of Linguistics* 36: 147–170.
———. (1993). Why we need descriptive studies: phonological variables in Hispanic English. In Robin Queen & Rusty Barrett (Eds.), *SALSA I (Proceedings of the First Annual Symposium about Language and Society—Austin)*. (Texas Linguistics Forum, 33.) Austin: University of Texas, Department of Linguistics. 42–49.
———. (1995). *Phonetic factors and perceptual reanalyses in sound change*. Doctoral dissertation, University of Texas at Austin.
———. (1996). A comparison of variation patterns of variables among sixth-graders in an Ohio community. In Edgar W. Schneider (Ed.), *Focus on the USA*. (Varieties of English around the World, general series 16.) Amsterdam: Benjamins. 149–168.
Thomas, Erik, & Bailey, Guy. (1992). A case of competing mergers and their resolution. *The SECOL Review* 16:179–200.
Thompson, Roger M. (1975). Mexican-American English: Social correlates of regional pronunciation. *American Speech* 50:18–24.
Trudgill, Peter. (1974). Linguistic change and diffusion: description and explanation in sociolinguistic dialect geography. *Language in Society* 2:215–246.
———. (1986). *Dialects in contact*. Oxford: Blackwell.
Walsh, Henry, & Mote, Victor L. (1974). A Texas dialect feature: Origins and distribution. *American Speech* 49:40–51.
Weinstein, Bernard L., Gross, Harold T., & Rees, John. (1985). *Regional growth and decline in the United States* (2nd ed.). New York: Praeger.
Wells, J. C. (1973). *Jamaican pronunciation in London*. Oxford: Blackwell.
Wesley, Charles H. (1927). *Negro labor in the United States, 1859–1925: A study in American economic history*. New York: Vanguard.
Wheatley, Katherine E., & Stanley, Oma. (1959). Three generations of east Texas speech. *American Speech* 34:83–94.
Wolfram, Walt. (1969). *A sociolinguistic description of Detroit Negro speech*. Washington, DC: Center for Applied Linguistics.
Wolfram, Walt, & Schilling-Estes, Natalie. (1995). Moribund dialects and the endangerment canon: The case of the Ocracoke brogue. *Language* 71:696–721.
———. (1996). Dialect change and maintenance in a post-insular island community. In Edgar W. Schneider (Ed.), *Focus on the USA*. (Varieties of English around the World, general series 16.) Amsterdam: Benjamins. 103–148.