CHAPTER 13

Western United States

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13.1 Introduction

While a number of studies (e.g. Feagin 1986; Fridland 2001; Gordon 2002; Irons 2007; Labov 1966; 1980; Thomas 2001) have treated the substantial variation within Northern varieties and Southern varieties, traditional as well as modern dialectological accounts of the pronunciation of English in the U.S. have generally considered the Western portion of the U.S. as a single dialect region, sometimes – as with the case of the "third dialect" (Labov 1991) – even extending this "Western dialect region" to cover as much as two-thirds of the geographic space of the continental United States.

One reason English in the Western U.S. has been lumped into one large undifferentiated mass may simply stem from the general paucity of modern studies. In comparison to work on the Eastern United States, only a relative handful of studies have examined the phonetics and phonology of Western speakers in detail (e.g. Luthin 1987; Di Paolo and Faber 1990; Labov, Ash, and Boberg 2006; Fridland and Kendall 2012) and there has not been much investigation into the purported vowel shift, often referred to as the (Northern) California Vowel Shift (Eckert n.d.), occurring within the Western region and the degree to which different settlement and migration patterns within the West may contribute to differences and similarities in shift realization. In part, the relative paucity of linguistic atlas data and early sources that helped document early language change (such as Civil War Veteran Questionnaires) in the North and South for the more recently settled West contributes to our lack of knowledge about this region.

This chapter originates from interest in two related questions: When might a Western koiné have formed and how variable were the inputs to this koiné? We attempt to shed light on these questions by conducting an acoustic analysis of the vowel systems of speakers contained in archival

recordings housed in several Western archives. For the sake of the present chapter, we limit our focus to speakers in Northern California and Nevada. Comparing our archival speakers to more recent recordings from speakers from these same places, we examine the degree to which Western speakers born in the latter half of the nineteenth century (recorded in the mid-twentieth century) anticipate the vowel systems found in current research (such as Eckert n.d.; Labov *et al*. 2006; Thomas 2011: 148; Fridland and Kendall 2012). We also consider the individual variability and evidence of other regional patterns further East that are found in these data.

13.2 California and Nevada Settlement History

Much of our early sociolinguistic information about the areas in which our speakers lived – Northern California and Nevada – comes from Elizabeth Bright's (1967) dissertation on California and Nevada speech. This work, along with David DeCamp's study of San Francisco speech (1953, 1959) and Carroll and David Reed's work more generally in the West (1972), is one of the few sources on early speech in the region. What we do know is that the (White) settlement of the Western United States is both more recent and more diffuse (in terms of migratory origin) compared to that of the Eastern portions of the United States.

Originally inhabited by a large indigenous Native American population, Northern California and Nevada were both part of the Spanish (1542–1821) and Mexican territories (1821–1846), with early European settlement occurring mainly in the late 1700s in Spanish missions and presidios. However, most Spanish and Mexican exploration remained on the coast of California, with little settlement inland (Bright 1967: 11–12). As discussed by Bright, California's seizure by the United States in 1846 and its growing status as a gold-mining center caused its population to explode, with much settlement coming from Eastern states such as New York and Ohio as well as directly from Britain, Germany, China, and other, mainly European, countries. Early settlement centered to a large extent on San Francisco, an area that quickly became a transportation and communication hub (Bright 1967; Reed and Reed 1972). And it is this Bay Area settlement, along with the related settlement of Nevada, which we will focus on primarily in this chapter.

According to Bright (1967: 15, 224), the discovery of gold was highly significant to the development of California and Nevada speech. Unlike other patterns of settlement in the United States, where cohesive groups settled in different areas and some aspects of the initiating groups' speech

persisted for a long time (Wolfram and Schilling-Estes 2006: 29–30), the discovery of gold in California prompted rapid migration of people from all over the United States (and other nations) to converge and then migrate outward to other areas (Bright 1967: 57). Thus, the persistence of dialect traits that we see in the Eastern United States is not replicated on the West Coast, since centers like San Francisco served more as corralling stations for other points in the West. Other aspects, such as the change in government from Spanish to Mexican and, finally, to American, also influenced the rate and type of development of local speech (such as widespread Spanish borrowings), but the effects of the gold-rush era appear to be most critical in laying the foundation for more modern speech (Bright 1967: 226).

As David DeCamp writes in his early study of San Francisco speech (1953, 1959), California's history before 1900 was very much tied to the history of San Francisco. In addition to migration from other U.S. sites, over a third of the inhabitants of the Bay Area were foreign born, primarily from Ireland and Germany, followed in later years by increasing Italian immigration. Many European immigrants came to California to escape unrest in their native lands, such as the 1848 revolution and general political turmoil in Germany and the Irish Potato famine (1845–1848, with its peak in 1847–1848 respectively) (DeCamp 1959: 383). As of 1890, Irish immigrants comprised the leading foreign nationality (see Hall-Lew n.d. for a treatment of the possible Irish influence in a part of San Francisco). Similarly, by 1900, German immigrants consisted of over 30% of the area's foreign-born population. Though not as numerous, British, Italian, and Chinese immigrants also had a sizable presence in San Francisco. Thus, in the late 1800s, our speakers would have found themselves predominantly surrounded by diverse dialects of English along with German, or, in some areas, with Chinese. In addition, the establishment of the transcontinental railroad in 1869, followed by expansion of the Southern Pacific and Santa Fe lines, increased the opportunity for inter-state migration from Eastern and Southern states, with over 70,000 new migrants arriving each year via railroad after its inception (Bright 1967: 21).

Reed and Reed (1972) suggest that, overall, foreign settlers left little linguistic trace, an example being the relatively sparse linguistic influence despite heavy early German and Scandinavian settlement (p. 136). DeCamp too indicates that inter-state linguistic influence on the area was greater, as settlers from the East retained their original dialect, with English speakers from outside the United States adopting to more general forms of

English in following generations. In addition, foreign-born speakers (children in particular) often acquired English and lost or minimized the use of their native languages (p. 31) or settled in ethnic enclave communities (p. 39). In contrast, internal migration from other states did not tend to create the same kind of cohesive communities or language loss experienced by the foreign-born, with economic status playing a greater role in district of settlement (p. 40). A relocated Eastern states' influence in San Francisco itself, however, may have had somewhat of an ethnic enclave effect on dialect formation in urban neighborhoods, such as the heavily Irish (via New York) settlement of the Mission District. Ongoing work by Lauren Hall-Lew (n.d.) suggests that such neighborhoods did retain strong characteristics of Eastern settlement, resulting in lingering linguistic effects that echo New York speech characteristics.

Nevada's population growth trailed that of California until the discovery of rich silver ore was made public in 1859, inspiring a population boom. Though intimately tied to the settlement of California, northern Nevada's settlement (beyond Native American and Spanish exploration) began a bit differently than that in California. Before the mining boom, most of Nevada's European settlement came primarily from the Mormon expansion of the Utah territory in the mid 1800s. There was a large Mormon settlement in the town of Genoa (about 50 miles from present-day Reno and close to the California border), and the Mormons who settled Nevada were primarily involved in agriculture (Bright 1967: 22–23). The discovery of Nevada's precious ore potential with the Comstock Lode in 1859 changed the nature and purpose of immigration into Nevada. Unlike the early gold-rush era in California, mining in Nevada required more equipment and expertise and was, for that reason, typically run by companies from the Bay Area, an important communication and transportation center for northern Nevada in the mid and late 1800s. As migration into Nevada shifted to reflect mining interests, so did the type of immigrants, with fewer Mormons and many more foreign-born and California-born migrants flocking into the area. Such migrants, however, were less interested in settling the area than in making money and did not establish the same long-term settlement pattern as they had in California (Bright 1967: 23). In addition, in an effort to separate Nevada from Mormon interests and the Utah territory, these non-Mormon settlers helped lead to Nevada's establishment as a state in 1864.

In 1860, about a third of Nevada's population was foreign-born. European settlers in Nevada were mainly of German, Irish, and English descent (Bright 1967: 23) and, like the Bay Area, Nevada also had a

significant amount of Chinese settlement. In addition to mining, Chinese laborers were particularly important in the construction of the transcontinental railroad that made the area much more accessible. Beyond foreign immigration, quite a bit of inter-state migration came via both California and New York. More scattered migration from Illinois and Ohio also contributed a Midland influence (Reed and Reed 1972). Most of these settlers came for mining, though some cattle-ranching and agricultural interests spread from the Sacramento Valley (Reed and Reed 1972: 137).

In terms of what we know of early speech in the region, most linguistic atlas work has focused on lexical patterns (Bright 1967; Reed and Reed 1972), with some limited early exploration of the phonology of San Francisco and the Bay Area (DeCamp 1953, 1959). A large atlas project directed by David Reed was begun in 1952, and records of lexical term use and phonetic transcription of informants' responses were made, though resulting analysis of these records has been limited. Beyond this work, not much early linguistic research was conducted in the California/Nevada area. Typically, the pattern of usage of lexical terms explored by Bright (1967) suggests that northern California and northern Nevada fall within the same dialect area, as isoglosses typically group the two areas, with only minor separations (pp. 120–136). This most likely reflects the patterns of settlement, with heavy transnational migration from East to West occurring over the Donner Pass into northern California and then a reversal of the migration back into Nevada after the discovery of the Comstock Lode. The primary lexical isoglosses found for both California and Nevada instead reflect different migratory routes and settlement patterns in the southern vs. northern sections of each state, where rugged mountain geography made travel between the areas difficult (Bright 1967: 69, 121).

Reed and Reed (1972) suggest that Nevada shows more of a Midland influence (in lexical items) than California as a result of its later settlement and the flow of immigrants from California, many of whom came not just from Northern but also from Midland states at the time of the main migration flows into Nevada (p. 137). Thus, drawing on migratory history of the area coupled with these earlier works showing traces of a Northern and Midland lexicon, we assume that the primary influence on the speech recordings collected from California and Nevada for this project would be both somewhat similar between northern California and northern Nevada and also reflect the predominately Northern/Midland influences of migrants at the time of our speakers' births.

13.3 Contemporary Speech in the West

Since we are primarily interested in tracing the genesis of the contemporary features that characterize the California and Nevada vowel system(s), we first must determine what is most defining of the Western vowel system at present and in contemporary work. William Labov's (1991) article "Three Dialects of English" articulates the generally accepted stance that U.S. regional dialects can be divided into three main regional groups based on how they are affected by various vowel shift processes. The most relevant contemporary vowel differences in terms of this regional demarcation are the Northern Cities Shift (NCS) affecting much of the North, the Southern Vowel Shift (SVS) affecting dialects across the South, and the low back merger affecting a large swathe of the continental United States, which falls into what has been termed the "third dialect" (Labov 1991). According to *The Atlas of North American English* (*ANAE*; Labov *et al.* 2006), the primary distinguishing feature of the West is the low back vowel merger, the conflation of the historical /ɑ/ and /ɔ/ classes into a single vowel phoneme. While most of the West participates in the merger, the Bay Area is unusual in that it has been reported to resist merger (Labov *et al.* 2006), though several recent studies suggest the merger is now characteristic of San Francisco speech as well (Hall-Lew 2009, n.d., Moonwomon 1987, 1991).

Beyond this merger, the California Vowel Shift (CVS), involving the lowering and/or retraction of the front lax vowels and the fronting of the high, and sometimes mid, back vowels, has been identified in some areas of California (Eckert 2008, n.d.). In addition to the general retraction of the front lax vowels, /æ/ is also documented with a pre-nasal split in which, rather than retracting, pre-nasal /æ/ raises extensively. While the changes to the front vowels are specific to the Western region, back vowel fronting and the low back merger are also associated with speech in other regions in the United States. Back vowel fronting, for example, has a long history in Southern speech, dating as far back as the mid-1800s (Bailey 1997), and is also reported in Midwestern English (Labov *et al.* 2006). Similarly, the low back merger is also a feature of eastern New England and western Pennsylvania speech, with traces of the merger reported in early Eastern U.S. atlas data (Labov *et al.* 2006: Ch. 9) and found in early recordings (Thomas 2001: 63–70).

Early documentation of the phonological system in the West is quite limited. DeCamp (1959) examined the phonemes of San Francisco speech (based on twenty-five informants) and suggested that the semi-vowels and

consonants of San Francisco resembled those of most of the rest of the United States, differing "in only a few particulars" (p. 55). However, his description of the low back vowels, in particular the fronted unrounded /ɔ/ variants in some of his speakers, suggests early reflexes of merger may have been present in his informants (p. 60). Later studies in California such as Hinton *et al.* (1987) also suggest incipient but not wholesale degrees of merger in San Francisco, despite more advanced merger elsewhere in the West. Moonwomon (1987) found a more advanced merger among her younger Bay Area subjects, suggesting the merger was continuing to advance in that area. Back vowel fronting is also mentioned in work in California starting in the 1980s (Hinton *et al.* 1987; Luthin 1987; Fought 1991). Beyond these two features, there is very little early documentation of any of the other changes associated with the California Vowel Shift prior to the twenty-first century. A number of recent studies have begun to investigate this shift in earnest in various parts of the West and to study Western vowel phonology more generally (Nelson 2011; Podesva *et al.* 2013; Wassink *et al.* 2009), but to a large extent our knowledge of the span of the California Vowel Shift and variability within the region awaits further sociophonetic research on the Western United States.

13.4 Obtaining and Working with Archival Recordings

Our primary question here is whether any contemporary Western features such as the low back merger, the pre-nasal /æ/ split and lax front vowel retraction can be found in early Western speech as produced by speakers born in northern California and Nevada in the late 1800s. Undertaking this work, we sought archival recordings from the earliest possible recorded oral history projects, and, perhaps unsurprisingly, finding suitable archival recordings proved quite a task. Most of the oral history projects contained in regional archives were either recorded too recently to fit our needs, had media that were too disorganized to be useful, or were just inaccessible. In some cases, relevant recordings could be found, but were on media (such as non-standard reel-to-reel recordings) for which transfer to digital was too costly or impossible. National archives, such as those at the U.S. Library of Congress, tend not to have local speech recordings, primarily focusing on folklore preservation or national media broadcasts.

All the recordings examined in this chapter were obtained at the Bancroft Library at the University of California, Berkeley and at the Nevada Historical Society, in Reno, Nevada, with the authors arranging

for and funding the digitization of a number of original materials, including reel-to-reel tapes and glass records. We also obtained some recordings at the library at Stanford University and visited several other archives, though we have not analyzed recordings found at these locations yet.

Again, although a number of older recordings that might have been useful were found in these locations, many were either in disrepair, not accessible due to lack of funding for equipment that could play the recordings, or were not organized in such a way that the actual media could be located (mainly a problem at historical societies that have limited staffing). Finally, another problem we encountered with mining archives for older recordings was that a number of potentially suitable recordings were found that did not contain sufficient information about or identification of the speakers involved and so had to be rejected for the project. A high-quality oral history recording from the 1940s with older speakers is not very useful if no information is available about the demographics or life histories of the speakers.

Thus, in many ways, the most difficult part of the background work for this chapter proved to be finding suitable archival recordings, in large part due to inadequate interest in and funding for such projects. Many of these recordings are being lost to us as research resources decrease every year, as glass recordings break and reel-to-reel tapes become damaged, when digitization would prevent such loss. But to rescue such material would require much more funding than any of these archives or libraries have. As a benefit of our work, a number of recordings that were at risk of being lost forever are now converted to digital recordings, which were made available to the source agency as we converted them. As a side-note of this project, we urge researchers to look locally toward the preservation of these rich resources and to use any additional funds they have to digitize at least small parts of local collections, or else much of our rich linguistic heritage will be forever lost.

Despite these difficulties, we were able to obtain and analyze several relatively good-quality recordings that were similar in type (oral histories). For the present chapter, we examine two speakers from California and two speakers from Nevada.

Our first California speaker, William Edward Colby, was born in Benicia, CA, in the Bay Area, near San Francisco, in 1875. His father, Gilbert Colby, was a "forty-niner," arriving from New England in the gold-rush era. His mother, Caroline Smith, came from Maine and traced her ancestry back to the Mayflower. The Colbys were a very successful family, with Gilbert both an assemblyman and state senator in California and William

becoming a lawyer and an early founder of the Sierra Club. Our other Bay Area speaker, Frank Tracy Swett, was born in 1869 and raised in San Francisco, one of eight children of John Swett, originally from Vermont, and Mary Louise Tracy, from Connecticut. John, the father, was a California educator and politician and was credited with establishing the free public school system in California. Recordings for both of these speakers were obtained through the Bancroft Library's oral history archives. Swett was recorded around 1964 as a part of a project by the Sierra Club to record memories of John Muir, its founder. Colby's recording was made in 1959 but was also centered on recounting early topics related to the Sierra Club.

In Nevada, our female speaker, Emma Bowler Welsh, was recorded in 1959. Born in the 1880s, she grew up primarily in Hawthorne and Reno, Nevada, graduating from Reno High School in 1902. Her grandparents, the Curlers (originally from Vermont and of Dutch origin), were early pioneers in Nevada, settling in Nevada in 1859. Her recording recounts the history of her family. Unlike the other three speakers we examine here, whose recordings contain interview speech and more spontaneous narratives, Bowler's talk appears to be prepared and scripted. Our male Nevada speaker, William Thomas, was born in 1876 in Austin, Nevada. His parents were British (from Plymouth) and moved to Nevada before he was born. After a brief move to Idaho, his family returned to Austin when he was five or six, and he remained there until early adulthood, subsequently moving to other parts of the West before returning to Nevada. His recording is one of a series of oral histories from this rural Nevada settlement recorded between 1959 and 1961.

One caveat of this work, and, we anticipate, of all work with "found" archival recordings from this period, is that the recordings were more difficult to work with than typical sociolinguistic interview recordings or lab-based recordings. Our recordings had tape-quality degradation making formant tracking difficult and, in our quest to obtain the oldest recordings available for the oldest speakers, we necessarily worked with older speakers than we often would. The speakers examined range in age from their seventies to ninety-five (Swett).

13.5 Modern Data and Baseline

Before we examine the data from our archival speakers, it is useful to look first at specific examples of modern Western speakers from California and Nevada. Figures 13.1 and 13.2 show two modern northern California

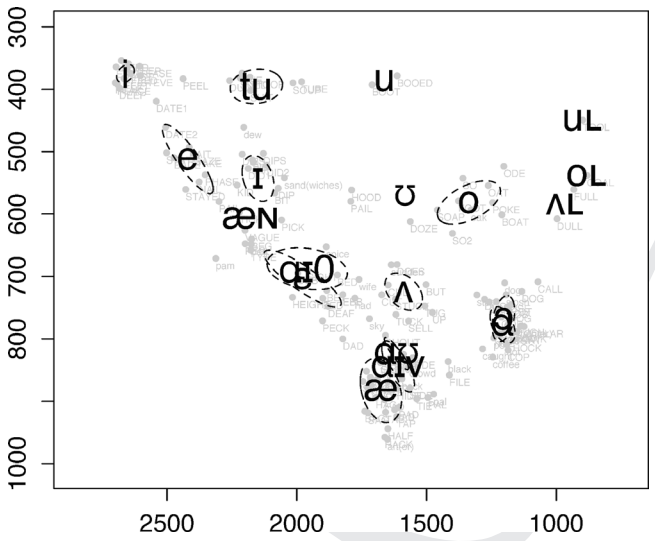

Figure 13.1 Vowel plot for Hana, young adult female from Sebastopol, California.

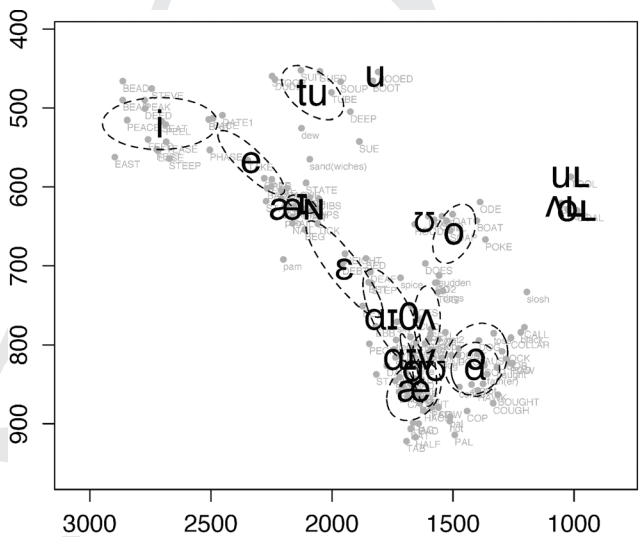

Figure 13.2 Vowel plot for Mia, young adult female from Lafayette, California.

speakers, Hana and Mia, young adult females (between the ages of eighteen and twenty-five) from Sebastopol, about 50 miles north of San Francisco, in Sonoma County, and Lafayette, in Costa County, just east of Berkeley, respectively. These modern speakers come from a large and growing database of regional speakers (Fridland and Kendall 2012; Kendall and Fridland 2012). The plots for the modern speakers are based on reading-passage and word-list elicitation and, unfortunately, do not contain the same vowel classes and subclasses as the archival speakers. However, these modern plots depict a range of vowels of interest and, we believe, are still useful comparators. In all plots, formant values were extracted using the formant analysis tools in Praat (Boersma and Weenink 2013) and are given in raw Hz. Individual tokens are shown in gray in the background. (For the modern speakers, tokens in all caps depict words from the word list while sentence case is used for tokens from the reading passage.) Ellipses are used throughout to indicate one standard deviation around the category mean when more than two tokens are available for a given vowel class or subclass.

Looking at both systems, a number of contemporary Western speech features are readily apparent. First, both speakers show extensive low back merger. For Mia, both vowel classes overlap in low back vowel space. Hana's low back vowels are also quite merged, but are not quite as lowered as Mia's. Both also show a tight clustering of the tokens of these classes, including pre-liquid tokens that tend to lag in the process of merger, indicating the merger has likely gone to completion. Moving to examine their high back vowels, note that we have separated the /u/ class into post-coronal (labeled /tu/) and non-coronal tokens (labeled /u/), as coronal contexts promote fronting for most speakers while non-coronals are often less fronted. Here, we see that both these young women are engaged in prominent back vowel fronting, with only pre-lateral tokens defining the back periphery of their systems. For both speakers, post-coronal /u/ is well front of mid-central and non-coronal /u/ is also relatively fronted, though, as we would expect, somewhat less so than in coronal contexts; /o/, though still back of /ʌ/, has also moved front to some degree.

Both low back merger and back vowel fronting are features that define a fairly broad swathe of American regional dialects. We also want to look at the time-depth of features, such as those associated with the California Vowel Shift (CVS), that more uniquely define Western speech. The most defining CVS shift, beyond back vowel merger, is the retraction of the front lax system, particularly /æ/, which also exhibits a nasal split. Looking

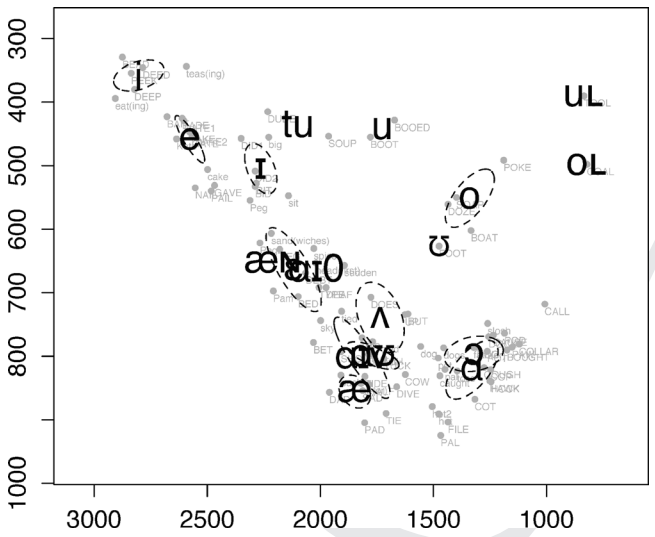

Figure 13.3 Vowel plot for Jocelyn, young adult female from Las Vegas, Nevada.

at Mia and Hana, we see that they are clear participants in this component of the shift – both exhibit greatly retracted /æ/ classes, appearing essentially low central rather than low front in acoustic position. In addition, both speakers show a much higher and fronter pre-nasal /æ/ location, with /æɴ/ firmly in front vowel space and having moved higher than even their lax mid-vowel class /ɛ/. Clearly these speakers exhibit unequivocally differentiated nasal and non-nasal /æ/ tokens.

Similarly retracted, though not as extensively, are their other front lax vowels. Notably, /i/ and /e/, in contrast to /ɪ/ and /ɛ/, define the high vowel system for these speakers. Finally, /ɑɪ/ and /ɑʊ/ fronting in these modern systems is not as advanced as we find in other dialects in the United States, with both classes in mid-central position, as opposed to the greatly fronted position of these vowels in, for example, the South.

Depicted in Figures 13.3 and 13.4 are our modern Nevada speakers, Jocelyn and Ryan, who show similar systems to those of our modern California speakers, though perhaps not quite as advanced in some of the shifts just discussed. Both sets of speakers show similarly fronted high back vowels, with post-coronal /u/ (/tu/) realized essentially in the front vowel system, although Ryan shows a relatively conservative non-coronal /u/ position. The more noticeable coronal/non-coronal split in relative fronting suggests that Ryan is, in general, less participatory in the Western vowel

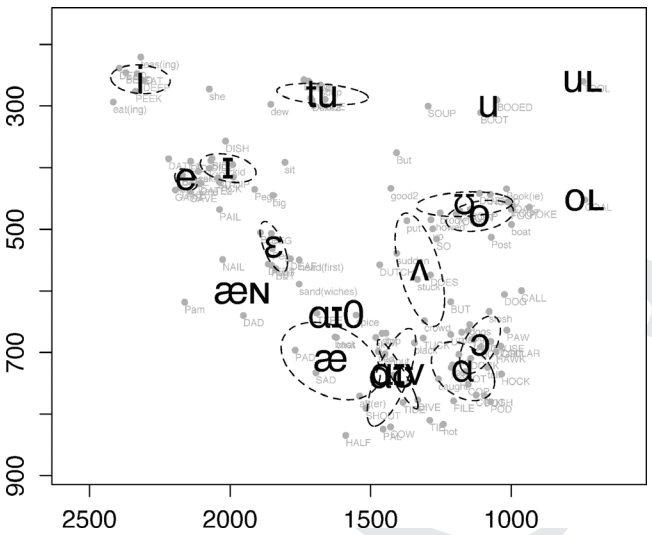

Figure 13.4. Vowel plot for Ryan, young adult male from Reno, Nevada.

features we are examining here. Likewise, while both Nevada speakers do show substantial overlap in their low vowel system, the overlap is not as complete in Ryan's system and the tokens of the two low back classes are not as tightly clustered (visible through the locations of the ellipses which do not overlap as completely), which may suggest the merger is not as complete in the Nevada area as it is in northern California (or that there may be a gender difference in advancement). However, both speakers show substantially overlapping low back classes. The Nevadans' front vowels share many of the same CVS reflexes as the CA speakers, with /æ/ greatly retracted into mid-central position and a clear pre-nasal split. Pre-nasal /æ/ is not as high relative to /ɛ/ as we find in the California systems, which may also suggest greater advancement in lax vowel retraction among the California speakers. Though, again, for our Nevada speakers as well, the vowels /i/ and /e/ are located in high vowel space, with lowering in the front lax vowels apparent. So, in summary, our modern speakers have a number of identifying features that characterize the modern Western system. It also deserves mention, as a side note here, that the modern Nevada speakers (though Ryan is somewhat less advanced) show many of the features of the so-called California Vowel Shift, indicating that this shift is perhaps more ubiquitous to the larger region than acknowledged by its conventional label.

13.6 Archival Data and Analysis

We now move to look at our archival speakers to see if the features present in the speech of modern Californians and Nevadans have any presence in this earlier era. Again, our main interest in this chapter is to determine whether there are any incipient tendencies toward the modern vowel shifts affecting contemporary Western speech. The most identifiable recent shifts in Western speech are the low back vowel merger, the split and retracted /æ/ system along with front lax retraction more generally, and /u/ (but little /o/) fronting. Recalling Figures 13.1–13.4, we see that all of these tendencies were reflected in our modern speakers from California and Nevada.

Figures 13.5–13.8 depict the vowel spaces for each of the four archival speakers, two speakers, William Colby and Frank Swett, from the Bay Area (California) and two speakers, Emma Bowler and William Thomas, from Nevada. All of our speakers' parents settled in different areas of the West – but all were areas primarily settled during the height of the mining booms. Thus, our speakers were born in an era of rapid settlement and disparate language and dialect influences. In presenting these plots, we would suggest our speakers represent the second stage of dialect development on the path of the new Western koiné – the first generation of native children, a period of variability based on the variable inputs of parents from a variety of languages and dialects (Trudgill 1986, 1998) – something we will discuss more after examining the data.

Before discussing these plots, two notes are in order: First, since back vowel fronting involves advanced fronting primarily in post-coronal contexts and very little fronting in pre-liquid environments, we have separated the /u/ tokens by a post-coronal (e.g. *two*, *news*) vs. non-coronal (e.g. *hoover*, *food*) distinction as well as by pre-liquid contexts (e.g. *school*) as we did for the modern comparators to better examine any early tendencies driven by these contextual effects. Post-coronal tokens are depicted in the plots as /tu/, with /uɹ/ depicting pre-liquids and /u/ depicting all other /u/ class vowels. In addition, as alluded to in our discussion of the difficulties with archival recordings, these recordings were often more difficult to analyze acoustically than modern recordings conducted for sociophonetic analysis. While we have done our best through careful analysis to limit the "noise" in our measurements, there is generally a greater amount of variability in the archival figures resulting from both the speakers' ages and the recordings' quality (e.g. Bowler's back vowels in Figure 13.7). That said, consistent trends still emerge in the recordings that suggest our measurements, even if less than ideal, are still quite useful.

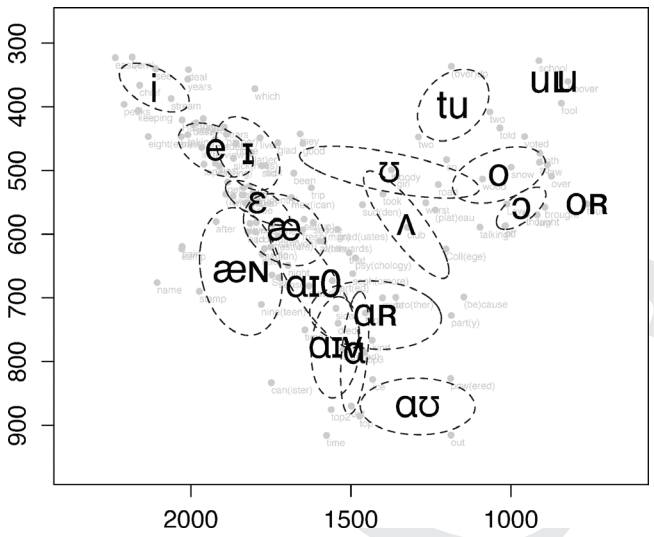

Figure 13.5 Vowel plot for William Colby, born 1875 in Benicia, California.

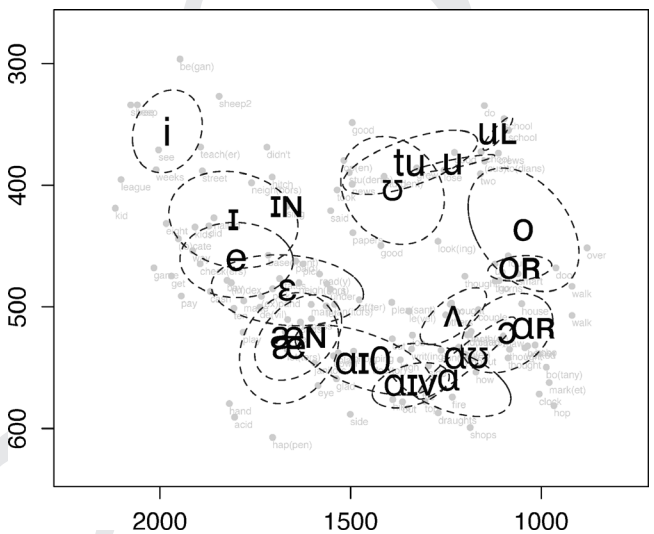

Figure 13.6 Vowel plot for Frank Tracy Swett, born 1869 in San Francisco, California.

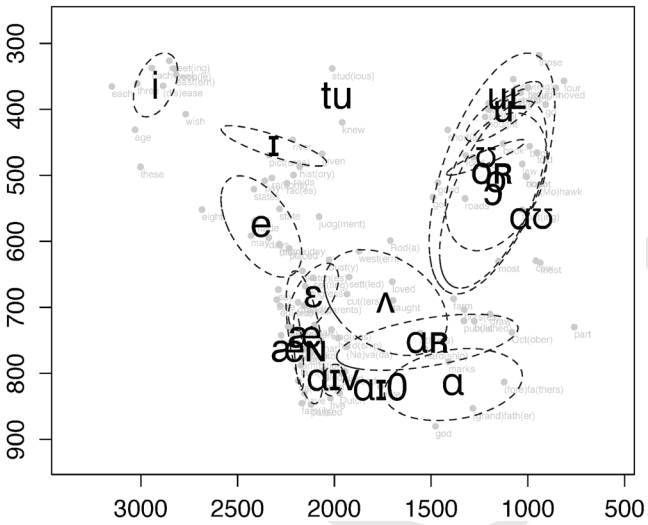

Figure 13.7 Vowel plot for Emma Bowler, born 1880s in Hawthorne, Nevada.

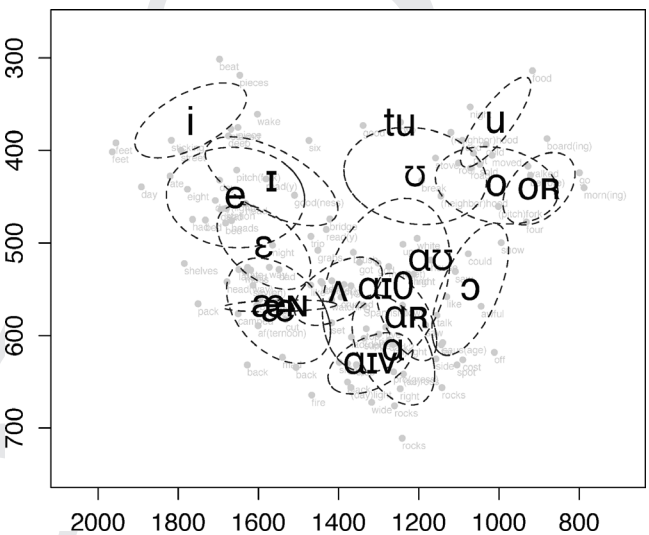

Figure 13.8 Vowel plot for William Thomas, born 1876 in Austin, Nevada.

Beginning with the front vowel subsystem, we find a number of variable aspects of vowel realization across the four speakers. While all four have the traditional alignment of tense and lax vowels, there is quite a range in the degree of overlap and position in front vowel tokens among the speakers. For example, Emma Bowler shows very distinct high/mid and tense/lax vowels – there is no overlap in her tokens in these classes (despite the general noise in our measurements for her) – unlike the other Nevada speaker, William Thomas, who shows a great deal of overlap in his mid tense lax vowel pair, and even with his /ɪ/ and /e/ (FACE) classes. More similarly positioned across our speakers, the low front vowel, /æ/, is realized at a mid-low position for most of the speakers and none show a split nasal system.

Looking back at our earlier modern plots (Figures 13.1–13.4), we see that there is less tendency toward front vowel retraction in the archival speakers than in the modern speakers. In particular, the low front vowel is neither separated by nasal context effects, as mentioned above, nor particularly retracted. This contrast is very noticeable, for example, in a comparison between Emma Bowler, in Figure 13.7, and her modern comparators, like Mia (Figure 13.2) or Jocelyn (Figure 13.3). Both of these young contemporary women have an extreme nasal split and very retracted non-nasal /æ/ vowel (essentially now a low central vowel) while Bowler clearly does not. Recalling that the front tense vowels /i/ and /e/ define the high front periphery of vowel space, with /ɪ/ and /ɛ/ retracted, for most of the modern speakers, our archival speakers for the most part still retain the more traditional relationship between /i/ and /ɪ/ and /e/ and /ɛ/. This suggests that the CVS shift, as it affects the front lax system, has yet to have appeared in speech in the West for speakers born in the nineteenth century. However, our archival speakers are not without any evidence of variation in the front vowels that may have prognosticated some of the shifts in the front system in modern speech. William Colby's system, in Figure 13.5, does show both a slight tendency toward a nasal split (though no /æ/ retraction and /æN/ is lower, not higher, than his /æ/) and a relatively low /ɪ/ in relation to /e/. In general, though, there is little to suggest any real CVS tendencies among our archival speakers.

We also see a noticeable contrast between the archival speakers and the modern speakers for the back vowels. Colby, Swett, Thomas, and Bowlers' plots show much less evidence of fronting generally in the /u/ class, confirming the notion that the fronting of back vowels in the West is also a fairly recent change. However, though certainly not fronted like our modern speakers, it is also clear that post-coronal tokens (represented in

the plots as /tu/) are realized quite a bit forward of non-coronal tokens, especially apparent in the separation from the /uɪ/ tokens that typically mark the back periphery of vowel space. As discussed above, this contextually based distribution is replicated in modern fronting, with post-coronal tokens typically showing more advanced fronting than non-coronals (Labov *et al.* 2006).

Thus, this pattern suggests that perhaps early reflexes of /u/ fronting actually do appear in our archival speakers – if we assume that post-coronal fronting caused originally by contextual effects then provided a model (due to misperception, e.g. a lack of perceptual co-articulatory compensation; Ohala 1993) for non-coronal tokens to front. In fact, recent work has suggested this mechanism underlies back vowel fronting in Standard Southern British English, a set of varieties in which such fronting is also attested (Harrington 2012). Similarly, modern Western speakers may have now phonologized a fronted /u/ that, for our archival speakers, was simply contextually based phonetic variation. While our archival speakers do not show either spectrographic or impressionistic evidence of onglided /u/ tokens, it is quite possible that loss of an older feature of ongliding (/ju/) after coronals, coupled with the subsequent retention of fronted position, may have provided the impetus for the contemporary shift if these tokens were perceptually recognized as defining a more fronted /u/ position generally.

In contrast to /u/, /o/ tokens in our archival plots appear back of mid-vowel space, a position similar to that found in several of our modern speakers. This is perhaps not surprising given the unevenness of this shift in the West, even in modern speech, and the likelihood that /o/ fronting is a subsequent shift to /u/ fronting. There is no evidence in modern U.S. dialects of regions with /o/ but not /u/ fronting. In other words, /u/ fronting appears to be a necessary precursor to shift in the mid-back class and, as such, would not be likely in speakers not participating yet in any generalized fronting of the high back system.

The merged low back vowels are the classic feature of the modern West, and our modern speakers maintained very little contrast in these two classes. Early reports from data collected in the 1950s (DeCamp 1953, 1959) suggested that merger had just started making inroads into the Bay Area in several of the speakers measured (although DeCamp notes the shift was starting in some parts of the Pacific Northwest more extensively (1959: 60), and McLarty, Kendall, and Farrington (under review) find clear evidence of merger in the speech of Oregonians born around the turn of the twentieth century), suggesting that our archival speakers most

likely pre-date the arrival of this shift in the northern California/Nevada area.

Supporting this suggestion of more recent inception for the merger in this part of the West, William Colby, born in the Bay Area in the 1870s, shows very distinct low vowels. In fact, his /ɔ/ class remains very much in the mid-back system, a striking positional difference from the descended vowel in many modern speakers. Similarly, our other archival speakers show a distinction in their low back vowels, with none exhibiting any overlap in tokens and generally showing a much higher and more back /ɔ/ class than any of our modern speakers. Our archival speakers' parents mostly stem from New England, an area where the low back merger is prevalent (cf. Thomas 2001: 63–70). However, clearly, none of our archival speakers inherited a merged system, which suggests either that their parents' systems also lacked the merger or that contact with unmerged systems, likely a more prevalent system given the large influx of New York and Midland migrants, provided the acquisitional basis for the pattern we see evidenced here. Looking at William Thomas's and Frank Swett's systems, though, we do see a more backed /ɑ/ and lowered /ɔ/ than we see for the other two speakers. We can even recognize how close in distribution some tokens are between the two classes compared to Bowler and Colby's highly distinct token distribution. Thus, though clearly distinct and not showing much evidence of actual merger, this variability among our speakers in the relationship of these two vowels certainly provides dialect input that could be taken, by the next generation, a step closer to a merged system, particularly if additional movements (such as /æ/ retraction) created a context for the backing of /ɑ/. Since it appears the merger was already making in-roads into Pacific Northwest speech, contact with speakers with a merged system might also have hastened the process along in subsequent generations.

This supports an interpretation that low back vowel merger in northern California and northern Nevada is a recent shift, originating after the early Western settlement period represented by the pioneer families analyzed here. In addition, it also suggests that the descent of the mid back class (and perhaps unrounding) is a key distinction between the older and modern system that may have played a central role in the tendency toward merger. DeCamp's data from the 1950s indicates a number of low unrounded /ɔ/ variants among his speakers which may suggest this change in positioning was a necessary precursor to merger.

In general, the data provided from our four speakers contribute several points that are of interest to us in our endeavor to examine the early input

to a Western dialect. First, our speakers display vowel positions that clearly predate the beginnings of the major shifts we find in modern Western speakers. Comparing our archival to our modern speakers, we see little in the way of front lax vowel retraction, a split /æ/ system, fronted back vowels or low back vowel merger. At the same time, however, we find quite a bit of variability among our four speakers – speakers who come from, in some cases, similar parental dialect backgrounds but who no doubt had extensive contact with diverse input beyond that of their parents. One speaker shows the beginnings of a separation in the nasal/non-nasal /æ/ system, one speaker shows much more separate front tense/lax classes, two speakers show much more proximal low back vowels than the other two, and all of our speakers show post-coronal /u/ fronting, but no general fronting tendencies. In other words, we find both diverse beginnings in the early Western speech patterns and, perhaps, subtle hints of what may be the foundation of later shift patterns.

13.7 Conclusion

We entered this project with an interest in the foundations of the Western regional accent of the United States, a remarkably massive dialect region in terms of its geographic distribution (Labov *et al.* 2006). A fascinating question, of course, is when and how this modern Western system began.

Based on its historical roots and modern similarity across the region, it seems appropriate to view the dialect of the Western United States as a koiné, a variety brought about through contact-induced change by speakers of a wide range of mutually intelligible dialects of the same language (Kerswill 2013; Siegel 1985). Our discussion above has shown that the four archival speakers examined can be interpreted to anticipate some major features of the vowel system of the modern Western United States but that they do not actually show these features to any large degree. To what extent do they help us understand the similarities across the expanse of the modern West?

One idea is to consider something akin to the hypothesized origin for the general (non-nasal split) raising of /æ/ in the Northern region, possibly deriving from a melting pot of short /æ/ systems that came into contact during the building of the Erie Canal (Labov 2010; Labov *et al.* 2006). Perhaps, in the case of the West, the groundwork for the opposite tendency, the split and retraction of /æ/, was laid during a similar period of intense dialect mixture resulting from foreign and transnational in-migration. Recalling our archival plots, we do see some variability among

our speakers in how the low front system was realized. For example, we see that William Colby's /æn/ is separated from his /æ/ class more than we see for our other speakers. Also, William Thomas's low front class exhibits quite a distributed pattern of tokens along F1, a more continuous system than that of the other speakers. These two systems suggest that, early in the history of the West, a number of different possible configurations of the low front vowels were evidenced, providing variable input to the formation of a new dialect, such as that proposed by Trudgill (1986), where contact between speakers from different dialect backgrounds leads to leveling and focusing. Similarly, Thomas's low back vowels are also closer in proximity compared to Colby and Bowler's systems, with an acoustically lower realization of the /ɔ/ class. Again, though it is not evidence for any of the modern shifts, this data does show that variability was a characteristic of these early systems.

This general absence of Western features in the archival speakers and their individual differences actually still supports an interpretation of koineization as the process leading to the modern West. "Rapid" dialect change is a hallmark component of koineization, and between these early Western immigrants and the time of their grandchildren much has changed. According to Trudgill's stages in koineization and his account of the development of New Zealand English (Trudgill 1986, 1998; see also Kerswill 2013), our speakers – the first native children of immigrants – represent stage two, a stage whose hallmark is massive variability. Thus, it is the next generation, the children of our speakers, in whom we would expect to find accommodation toward a new regional dialect. As a result of exposure to multiple dialect systems at the early stage of koineization exhibited by our archival speakers, for example, re-analysis of the fronted coronal /u/ tokens or the separation of nasal tokens must have occurred and then these forms became leveled toward a less variable realization for the next generation.

Although our archival speakers show only isolated variants that hint at what was to come, DeCamp's work in the 1950s in San Francisco indicates that speakers born in the early part of the twentieth century were engaged a bit farther along in the journey toward a more cohesive Western system, particularly in the low back system. Largely absent in our archival speakers, CVS tendencies and the low back merger may, however, have been extant in subtle ways as noted in our early data.

In closing, while the data we have presented here are only preliminary and are quite limited in many ways, our work suggests perhaps an incipient tendency toward both back vowel fronting and the nasal /æ/ system

in isolated speakers born in northern California and Nevada in the mid to late 1800s. While, more generally, none of the main shifts found in modern Western speakers are present in these early data, the seeds for shift, even if primarily in the form of idiolectal variation, may have been planted. Presumably, the generation following that of the speakers examined here – luckily a generation whose recordings will be less hard to come by – will shed great light on the rapid dialect leveling that occurred in the expansive West during the twentieth century.

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