

SOUNDING SOUTHERN: PHONETIC FEATURES AND DIALECT PERCEPTIONS

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By

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# **SOUNDING SOUTHERN: PHONETIC FEATURES AND DIALECT PERCEPTIONS**

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## **ABSTRACT**

Using an online survey of naïve listeners, this dissertation investigates which Southern speech characteristics among monophthongal (ay), velar fronting of *-ing*, the Southern Vowel Shift (SVS), or “drawl” contributes more to the percept of stronger Southern accent. The former two have a wealth of studies; the latter two are investigated in detail in this study. Ch.2 looks at the SVS in sociolinguistic interview data from seven young women from the Riverton, Alabama, area near Huntsville. Results show that these young women participate little in the high front vowel shift but often have shifted mid front vowels. Ch.3 explores the idea of “drawl”, finding that neither laypeople nor linguists have a clear, unified notion of what constitutes this phenomenon. The chapter presents a taxonomy of drawl types and the vowels and linguistic environments that correlate with use. Measures of Euclidean Distance and Slope were applied to drawled tokens of the Riverton women, and revealed that triphthongs have much farther movement than other types within acoustic space. I argue for more precise uses of *drawl* and *breaking*, adding the concept *hiatification* (inserting hiatus into a vowel) to the analytic set. Ch.4’s survey used the matched guise technique to gather listener percepts using all permutations of the four features. Results show that, overall, lowered /e/ and drawl contribute most to a perceived stronger Southern accent. Drawl and velar fronting influenced non-Southerners’ percepts of strong accent more than they did Southerners’, implying that the identities and styles speakers project via linguistic features may be interpreted differently by different listeners. This

work contributes to research on the SVS, indicating variable participation in a growing Southern metropolitan area. The contrast between robust participation in mid front vowel shifts and weak participation in high front vowel shifts provides support for the notion that young people in urbanizing Southern areas participate only partially in the SVS. This research adds to the body of work on the Southern drawl, including its variable patterning and acoustic properties. Finally, the survey enables linguists to begin translating casual comments about stronger accents into linguistic terms to help understand intricacies of speaker-listener interaction.

## DEDICATION

*Success is to be measured not so much by the position one has reached in life, as by the obstacles which one has overcome while trying to succeed.*

*– Booker T. Washington*

This dissertation is dedicated to my mother, who showed me the true meaning of this statement and whose personal strength and ambition have been and will always remain an inspiration.

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## CHAPTER 1. INTRODUCTION

### 1.1 BACKGROUND AND INTRODUCTION

As pointed out by Preston (1997), there is no doubt that a vague idea of American Southern English exists. People do not always have an accurate idea of what it entails, but they are certainly aware of a distinct dialect region in the Southeastern United States. In his work implementing folk linguistics surveys in which non-linguists draw and label the dialect regions on maps of the United States, he demonstrates that respondents overwhelmingly identified a South with more frequency than any other dialect region in the U.S. It is also common for non-Southerners to believe that most Southerners' speech is generally the same, i.e. drawing features from the same basic pool. Feagin (1979, xvii) says that part of what motivated her work is her "surprise at Non-southerners' assumptions that all Southerners talked alike." In the course of doing sociolinguistic fieldwork in Alabama, I found that even some Southerners believe that the dialect of the South sounds generally the same throughout the region. Bender (2004, 2) also emphasizes that the wide variation in Southern speech is "a diversity of which the general educated public outside of the South and outside of the world of language scholarship often seems to be unaware."

At the same time, people also generally recognize that it is possible to perceive the accent of Southerners as being on a continuum of "stronger" versus "weaker" or "milder". Informal oral surveys that I have conducted have convinced me that almost everyone agrees that some accents are stronger than others. When pressed to outline what it is about the accents that earns this impression, speakers typically find it difficult to articulate exactly what it is. Presumably, when

people apply the adjectives *strong*, *weak*, *mild*, and (unfortunately) *worse* to accents, these are a reference to how close or far a given instantiation of a variety is from a broadcast-English style or their imagined “unaccented” American English. In a reference to Cajun English, Bender (2004, 6) asks, “Is the degree of Cajunness understood in part as a cultural distance from the mainstream, indexed by the distance of one’s Cajun speech from Standard English...?”

Similarly, one could also ask if the degree of one’s Southernness is indexed by the distance of Southern features from an imagined Standard American English. Following Ochs (1992), the term *index* is employed here to mean the use of one or more linguistic features to point to a social meaning or aspect of identity. Research has shown that speakers within a given dialect area vary in their participation in local changes or dialectal features to express various aspects of identity or community membership (Hall-Lew 2005; Dodsworth 2005; Allbritten 2008).

Frequency or type of feature use may also vary for other, less conscious reasons such as level of contact with speakers of other varieties of English, etc. Which features might a speaker (consciously or subconsciously) manipulate (and to what level) to give the perception of indexing a higher or lower degree of Southernness? How much agreement is there among listeners of both Southern and non-Southern origins about which Southern speech is “stronger” or “weaker”? These are the central questions which this project attempts to answer.

Even if speakers themselves are not consciously indexing “more” or “less” Southern, this is still part of the message they are sending. Since the interpretation by listeners forms a large part of what meaning is, it is valuable to seek out the perceptions of listeners and to gain insight into how listeners interpret what speakers project about their particular version of what it means to speak like a Southerner. In contrast to other dialect-related perceptual tasks, this study does

not ask listeners to place dialects geographically (as, for example was done in Clopper 2004), nor does it ask listeners to perform language attitude tests in which multiple dialects are compared (as overviewed, for example, in Preston 2002). As stated by Campbell-Kibler (2005, 7), “What the current literature has neglected to date is the actual influence of specific variables on the interpretation of a linguistic performance. This question is crucial to treating linguistic variation as reflecting a system of social meaning.”

In order to answer this question, this study seeks to gain insight into *intra*-dialectal variation and perceptual correlations with specific cues, and in this way, learn more about how the presence or absence of individual dialect features in a (Southern) speaker’s speech might affect perception of how Southern the speech sounds. The research presented here is based on two types of data: 1) production data from native southerners (chapters 2 – 3); 2) perception data from judgements of naïve listeners from an on-line survey (chapter 4).

The question to be resolved here was which among the Southern speech characteristics of monophthongization of the diphthong /aʼ/, velar fronting in the *–ing* suffix (ING), the Southern Vowel Shift (SVS), or so-called “drawl” contributes more to the percept of a stronger Southern accent for those naïve listeners. I originally constrained the study to investigate only five aspects of the language of the southeastern U.S.: 1) acoustic movement (according to the Southern Vowel Shift) of high front vowels; 2) acoustic movement of mid front vowels; 3) monophthongization of the (ay) variable<sup>1</sup>; 4) the alternation of (ING); and 5) the tendency to turn

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<sup>1</sup> In the dissertation, slashes (/ /) represent American English phonemes in broad transcription, brackets ([ ]) represent realization, and parentheses represent variables, or more abstract notions of a sound. For the most part, before the abstract or variable notation is used, there is an explanation.

some monophthongs into diph- and triphthongs.<sup>2</sup> Following Feagin (1987) and Thomas (2003), I will refer to the last feature, production of vowels as diph- and triphthongs, as the Southern “drawl”<sup>3</sup>. With the exception of SVS and Drawl, coverage of each feature within the dissertation is relatively shallow. SVS and Drawl warranted separate explorations (Chapters 2 and 3), both of which are based on recordings of young women from a community I call “Riverton,” located in North Alabama (near Huntsville). (See below for a description of Riverton.)

While other studies have delved into the features of monophthongal (ay) and velar fronting in depth; the main goal for this project is to assess how features work together as resources for sounding Southern. Most of these features (components of SVS, (ay), and drawl) are related to vocalic aspects of Southern speech. Wolfram (2003, 126) asserts, “A wide variety of variables on all levels of language organization are involved in defining English in the American South, but none is more salient than the vowel system.” The next chapter (Chapter 2) explains the decision to omit the first feature/process listed above – acoustic movement (according to the Southern Vowel Shift) of high front vowels – from the final perception survey (discussed in Chapter 4), leaving only four features to manipulate.

The perception study is based on 16 iterations of a test sentence by one of the seven young women from Riverton which was judged on “Southernness” by 45 naïve listeners. The single sentence was presented as an online matched guise test and contained one instance of each of the four Southern features listed above. The sentence that was used in the survey was: *She was having a hard time in seventh grade in her history class*. This sentence resembles one uttered spontaneously by one of the interviewees and the specifics on why it was chosen are explained in

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<sup>2</sup> Only four features were eventually used; see below.

<sup>3</sup> I discuss some problems associated with this terminology in Chapter 3.

detail in Chapter 4.

In the remaining parts of this chapter, I will first discuss other perceptual studies concerning features in the context of Southern speech, before reviewing the general literature on the phonological features listed above. A brief history of Huntsville, Alabama, follows, as well as an introduction to Riverton, the area in which my sociolinguistic interviews were conducted. Last, I will review a pilot study performed very early in the process, which contributed to the overall shape of the subsequent project.

## 1.2 SIMILAR RESEARCH

### 1.2.1 Previous Studies Testing “Southernness”

Preston (1999, 38) stresses the need for research along the lines of the current study stating, “I believe that future work in the perception of variety might focus more specifically on the exact linguistic elements that give rise to perception rather than on the global presentation of varieties (or variety or area labels) in eliciting responses.” This point is further emphasized in Preston (forthcoming) when he reiterates, “An important area to explore in perceptual dialectology...was the influence, importance, and role of single features (or groups of features) rather than just the consideration of such global constructs as ‘Southern accent’.” By integrating both production and perception studies, this study addresses this issue by beginning to pick apart the “global construct” of the Southern accent in order to determine the relative contribution of several features to the accent of speakers of the Southern variety of English.

Earlier studies have had related goals. In an examination of the traditional raised production of /ɔ/ in the Outer Banks, North Carolina, Wolfram, Hazen, & Schilling-Estes (1999)

conducted a perception study using 56 speakers from Raleigh, North Carolina asking listeners to rate four variants of the /ɔ/ vowel from the most Northern-sounding to the least Northern-sounding and from most Southern-sounding to least Southern-sounding. Their results showed that traditional Outer Banks /ɔ/ patterned more closely to Northern variants than nearby mainland Southern variants.

Preston (forthcoming) also mentions unpublished studies done by Grimes (2002) and Torbert (2004) in which samples testing vowel or consonantal features (within words) were presented to listeners to examine the effect of individual features (as opposed to whole varieties) on attitudes. Both studies showed that well-established Southern features may have different degrees of salience, even those in which the community under study participates. Of Grimes (2002), Preston states (forthcoming, manuscript 23), “This study makes it clear that not all authentic Southern features have equal affective perceptual value.” However, these projects studied isolated features and utilized a dichotomy of Southern versus not Southern. The current study is aiming to determine which feature(s) gives rise to a percept of more Southern versus less Southern.

Fridland, Bartlett, and Kreuz (2004) conducted a study testing listeners’ perceptions of a chain shift taking place in the Southeastern U.S. (among other areas of the world) called the Southern Vowel Shift (SVS) whereby the variable (ay) is monophthongized and fronted, the nuclei of front high and mid tense and lax vowels essentially reverse positions<sup>4</sup>, and the back vowels move forward (Feagin 1986, 2003; Labov 1972, 1991, 1994; Fridland 2000, 2001; see

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<sup>4</sup> It is actually more complicated; see below.

below for description). Fridland et al. used acoustically manipulated vowels in word lists and elicited reactions from 141 listeners from Memphis, Tennessee. In rating the degree of Southernness of the variants, they presented the same word twice to listeners. One instance contained a vowel undergoing a more advanced version of the SVS than the other (which sometimes was manipulated such that it was not shifted at all). The word pairs had either a high front vowel or a mid front vowel (with both words being the same). The listeners circled the word they considered more Southern. The researchers found that Memphians were far better able to recognize the mid front vowel shifts – which are the most prevalent in the speech of the Memphis area – than the high front vowel shifts. Later, in Fridland, Bartlett, and Kreuz (2005, 370), they add that Memphians were also better able to label (as more Southern) mid front vowels (than high front vowels) for finer distinctions in formant movements toward a more advanced SVS. Having hypothesized that speakers would have been more attuned to high front vowel shifts if they participated in them, they conclude, “These results suggest that speakers’ perceptions are sensitive to community norms.”

Because later research done by Fridland (2006) showed that her listeners were often conflating the notions of sounding Southern with sounding rural, the survey in Chapter 4 will include a question which attempts to explore, if not control for, this issue. While studies done by Fridland and her team are highly valuable to build on, they deal with only one aspect of Southern speech (the shifted vowel system patterns in the South) at a time. The next section highlights research which has conducted experiments looking at multiple features at once.

### 1.2.2 Previous Studies Looking at Feature Clusters

Studying how an individual feature affects perceptions of Southernness is valuable, but a type of synthesis of the individual studies is needed. As Moore (2004:393) states, “Variables are only meaningful in as much as they are constituents of a sociolinguistic style.” Her study investigates the use of features among teenage groups at “Midlan High” in northwest England called “Townies” and “Populars” and the ways in which they use many of the same features, but index different identities by using them at different frequencies and in different situations. Most crucially, it is the combination of features present at a given time, rather than the specific ones being used within the combinations that index the particular identity.

Another study which has looked at how systems of features can work together at differing levels to jointly create style is that done by Podesva, Roberts, and Campbell-Kibler (2002). They looked at five variable features often associated with gay speech in order to examine how the speaker in their study used them together to create a certain identity. In their conclusion, they encourage further research of this kind: “We would like to emphasize that there is a need for additional studies investigating how sets of variables cluster together to form gay styles and all linguistically constructed styles” (187).

In connection with the research reported in the next few chapters, the eventual goal in the current research is to uncover how a speaker might evoke the perception of a more Southern linguistic style versus a less Southern linguistic style.

### 1.3 SOME PHONOLOGICAL FEATURES OF ENGLISH IN THE SOUTHERN U.S.A.

It would be impossible to definitively and concisely list all features of Southeastern American English. First, the features used by speakers in the Southeastern U.S. are not always exclusive to one or even a few dialects of English. Second, the features may not be interpreted the same way by all researchers of language. That is, complete consensus may not be reached as to what defines a particular feature or what constitutes a “legitimate” occurrence. Third, all features of language that could potentially be categorized as Southern features are by no means used by every speaker labeled as using a Southern style or accent.

Because of these facts, it is fortunate that an extremely large body of linguistic literature exists on the general topic. In fact, McMillan and Montgomery (1989) published an entire book filled with references to research on Southern American English. This book, with references “in excess of 2,800 items” (back cover) was an update from the 1971 edition. It could be argued that so much work on Southern English has been conducted in the interim that another volume could serve as an addendum to the 1989 edition. From this expansive body of literature on Southern American English, one may extract some of the most common features occurring in the Southeastern U.S. Though a study investigating a dozen or more Southern features would be interesting, practicality necessitated narrowing the features to a number that would be feasible to use in this study.

At the outset of this project, I knew that the speaker used in this project’s perceptual survey would be taken from the Riverton community in the northeast suburbs of Huntsville, Alabama. Because of this, the determination was made to only utilize features that would be

reasonable for a speaker from that area. In order to determine which features such a speaker would be likely to use, familiarity with the area was necessary. As a native of the area and because of previous research that I conducted there, I am quite familiar with the linguistic patterns of speakers of the area and some of the phonological features in use there. As a result, the following features were identified as having the greatest potential for a study such as this: the monophthongization of the diphthong /aɪ/<sup>5</sup> as in *bide*, (Section 1.3.1 below), the velar fronting of the suffix –ING such that it becomes –IN (Section 1.3.2 below), the tendency of southerners to elongate and add acoustic trajectories to vowels, commonly referred to as “drawl” (Chapter 3), and the phenomenon of systematic vowel change referred to as the Southern Vowel Shift (Chapter 2). The remainder of this chapter is dedicated to discussing briefly in turn some of the most relevant studies pertaining to these features and their contributions to the idea and perception of “Southernness”.

### 1.3.1 Diphthong /aɪ/ → Monophthongal [a:]

Without doubt, monophthongization of the diphthong /aɪ/ is an extremely pervasive and well-known feature of Southern American English. Monophthongization of /aɪ/ occurs when a speaker utters a word containing /aɪ/, such as *side*, and the glide of the diphthong is omitted, shortened, or otherwise weakened. Although it is sometimes assumed that this would create a merger for minimal pairs containing /aɪ/ and /a/, such as *side* and *sod*, this is not the case, at least

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<sup>5</sup> After the following section, this is referred to as (ay).

not in North Alabama. In fact, when the vowel becomes a monophthong, the nucleus almost always moves forward in acoustic space, resulting in the low central vowel [a]. This is mentioned as a side note in some literature. For example, Labov (1997, 513), describes the Southern realization of /a/ as “monophthongized and slightly fronted.” In addition, my previous research has also indicated that the sound of the monophthong is located further forward in acoustic space, and stressed the existence of minimal triplets such as *sad*, *side*, and *sod* (where *side* is completely monophthongized) (Allbritten, unpublished manuscript). Therefore, the default transcription symbol for the vowel in the monophthong should be [a], which is consistent with the transcription practices of Pullum and Ladusaw (1996) in referring to a low, central unrounded vowel. IPA transcription of a diphthongal pronunciation will be [aʔ]. However, for orthographic simplicity, a shorthand version will be used throughout much of the dissertation, with the variable representation (ay), as in “monophthongal (ay)”, when IPA transcription is not a necessity. The above representations do not, of course, apply to quoted material.

As stated by Wolfram and Schilling-Estes (2006, 84), “Southerners are more readily identified by their /ai/ vowels than by any other single dialect feature...” Thomas (2003) indicates agreement, stating that “...this trait has long been regarded as a hallmark of Southern speech” (150). Anderson (2003) also considered (ay) a vital feature to include in her investigations of the language contact developments of Southeastern African-American and White migrants to the Detroit area. She claims that the variable is “a crucial site for the expression and negotiation of language ideologies” (7).

One study in particular has investigated the feature with regard to the aspect in which I

am most interested for this study. In a perceptual survey using synthetically manipulated variants, Plichta and Preston (2004) demonstrated that listeners are able to assign a more Southern or less Southern label to this feature, depending on degree of monophthongization. Their study involved manipulation of (ay) to sound more or less monophthongal. Listeners were asked to associate the token with one of nine U.S. cities which ran along a north-south continuum. Listeners generally associated a higher degree of monophthongal vowel quality with a more Southern city. This speaks to the robust nature of this feature's association with the "Southernness" of a particular speaker.

The abovementioned studies are only a few of the plethora mentioning the relationship between Southeastern American speech and (ay) monophthongization. Because monophthongization of (ay) is a stereotypical and widely salient marker of Southern English, I chose to give it independent consideration from the rest of the Southern Vowel Shift, which is discussed in detail below.

### 1.3.2 The alternation of –ING and –IN

The second feature used in this study is the alternation of the suffix *-ing* ([ɪŋ] → [ɪn]) as in *working~workin'* or *something~somethin'*. Hereafter, this phenomenon will be represented in the text as (ING). Though a great deal of literature exists on the variability of velar fronting, two studies are arguably among the most well-known and earliest: Fischer (1958) and Trudgill (1974). In one of the earliest studies of language variation, Fischer (1958) investigated the alternation among New England schoolchildren. He found patterned variability according to both the formality of a given situation and gender. Data were collected during three exercises: a very

formal administration of a test, a moderately formal interview, and an informal discussion of the children's activities. Both boys and girls increased their level of velar fronting as the situation became more informal. However, girls favored the higher prestige form of (ING) under all circumstances.

One of the variables explored in Trudgill (1974) was (ING). His findings in Norwich, England mirrored those of Fischer, in that both more formal styles of speech and women were factors contributing to higher levels of –ING. Trudgill additionally found correlations with social class. Over five divisions of social class, the levels of the nonstandard variant –IN increase as social class lowers. While the highest class studied (middle middle class) showed zero occurrences of velar fronting in the two more formal styles (reading word lists and a passage), levels of –IN in the lowest class studied (lower working class) reached 100 percent in the most casual style. This demonstrates that the study was successful in showing the continuum for this variable within this community, at least within the social categories with which the researcher was concerned at the time.

Though (ING) has had a long history in linguistic research, less literature is available on the prevalence of the variant in the Southeastern U.S. It is not clear from any quantitative production literature that Southern speakers really make use of velar fronting more frequently and/or ubiquitously than speakers outside the South. Nevertheless, the impression is certainly present. Over 40 years ago, Mencken (1963) noted the association of velar fronting with the language of the South, emphasizing that among the educated, it was more popular in the South. McDavid, who later updated/edited the volume, mentioned that in data collection for “the Atlas” (presumably the Linguistic Atlas of the Middle and South Atlantic States on which McDavid

worked), it was noted (without providing actual numbers) that while the speech of about one-fifth of the respondents in New England and the Middle Atlantic states contained the variant, it surfaced in the speech of about half of Southern respondents (443). More recently, Labov (2001, 90) mentions that, in the American South, the –IN variant is the predominant form for most speakers, even in formal situations. However, he does not refer to a specific study.

In an extensive investigation of the social meanings listeners associate with the phenomenon of velar fronting, Campbell-Kibler (2006) found evidence that listeners often associate the –IN form with Southern speech under certain circumstances (e.g. when another Southern feature is present). For her research, Campbell-Kibler (2006) conducted a perceptual survey using recorded stimuli manipulated through cut-and-paste techniques. Prior to creating her survey, she conducted small focus group interviews in order to obtain loose-ended perceptions in order to tailor the survey portion of her project. Her interviewees expressed their perception that Southern speakers not only use more –IN, but that they sound more “natural” when they do (144). After the interviews, she used the information to create a survey utilizing the matched guise technique (see Chapter 4, this study), modifying the speech of eight speakers, four from the South (North Carolina) and four from the West Coast. She used four short samples per speaker – the total time of each being less than one minute – in a web-based perceptual survey. For each speaker and each of their samples, Campbell-Kibler used cut-and-paste to create two versions: one containing –IN variants and the other containing –ING variants. In other words, there was an –IN guise and an –ING guise for each sample. She discovered that (ING) variability has myriad meanings, depending on other information listeners perceived about the speaker, such as region of origin or sexual orientation. The most salient meanings that she found

had to do with education and articulateness. While there were some interesting revelations on the relationship of (ING) and other meanings, such as age, gender, and race (of listener), the listeners also made a strong connection between the use of –IN and being Southern. If listeners reported perceiving that a speaker was Southern, the –IN guise made listeners more likely to select the optional checkbox attribute “accented”. She says, “Participants in both the interviews and the survey associated *-in* with Southern accents and rural residents... In the case of Southern speakers, *-in* increased the percept of accent.” Including (ING) as one of the features in the current study is a natural addition, given the perceptions of listeners inside and outside of the South that this is a “Southern” feature. Campbell-Kibler concluded that –IN seemed to “perceptually enhance (some) Southern accents” (149). Given the nature of my study, a feature which might affect how Southern a Southern speaker sounds is very valuable as a variable. As Campbell-Kibler also points out, “Many linguists and nonlinguists alike have a sense that speakers in the American South use more *-in* than the rest of the country...Regardless of the facts, the belief exists” (39). This study builds upon her work by manipulating not only this feature, but including an investigation of an additional three features.

Because a great deal of literature has explored the behavior of this variable, it will not be given separate consideration here in a dedicated experiment or investigation. However, it is worth noting that during transcription of interviews, the feature was heard quite frequently in variation and that velar fronting definitely is frequent in the Riverton community. (See below for more information on Riverton.)

### 1.3.3 Drawl

Among linguists, drawl is typically thought of as an addition to a monophthong of one or more of the following: length, glides, or a drop in amplitude or pitch during the vowel (Habick 1980; Feagin 1986). The result of the last may be the impression of an added syllable, as in the folk transcription “cayut” for *cat*. An exploration of this feature is conducted and discussed in Chapter 3. Drawl was chosen due to its assumed salience for listeners and its long-established association with Southern speech. Ash (2003, 62) discusses the fact that, for reasons of vowel plot aesthetics, researchers often simply use one point, the nucleus, to demonstrate vowel placement. However, she stresses the need to investigate more than simply the nucleus: “As a purely linguistic feature, vowel trajectories, glides, and length need attention” (62). Drawl is indeed in need of extensive investigation. Some researchers have done work on this feature, including Sledd (1966), Feagin (1987, 1995), and Thomas (2003). Thomas (2003, 156) emphasizes the importance of this feature in the Southern English of the U.S., “Of all the phonological traits associated with the South, the most stereotypical yet the most enigmatic for researchers is the ‘Southern drawl.’” Chapter 3 deals more extensively with the background and investigation of drawl.

### 1.3.4 The Southern Vowel Shift

The term Southern Vowel Shift (SVS) is used for describing a particular *chain shift*, or a process of vowel pronunciation changes (vowel rotation) caused initially by movement of a vowel in acoustic space. Often, other vowels follow suit by moving to preserve systemic

phonemic distinctions (Labov 1972, 105). The front vowels of the Southern shift are involved in a *pull* chain shift, which contrasts with a *push* chain shift (Labov 1994, 199).<sup>6</sup> In a pull chain shift, a phoneme will vacate its original phonetic space, subsequently causing another phoneme to move into the no longer occupied space. This may cause yet another phoneme to move into the newly abandoned space, and so on. In the SVS, the front vowel chain shift is triggered by the nucleus of the (ay) diphthong (*hide*) vacating the low back vowel space during monophthongization (see above), either shifting forward - as it does in Alabama speech - or raising to mid back vowel space (oy) as it does in the case of Ocracoke, North Carolina, as in [hoi] *high* (Schilling-Estes, e.g. 1997). The movement of (ay) is considered to be Stage 1 of the SVS and this movement is assumed to cause the nucleus of the (ey) vowel as in *hate*, to lower toward the former space occupied by (ay) (Labov et al. 2006, 125-127).

Labov and Ash (1997, 513) point out that *complete* monophthongization of (ay) allows (ey) to fall and take its place without the risk of confusing the two phonemes. Labov, Yaeger, and Steiner (1972) mention the Central Texas speaker who has (ey) lowering to the point of completely overlapping and surpassing the always monophthongal (ay). Thomas (2003, 161) also remarks

... Extreme lowering of /e/ to [æi] occurs only when /ai/ is monophthongized in all contexts. With /ai/ out of the way, so to speak, /e/ is free to widen because a broader range of variants can be identified perceptually as /e/.

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<sup>6</sup> A push chain shift occurs when a phoneme encroaches on the vowel space of another and the latter moves to create/preserve a distinction, creating “a kind of domino effect” (Wolfram and Schilling-Estes 2006).

In some parts of the South (see Chapter 2), the nucleus of (iy) as in *heat*, also lowers toward the space where (ey) was. Labov (1994, 119) displays a representation of this kind of shift, though he was using it to describe part of the Great Vowel Shift:

(1) /iy/ → /ey/ → /ay/ → /oy/

(→ /a:/) (adapted from Labov 1994, 119, parentheses mine)

According to Labov's (1994) Principles of Chain Shifting, it is Principle I and Principle II that are at work in the front vowels of the American South. These Principles are:

(2) Principle I

**In chain shifts, tense nuclei rise along a peripheral track.**

Principle II

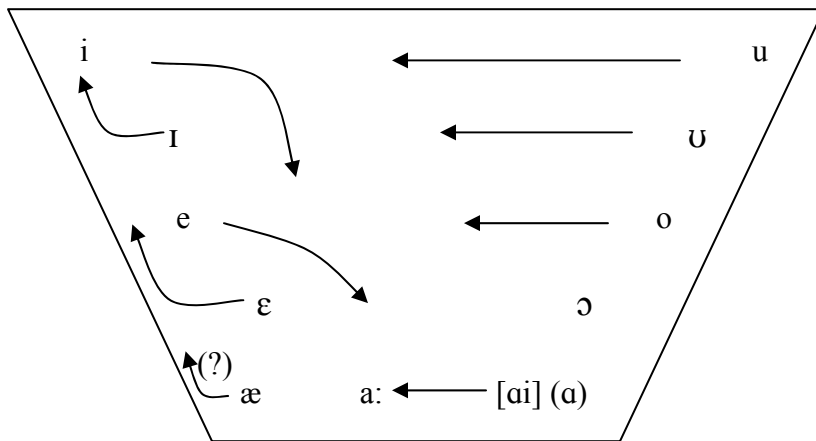
**In chain shifts, lax nuclei fall along a nonperipheral track. (176)**

Principle II applies to the series shown above in (1) for tense vowels which become lax/nonperipheral and are then lowered. Additionally, according to Labov (1994, 210), the lax front vowels tense, moving to the peripheral track, or the outside envelope of acoustic vowel space. They may then rise, following Principle I. The front vowels are therefore affected by two subshifts, or minimal chain shifts, and together are considered an extended chain shift (Labov 1994, 118-119).

On the other hand, the back vowels are involved in their own subshift, which is may be called a “parallel” shift since there are no vowels moving in to take their places. Following Principle III of Chain Shifting – “In chain shifts, back vowels move to the front” (Labov 1994, 116) – the back vowels move forward in phonetic space. Labov et al. (1972, 124) remark,

The paths of /ow/ and /uw/ do not make up a chain shift: they are parallel movements responding to some common cause. It is not at all obvious that a chain shift is involved in this situation, since there seems to be no back upgliding vowel which moves up behind /uw/ and /ow/ to assume their positions and which might have been held back by /uw/.

Figure 1 displays the phonetic changes to American English phonemes that may occur due to the Southern Shift as it might occur in Alabama. While much literature on the SVS simplifies the complex movement of the front vowels by emphasizing the relative rotation of the pairs of high vowels and mid vowels, the nuclei of the tense vowels in both tense-lax pairs actually fall quite far; the high vowel becomes/approaches a mid vowel, the mid vowel becomes/approaches a low vowel.



*Figure 1.1* Vowel Shifting in the Southern Shift

Figure 1.1 illustrates the movements within acoustic space that are associated with the SVS (after Labov 1994, 209 and Labov, Yeager, and Steiner 1972, 132, 146, Figure 4-1). The nucleus of /e/ (which is, in reality, usually diphthongal [eʲ] in American English) tends to be backed and lowered so that it approaches the sound of (ay) tokens in Standard English. For example, *weighed* in shifted speech may sound more like *wide*. In some areas, /i/ may also back and may additionally lower. In the areas where both of these occur, *weed* might sound similar to *weighed*. As mentioned above, movement of the nucleus of (ay) is considered to be the first stage of the SVS. Stage 2 is the relative rotation of the mid front vowels (the tense/lax pair). Stage 3 is the relative rotation of high front vowels (Labov, Ash, and Boberg 2006, 125-127). There is some discrepancy in findings on the behavior of the front low vowel /æ/, but it is often not included in depictions of the SVS and, since it is not one of the SVS features designated for this study, I will not cover the debate here. The back vowels /u/, /ʊ/, and /o/ also move forward in acoustic space. Quite frequently, /u/ tokens are pronounced with such a fronted vowel that they overlap with space for /i/ (e.g., Labov, Yaeger, and Steiner 1972, 145). The forward shifting back vowels are not included as a feature in this study. Chapter 2 elaborates on this decision. In general, incorporating at least one vowel affected by the SVS is a valuable addition to the perceptual survey, useful for ascertaining which features listeners believe evoke a more Southern sound.

#### 1.4 GEOGRAPHIC SOURCE OF PRODUCTION DATA

The data for this dissertation come from a community I call “Riverton”, Alabama.<sup>7</sup>

Riverton is located in the northeast suburbs of Huntsville, a few miles outside of the city limits, where speakers are somewhere between being in the city and being in a traditional Southern rural area. How speakers are negotiating their identities in light of the changes in the area is becoming increasingly interesting, a topic dealt with in Allbritten (2008) and discussed below as well. I selected Riverton for collection of Southern speech data since, as a former resident, I had knowledge of local practices and already had contacts in the area. Additionally, the demographic changes in the area are resulting in interesting effects on the local language (see below). Figure 1.2 shows a map of Madison County, with the approximate area of Riverton indicated by a red circle, as well as a map showing the location of Madison County within the state of Alabama.

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<sup>7</sup> Many people of the community refer to the area as Riverton, though it is known by at least three other names and is not an incorporated town.

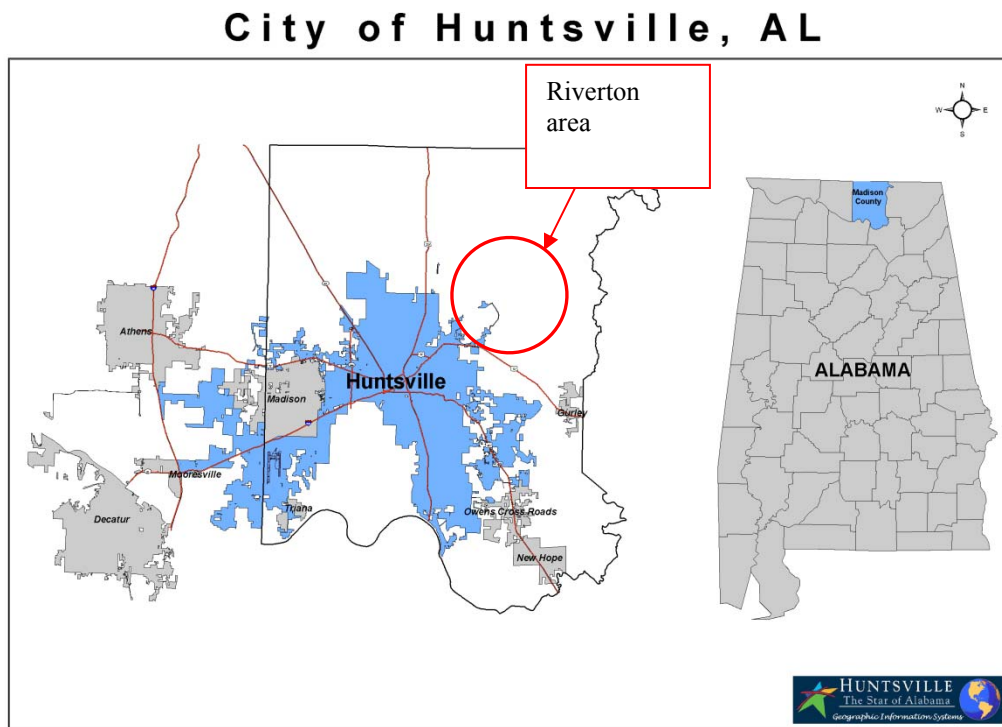


Figure 1.2 Map of Madison County, Huntsville, and Riverton.<sup>8</sup> Added information about the general location of Riverton is mine.

#### 1.4.1 Sociolinguistic Interviews in Riverton

In this community, I conducted more than thirty sociolinguistic interviews during the time period from 2004 to 2007. Most of the initial interviews were conducted in a local café (see below) where I would approach patrons who appeared to fit my racial and age criteria. In terms of finding locals who may have a few minutes to do an interview, the café is ideal. After my first stretch of data collection, I was fully supported by the owners and managers (who, for example, vouched for me if an initially wary potential interviewee questioned them) and I therefore

<sup>8</sup> Figure from Huntsville City Government's Department of Urban Planning, Geographic Information Services. Available freely by the license at WikiMedia Commons.  
[http://en.wikipedia.org/wiki/File:Madison\\_County\\_Alabama\\_with\\_Current\\_Huntsville\\_Corporate\\_Limits\\_Highlighted\\_in\\_Blue.png#filelinks](http://en.wikipedia.org/wiki/File:Madison_County_Alabama_with_Current_Huntsville_Corporate_Limits_Highlighted_in_Blue.png#filelinks)

continued to use the café for data collection and meeting potential participants. The café where data was collected is ethnographically significant, partially because of its location. Situated on the main highway running through Riverton, it is considered to be a part of the local “scene.” For example, since the café is located next to the school, children have walked to the café after school for generations, helping to create the idea that this café is part of local life and tradition. This café is located only about 200 yards from the site of the old Bell Factory (see below). The café has been in operation for decades and despite the more recent additions of fast food chains such as McDonald’s and Waffle House, locals continue to patronize and even prefer the café for fast-food or traditional Southern food fare. By contrast, some current longtime residents perceive that the “new” residents only go to the new chains. There may be something to these perceptions, since in all the time I spent in the café, the only patrons I observed or talked to who were not *very* local were some of the manual laborers who came in large groups from nearby work sites during short lunch breaks. A couple of these workers told me that they lived in adjacent parts of Madison County, perhaps 30 minutes or more away. The owners of the café also own the commercial space adjoining the café, and during one stretch of data collection in 2007, that space was unoccupied. The owner (generously) gave me the key, allowing me to invite residents to finish the interview next door, which was relatively quiet. For these reasons, the data used in this study was recorded in various locations. In addition to the places just mentioned, an outdoor park and the participants’ homes were used for recording.<sup>9</sup>

While it is highly desirable to conduct future research with African Americans of the area, this research utilized only White residents over 18 years old. Race has been repeatedly

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<sup>9</sup> See Appendix A for specifics.

shown to be a demographic factor which profoundly impacts linguistic practices. The participants I interviewed varied within the remaining age and gender demographics and while I attempted to collect as even a data distribution as possible, the patrons on a given day and time randomized my data somewhat beyond my control. Further, certain demographic groups are more available for interviews. For example, some people are more likely to patronize the café with multiple small children. These residents would not be available for interviews. However, being female myself, I did approach females more often than males, and females were more likely to agree to the interviews. For several of the participants, I was also able to secure follow-up meetings, which was fortunate since the noise level in the café is far greater than desirable for linguistic recordings.

#### 1.4.2 Huntsville and Dialectology

The city of Huntsville is located in North Alabama, just south of the Tennessee state border. Huntsville is located in a part of the South that is sometimes set apart from other parts of the South or other parts of Alabama by dialectologists and other linguists. Wood (1971) differentiates the Tennessee Valley from the rest of Alabama based on lexical items, showing it as part of the “South Midland Area.” (123). Based also on various lexical isoglosses from data gathered as part of the *Dictionary of Regional English*, Carver (1987) shows Huntsville located within the North Alabama portion of the non-Mountain Upper South (map 4.10, 121), the Inland South (map 6.3, 169), as part of the small Alabama margin included in his broad Midland Layer (map 6.6, 176), and – most definitively – as part of the “core” of the Upper South (map 6.1, 165). Carver (1987) states that much of the Upper South did not own slaves. However, Whites in

Madison County did own slaves, even before the first Census in 1820 (see for example, Carlisle, *Early History*, 25). For Labov, Ash, and Boberg (2006), Huntsville is located within the “Inland South.” In their *Atlas*, this region is set apart from the surrounding South because they consider it to be the one with the highest Southern “dialect level” based on phonetic variation of five features or groups of features (131). So for example, Carver’s (1987) isoglosses might be based on whether or not residents say *pallet* ‘temporary bed on the floor’, *carry* ‘take a person somewhere’, or *play like* ‘pretend’ but Labov, Ash, and Boberg’s (2006) would be based on monophthongization of (ay) before voiceless consonants, the Hertz values of (ey), the low back vowel merger, etc. From sources such as these, research in North Alabama should reveal an area that patterns slightly differently from the Alabama areas to the South and the more coastal states to the east, such as Georgia and South Carolina. Additionally, based on the assertions of Labov, Ash, and Boberg, North Alabama should display a robust and full Southern shift, along with a great deal of monophthongal (ay) in all environments.

#### 1.4.3 Sociohistorical Description of Huntsville, Alabama

Huntsville has always been a city of some importance in Alabama. It was already a city in the late 18<sup>th</sup> century Mississippi Territory, before the state (or even the territory) of Alabama existed, and is now the second largest metropolitan area in Alabama, behind Birmingham. The geographic area around Huntsville is characterized primarily by hills scattered throughout large flat plateaus and watersheds, with numerous small rivers, springs, and lakes feeding into the Tennessee River.

The area was taken by the U.S. from the American Indian Chickasaw and Cherokee tribes around 1804. Prior to their removal, these and other tribes prevented large numbers of settlers from moving west into Alabama from Georgia, particularly along the Chattahoochee River. The first White settlers of what would become Madison County were attracted by the Tennessee River and its tributaries. Huntsville's namesake, John Hunt, first ventured into the area from central Tennessee in 1805 after hearing American Indians' tales of a big spring at the foot of a small mountain. The place he settled, next to Big Spring near the foot of Monte Sano mountain<sup>10</sup>, eventually became downtown Huntsville. Apart from the Mobile area, which had been settled by the French many years before (then taken over by the Spaniards as part of Florida), the area around the Tennessee River, including Huntsville (and Riverton), was the first in Alabama to attract significant settlement.

Due partially to the cotton gin, invented in the late 18<sup>th</sup> century, the cotton industry rose in popularity and became extremely lucrative early in the 19<sup>th</sup> century. Because Madison County had access to multiple tributaries of the Tennessee River, cotton was not only grown in the area, but several textile mills to process cotton and cloth were built in the Huntsville area along the river tributaries. Cotton planters of the area used the tributaries to float loads of cotton to the Tennessee River, where they could be exported greater distances (Stephens 2002, 27). Wealthy planters from Virginia and parts of North Carolina migrated to Huntsville, often via Tennessee, attracted to the area by the booming cotton industry (Wood 1971; Carlisle *Early History*). This influx of settlers into North Alabama from a more northerly direction as compared with the

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<sup>10</sup> A large portion of the relatively low altitude Monte Sano mountain, rising about 1,000 feet (~300 meters) above the rest of the city, sits within the current city limits. Monte Sano's summit is at 1,621 feet (494 meters) ([www.mountainzone.com](http://www.mountainzone.com)).

middle and southern parts of Alabama created dialect boundaries that set the Tennessee Valley (or Cumberland Plateau) region somewhat apart from neighboring regional dialects. This pattern of settlement is shown in different ways in both Carver's (1987, 118) Map 4.2 and Wood's (1971, 123) Map 10.1 where arrows depict the settlement of the upper half of Alabama by settlers from Tennessee. This low plateau region, or "Highland Rim" (Nielson 2007), created a natural channel for the southern flow of people alongside the mountainous Appalachians to the east. In contrast, many of the areas south of Huntsville, particularly south and east of Birmingham were populated by settlers from Georgia.

During the years of the Alabama Territory, the South Alabama town of St. Stephens was the territorial capitol. However, Huntsville was the center of cultural and political development. The first newspaper in the territory was Huntsville's *Madison County Gazette*, begun in 1812 (Schmidt 2009). It was in Huntsville that the Alabama petition for statehood was first conceived and where the first constitutional convention convened to draw up the state's constitution. While the constitution designated Cahaba, Alabama, to be the first capital, Huntsville served as temporary capital while the town of Cahaba and capitol building were readied. According to Jones (1989), when the land census was completed in 1809, Madison County had 2,223 White residents and 322 slaves. However, after Alabama became a state in 1819, the 1820 U.S. Census (the first) indicated that Madison County, where both Huntsville and Riverton are located, had a population of 8813 Whites and 8622 Black slaves<sup>11</sup>.

Though the Tennessee River had been used for transporting Madison County's cotton, the area's prosperity exploded in the mid 19<sup>th</sup> century when the Memphis and Charleston (M&C)

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<sup>11</sup> "Census Data for the Year 1820."

<http://fisher.lib.virginia.edu/cgi-local/censusbin/census/cen.pl?year=820>

Railroad was extended through North Alabama from Memphis, with a stop in Huntsville, allowing the shipping of goods to more locations, more quickly. By 1854, Huntsville was the headquarters of the M&C Railroad. Due partially to this, Huntsville continued to remain an important commercial center into the 20<sup>th</sup> century. The importance of the railroad for that time period is highlighted by the fact that capturing the Huntsville Railroad Depot and disrupting Confederate supplies was a major goal for Union soldiers during the Civil War. Union soldiers succeeded in taking over the Huntsville Depot and much of downtown Huntsville from 1862-1865 (Heidler et al. 2000).

The largest branch of the national watercress producer, Dennis Watercress Company, bought land for watercress in 1908. By the 1950's, in addition to being a successful cotton and textile center, the largest producing branch of Dennis Watercress Company was located in Huntsville. This earned the city the nickname "Watercress Capital of the World," a moniker currently claimed by nearby New Market, Alabama (which is just past Riverton) (Lang 2008).

According to Stephens (2002), African Americans and Whites in Huntsville did have social interactions, perhaps more so than elsewhere in Alabama. She writes that African Americans were involved in politics, education, and had a Masonic lodge. One of the African American community leaders, Charles Hendley, was the editor of the Huntsville newspaper, *The Gazette*. She relays that, around 1880, an article in *The Gazette* stated:

The state of Alabama is ten years behind Madison County...In Madison the Negro is accorded representation in the jury box, while in its county seat, Huntsville, he is found on the police force, in the city council...and is generally treated by capitalists, merchants, business men, officials, with consideration and respect (Stephens 2002, 68).

We can therefore, speculate that the speech of the White community and that of the African American community, if different, were at least somewhat mutually influential.

### 1.4.3 Riverton, Alabama

In some ways, the history of Riverton parallels Huntsville's. Local history books even have the settlement of the Riverton area predating the settlement of Huntsville. Allegedly, John Hunt, on his way to find the Big Spring, found the settlement of two brothers, Issac and Joseph Criner, just north of Riverton and stayed the night (Carlisle *Early History*; New Market VFD 1984; Jones 1989). Most of the early settlers to Huntsville arrived coming south through Nashville, Tennessee, on the meridian road which divided the county in half (now Meridianville Road/Memorial/Parkway/U.S. Highway 231) or south down a trail from Winchester, Tennessee, right through what is now the Riverton area, whose main thoroughfare is still called Winchester Road (County Highway 65). Therefore, Riverton was settled along with Huntsville by similar people, at a similar time, and (at first) at a similar pace (Rohr 2008). The early residents of Riverton prospered due to the numerous cotton fields, cotton gins, and textile, saw-, and corn mills in the area. By the mid 19<sup>th</sup> century, there were already several churches in the area for the residents (New Market VFD 1984). The community lies in a primarily open, flat valley between the small Chapman, Lewis, and Berry Mountains<sup>12</sup> with small scattered pockets of woods. Like Huntsville, Riverton has its own Tennessee River tributary, the Flint River, and was the location of the first major cotton textile mill in Alabama: the Bell Factory (Stephens 2002, 29). The

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<sup>12</sup> Chapman Mountain elevation 1,214 feet (370 meters); Lewis Mountain elevation 1,430 feet (435.86 meters); Berry Mountain elevation 1,138 (348.46 meters) (www.mountainzone.com). Subtract roughly 600 feet (or 183 meters) from each elevation for an idea of how far it rises above the valley.

factory, which operated from 1818 as simply a cotton spinning factory (Jackson *Huntsville News*, n.d.), officially became Bell Cotton Factory in 1828. The factory was initially operated by 2,000 slaves (Record 1984; Jackson *Huntsville News*, n.d.)<sup>13</sup>. According to Jackson (*Huntsville News*, n.d.), cotton cloth was not manufactured in Alabama “on a large scale for commercial purposes” until Bell Factory began its manufacture of cloth after the factory was incorporated by local businessmen in 1832. He goes on to say, “This was the first cotton manufactory of any consequence in the South.” The bell from the Bell Factory was used to summon workers, since the factory did not use steam (and therefore did not have a steam whistle). It was the dam on the Flint River that provided power to the looms and spindles. The factory ran until 1885 (Jackson *Huntsville News*, n.d.). The bell is currently located in a brick monument outside of what was originally the only school, serving students through 12<sup>th</sup> grade (currently the local elementary school, through only the 4<sup>th</sup> grade). When the school was built in 1917, the bell was donated and used to call construction workers to the site. The school itself developed into a place for social gatherings. The website states, “People would flock to the kerosene-lighted auditorium to see a magician, fiddling contest, play or even a movie” (Riverton School History<sup>14</sup>). In one of my interviews with an elderly resident of the area, she told me of her fond memories of going to see movies at the school as a child. In 1887, the Nashville, Chattanooga, and St. Louis (NC&StL) railroad built a spur connecting its Elora, Tennessee stop with Huntsville’s M&C railroad. The spur had stops in Riverton and north and south of Riverton (~2 miles) as well, in Chase and Deposit, Alabama (Baudendistel 2003; Harrison “The Huntsville Branch”; New Market VFD

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<sup>13</sup> Old tax records and wills provide evidence that Riverton residents owned slaves, though evidence of influence of this on their language is not available (Dunham 2008).

<sup>14</sup> <https://www.madison.k12.al.us/Schools/ris/Pages/AboutUs.aspx>

1984). Two of my interviews with older residents detailed the ways in which this railroad affected their lives and other residents', including the fact that it allowed them to take the train into Huntsville for work or social outings at a time when automobiles were rare.

#### 1.4.4 Twentieth century change

The population of Huntsville in 1940 was 13,150, and, like much of the U.S., industry had declined during and after the Great Depression. The passing of the Tennessee Valley Authority Act by congress during the Roosevelt administration brought much needed revitalization into the area, employing residents and bringing engineers into the area. TVA not only created affordable electricity for rural areas, but also generated enough hydroelectric power so that aluminum, an essential metal for wartime needs such as airplanes, could be mass produced in the Tennessee Valley (e.g. [www.tva.gov](http://www.tva.gov); [www.feri.org/tva](http://www.feri.org/tva)). At the same time, Alabama politicians lobbied the United States Government to build its planned Army ordnance center in Huntsville, which resulted in the creation of Redstone Arsenal along the Tennessee River. This created new jobs and even entirely new trades for locals as the need for engineers increased, beyond those needed just for TVA. In 1950, following WWII, German rocket scientists such as Wernher von Braun came to the Redstone Arsenal to develop rockets and missiles, tasks which, by 1960, morphed into the U.S. space program. This had profound consequences for the city, currently known as "Rocket City." A large percentage of the population is now employed in engineering and information services, particularly for defense contractors and the U.S. Government, including NASA (Bearden 2008). According to the 2010 U.S. Census, the population of Huntsville was 180,105 residents in the city proper in 2010. The

population of Madison County (in which Huntsville is located) was 334,811, an increase of over 58,000 residents since the 2000 Census. The 2010 U.S. Census counted the Huntsville Metropolitan Statistical Area at 417,593, making it the second largest metropolitan area in Alabama (behind the seven-county Birmingham area) (Pierce 2011). The most recent census also shows that White residents make up 69.9% of the total population, while African Americans make up 23.3% (residents of two or more races comprised 1.7%). The population of Riverton is included in the calculations for the Madison County and metro area numbers above (and not Huntsville's), since it is about four miles outside the city limits of Huntsville. Huntsville is still undergoing extreme demographic and physical change at present as thousands of people are being relocated (usually from outside the South) to Huntsville to work on the Redstone Arsenal Army Base, the Missile Defense Program, and NASA. Several national defense agencies and military bases are also being relocated to Huntsville from Arlington, Virginia as a part of the Base Relocation and Closure (BRAC) program. Because Huntsville has witnessed such great change over the last 70+ years, this area is an exciting place to conduct linguistic research.

Just as the 1950's arrival of the U.S. Space Program in Huntsville saw a redefinition of the city as people knew it, the community members I have talked to are highly aware of another wave of change on the way. Many of the "new" Huntsvillians are moving into the quickly-expanding subdivisions (housing developments) in the Riverton area, redefining not only the makeup of the community, but also changing the landscape as the fields and cow pastures that once separated older subdivisions are replaced with new subdivisions or shopping centers. Some of the comments about change from the interviews I collected in 2007 are included here:

- (1) “[The area] has grown up so much. It's changed so much since I was growing up. The Redstone Arsenal - obviously there's tons of people that move into this area because of that. There's tons of people that are government that move to this area...None of this was here, like all these subdivisions. It's crazy.” – Beth, born 1978. (data used in Ch. 2 and 3)
- (2) “The one thing about Huntsville being so dependent upon the military base [is] there's a lot of different people that move through here.” – Jake, born 1964
- (3) “Yeah, it's changed very much. That's been true for many years now – Redstone Arsenal creating that change, I guess.” – Roger, born 1945
- (4) “This community has grown so, and so many people are in it. It's just - you wouldn't believe when we were coming up, what wasn't here. It wasn't like it is now.” – Margaret, born 1936

These comments help highlight the dynamism of the area and the reasons why the area is an attractive one for studying dialect variation and change. Many of the residents I interviewed believe the demographic change is affecting the language of the area, both by increasing the number of non-Southern peers the children and adults interact with, but also by changing their outlook on how cosmopolitan they view themselves and their city. At the same time, most of the residents also mentioned the idea of “native” Huntsvillians and how they are increasingly difficult to find. Residents of North Alabama could develop a dichotomy of local accents: those who want to stress “native” status versus those who want to stress “cosmopolitan” status. Because of these facts, it is possible to find a wide array of feature usage and strength of accent in Riverton.

### 1.5 Exploratory Pilot Study and beyond

Like studies conducted by other researchers (e.g. Fridland, Bartlett, and Kreuz 2004, 2005), the pilot study conducted for this project indicated that listeners are tuned in to the acoustic placement of speakers' vowels. In the pilot study, three young speakers were selected via random number generator from within my pool of collected interviews of white residents of Riverton, Alabama. People were asked to listen to 5-6 short clips of unaltered running speech for each of the three speakers. The speakers were two females (Stacy and Sierra, b. 1978, 1987) and one male (Ted, b. 1977) and the speech samples were excerpts from sociolinguistic interviews. Thirteen listeners (friends and friends of friends) made up of four Southerners and nine non-Southerners completed a survey based on the clips they heard. The age groups of the listeners were: 18-25 = 4; 26-40 = 4; 41-55 = 2; 56+ = 3.

Before displaying the results of the pilot survey, tables are provided showing preliminary results of a quantitative analysis of the production of two variables: (ING) and (ay). The numbers below were calculated only from the passages presented to listeners to assist in understanding what the listeners actually heard. While more rigorous measurements would certainly be interesting, this pilot study functions primarily as an exploratory study. Nevertheless, the measurements that were taken are still of interest and are displayed in Figures 1.2, 1.3, and 1.4 and accompanying Tables 1.1, 1.2, and 1.3 (respectively).

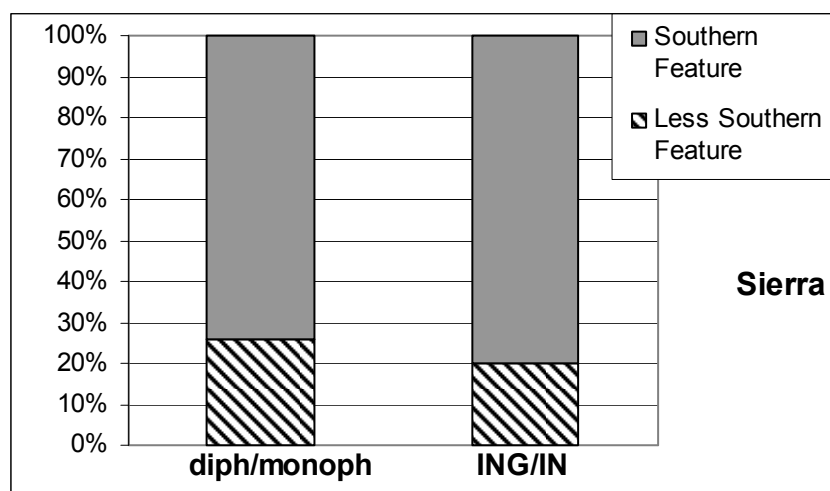


Figure 1.2 Sierra: Distribution of velar fronting and monophthongization

MONO	17	IN	8
DIPH	6	ING	2
<b>Total</b>	<b>23</b>		<b>10</b>

Table 1.1 Sierra: Distribution of velar fronting and monophthongization

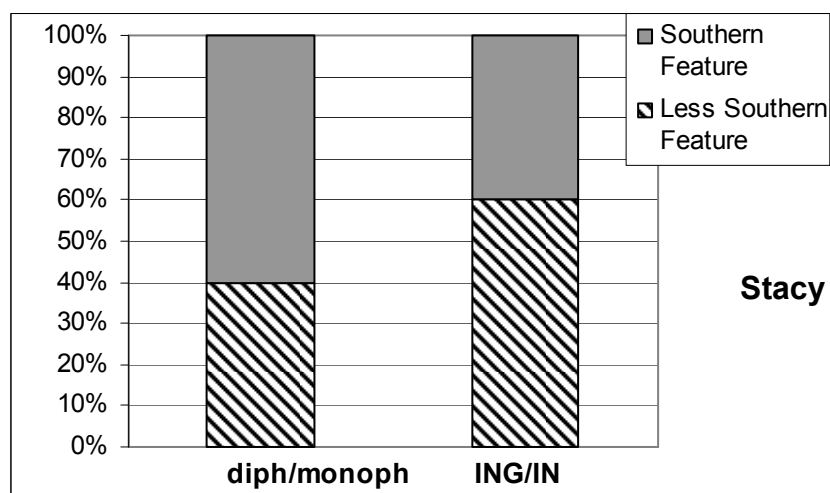


Figure 1.3 Stacy: Distribution of velar fronting and monophthongization

MONO	9	IN	4
DIPH	6	ING	6
<b>Total</b>	<b>15</b>		<b>10</b>

Table 1.2 Stacy: Distribution of velar fronting and monophthongization

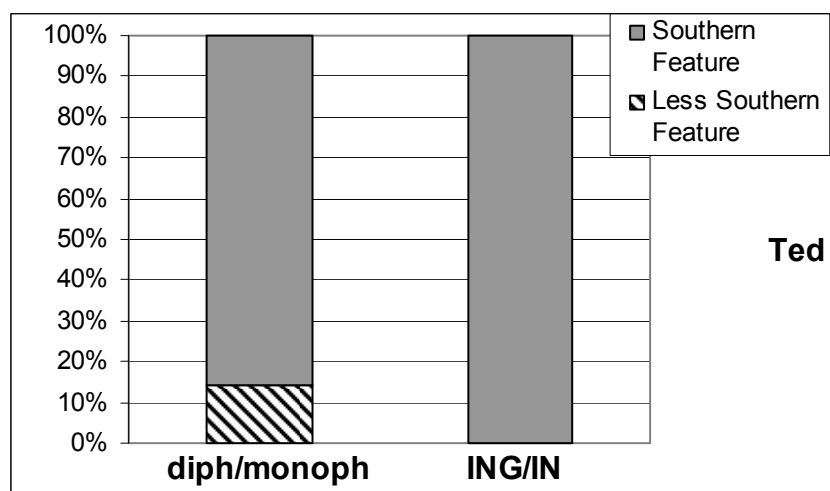


Figure 1.4 Ted: Distribution of velar fronting and monophthongization

MONO	6	IN	11
DIPH	1	ING	0
<b>Total</b>	<b>7</b>		<b>11</b>

Table 1.3 Ted: Distribution of velar fronting and monophthongization

In essence, the greater amount of solid gray indicates a greater use of Southern features. If we were to base who is most Southern solely on these results, we might say that the order of most to least Southern would be Ted > Sierra > Stacy. Since the pilot study was initially used merely to get a general idea, more thorough measures (such as acoustic measurement of the SVS) were not taken. Additionally, the actual properties of drawl were not yet isolated. (Chapter 3 discusses this in detail.). In fact, Ted's low occurrence of (ay) tokens skews his percentage. Note that he actually has fewer monophthongs than either of the women. Still, this can function as a rough guide to the nature of the speech in the audio clips.

The listeners were instructed to listen to all of one speaker's short clips and then fill out a section of the survey questionnaire. The listener would then move on to the next speaker. Each

speaker had his/her own section on the questionnaire. Additionally, speakers were reordered so that different listeners heard the speakers in slightly different orders. Note that some of the listeners did not answer every question and the number totals are affected in some of the tables and graphs below.

First, the survey asked listeners whether they could guess the speaker's age, the occupation of the speaker, and how long the speaker had lived in the South. The results of these questions are shown in Figures 1.5, 1.6, and 1.7.

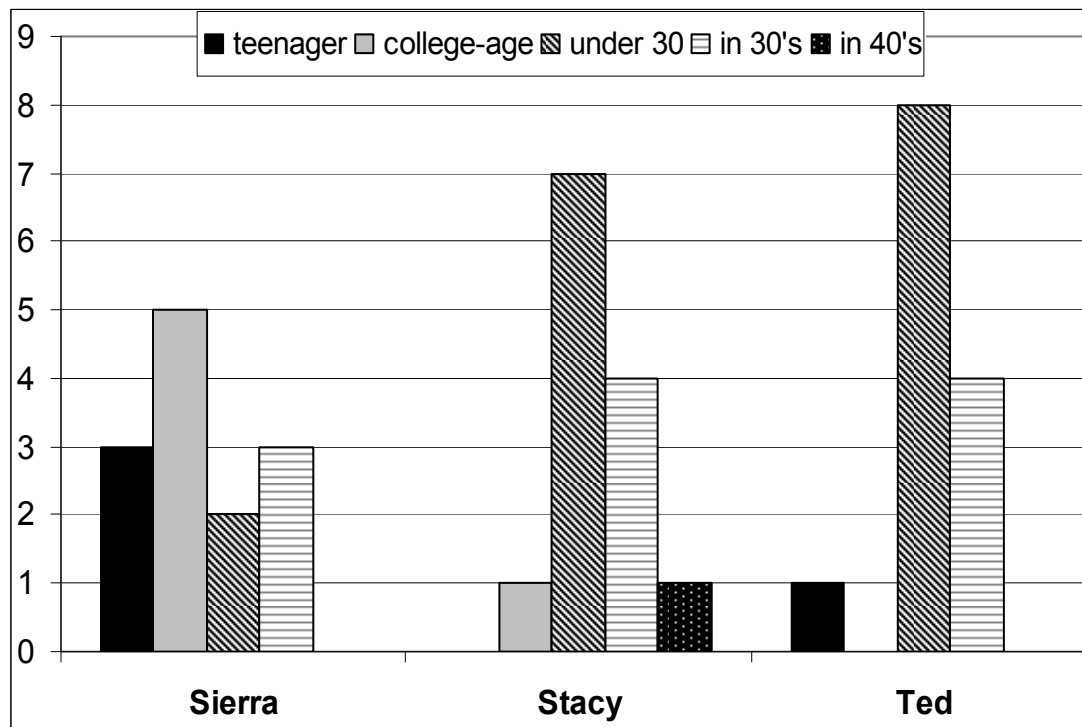


Figure 1.5 Perceived age of speakers



Figure 1.5 Perceived occupation of speakers

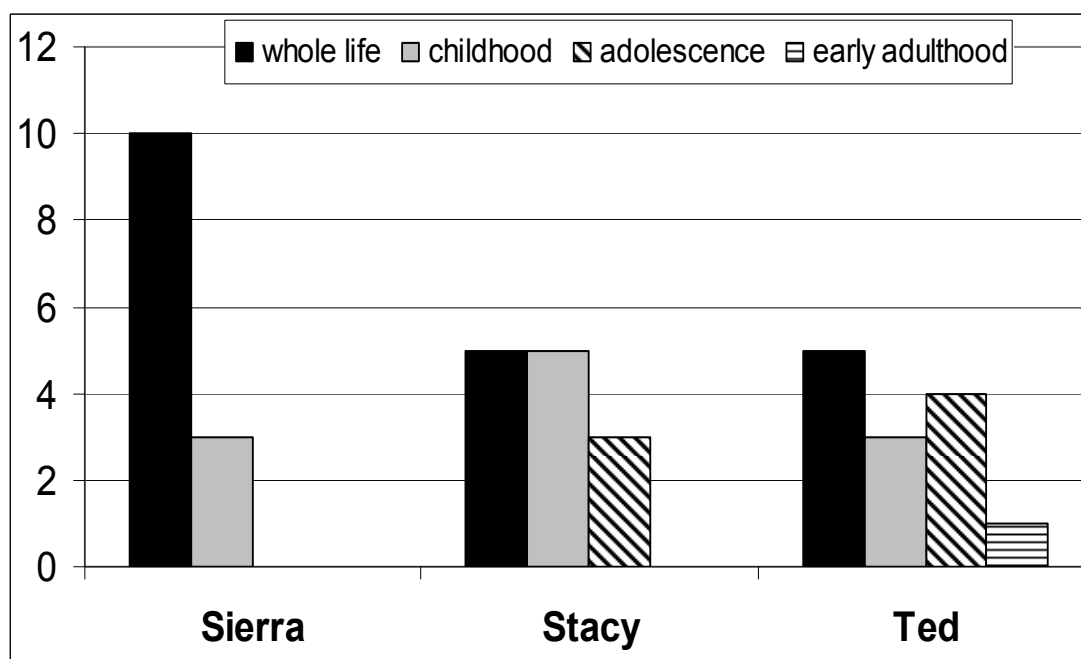


Figure 1.6 Perception of how long the speaker had lived in the South

In general, listeners believed Sierra to be younger than the other two speakers. Sierra, born in 1987, is in fact younger than Stacy (b. 1978) and Ted (b. 1977). Their ages at the time of

interview were 19, 29, and 30. Most of the people who wrote that Sierra might be a student commented that she was probably too young to have a career yet, so her results in Figure 1.5 are likely correlated with the perception that she is very young. However, listeners indicated that Sierra sounded much more blue-collar than did Stacy or Ted. Sierra does indeed hold a blue-collar job, while both Stacy and Ted are professionals. And while they believed that all of the speakers had lived in the South since an early age, Sierra is again singled out, this time as the one that almost all listeners believed had been in the South since birth. In fact, all three speakers have lived in the South their entire lives, though Stacy lived in Florida until the age of seven, Ted lived in Texas until the age of five, and Sierra lived in Montgomery, Alabama, until the age of five.

Listeners were also presented with a series of attributes, in the style of a semantic differential scale (see Chapter 4), and a section which allowed listeners to “check all that apply.” In the latter, attributes were supplied for the listeners along with an “other” fill-in-the-blank option. In the former, the supplied scale was a 6-point scale, with numbers ranging from 0 to 5. For the purposes of the current larger study, the most important question in the survey was, “How strongly would you rate the Southern accent of this person?” Listeners rated the strength of the person’s Southern accent from 0-5, with 0 indicating that the accent was “not at all strong” and 5 indicating the “strongest possible accent.” The results of this question are displayed in Figure 1.7.

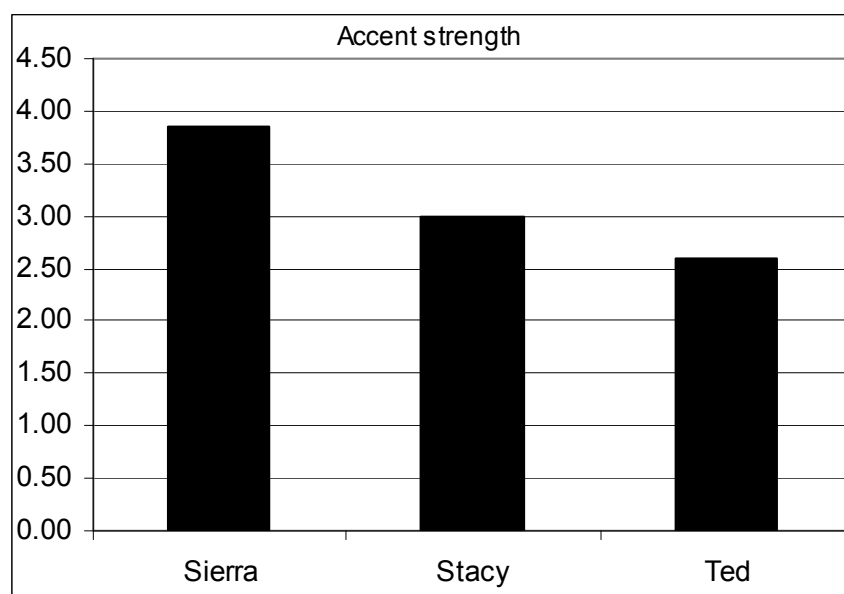


Figure 1.7 Listener ratings on strength of Southern accent

In this particular instance, listeners judged Sierra (3.85) as more Southern than Stacy (3.00), who in turn was more Southern sounding than Ted (2.59). It is interesting to note that Stacy's and Ted's scores are closer to each other than they are to Sierra's, indicating that Sierra's degree of Southern accent is perceived as being much higher than either of the other two. The questionnaire additionally asked listeners, "Please list, if you can, the cues in the *sounds* of the speech allowed you to determine strength of accent." While interpreting what laypeople mean when they describe sounds is not always straightforward (e.g. What is a "flat a"? Does "i" refer to [ɑ'], [i], or [ɪ]?), an attempt was made to roughly categorize the features responsible for listeners' rating someone as having a strong accent. These are shown in Figure 1.8.

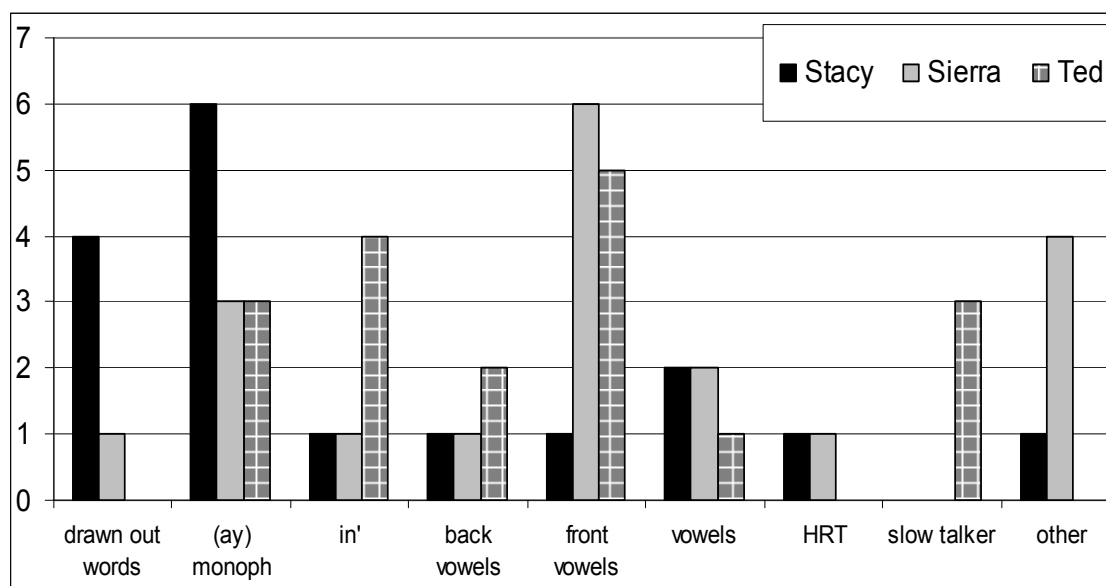


Figure 1.8 Listeners' reasons for rating Southern accents as stronger

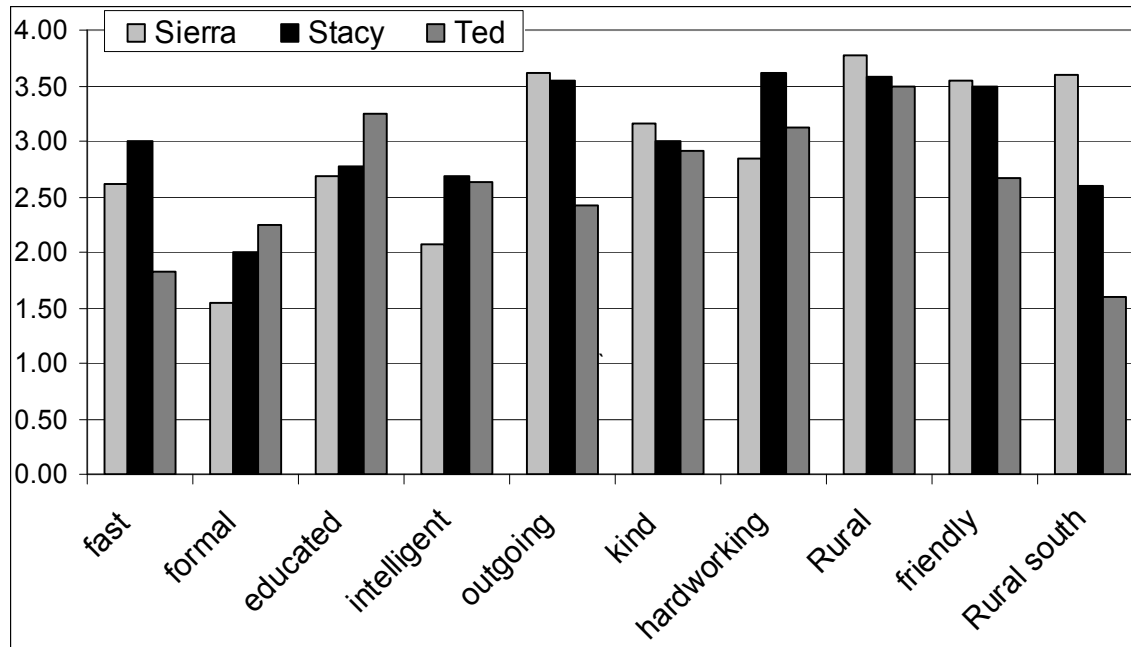
While some of the listeners listed a specific vowel (or a few tokens with the same vowel), some listeners simply said “the vowels” prompted their decision, so this is indicated by the general “vowels” category in Figure 1.8. It seems that listeners are very sensitive to front vowels and monophthongal (ay). Four people commented on Stacy’s drawn out words, though they commented that her speech rate was very fast. It is interesting side note that speech rate and word duration are not always correlated and that listeners may notice it. Listeners also tuned in to Ted’s prevalence of *-in'*, which occurred 11 times out of 11 occurrences (see Figure 1.4). A rising intonation at the end of a declarative statement, also known as high rising terminals (HRT) (Britain 1992) was noted once for both Stacy and Sierra. Based on the open-ended responses, there is evidence that some of the listeners’ percepts were cued by vowel sounds and a few gave responses that indicated that they were at least vaguely aware of SVS-type vowel movements. For example, when asked to list the cues, one speaker responded, “*Table* became “tie-bell” and

*hated* was “high-dead”. So... the vowels.” Responses such as these solidify the decision to include the front vowels affected by the SVS as features which may prompt a percept of a stronger Southern accent.

How the listeners rated the speakers on the attributes other than strength of accent is displayed in Figure 1.9. In the distributed survey, positive and negative attributes (as judged by me) were mixed in terms of which occurred on the left or right. However, the graph below shows scores for positive attributes. For example, the scores for “unkind” were subtracted from 5 to obtain a converse score and the attribute “kind” is shown on the graph with this converse score.

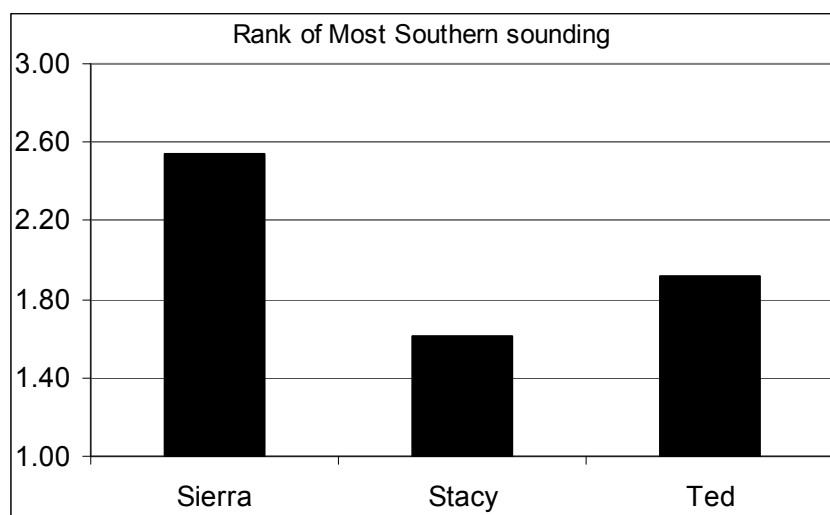
The last category titled “Rural South” on the graph, was added after it seemed that listeners might be considering the similar attribute scale, “city dweller vs. used to rural atmosphere,” as a question aimed more at the perception of how closely the speech fit a general idea of large non-Southern urban centers versus some mental representation of a rural, agrarian South. Fridland (2006) encountered a similar problem in her research on perceptions of Memphis, Tennessee speakers (see Chapter 4). The attribute pairs, “Lives in Southern City vs. Lives in Rural South” were added before the last five listeners took the survey. Although only a few listeners were presented with this last scale, the ratings suggest that listeners might indeed mentally distinguish these two attribute scales. While all speakers were considered relatively “rural”, some listeners believed that Stacy might be from a Southern city and many believed that Ted was. Sierra, on the other hand, was considered rural no matter the framing. Though listeners believe Sierra to be the least educated and intelligent sounding, she fared well in terms of positive social attributes, with listeners believing her to be outgoing, and slightly more kind and friendly than the others. Two comments from different people were, “Seems like a friendly

person” and “I like her, she sounds fun.” Yet another commented, “She gives me the impression of someone doing an impersonation of Brittany Spears trying to sound really southern.” While it is not exactly clear what this means, it is fair to assume that Brittany Spears is not perceived as being shy.



*Figure 1.9* Listeners’ ratings of speaker on various attributes on a scale of 0-5.

Also relevant to the interests of the larger study, listeners were asked to rank the speakers in order from most to least Southern. A value of ‘3’ was assigned to the person ranked as the most Southern, ‘2’ for the second ranked, and ‘1’ for the least ranked. Figure 1.10 shows the averages of listener ranking scores.



*Figure 1.10* Listener's rank of Most to Least Southern sounding

Sierra is the winner of the distinction of sounding most Southern of the three speakers. It was not easy to tell why listeners believed Stacy to sound less Southern than Ted. In fact, Stacy and Ted both received many scores of '1'. However, Stacy also received several scores of '2', while Ted received more scores of '3'. It seems listeners agreed the least on how Southern Ted sounded in relation to the two women, with some believing he was the most Southern of all and others believing he was the least. Note that this ranking does not match the conclusions that can be drawn from Figure 1.7, further reinforcing that Stacy and Ted may be almost "equally Southern" (though perhaps for different reasons) with both less Southern than Sierra.

For the sake of completeness, the results of the "check all that apply" section are reported in Figure 1.11. From these, we see that Stacy fared better than the other two on positive attributes such as "hardworking", "compassionate", "ambitious", "confident", "articulate", and "reliable." Sierra and Ted were both considered somewhat lower class than Stacy and both were labeled at

least once as being a “redneck”. Again, while it is interesting to see how listeners responded to these clips, it is not easy to tell what exactly prompted these percepts.

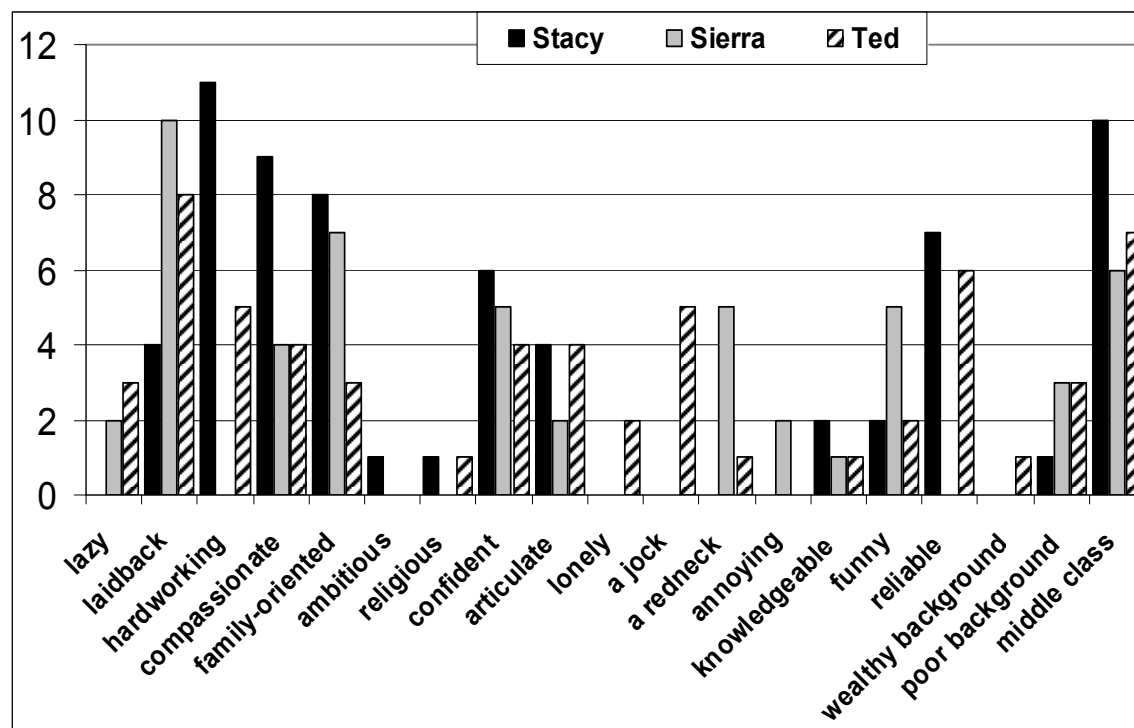


Figure 1.11 Number of optional features selected for each speaker

Primarily, passages from each speaker were selected to ensure that each of the following features occurred at least once: monophthongization; velar fronting (ING/IN); and at least one SVS shifted front vowel. Nevertheless, *all* listeners reported that sometimes content, and not merely sounds, affected some of their perceptions. While there was a vague attempt to control for content, it is not easy to tell which stories listeners will find more stereotypically Southern without testing. (The clips included such themes as stories about Hurricane Katrina, the speaker’s favorite season of the year, first job in high school, childhood teachers and toys, and

pets. All three had a story about a snake.) In fact, a small part of the purpose of the pilot was to determine the challenges that using uncontrolled stimuli would create.

Due partially to the (somewhat predictable) inability to point to the exact reasons for listener percepts in the pilot study, it was decided that a much more controlled environment would be utilized in the greater perceptual study. For the actual survey (described in Chapter 4), listeners heard one sentence spoken by a resident of Riverton (Stacy), “She was having a hard time in seventh grade with her history class.” This one sentence used the four features discussed above in all “on/off” combinations, e.g. monophthongal vs. diphthongal *time*, resulting in sixteen possible permutations, all of which were presented to listeners via an online survey.

Chapter 2 discusses the finding on SVS progression in the Riverton area and draws conclusions about how SVS should be incorporated into the perceptual survey. That is, Chapter 2 addresses the question: in what preceding and following environments are the most shifted vowels commonly found and how should that shape the token(s) used in Chapter 4’s survey? Chapter 3 explore the notions of Southern “drawl” and “breaking”, contributing to ongoing explorations of the processes by which Southerners seem to add syllables via inserting gliding and amplitude variations into vowels. Chapter 3 also operationalizes the nature of the “drawl” feature that is used in the survey. Chapter 4 discusses the methods, execution, and results of the perceptual survey in detail. Finally, Chapter 5 discusses some implications of what the survey reveals and, more generally, the results of the entire project.

## CHAPTER 2. ARE WE SHIFTED YET?

*Southerner and Northerner are sitting in a restaurant.*

*Southerner: Do you wanna pie?*

*Northerner: Sure, that sounds great.*

*Southerner: Well, thank you. The register's right over there.*

### 2.1 INTRODUCTION

There are ample features associated with a Southern accent, any of which might have been chosen for the project. With an eye toward practicality, potential features for the task were narrowed to a small group based both on previous literature and on my own familiarity with the area. Features included: 1) monophthongization of the (ay) diphthong; 2) the Southern “drawl”; 3) velar fronting of the –ING suffix; and 4) the Southern Vowel Shift (SVS). Of these “features”, the SVS is most problematic in terms of labeling it as only one feature. The SVS (described in Chapter 1) is a process that affects many individual phonemes. Research on SVS progression usually includes treatment of groups of phonemes sharing phonetic characteristics (e.g. +high –back) separately. Some research (see below) is conducted entirely on subsets of the SVS.

Because of this, I began to consider each subset of the shift separately for inclusion in the study. Below, research is discussed which has shown that the sub-shifts do not behave in the same way in all areas, even within the American South, and other research indicates that at least one of the processes within the SVS, the forward parallel shift of the back vowels, is not unique to the SVS.

This chapter first deals with the available literature on these two assertions. Then, with an eye toward informing the perceptual survey (Chapter 4), an acoustic phonetic investigation is conducted of the extent of SVS progression on the front high (/i/, /ɪ/) and mid (/e/, /ɛ/) vowels of

seven female speakers from the town of Riverton, located northwest of Huntsville, Alabama (discussed in Chapter 1). Acoustic measurement (resulting in vowel plots) was the method used in lieu of a classic variation analysis to help capture the intermediate levels of shifting in which the vowels can be realized. While a quantitative variation analysis of shifted vs. non-shifted vowels and their linguistic conditioning factors would add to the investigations performed here, using vowel plots aids in seeing the fine grained distinctions and relative locations within vowel space. Though this analysis did not use regression analysis, primarily because of the limited number of tokens in specific phonological contexts, it does qualitatively consider the effects of the preceding and following phonological contexts.

The results of the measurements of front vowels showed that the speakers' high front vowels were variably standard and shifted in this area, both in terms of individual speakers and within individual speakers. That is, for some speakers, all (or nearly all) of their /i/ and /ɪ/ vowels were in canonical position with respect to their individual vowel systems. While other speakers did have some shifted high front vowels, these same people also had many that were not shifted or that showed only slight movement in the direction of a shift. By contrast, the mid front vowels showed a more robust pattern, with most speakers shifting most of the vowels in words containing /e/ or /ɛ/. After presenting these results, I examine whether or not more advanced shifting of these mid-vowels is favored or disfavored by various preceding and following environments. Information on the effect of environment on progression of mid vowel shifting was also helpful in choosing the representative SVS feature for the survey in Chapter 4.

While the environments showed a pattern, it was a weak one. More shifted mid vowels

may co-occur with preceding coronals and with following voiced consonants. However, in a very shifted system, consonantal environment lends only a small contribution. For the purposes sought here – choosing a following environment for the perception stimulus sentence – the results are sufficient. However, a larger sample would be necessary to draw definitive conclusions. Expanding the pool of speakers would be a fruitful future exercise.

The acoustic analysis of speakers' high and mid front vowels is also included to better understand the behavior of the SVS in Riverton, Alabama. The preliminary background investigation of linguistic constraints on these features that is conducted in this chapter will ensure that the sentence manipulations performed in Chapter 4 are linguistically principled manipulations for the Riverton area. Further, an exploration of the constraints on the above features makes a contribution to linguistics that could be of interest to a variety of subfields including sociolinguistic variation and phonetic and phonological theory.

## 2.2 BACKGROUND

### 2.2.1 Back Vowels

As noted above, the parallel frontward shift of the back vowels has been found in English dialects of the United States other than that of the American South. Over the past few decades, linguistic research has revealed that back vowel fronting, particularly of /u/, may be an increasing dialect pattern in areas of the American West and Midwest.

Two decades ago, Hinton et al. (1987) conducted a real time study of Bay Area California vowels with data collected in the 1920's, 1950's, and (by the authors) in 1986. Analysis of back vowels showed that the percentage of speakers with fronted high back vowels

had increased by a very small amount between the 1920's and 1950's data, from approximately 22% to approximately 29%. However, the data collected in 1986 showed that 70% of young Californians had fronted /u/ vowels in environments other than preceding /l/. This study suggests that, by 2010, /u/ fronting should be well established in the San Francisco Bay Area and most likely, in areas nearby as well. Evidence for this assertion can be found in, for example, Fought (1999), who mentioned that she has found that Anglo residents of the Los Angeles area demonstrate significant /u/ fronting in interviews she has conducted in the area. However, the primary goal of the research shown in Fought (1999) was to determine if the Chicano minority was also participating in the wider change. She examined the back vowel patterns of 32 speakers and found that fronting of /u/ among Chicanos exhibited a complex pattern that was dependent on the social categories of sex, class, and whether or not the person was affiliated with a local gang. Non -gang affiliated speakers tended to have the most fronted /u/ vowels, demonstrating that the gang identity may be partly expressed through the rejection of participation in wider (Anglo) norms.

Elsewhere in the West, as part of a larger project at Portland State University (the PDS, or Portland Dialect Survey), Ward (2003) looked at back vowel fronting in Portland, Oregon. His study analyzed data from 18 speakers of the area and found pervasive /u/ fronting in the area, particularly with younger speakers, with almost no correlation with gender or social class. Somewhat oddly, young adults had more fronting than teens (who still showed far more than older speakers). Though age was shown to be the best predictor of fronted /u/, the results showed that females fronted slightly more than males and that working class fronted slightly more than middle class. Ward's study reinforces the idea that the dialect of the American West exhibits a

pattern of back vowel fronting, particularly with the back vowel /u/.

Ash (1996) additionally reports that some speakers in the Midwest actually participate in /u/ fronting as well, even when they otherwise exhibit traits associated with the Northern Cities Shift (NCS), which originally counted “absence of change” in the back vowel /u/ as indicative of NCS (4). The findings were therefore surprising and suggest that /u/ fronting may occur in conjunction with other features of the NCS. The article also cites research done by Luthin (1987) which shows back vowel fronting in San Francisco, California, further supporting the idea of back vowel fronting in the American West.

Recent research has shown that there may in fact be a difference between the execution of /u/ fronting by Southern and non-southern /u/-fronters. Koops (2010) analyzed fronted /u/ vowels as spoken by Houstonians. He created a rating system based on the front vowel shifts of the SVS and monophthongization of (ay) and, out of a greater sampling of 42 speakers, ten speakers were selected who participated in the vowel shift the least (presumably not at all) and ten were selected who participated the most. The mean ages for Southerners and non-Southerners (as defined by participation in the SVS) were 54 and 19, respectively. While both groups demonstrated /u/ fronting, the formant trajectories of the two groups were significantly different. In simplified terms, the non-Southern group’s fronted /u/ contains a backed offglide (resulting in a diphthong similar to [ɪ<sup>u</sup>]), while the Southern group’s /u/ remains relatively steady in a fronted position (similar to [y]).

Taken together, these studies contribute to the decision to exclude investigation of back vowel movement as one of the features strongly indicating a Southern accent. The above research demonstrates that, while back vowel fronting is undoubtedly a feature of Southern

speech, the phenomenon is obviously not exclusive to that geographic region. While Koops (2010) shows that the types of /u/ fronting occurring in the South and elsewhere may not be the same, it is difficult to determine whether listeners would make this distinction. Though this feature would certainly be able to contribute to the current study, keeping the study at a feasible level is vital and necessitates trimming variables. Perhaps the forward movement of the back vowels can be included in future work to test if listeners associate all types of /u/ fronting with the South, no matter the reality, particularly if listeners are told they are listening to a Southerner (as they will be in the perceptual study in Chapter 4). Given the above research, however, it is not likely that a fronted back vowel alone would be enough to obtain a percept of a Southern accent.

The study can be simplified by only looking at the two front vowel pairs in the shift. In addition, work such as that done by Fridland, Bartlett, and Kreuz (2004) suggests that the front shifts may indeed be much more salient for listeners than the back vowel movement. In fact, they write “midfront vowel shifts are generally more socially identifying than the shifts affecting the back vowels” (2004, 13). In this work, the researchers conducted a study testing listeners’ perceptions of the SVS to investigate to what level listeners are attuned to formant changes in vowels and, presumably, the ability to assign a social value to the sound. Fridland et al. had two speakers, one male and one female, read a word list. The speakers, from Memphis, Tennessee, had a small amount of Southern shifting. From this natural (as opposed to artificially synthesized) data, they were able to acoustically manipulate the vowels, resulting in a shifted and non-shifted token for each speaker for each of six vowels. Reactions were elicited from 141 listeners from the Memphis area. In rating the degree of Southernness of the variants, pairs of

words were presented to listeners. For each pair, one word contained a vowel with a more advanced version of the SVS than the other. The listeners circled the word they considered more Southern and rated how different the two stimulus words sounded from each other. The researchers found that Memphians were better able to recognize those front vowel shifts that were most prevalent in their own speech, i.e. the mid vowels were more salient than high vowels. By contrast, the back vowel shifts did not show the same pattern; even though speakers in the Memphis area participate in this sub-shift, they do not associate fronted back vowels as readily with sounding Southern. Apropos to the studies discussed above, they observe that “it certainly appears that /uw/ and /U/ fronting are quietly spreading through North American dialects with little social significance attached” (13). Further, for those front vowel shifts in which the Memphians participated the most, they were also better able to label (as more Southern) finer distinctions in formant movements toward a more advanced SVS. In Fridland, Bartlett, and Kreuz (2005, 370), which summarizes the results from the 2004 article, they conclude: “These results suggest that speakers’ perceptions are sensitive to community norms.”

### 2.2.2 Front Vowels

The front vowel shift of the SVS includes the high vowels /i/ and /ɪ/ and the mid vowels /e/ and /ɛ/. The nuclei of both of these pairs are alleged to approximate switching places in

acoustic space<sup>15</sup> under Labov's (1994: 209-212) "Pattern 4", with the tense vowels becoming nonperipheral and lowering and the lax vowels becoming tense, peripheralizing and raising.

However, previous research that I conducted in the Huntsville area suggests that while the suburban Huntsville area does participate in the front mid vowel shift, the situation regarding the high front shift of the SVS is much less straightforward, with /i/ and /ɪ/ often remaining stable. This is corroborated by research that Fridland (2000) conducted in Memphis, Tennessee, with speakers interviewed in 1996 and by Bailey (1997) looking at Southerners (from various places, but especially Texas) over a period of over 100 years (mid-19<sup>th</sup> century to the 20<sup>th</sup> century), whereby the shift in front high vowels was not very advanced. In contrast, Feagin (1986) and Labov (1997) did find this shift in Alabama, in Anniston in the early 1970's and in Birmingham in the late 1980's, respectively.

As part of the Cross Dialectal Comprehension project, Labov and Ash (1997) interviewed 15 participants from the Birmingham, Alabama, area, in 1988 and 1990. While this study focused primarily on the comprehensibility of words that were shifted according to the SVS, it closely examined three females from whom data were recorded: Wendy P., Melanie O. and Alison K., who were age 18 in 1988, 24 in 1988, and 16 in 1990 respectively. More details of the study are discussed in Chapter 4. Relevant here is that, for all three females, the high and mid front vowels have exchanged relative position in acoustic space according to the pattern of the SVS; the lowering of /e/ was particularly advanced.

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<sup>15</sup> It is "approximate" because the tense vowels of each pair lowers further than the original position of their lax counterparts.

Feagin (1986) and (2003) reports SVS findings in speakers from Anniston, Alabama, recorded in the late 1970s. In the former, she looked at seven speakers from her data pool and the latter, twenty. Each study examined the progress of the SVS based on apparent-time analyses. Her acoustic measurements showed many of the same patterns Labov found: the gradual reversal of both high and mid front vowels, with the oldest man showing nascent signs of front vowel movement and the oldest woman showing completion of the reversal of /e/ and /ɛ/ and some movement of /i/ and /ɪ/. Most importantly, the youngest speakers of both sexes showed a completion of the shift of both high and mid front vowels.

Fridland (2000) examined the behavior of the Southern Shift in Memphis, Tennessee. Her study was carried out using speech from 25 participants who were recorded in 1996. Despite the above findings, her results show that Memphis speakers displayed an extremely active reversal of /e/ and /ɛ/, but rarely showed any signs of movement in front high vowels, with no one having anything close to an exchange of these vowels.

Further, Bailey (1997) uses old records of Southerners dating from the mid to late 19<sup>th</sup> century, additionally bringing in analyses of 20<sup>th</sup> century speakers from Texas. There is evidence that the time period of the early 20<sup>th</sup> century through the present has been the window for the change involving backing and lowering of /e/. The high front vowels from speakers of birth dates ranging from 1896 to 1976 seem to have remained in the traditional places, i.e. unshifted, much like Fridland's findings. The variability of the behavior of the high front vowels is indirectly noted in Tillery and Bailey (2008: 124). While elaborating on the parts of the Southern

shift, the sub-shift involving the high front vowels is qualified as occurring only “in some parts of the South....”

It is important to additionally note that the front vowel exchange may not occur if the vowel precedes syllable-final /l/. In fact, this environment often results in a merger or near-merger, where both pairs – /i/ and /ɪ/ as well as /e/ and /ɛ/ - are merged, with the resulting sounds being those of the lax vowels. This merger among Southerners has been noted by several researchers. For example, Feagin (1986) notes a merger before tautosyllabic /l/ in Anniston, Alabama (141). In two recent articles appearing as back-to-back chapters, Thomas (2008) and Tillery and Bailey (2008) all describe this merger as well. Thomas (2008) describes it as a feature of young, rural, white Southerners and claims that the high front vowels are merged before /l/ more often than the mid front vowels are (316). Tillery and Bailey (2008) discuss current mergers affecting the urban South, including those before /l/. They point out that, as a result of the mergers, there are only three front vowels in Southern English that occur before /l/: /ɛ/, /ɪ/, and /æ/. While the area from which the data for the current project was collected straddles the line of urban and rural, this phenomenon may actually surface in all types of Southern areas, whether urban or rural, which is borne out in the data below.

Interestingly, the merger has also been found outside of the Southeast. It is described in some depth by Di Paolo and Faber (1990) using data from Utah in the West. Di Paolo and Faber (1990) conclude that it is only an apparent merger since listeners were usually successful in distinguishing the pairs in tests. Upon investigation, the distinction was due to creaky voice in

one phoneme and not in the other. Labov et al (1972) also discuss a merger of the tense and lax pairs of vowels in Salt Lake City, Utah, and in Albuquerque, New Mexico.

While Di Paolo and Faber (1990, 20) suggest that it may be the case that “Utah English is beginning to participate in the Southern Shift,” the various findings seem to suggest that the mergers are either not necessarily indicative or no longer indicative of the SVS. The mergers may be more widespread than they were previously or than they were previously believed to be. Evidence for the mergers is available via popular media as well. For example, in the song, “Damn it Feels Good to be a Gangster,” the artist group Geto Boys rhymes *bills* with *deals*, which suggests the merger exists in AAVE as well. Additionally, in an informal survey that I conducted online, I found that young women and girls from across America show variable merging of these front vowels. The young women and girls were participating in a model search for the clothing boutique Wet Seal. The contest entries were available on the website You Tube ([www.youtube.com](http://www.youtube.com)) and in each entry, the young females used the word *seal* at least once and up to five times. The 157 contestants whose videos were viewed self-reported being from all over the United States, ranged from 13-25 years of age, and included several different ethnic or racial backgrounds. While Southerners and African Americans appeared more likely to pronounce *seal* as *sill*, not all of them did, or it varied within the video. More interesting is that females from various backgrounds and regions (not only Southerners and African Americans) pronounced (completely or variably) *seal* as *sill*. This informal information combined with my own experiences and the work of linguists such as Di Paolo and Faber (1990) suggests that the merging or near-merging of front vowels may variably occur nationwide. There is a need for work which fully researches these relatively new merger patterns.

Further investigation of the front shift in the Huntsville area was not only an illuminating enterprise by itself, but was informative for the survey portion of the project covered in Chapter 4.

### 2.3 DATA GATHERING AND TREATMENT

As discussed in Chapter 1, the data for the acoustic analysis come from interviews I conducted in Riverton, Alabama. At an early stage of the current study (but after all interviews were conducted), I found a resident of Riverton to record stimulus data for the perception portion of the project. The volunteer was a female resident born in 1978 (Stacy). So that I might determine the patterns in the area for females around her age, I looked at the pool of sociolinguistic interviews I had conducted and selected all females that were roughly around her age. This, too, contributes to setting up a more realistic stimulus since data analysis of these females may allow us to learn more about how a woman like Stacy might speak. Stacy seemed to be a promising choice for producing variable stimuli since I found that she herself sounded variably very Southern and not-as-Southern during different stretches of speech during my interview with her. Stacy is not the only one of the young women below who seems to do this, but she is the only one I could both find again and get to agree to participate as the voice of the stimulus.

While Stacy's accent strength variability was primarily an overall impression, she has some features in her interview that likely prompt this impression, which I attempt to describe here.

Stacy's vowels sound very standard throughout the duration of the interview. Some of her very high and front [i] vowels stand out in words like *me* and in the glide portion of *state*, with the result that some of her words take on an almost squeaky quality. In some portions of her interview – describing her mother's career, colleges attended, nerdy childhood experiences, being a girly child (describing her fixations with lotion, hair, and purses) – she does not sound Southern, apart from her monophthongization of (ay) before voiced consonants and her very fronted /u/ vowels, both of which are pervasive features for her. However, her various narratives typically sound very Southern, even when school is part of the theme (e.g. a funny school bus story, her favorite biology project). In addition to the other features, these stories contain a lot of velar fronting of (ING) and drawl. When Stacy performs a “soapbox” style, (e.g. how the news sensationalizes weather unnecessarily), she does not sound very Southern, taking on an indignant tone and a persistent, “rapid-fire” intonation. More information about Stacy's recording of the actual stimulus sentence is discussed in Chapter 4.

The resulting data group is comprised of the interview speech of seven young women whose years of birth range across a period of ten years from 1977-1987. The participants and some details are listed below in Table 2.1. More detail about each speaker can found in Appendix I.

<b>Pseudonym</b>	<b>Year of Birth</b>	<b>Home Location at birth</b>	<b>Moved to area in</b>
Sierra	1987	Montgomery, AL	~1992
Kristina	1982	Huntsville, AL	~1985
Natasha	1981	North Carolina	~ 1988
Tiffany	1979	Riverton, AL	n/a
Beth	1978	North Carolina	~ 1981
Stacy	1978	Florida	~ 1986
Marcia	1977	Riverton, AL	n/a

*Table 2.1* List of Speakers

Clips of individual tokens were made for each speaker. Measurements were taken of words containing the target sounds in stressed syllables only. The target sounds were /i/, /ɪ/, /e/, and /ɛ/. Tokens with front vowels were gathered from sociolinguistic interviews with the seven women, with a goal of obtaining at least three tokens from each following environment category (e.g. voiceless category). The tokens that were actually available from the various following environments varied from speaker to speaker, since the interview questions were open-ended and speakers were allowed to speak freely. The actual number of tokens per following environment collected varied from one to ten, with a usual collection of five or six. Over half of the tokens were monosyllables, though there were several two-syllable words and a handful with three or four syllables, which were only included if the measurable part of the vowel was at least 0.04 seconds in duration (long syllables are not uncommon for multi-syllabic words in the South).

The recordings were also conducted with a mixture of equipment, but were limited to three recorders. The earlier recordings (2004-2005) were done with a PMD-430 Marantz audiocassette tape recorder (analog). Cassette tapes were then digitized onto compact discs as WAV files. Later (2007 and Stacy's stimulus in 2008), simultaneous recordings were done using a Digital Marantz PMD-660 recorder and, as backup, an Olympus Digital DS-40 Voice

Recorder. The Digital Marantz was set to record in MP3 format with a sampling rate of 48 kHz and a bit rate of 64 kbps. MP3 format was the only format that could be recorded using the memory card available at the lab from which the Marantz was rented. The MP3s were later decompressed into WAV format, though some data loss inevitably occurred and unfortunately could not be avoided.<sup>16</sup> The Olympus recorder was set to record on the ST XQ (stereo extra high quality sound recording) setting with noise cancelling function on low. STXQ records at a sampling rate of 44.1 kHz with an overall frequency response of 50-19000Hz. The Olympus records (without exception) in WMA (Windows Media Audio) format and all files were also later decompressed into WAV format. All interviews were conducted using either a Radio Shack Pro-301 Unidirectional Dynamic Microphone or a Sennheiser MD511 Dynamic Microphone. Microphones were supported on tables by a foam vibration absorber.

All recordings were converted to .wav format and underwent spectrographic analysis via the software program PRAAT (Boersma and Weenink, 2010). After having PRAAT perform LPC formant tracking, measurements were taken of the first and second formant frequencies, used to determine the vowel's degree of height and location on the front/back dimension, respectively. Various techniques were used to measure the vowels' formants appropriately. The "time step strategy" was usually set to a fixed time step of 0.001 so that PRAAT computes formant values for every millisecond. PRAAT formant settings were adjusted in those cases where the tracking did not appear to reasonably follow the visible formants. Maximum formant was always set at either 5500, 5000, or 4500 and the number of formants calculated was always

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<sup>16</sup> For the purposes of the research in this dissertation, there was no noticeable difference between analog → WAV and mp3 → WAV in ability to see formants or have Praat measure them. The noise level of the recording environment (e.g. talking, dishes banging, birds chirping, etc.) had the greatest effect in terms of compromising quality.

3, 4, or 5. Because each vowel was measured one at a time (and not via automatic script), the tracks of the LPC analysis could be verified against the observed formants in the wideband spectrogram. Though the settings recommended for women are usually 5 formants with a maximum of 5500 Hz<sup>17</sup>, the recordings used for this study typically performed best (i.e., PRAAT's tracking matched actual formant lines) with a setting of 5000 Maximum formant value and 4 formants. The exception was Beth, whose formants were usually best located using a 4500 Maximum formant value setting.

For completely steady state (nearly level horizontally<sup>18</sup>) formants, the measurement was taken at the midpoint of the vowel's duration, unless it was preceded or followed by a liquid (/l/, /r/) or semivowel (/w/, /j/). In the latter cases, careful attention was paid to F3 in the liquids to assess dips at the end or beginning of the vowel and measurements were taken a millisecond or more away from such dips. Attention was paid to severe and/or sudden changes in F1 or F2 for the vowels followed by semivowels. If a vowel's formants contained an obvious peak and/or valley where it was arguably a better representation of the vowel's quality, the formant measurements were taken at that point. Labov et al. state, "A point of inflection indicates the moment when the tongue stops its movement away from an initial transition into the vocalic nucleus and begins moving away from the nucleus...." (38).

No measurement was taken if one or more of the following occurred: the formants were neither clear to the eye nor was the software able to analyze; the vowel was so creaky (due to voice quality) that the formants were questionable or non-existent; the vowel was less than 0.04

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<sup>17</sup> E.g., [http://www.fon.hum.uva.nl/praat/manual/FAQ\\_\\_Formant\\_analysis.html](http://www.fon.hum.uva.nl/praat/manual/FAQ__Formant_analysis.html)

<sup>18</sup> Assessments of horizontal level were not merely evaluated impressionistically, but rather by having Praat show a horizontal line at a nearby Hertz value. If most or all of the formant track touches the same horizontal line, the formant can be said to be horizontal, or "steady".

ms in duration; or too much interference occurred from environmental noise or surrounding consonants or semivowels.

After recording the formant values of each vowel, I used MS Excel to create a reversed value graph in order to view the placement of the vowels in acoustic space. A separate graph was created for each speaker. Normalization was not necessary in this particular case since the goal was to determine how each speaker's vowels behaved in relation to other vowels within her own system.

## 2.4 RESULTS OF ACOUSTIC STUDY

The charts resulting from formant measurement displayed differing shift patterns among young women in the community. Figures 2.1-2.7 below display the front vowel systems of each of the seven women which are displayed in order of speakers according to the top-to-bottom order (from youngest to oldest) in which they appear in Table 2.1. No environment was excluded except in the following environment categories of # (word boundary), /r/, and /n/ (see below). For each chart, the minimum values for F1 and F2 are 300 Hz and 750 Hz, respectively, so that the plots are slightly enlarged making viewing easier. For these charts, the primary indication for a vowel shift would be the relationship of the tense vowels to their lax counterparts. The tense vowels should become less peripheral (less fronted in this case) and lower. The lax vowels should become more peripheral (more fronted in this case) and raise. Since /e/ shifts to a lower and more central space, resembling a diphthongal (ay) to a large extent, the reference(s) of one or two (ay) diphthongs are included to show how much /e/ is encroaching into (ay) territory, if at all. Since (ay) is so variable in the community, averages would not be as useful as one or two tokens that were impressionistically plainly diphthongal. For a few of the women, it was not hard

to find more than one diphthongal (ay), so two different ones were included to add to the picture somewhat. Natasha (Figure 2.3) is the only one for whom I could not find even one strongly diphthongal (ay), though the inclusion of one I considered “close” is still useful to provide a general idea. Comparing an (impressionistically) diphthongal (ay) helps show whether /e/ is lowering or whether the apparently reversed positions are actually due to the raising of /ε/, while /e/ remains relatively static.

High front vowels are indicated below by triangles and mid front vowels are indicated by circles. The tense vowels are black and the lax vowels are two shades of gray (since these women often have the lax vowel adjacent in their systems). Each chart includes a mean Hz value for each of the four vowels, indicated by a larger version of the same symbol, encircled by the area of standard deviation.

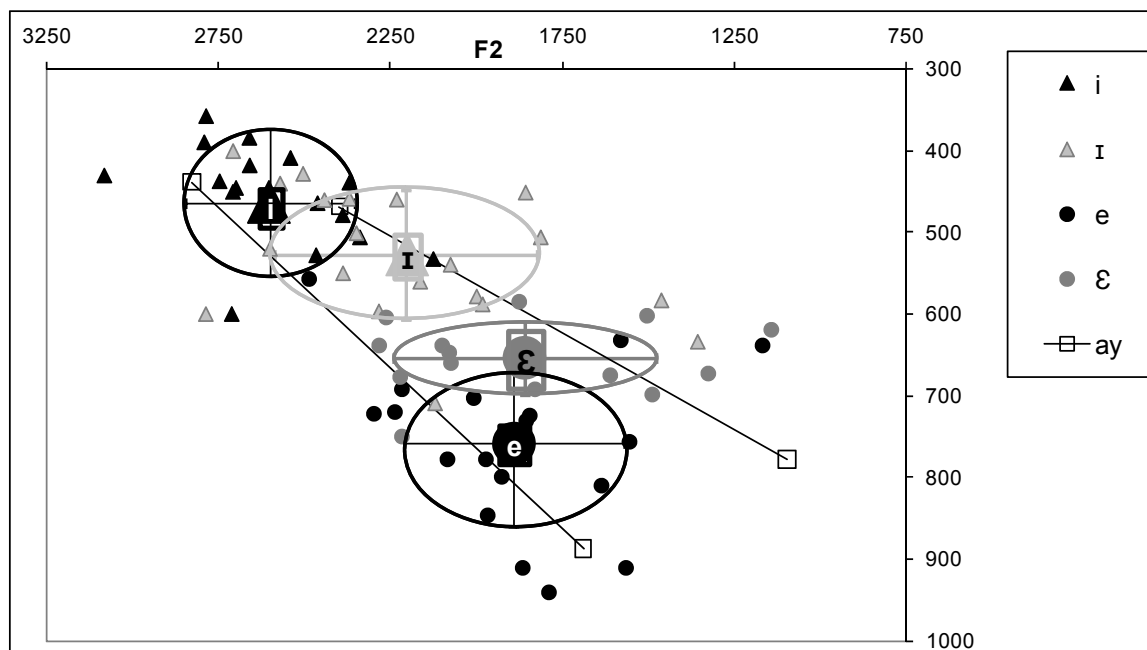


Figure 2.1 High and mid front vowels: Sierra, b. 1987.

Sierra has only a handful of shifted high front vowels. Aside from her very lowered token *wheel*, located next to the average for /ɪ/, she has only a few other slightly lowered ones. However, Sierra has some extremely high /i/ tokens such as her triphthongal *kid*<sup>19</sup>, the nucleus of which is far above the average for /i/. Overall, her high front vowels do not show strong shifting, which is in contrast to her mid front vowels. Sierra's mid front vowels are very shifted, with several tokens in or very near the territory of at least one nucleus of diphthongal (ay). Her mid front vowels have almost completely reversed their relative positions.

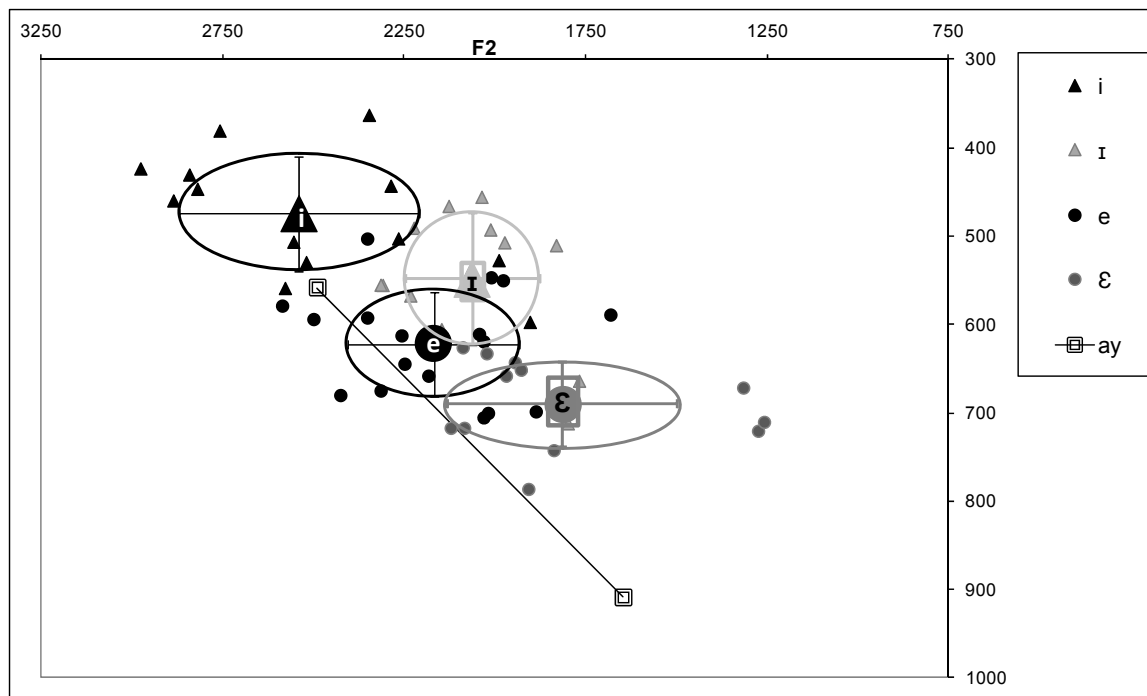


Figure 2.2 High and mid front vowels: Kristina, b. 1982.

<sup>19</sup> See Chapter 3 for a discussion of these types of vowels.

Kristina's vowels are not very shifted, though she has two lowered /i/ tokens and has a few mid vowel tokens (both tense and lax) that have shifted. Kristina's two very low /i/ vowels precede /l/ (*really*), an environment in which the tense and lax vowel pairs tend to merge in the South (see above). Along with Stacy (below), Kristina is one of the only two women out of the seven whose mean /e/ value is higher and more peripheral than her mean /ε/ value.

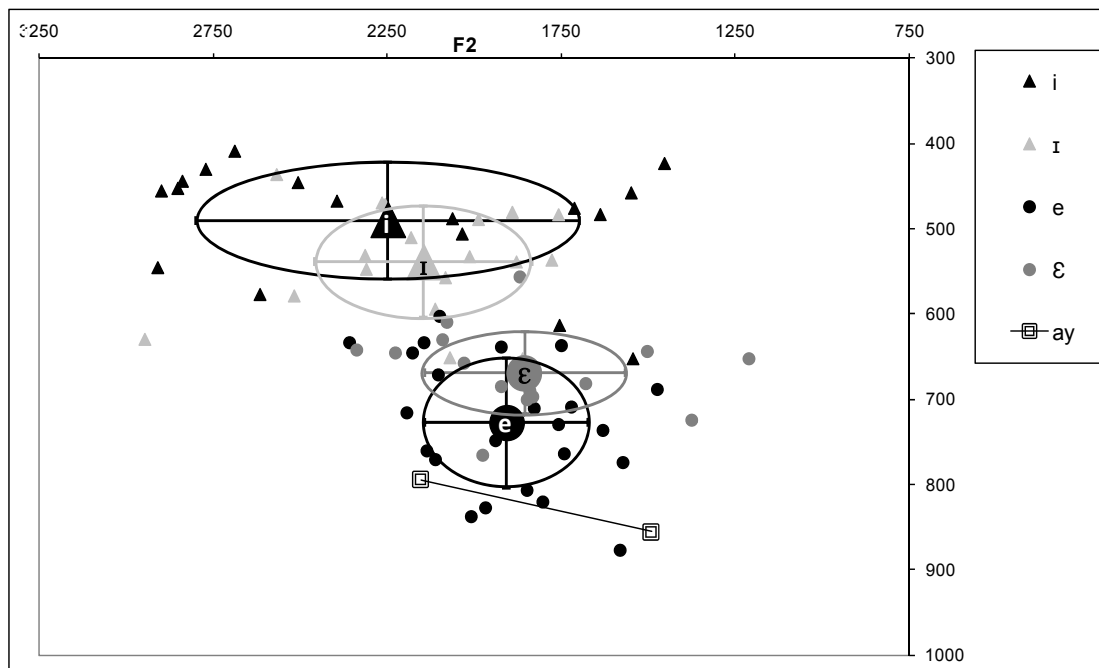


Figure 2.3 High and mid front vowels: Natasha, b. 1981.

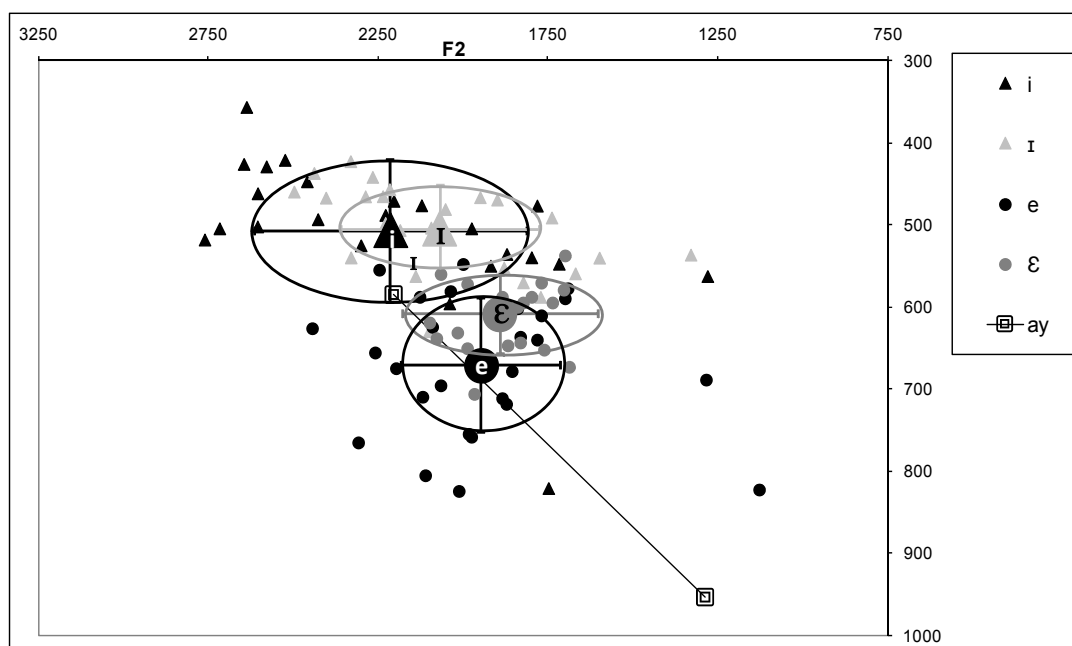


Figure 2.4 High and mid front vowels: Tiffany, b. 1979.

Natasha and Tiffany, Figures 2.3 and 2.4, seem to have the most shifted high front vowels of the seven women. Even then, Natasha's /i/ vowels tend to remain higher than the /ɪ/ vowels. That is, her shift has primarily been a shift in F2, the front/back dimension. In terms of the SVS, this would primarily be an indicator of whether or not the vowel's peripherality is being affected by the shift. Tiffany, on the other hand, has what seems to approach a merger. However, even her individual tokens reveal that /i/ slightly favors a higher and more fronted position than /ɪ/. Tiffany's /i/ outlier is *clean*, which, to my ears, rhymes with *plane*.<sup>20</sup> Natasha's mid vowels share a good deal of acoustic space, though her /e/ vowels are lower on average. Natasha also has several tokens in her low vowel space, with at least one *training* side-by-side with her weak

<sup>20</sup> As a fascinating side note, she is talking about something in a negative light and mentions her intention not to seem rude or snobbish.

diphthong, *white*. While Tiffany definitely has /e/ lowering to some extent, her apparent rotation appears partly due the raising tendency of her /ε/ vowels, since many of her /e/ tokens are not close to the general area of her low vowel space.

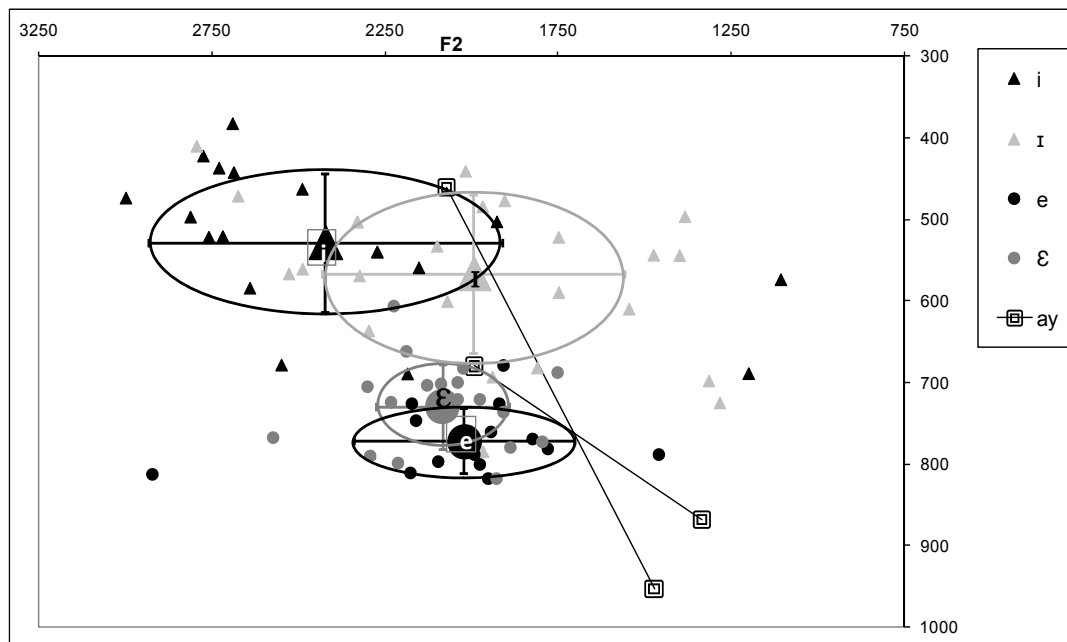


Figure 2.5 High and mid front vowels: Beth, b. 1978.

Beth's high vowels are wide-ranging, but are not in particularly surprising locations, though her /ɪ/ tokens are often very central. Listening to the vowels confirms the centralized character of the vowels in these tokens, sounding somewhere between /ɪ/ and /ʌ/. Her two /i/ outliers are the two tokens of /i/ before /l/ (*wheelers* and *feel*). In general, Beth's mid front vowels are almost merged. However, the mean value for /e/ is still slightly lower than that of /ε/, revealing that she, too, is participating in the mid front vowel rotation.

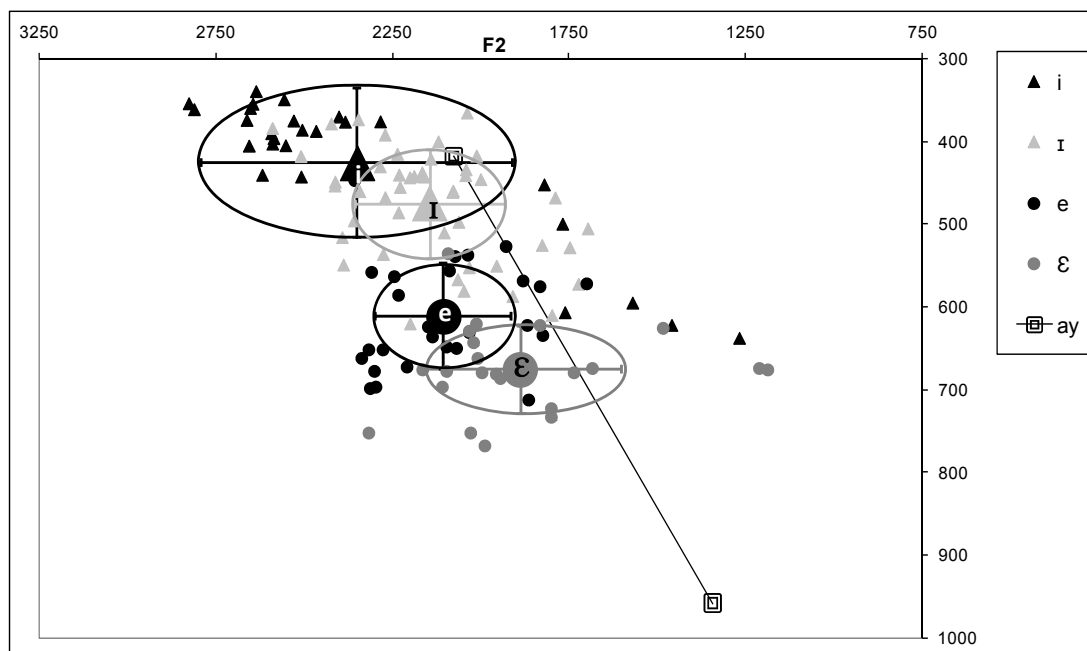


Figure 2.6 High and mid front vowels: Stacy, b. 1978.

Like Kristina, Stacy is not heavily participating in any part of the front vowel shift of the SVS, though she periodically shifts tokens. All of her tokens occurring before /l/ are lowered: *feels*, *really*, *real*, and *wheel*. She also has two other tokens below/more central than the range of standard deviation for /i/: *screaming*, and *least*. Stacy's very raised /ɛ/ token is *dead*, and her very lowered and central /e/ token is *way*.

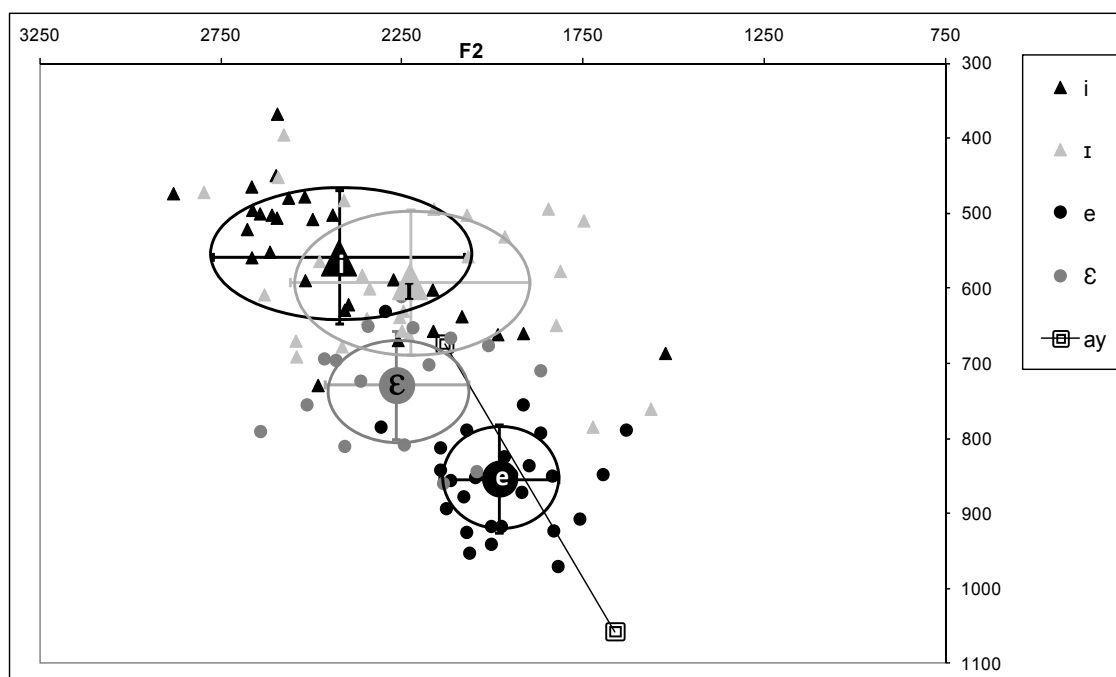


Figure 2.7 High and mid front vowels: Marcia, b. 1977.

Marcia has many shifted high front vowels, though the mean value demonstrates that her tense high front vowels are still a little higher and more peripheral. By contrast, the relative positions of Marcia's mid vowels are nearly categorically reversed except for one high token, *later*. Like the others, Marcia's outlier /i/ tokens precede /l/.

Natasha, Tiffany, and Marcia are the most advanced in terms of shifted high front vowels. However, even for these women, there are a larger percentage of unshifted tokens than there are shifted, as revealed by each woman's higher mean for the tense high front vowels. Also, while clusters of high front tense vowels emerge, high front lax vowels are more scattered. Based on these results, we can assume that the high vowel rotation is not robust in this community among young women. While there is variable raising of some high lax vowels, lowering of the high vowel /i/ is weak at best. The exception is /i/ before /l/, which is lowered for

all of the women, though whether /ɪ/ and /i/ are truly merged in this area has not yet been explored (see above, Section 2.2.2).

What is most striking is the high participation rates in the mid front vowel shift. While all of the speakers participate at least slightly in the mid front vowel shift, most participate to a large degree or fully. Mid vowel rotation occurs frequently among most of these seven women, with all women having at least an occasional lowered /e/ vowel. In the next section, an application of this knowledge toward pattern identification will be explored.

## 2.5 INFORMING A PERCEPTION STUDY

What remains to be determined from the above results is how they may best inform a study of the perception of a Southern accent. Since the feasibility of the study necessitates a manageable number of variables, it would be beneficial to retain one representative feature of the SVS by choosing the most prominent shift in the most prominent environment. In keeping with the spirit of the results of the acoustic study, it can be concluded that data – at least for this geographic area – point to a more widespread and less variable participation in the mid front vowel shift than in the high front vowel shift. Therefore, the perception study will not include the variable of shifted versus unshifted high front vowels. There is some precedence for such an idea represented by a comment in Thomas (2008) where he describes the lowering of the nucleus of a word like *face* as one of the features “that typify the speech of Southern whites” (322) or by Fridland’s increasing (e.g. 2008; Fridland and Kendall, forthcoming) references to the high front vowel shift as happening only “sometimes” (Fridland and Kendall, forthcoming, 5, manuscript) or “in some Southern dialects” (2008, 69).

In terms of choosing the most felicitous environment for the mid front vowel variables, it is necessary to revisit the data and determine if any preceding or following environments seem to correlate with more shifted vowels. For SVS, shifted vowels may be measured via the two dimensions of height and backness, represented in acoustic terms by the measurements of the first and second formants. Preceding place of articulation may have a phonetic effect on how front or high the vowel is articulated, whereas following manner such as voicing, nasalization, and liquids all have effects on aspects (e.g. patterns of monophthongal (ay), raising before nasals, merger before /l/, etc.) of Southern accents. There is a great deal of variation for the females used in this study, and examining more factors can help illuminate patterns.

For preceding environment, mid vowel tokens were coded according to place of articulation, with categories based on Ladefoged and Maddieson (1996). However, some consonants were pulled out of their articulatory category. Due to the special nature of /r/ articulation, it was given a separate code. Semivowels are also more likely to affect the following vowel (e.g. the similarities shares between /j/ and /i/ could more easily make the following vowel higher and/or fronter. Preceding environment codes were the following:

- Labials = B (e.g. *pet, better, make*)
- Coronals = C (e.g. *tape, play, chess, safe, name*)
- Dorsals = V (e.g. *gave, kept*)
- Glottal = H (e.g. *hate, hell*)
- Rhotic = R (e.g. *rail, red*)
- Beginning of word = # (e.g. *egg, ate, aim*)
- W semivowel = W (e.g. *way*)

- Y semivowel = Y (e.g. *yell*)

Separate charts were created to examine possible effects from following environment as well. For following environment, tokens were coded according to the following schema:

- Voiceless obstruents = t (e.g. *lip, hate, truck, guess*)
- Voiced obstruents = d (e.g. *grab, laid, leg, jazz*)
- End of word or “pause” = # (e.g. *way*)
- Nasals = n (e.g. *him, pane, hang*)
- Lateral (l) = l (e.g. *hell, mail, well*)

Words containing the following environment of American flap (for example, *waiter*) were coded into the “d” category. Words containing a hiatus immediately following the sound in question (for example, *playing*) were excluded from the data. There are two cases in which some environments may appear to be missing in a few of the charts below. First, in some of the interviews, there were no tokens produced in certain environments. This happened most frequently with /l/ and happened even when the length of the total interview exceeded one hour. Second, some of the vowels are not supported in some environments. English generally disallows lax /ɪ/ and /ɛ/ to stand alone (without a coda) in a final syllable. In addition, there is no phonemic distinction in lax or tense vowels before /r/. In other words, [her] and [her] both mean *hair* whereas [hɛl] and [hel], for example, are different words (even if they are near homophones in some dialects, as discussed above). For this reason, tokens with a following environment of /r/ were deemed unhelpful in determining SVS shift and were not included in the data. Last, in Southern American English, the phoneme /ɛ/ does not reliably occur before /n/. The realization

of pre-nasal /ɛ/ as [ɪ] is well known and referred to as the pin~pen merger. This merger is evidenced in all of the interviews. Even so, a lack of lax counterparts does not prevent shifting in the tense vowels. *Pain*, for example, is not prevented from approaching *pine*, even if no *pen* tokens with lax /ɛ/ are found. In the same way, *pay* may still shift toward *pie*, even though \*/pɛ/ does not exist. Because of this, the graphs below do not depict lax vowels before ‘#’ or ‘N’, though the graphs do depict the tense vowel counterparts.

For the charts below (Figures 2.8a-2.14b), a black symbol indicates a tense mid front vowel and a gray symbol indicates the lax vowel. Averages are provided only when the category contains more than one token. The large shapes used for averages match the shapes for those tokens of the same environment. Since the data was collected from free-flowing speech (which is not readily predictable), most of the women are missing tokens from various environments. The analyses of each chart are based only upon available data. The below charts can show shift at a glance based on the relative positions of the tense and lax vowels, represented by black and gray symbols, respectively. Ordinarily, the black symbols would be located *above* the lighter gray ones. In an SVS shifted system, many or all black symbols may be located *below* the gray tokens and/or vice-versa for the gray tokens. In addition, shifted lax vowels may be in a more fronted (or peripheralized) position and tense mid vowels may be backed (in addition to their lowering).

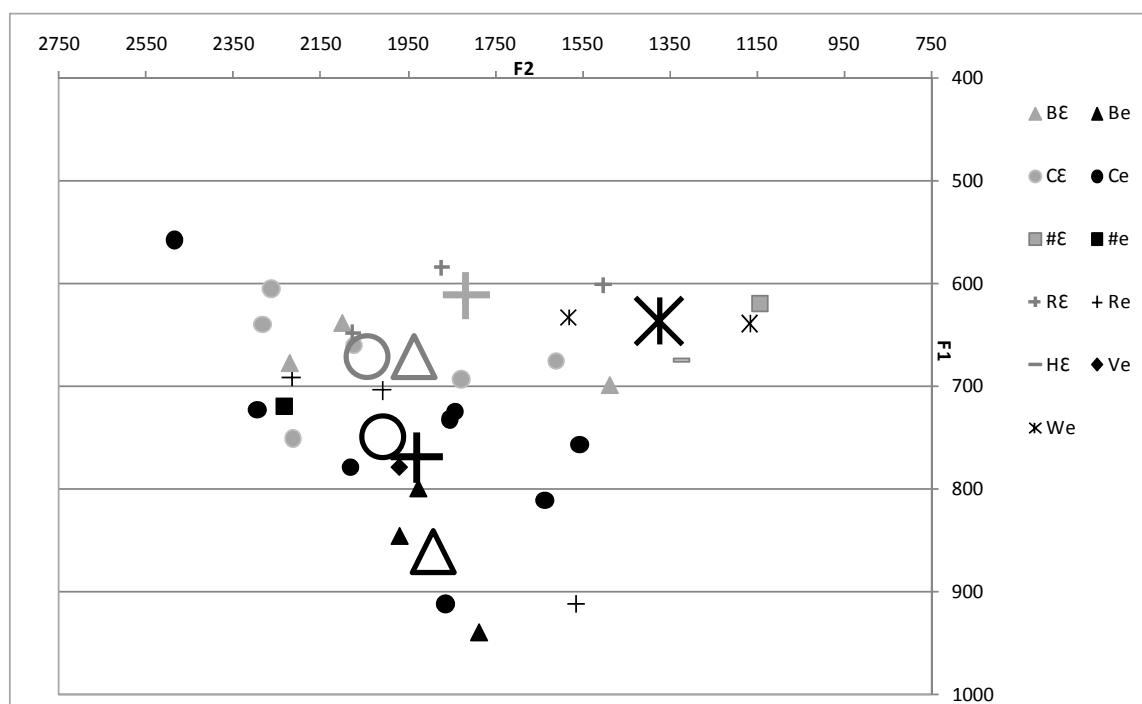


Figure 2.8a Sierra's mid vowel tokens sorted by preceding environment

Sierra's mid vowel sub-system is shifted, as indicated by the fact that her / $\epsilon$ / vowels are higher than her /e/ vowels in acoustic space. Using the location of the means, the most favorable preceding environment for her very shifted / $\epsilon$ / vowel is labials, though the lowest token occurs with a preceding /r/. Lowered /e/ also occurred with preceding coronals and with her one token preceded by a dorsal (the diamond adjacent to the large dark cross). There is little difference in these three categories in terms of F2. This suggests that, in her case, the preceding place of articulation that affected fronting or backing of a vowel was /w/, showing that the /u/-like semi-vowel may be coloring the / $\epsilon$ /. She additionally has one very back token preceded by a glottal consonant (/h/).

The averages for Sierra's lax vowel tokens are located in similar acoustic space, though a preceding /r/ may correlate with slightly higher /ɛ/ and coronals may correlate with a more fronted /ɛ/.

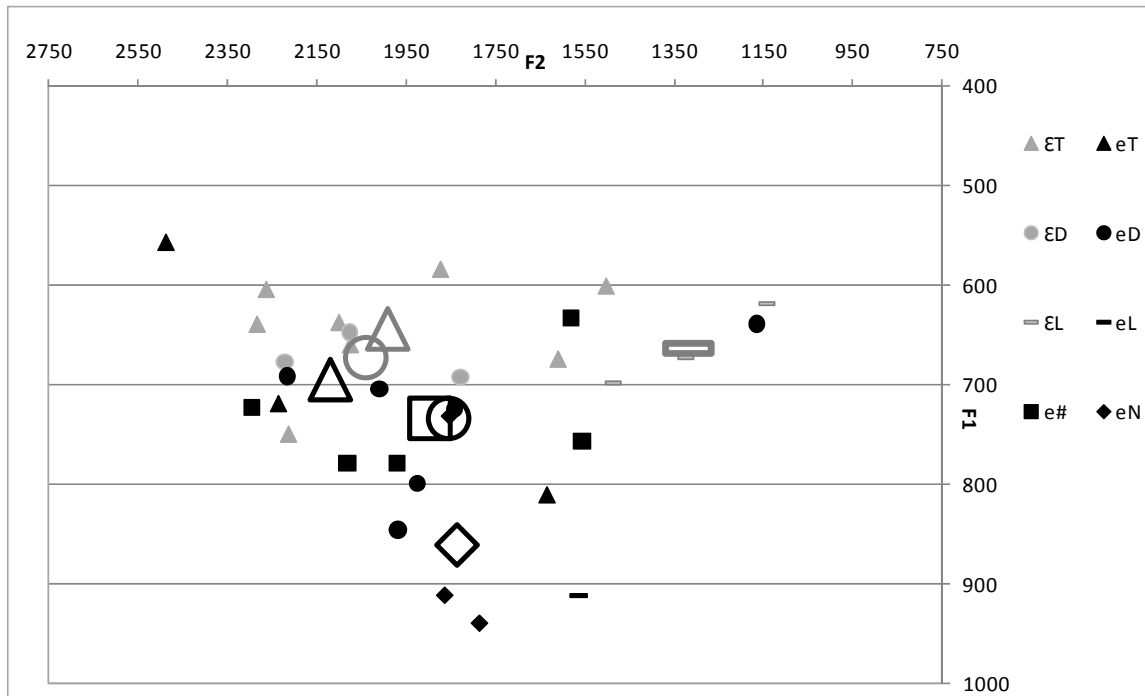


Figure 2.8b Sierra's mid vowel tokens sorted by following environment

Nasals and one /l/ (*trailers*) occur following the most shifted /e/ vowels for Sierra (Figure 2.8b), while voiceless following environments prompted less shifted vowels. Following environment does not play a great role for the /ɛ/ tokens measured here, though those with a following /l/ environment tend to remain more central than the others.

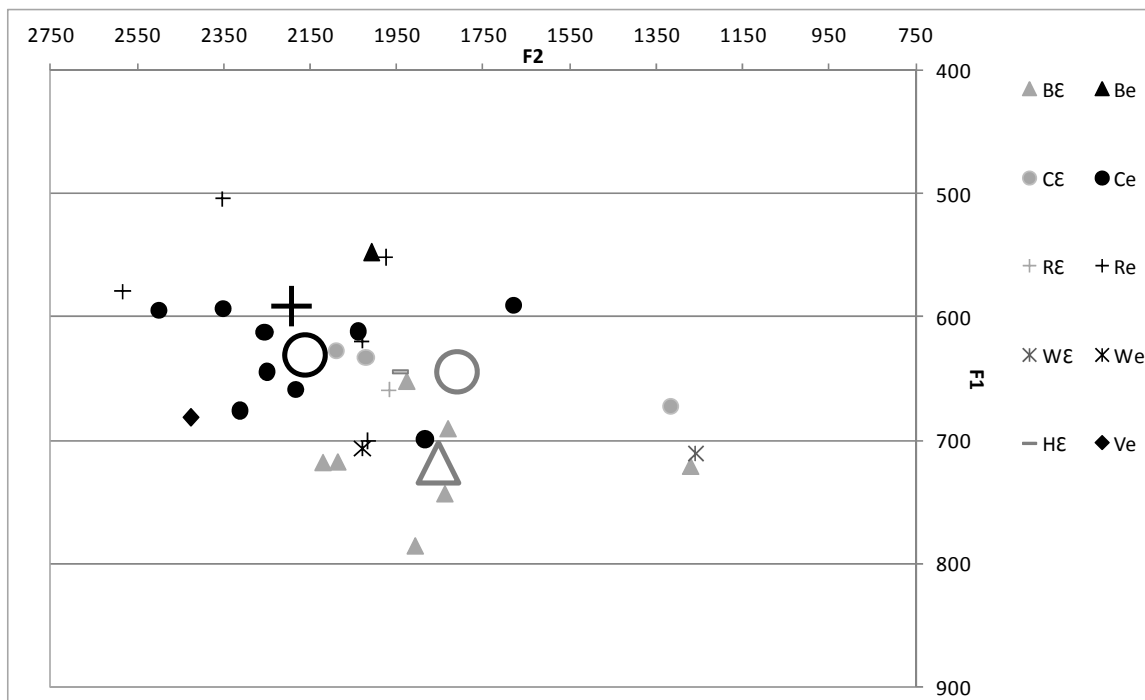


Figure 2.9a Kristina's mid vowel tokens sorted by preceding environment

Though Kristina does not have many shifted mid front vowels, her lax vowels are slightly more raised after coronals than after labials. Her few lowered /e/ vowels near the average for for labial before /e/ have three different preceding environments (W, R, C). The three lowered /e/ tokens are all followed, however, by voiced consonants (D and N) and the mean for /e/ with voiceless following environment stands apart – higher and more peripheral – from the cluster of other means (Figure 2.9b). Even so, for Kristina, her lax mid vowels are much more shifted when they occurred before voiceless obstruents, demonstrated by the higher mean. Like Sierra, Kristina's tokens with following /l/ environment cluster together more centrally than tokens with other environments.

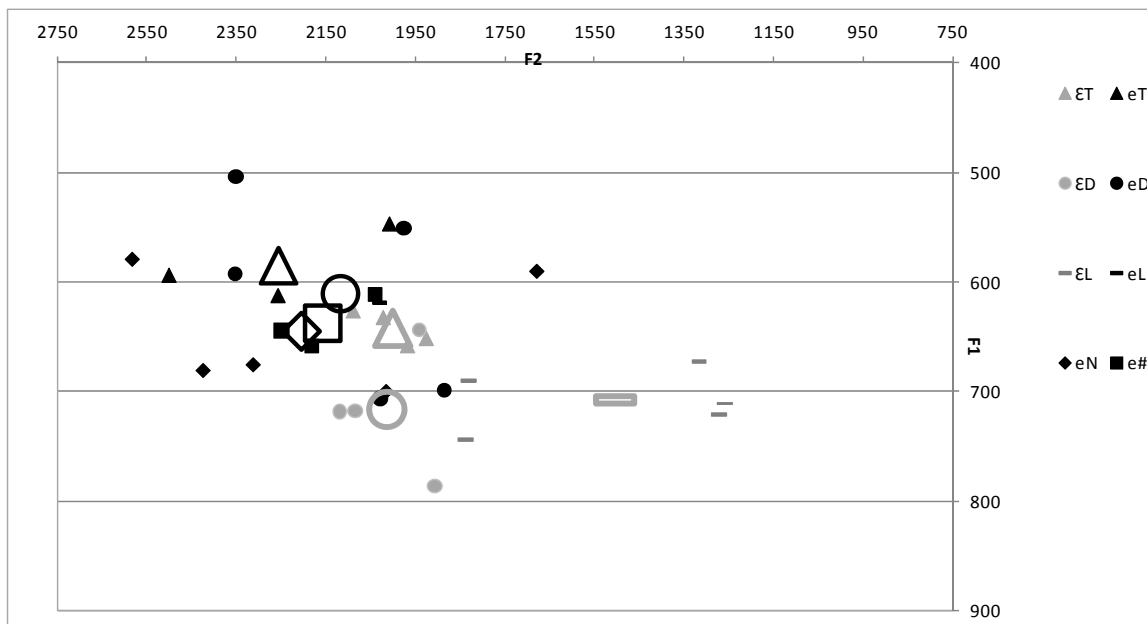


Figure 2.9b Kristina's mid vowel tokens sorted by following environment

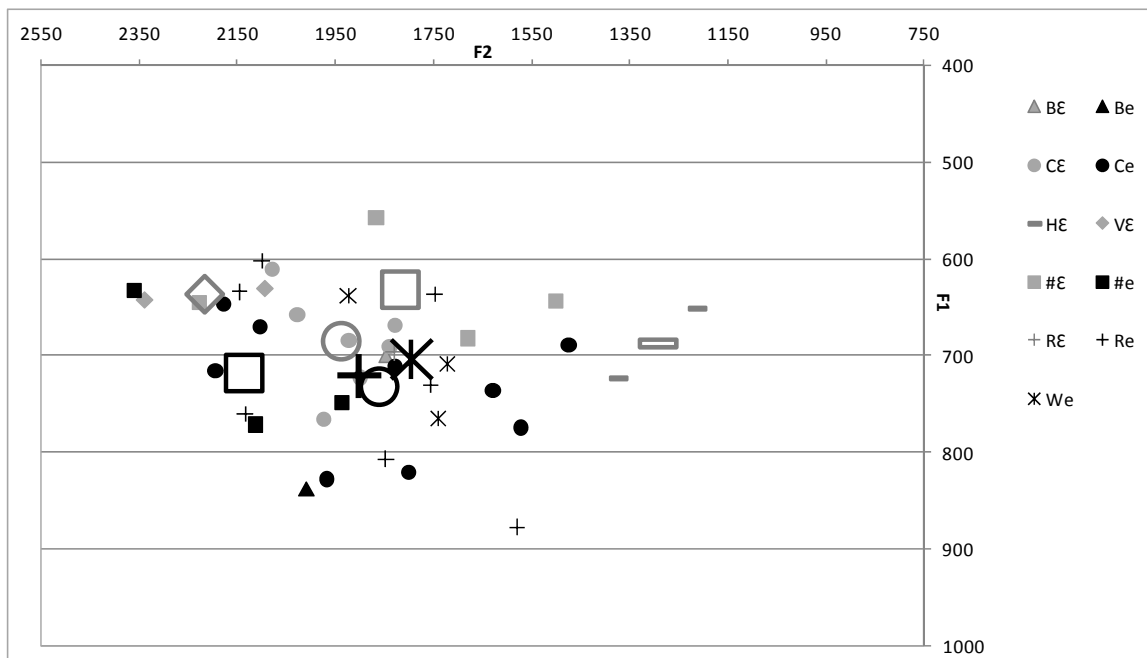


Figure 2.10a Natasha's mid vowel tokens sorted by preceding environment

Natasha has a shifted mid vowel system, though her tense and lax mid front vowels overlap a good deal in her vowel space. The most shifted /e/ vowels are preceded by coronals

and /r/ and the least shifted are those that are word-initial. By contrast, her most raised /ε/ vowels are word-initial or preceded by velars. The latter environment, velars, also precedes the most fronted /ε/ vowels, suggesting that the velar's back (dorsal) articulation is not having a great effect on the following vowel.

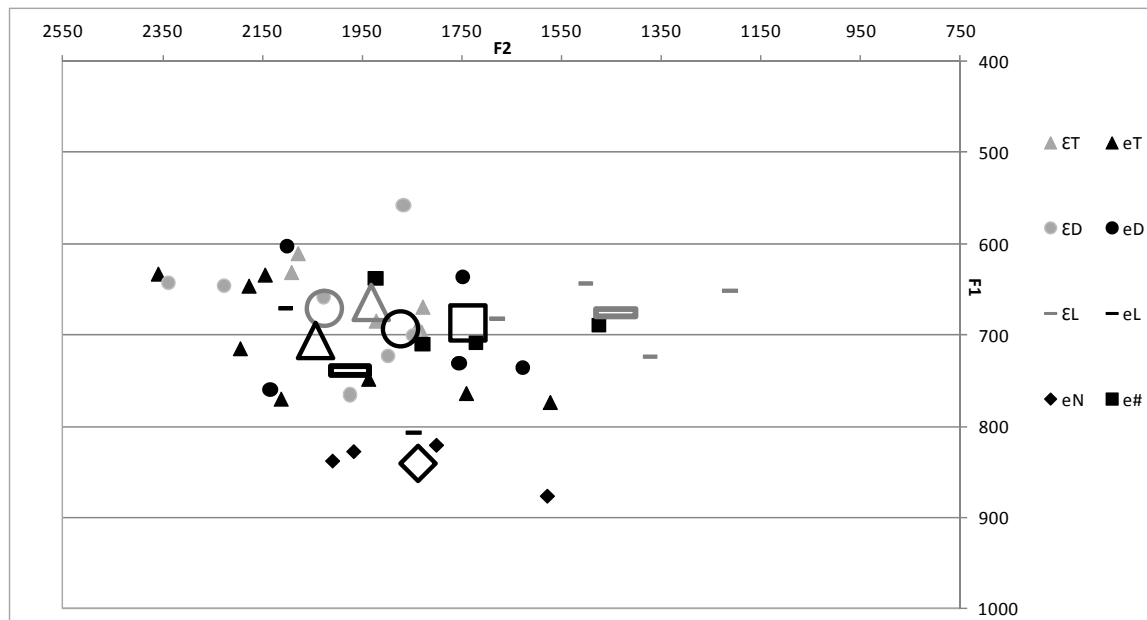


Figure 2.10b Natasha's mid vowel tokens sorted by following environment

Figure 2.10b shows that Natasha's most lowered (shifted) /ε/ vowels are followed by nasals, with voiceless, voiced, and word-final environments relatively even on the F1 dimension but moving gradually more back, respectively. Apart from the clustering of following /l/, patterns with /ε/ are not easily visible with this dataset, since her /ε/ vowels followed by voiced obstruents have only a slight tendency to correlate with a more shifted position than voiceless.

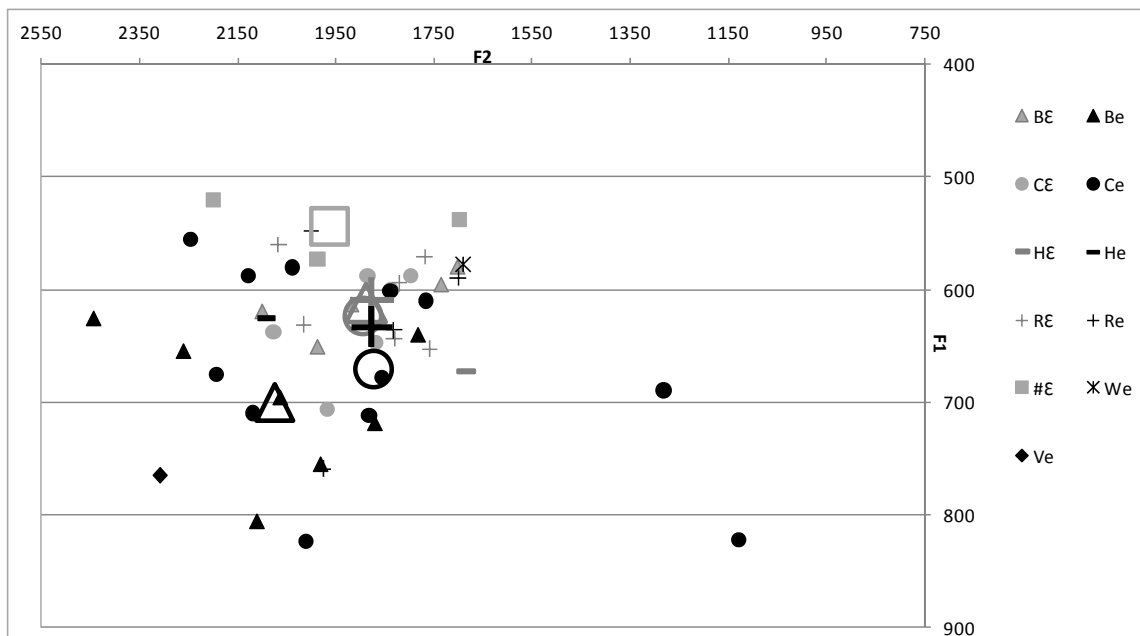


Figure 2.11a Tiffany's mid vowel tokens sorted by preceding environment

Tiffany's most shifted /e/ vowels follow coronals, though this is true of her least shifted /e/ vowels as well. More interesting is that both of the very backed vowels were preceded by the cluster /pl/: *play* and *explain*. Both tokens impressionistically seem to have an (ay) vowel. (Her other very lowered (>800hz), less backed tokens are *May* and *neighbor*.) The least shifted tokens categorized in the coronal category are all alveolar stops with two tokens of *day*, and one *tails*. (Her only other token with an alveolar stop before the vowel is *take*, much lower in phonetic space, adjacent to the large triangle symbol for the mean labial value.) Tiffany's lax vowels are most shifted word initially, with the other preceding environments' means clustered in nearly the same location.

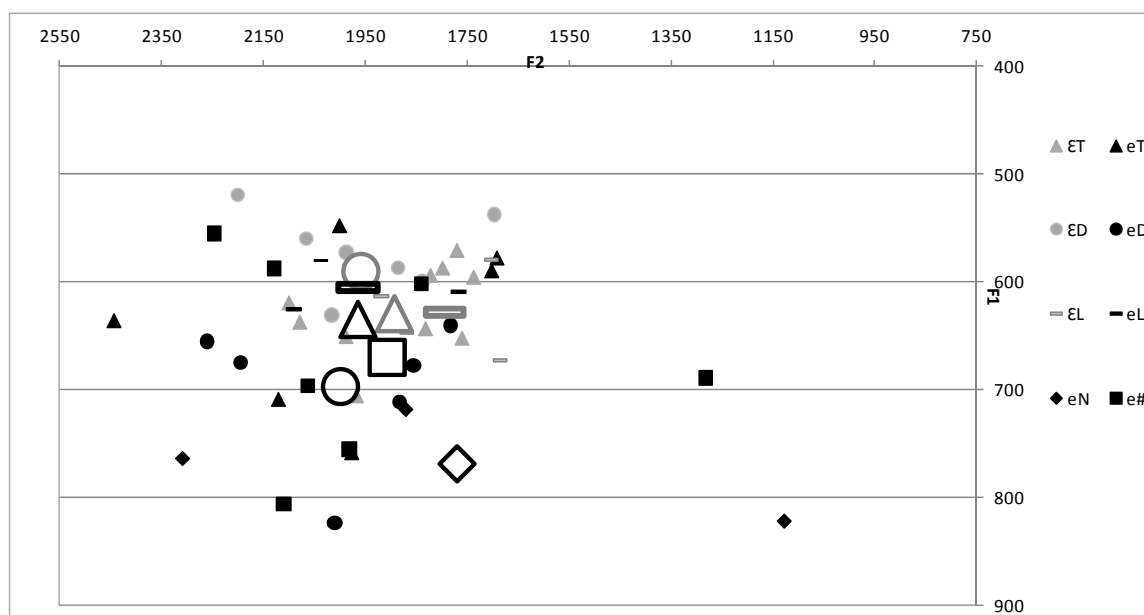


Figure 2.11b Tiffany's mid vowel tokens sorted by following environment

Figure 2.11b shows that, for Tiffany, vowels preceding nasals and voiced stops (i.e., voiced consonants) tend to be very lowered. Note that word-final /e/ appears all over; these are likely better categorized according to preceding environment since they variously belong to clusters of labials, and two different coronal groups of alveolar stops and preceding /l/ (as discussed above). The following environments for Tiffany's /ε/ tokens suggest that following voiced environments may contribute to a more raised lax vowel.

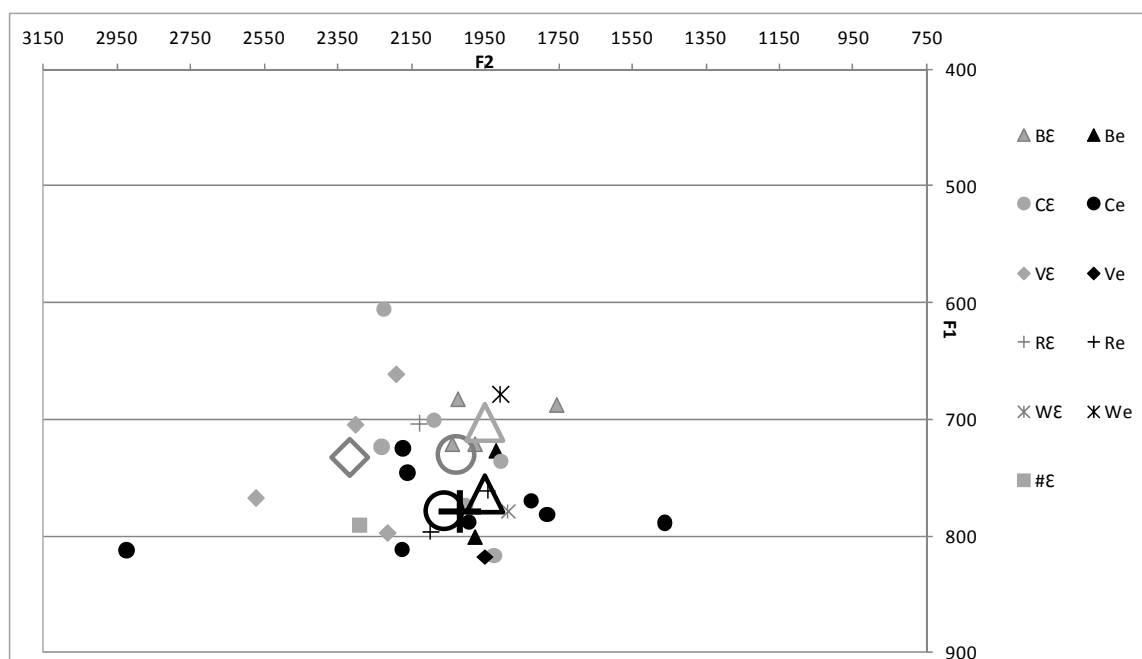


Figure 2.12a Beth's mid vowel tokens sorted by preceding environment

Though Beth's /ε/ vowels are often higher than /e/, her mid vowel space is tight, suggesting at least a partial merger. Beth's /e/ vowel preceded by coronals can be very low, but the wide distribution implies coronals do not have a systematic effect on following /e/ vowels. There are too few tokens in the labial, nasal, and rhotic categories to draw solid conclusions, though all of the tokens with these in a preceding environment are clustered in a very low position, revealing that they at least do not *impede* lowering and backing of /e/. (Relevant to the stimulus in Chapter 4, both of the lowered tokens with preceding /r/ are instances of *grade*, which is the carrier word for the shifted vowel used in the survey.)

Beth's lax vowels do not pattern robustly according to preceding environment and the means all hover around similar F1 values. She has one very raised /ε/ token, *legs*.

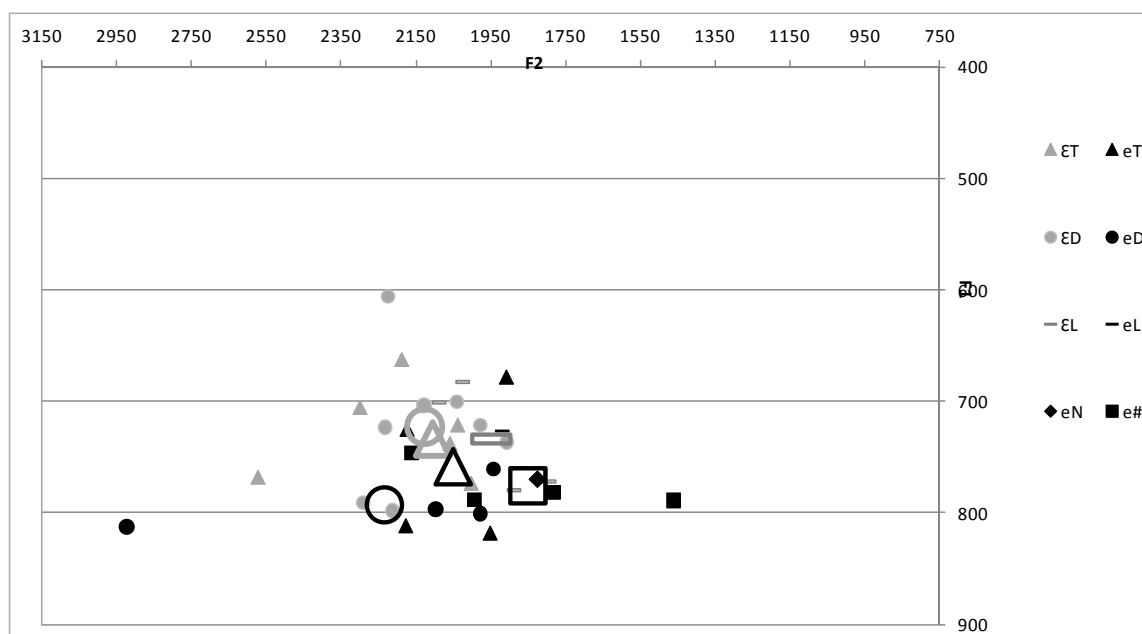


Figure 2.12b Beth's mid vowel tokens sorted by following environment

Following environment does not have a readily noticeable pattern on Beth's /e/ vowels, though tokens with word-final /e/ may favor more than voiceless and voiced. She also has a very fronted and low *stayed*, with a vowel nucleus that sounds a bit like [æ']. The raised /ε/ vowel mentioned above occurs with a following voiced obstruent, though her /ε/ vowels are generally raised in all environments.

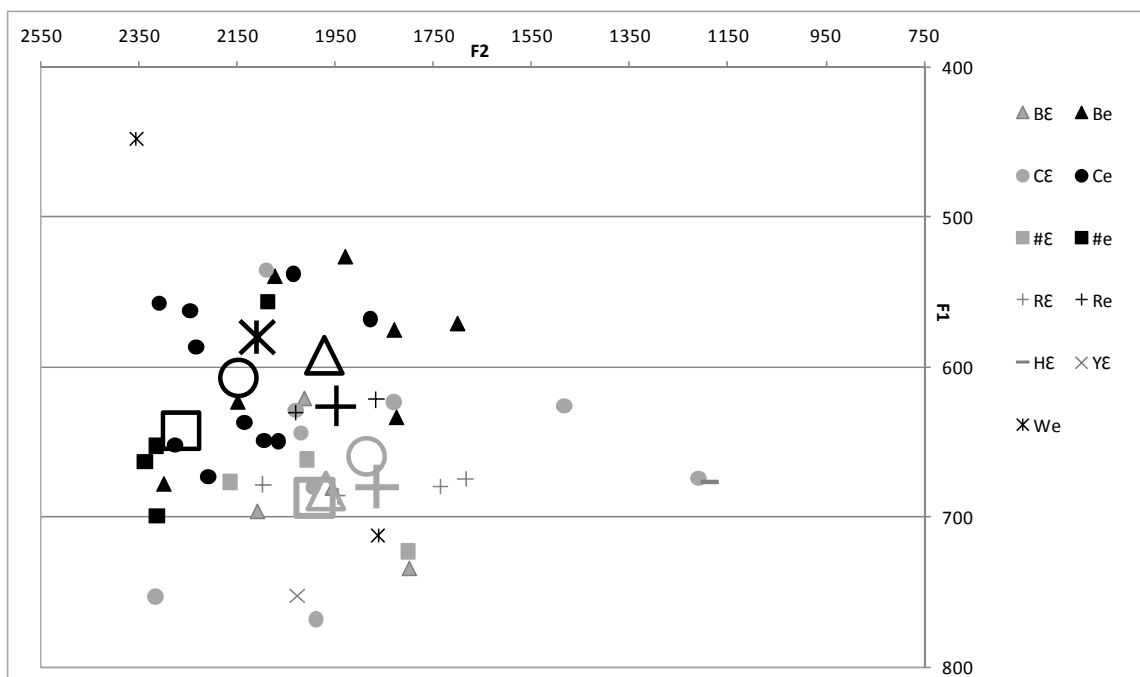


Figure 2.13a Stacy's mid vowel tokens sorted by preceding environment

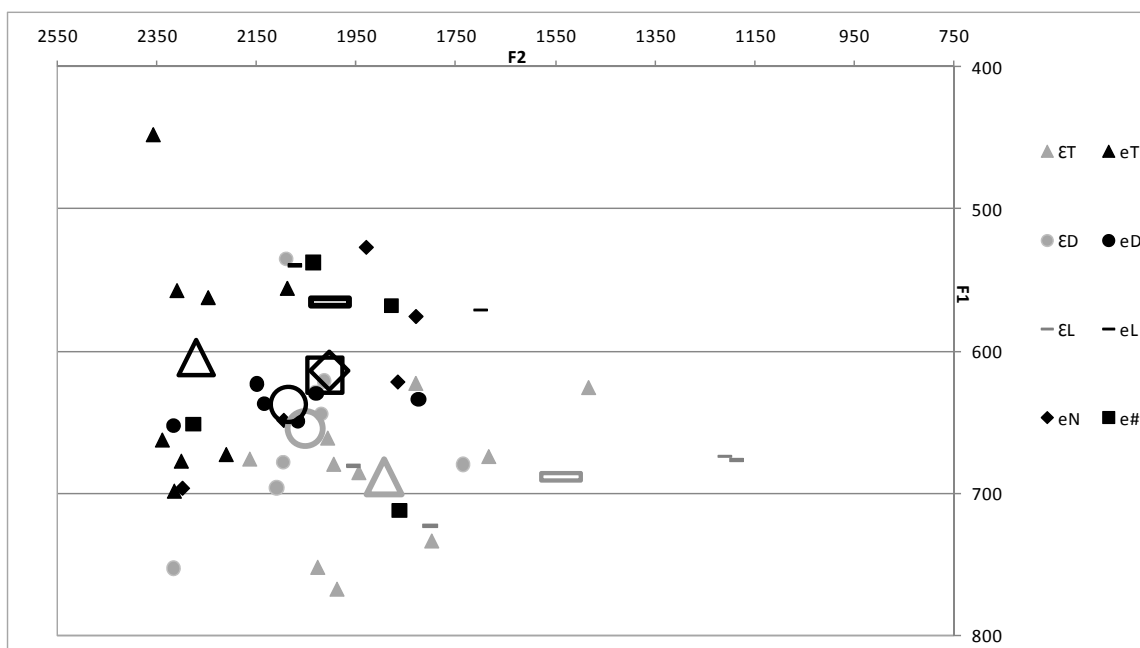
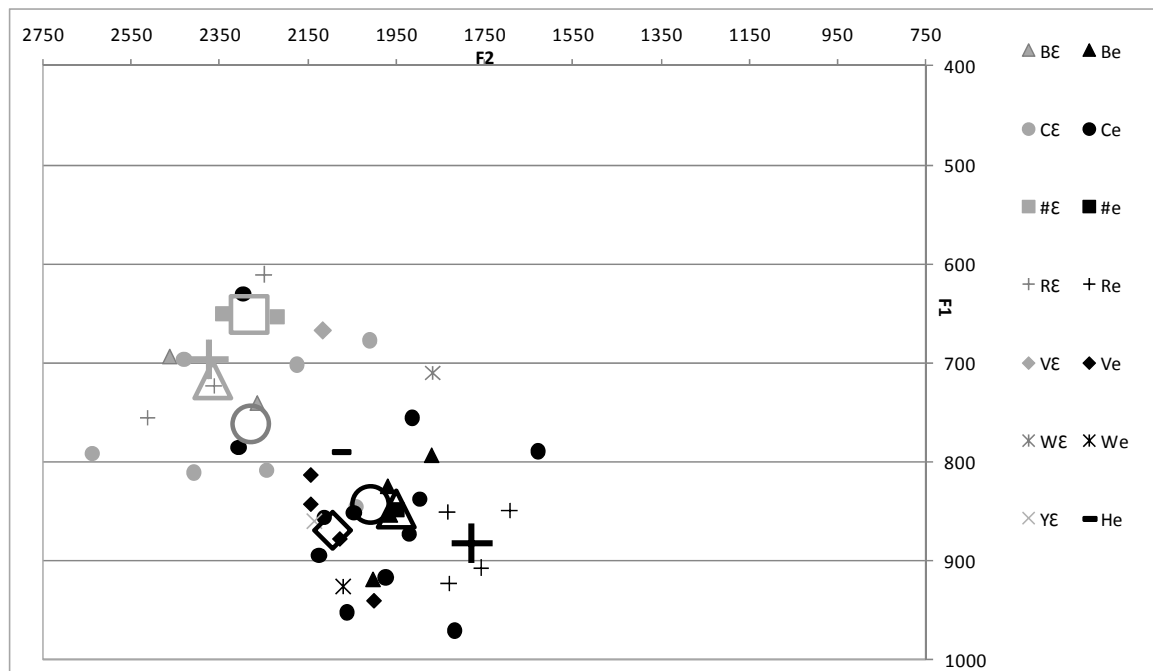


Figure 2.13b Stacy's mid vowel tokens sorted by following environment

Stacy has very few shifted tokens, though she has a couple of /e/ tokens preceded by coronals and a token preceded by a labial mingling in the same acoustic space as her /ε/ tokens (Figure 2.13a). Additionally, both of her tokens with preceding /r/ (cluster) environments (*brainiac* and *crazy*) are some of the lowest. She also has one low outlier, *way*. Looking at her lax mid front vowels, she has one very shifted (raised) token, *dead*, and, more generally, her /ε/ tokens before voiced obstruents tend to be higher than in other environments. (Stacy also has a raised /e/ vowel in *waste*.) Given her small degree of shifting, Stacy's patterns may carry less weight, though her patterns can still contribute to knowledge of which environments affect shifting (e.g. raising) more than others.



Figure

2.14a Marcia's mid vowel tokens sorted by preceding environment

In Marcia's very shifted system, the most noticeable pattern is that Marcia's tokens with /r/ before /e/ are all much lower and more back than /e/ (Figure 2.14a). She also has some very low vowels preceded by coronals. For her lax vowels, word-initial /ε/ tokens were the most shifted (raised) overall, but the highest token was *dress*. Marcia has one unshifted (higher) /e/ vowel, occurring in the word *later*.

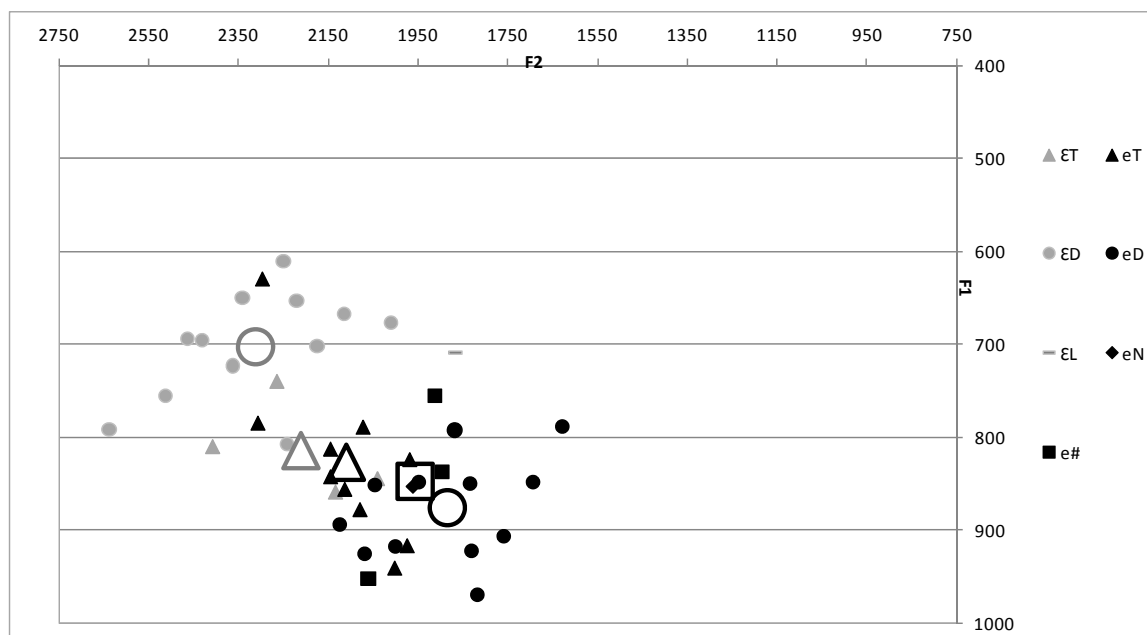


Figure 2.14b Marcia's mid vowel tokens sorted by following environment

Marcia's most shifted vowels occur before voiced obstruents for both her tense and lax vowels. Her two low /ε/ tokens occur before voiceless obstruents (*yes* and *left*). While there is only one vowel (a lax one) preceding /l/, it is worth noting that it is the most central of the lax vowels. In fact, for all seven women, the most central or backed lax vowels (lowest F2 score) occur before /l/. Most likely, the women have some /l/ vocalization influencing the preceding

vowel, though even the multisyllabic tokens (i.e. the /l/ is not solely in the syllable coda) are centralized, such as Sierra and Natasha's *elementary* tokens, Tiffany's *spelling*, and Kristina's *telling*.

Table 2.2 is a summary of the basic findings. With a larger dataset, stronger conclusions would be possible. Statistical analyses are also invalid with such a small number of data points. There are only three possible following environment codes for lax vowels. A long dash indicates that the most shifted vowels did not correlate with a particular environment. If a disfavoring environment is present, it is noted.

Environment code		Preceding environment contributed		Following environment contributed	
		most	least	most	least
Sierra	e	Labials, maybe /r/		Nasal, maybe /l/	Voiceless
	ɛ	-----		-----	
Kristina	e	-----		Voiced (both D & N)	Voiceless
	ɛ	maybe coronal		Maybe Voiceless	
Natasha	e	Coronals, /r/	Word-initial	Nasals	Voiceless
	ɛ	Velars, maybe word-initial		-----	
Tiffany	e	'pl-' coronals	Alveolar stop coronals	Voiced (both D & N)	
	ɛ	Word-initial		Voiced obstruents	
Beth	e	-----		maybe Word-final	
	ɛ	Maybe Coronals		-----	
Stacy	e	maybe /r/, maybe Coronals		maybe Voiced obstruents, maybe Word-final	
	ɛ	maybe Coronals		maybe Voiced	
Marcia	e	/r/, maybe Coronals		Voiced obstruents	Voiceless
	ɛ	Word-initial		Voiced obstruents	

Table 2.2 Summary shift correlated with environments directly before and after the vowel

Based on the results of the study, the use of a stimulus word with a shifted /e/ would match the patterns of at least some of the community's young women if it were immediately preceded by /r/ or a coronal. A shifted /ɛ/ would not be unusual in a word-initial position or preceded by a coronal.

The most usual following environment for a more shifted mid front vowel appears to be a voiced consonant, whether oral or nasal. Further, while a voiceless environment does not *impede* shifting, shifting may be less common with a voiceless following environment.

The notion of a voiced environment promoting shifting more than a voiceless environment is not particularly unexpected, since vowels are slightly longer when followed by a voiced sound. A longer vowel could promote shifted lax mid front vowels, which tend to be much longer (what some call diphthongal or triphthongal; see Chapter 3) and shifted mid front vowels, which must cover the slightly farther phonetic distance of [a] to [ɪ] in comparison with [e] to [ɪ], e.g. *weighed* pronounced like *wide* whereby the [aɪ] trajectory is slightly farther than the trajectory of the [eɪ] diphthong. Table 2.2 indicates that a voiced consonant will work well as a following environment for testing perception of shifted front high vowels. Discussed in much greater detail in Chapter 4, the stimulus sentence eventually used was, “She was having a hard time in seventh grade in her history class.” The carrier word for the shifted /e/ of the SVS is *grade*, with the vowel preceded by /r/ and followed by a voiced consonant.

## 2.6 CONCLUSION

In this chapter, the speech of seven women was examined to observe the behavior of vowels in the area northeast of Huntsville, Alabama, with an eye toward creating a stimulus for the perception study which follows in Chapter 4.

Although the SVS traditionally includes the place exchange of the high front vowels, the acoustic placement of the high front vowels of these women is extremely varied and frequently unshifted. Without doubt, these results suggest that speakers in this area participate in the mid vowel shift much more than they do in the high front vowel shift. This is consistent with recent research into the behavior of the Southern Vowel Shift in some parts of the Southeast. Taken

together with the findings of other investigations of the SVS (e.g., Bailey 1997; Fridland 2000; Allbritten 2008), this research suggests that the high front vowel shift and mid front vowel shift may be more independent of each other than previously thought. There is no claim here that no one in this area is undergoing the shift in high front vowels. However, based on my past research and the research of others within the South, the inclusion of the high front vowels as being a typical part of the SVS is in question. The high vowel shift is also considered to be the last stage of the SVS by many researchers (e.g. Labov, Ash, Boberg 2006; see Chapter 1). However, as members of some of the youngest adult speakers in the Riverton area, and based on research conducted on previous generations (e.g. Feagin 1979), these women should be well into Stage 3 (raising of /ɪ/ and lowering of /i/), yet they are not. There is a need for more research into the idea that the Southern Vowel Shift appears to be either an umbrella term for a few disparate shifts with overlapping geographical distribution, or that social factors are preventing the SVS from achieving Stage 3 in some areas of the South (even though Stage 1 – monophthongization of (ay) – and Stage 2 – (relative rotation of mid front vowels /ɛ/ and /e/ – are robust).

Another traditional shift within the SVS is the parallel fronting of the high and mid back vowels. A great deal of work outside of the South has shown that this parallel fronting occurs over much of the United States, not only the South. Therefore, it was decided that this sub-shift would contribute less to the overall picture of a Southern accent. I acknowledge that reality may not fit perception in this case and fronted back vowels likely cause a speaker to sound more Southern. However, I believe that this would necessarily need to be used in conjunction with other features, given the widespread current usage in other areas.

The apparent merger of front vowels before tautosyllabic /l/ appears to be occurring in this area, as expected. Whether this is still purely a feature of the Southern U.S. is in doubt. More work is needed to research the behavior of pre-lateral vowels.

The SVS traditionally includes the place exchange of the mid front vowels, which most of the women participate fully in and all of them participate to some degree. The difficulty of finding a strong (ay) diphthong for Natasha (Figure 2.3) is interesting given the extremely low position of many of her /e/ tokens. This pattern supports the assertions made by Labov and Ash (1997) and Thomas (2003) mentioned in Chapter 1: that fully monophthongal (ay) encourages the complete lowering of /e/ to fill the phonological “gap”. At the same time, the vowel patterns of Sierra (Figure 2.1) and Marcia (Figure 2.7) seem to run counter to this assumption. Both of these women have very shifted system and yet they also produced at least a handful of diphthongal (ay) tokens (the graphs above show *wife* and *like* for Sierra and *nice* for Marcia). In Marcia’s case, however, her (ay) nucleus is still far from the nuclei of her lowered /e/ vowels; it may be that her /ε/ vowels have raised quite a lot, but her /e/ vowels have not, in turn, lowered very much.

Considering the importance of limiting the permutations present in the second part of the greater study, the less common shifting pattern of high front vowels will not be used as a variable in the feature cluster perceptions of Chapter 4. Instead, the robust feature of mid front vowel lowering is the representative feature of the SVS. In this chapter, linguistic environments were also searched for patterns. Results suggest that, in this geographic area, mid front vowels are often shifted when followed by voiced consonants and when preceded by coronals or /r/. Therefore, these environments are felicitous choices for a perception experiment because they

are anchored in actual data. Even so, only slight patterns emerged, revealing that mid vowels can be shifted in almost any environment. A greater number of tokens may create a more robust pattern. In Chapter 4's experiment, /r/ is the preceding environment and a voiced obstruent is the following environment, using the word *grade* for the SVS influenced vowel manipulations. Observing actual data to inform the perception task – as opposed to solely following assumptions – allows an empirical grounding for the Southern accent perception task, as well as to allow an opportunity to question assumptions about the SVS sound change in the American Southeast.

## CHAPTER 3. ON DRAWL

*“3 secrets to speaking like a Southern Girl:*

- 1. Take your own sweet time.*
  - 2. Bat your eyelashes slowly and speak at the same tempo.*
  - 3. Add syllables whenever possible.”*
- The GRITS (Girls Raised in the South) Guide to Life.*<sup>21</sup>

### 3.1 INTRODUCTION

The author of this short quote from the popular book *GRITS* may not realize it, but she is essentially instructing readers on how to perform what linguists usually call the “Southern Drawl”. To non-linguists, and indeed many linguists, the Southern Drawl is associated with or equivalent to the oft parodied pronunciation of a word like *cat* as “cayut” or *fed* as “feyud.” In other words, one syllable behaves as though it were two, adding a lax, unstressed schwa sound after the original vowel. The parodies also almost always include a palatal glide and an exaggeratedly long duration for the word. In actual production, the drawl presents a more complicated picture. In real data available in the 21<sup>st</sup> century, this picture is further clouded by the changing nature of Southern English where such obvious and stigmatized features are sometimes shunned by speakers with a desire to disassociate themselves from the accompanying stereotypes.

Although this feature is a challenging one to include in a perceptual survey of sounding Southern, I believe it is an important one to include. Commenting on the South, Thomas (2001, 105) states, “The ‘Southern drawl’ has long been associated with the speech of this region.”

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<sup>21</sup> Ford and Hand (2004, 35)

Feagin (1987, 137) also introduces her article on drawl by saying, “One of the most noticeable aspects of white Southern speech is what is generally called ‘the Southern drawl.’” This sentiment is reiterated in Feagin (2008, 111): “It is the expanded drawl...which is probably the main source of what is perceived as ‘Southern speech’.”

Given the large amount of linguistic literature devoted to various aspects of Southern speech, it is somewhat surprising that the widely noticed and stereotypical feature of “drawl” has evaded most researchers in terms of definition, explanation, and the nature of its variable patterning. Part of the reason for this might be the fact that what I am calling a “feature” is actually more than one feature and the features – both segmental and suprasegmental – interact and occur more or less simultaneously. In addition, disparate but related phenomena are traditionally categorized by linguists under the same term. Thomas (2003) perhaps captures the essence of the linguistic understanding of drawl:

Of all the phonological traits associated with the South, the most stereotypical, yet the most enigmatic for researchers is the “Southern Drawl”. It is usually associated with the prolongation of certain vowels, but other traits include wide intonational fluctuations and breaking of vowels and diphthongs into triphthongs.  
(156-157)

A greater understanding of the operation of drawl is important when including it as one of the features for a perceptual survey. Therefore, it is necessary to look more deeply at this phenomenon than the other features that have been included. Researchers working in Southern dialects have devoted surprisingly little effort to the topic in comparison with other features of

Southern American English. Because of this, an entire chapter is devoted to examining this feature (or feature bundle) in more depth. Even so, one chapter is not enough to explore methods and criteria for identifying drawl as deeply as would be ideal. However, in light of the scope of the research question for the larger project, the coverage here is sufficient. The work on drawl here contributes to the ongoing study of this phenomenon.

This chapter will first review the post-1960 literature on drawl, summarizing what we do know so far. Following that, I will review three interrelated explorations of drawl. First, a brief experiment designed to find agreement about what counts as drawl is explained. After that, a taxonomy for drawl types is proposed along with linguistic constraints. Last, some methods of measuring of drawl are performed using Euclidean Distance and Slope to measure distance of movement on a formant graph. These three explorations work together to build on existing knowledge of drawl. After presenting the results of these measures, discussion will turn to how best to apply the knowledge for the specific task of choosing a survey stimulus in which drawl will be one of the features. (See Chapter 4.)

Additionally, after reviewing other studies and presenting the classification scheme derived from auditory analysis of my data, I argue for revision of the terms linguists use for drawl and its sub-characteristics. Note that in the beginning of the chapter, traditional terms are used. Drawl and breaking are used as they have been in recent literature (e.g. Feagin 1987, Labov et al. 2006), though breaking has still implied added gliding. In Section 3.4 below, I argue for the adoption of clear-cut distinctions of these terms and I present definitions, as well as posit a new label for one of the features. After presenting the arguments for a terminology change,

some of the new terms will be used. Thus, some confusion may arise if the conclusion is read first.

### 3.1.2 Past research into Drawl

While drawl was discussed in descriptive linguistic dissertations of the early 20<sup>th</sup> century, the first modern treatment of drawl with an attempt at ordered rules and linguistic constraints is that of Sledd (1966). Following that, a handful of researchers have looked at the phenomenon and supplied information ranging from a definition (Habick 1980) to a discussion of drawl, a system of classification, and graphics (Feagin 1987, 1996, 2008) to the incorporation of parts of drawl into other, larger studies (Thomas 2001, 2003; Labov 2006). Of all these, Feagin's are the only works devoted exclusively to drawl in the Southern U.S. In looking at these studies, the linguistic constraints on drawl (e.g. which vowels, where, etc.) are particularly relevant in terms of the goals of the current study.

Sledd's (1966) article concerns itself primarily with the behavior of lax vowels before liquids, especially underlying /r/ in r-less dialects. However, the latter part of the article is devoted to breaking and umlaut<sup>22</sup>, which he views as typically occurring together. The data are his observations of r-less dialects of British English and Southern English, though he states that he is primarily using observations based on his own "old-fashioned variety of Atlanta speech" (28). He supplements this with results from the work of Kurath and McDavid (1961) and the *Atlas of the Pronunciation of English in the Atlantic States* (PEAS). In approaching the subject matter from a somewhat older paradigm, he is primarily concerned with ordering descriptive

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<sup>22</sup> In umlaut, a vowel takes on all or part of the phonological characteristics (such as height) of a following vowel. (e.g. Crystal 2003, 180).

rules which detail the stages by which drawl occurs in r-less dialects. Much of the discussion and examples leading up to his presentation of the rules are quite useful in terms of learning about the glides produced in Southern English lax vowels and vowels before liquids. Though Sledd's definition of the term *breaking* is not explicit, he seems to be indicating the phenomenon whereby a glide is added to a previously monophthongal vowel within a stressed syllable. He also indicates that it is usually accompanied by a change in pitch within the syllable. High and mid vowels are purported to have centralizing glides – front vowels move back, back vowels move forward – and the low front vowel glides have two possible directions: upgliding or ingliding. Interestingly, he asserts that front vowels with ingliding offglides preceding labials (e.g. [hɪəp] *hip*) are more perceptually salient than following environments with other places of articulation (e.g. [hɪəd] *hid*) due to the rapid change (and contrast) in place of articulation of the central offglide and the front consonant.

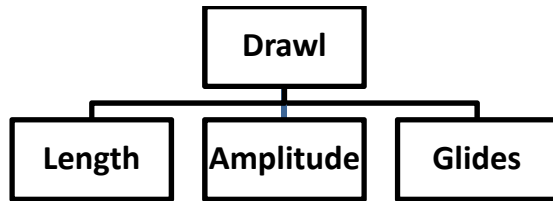
According to Sledd, breaking can occur both in monosyllabic words and in plurisyllabic words. One of the key problems in studying drawl arises in Sledd's discussion: drawling is extremely variable. My observations support this as well. Drawl varies in actuation both within the individual and within dialects that have it. Drawl is extremely varied in its frequency of occurrence. For example, the same person may drawl three times within a few minutes and then not again for an hour. Until Feagin (1996), studies mentioned primarily linguistic conditions for drawl. Feagin (1996 and 2008; see below) touches on extra-linguistic constraints such as conversational situations (talking to friends vs. giving a presentation at work), gender, social class, etc.

Habick (1980) provides a more straightforward and concise description for the phenomena, using the term “drawl” to refer to a collection of three interconnected features: lengthening, breaking, and “amplitude drop.” Habick’s greater study looks at the vowel systems and social dynamics in Farmer City, Illinois (northeast of Springfield, IL). The social situation of Farmer City is particularly interesting due to the migrants from other towns, especially those that Habick concentrates on from Somerset, Kentucky (south of Lexington, KY). Habick’s doctoral thesis measures the vowels of 40 speakers in Farmer City as well as 7 speakers living in Somerset so he might understand what features were brought to Illinois. Though his main project centers on the use of vowels in construction of personal identity by adolescents, he comes across drawl often enough to devote some time to the features involved and the behavior that he observes. In his data, the interconnected features behave variably among Illinois speakers and Kentucky speakers, though he is still able to provide a definition:

In its most basic sense, drawling can be defined simply as a type of tempo, indicating lengthened as opposed to shortened (‘clipped’) syllables. In its practical realization in Southern dialects, however, drawling has become a complex phonetic and phonological development characterized by a large number of features and systemic implication...(Drawl) can be described spectrographically in terms of three major features which may occur singly or in combination: lengthening, breaking, and amplitude drop. (Habick 1980, 181)

He additionally defines breaking: “Breaking refers to the development of lengthened monophthongs into diphthongs or triphthongs” (1980, 181). This is presumably the realization of *cat* as approximately [kæ’jət]. Habick’s use of “breaking” can be interpreted as meaning the

addition of glides. Figure 3.1 below gives a graphic representation of the related features of drawl as viewed in Habick (1980).



*Figure 3.1* Breakdown of drawl according to Habick (1980).

In the speech of the participants in his study, he observes that all three of these comprise the drawl of the Somerset, Kentucky speakers. By contrast, in Farmer City, drawl as simply lengthened monophthongs is the most usual case. Even so, Habick mentions that amplitude drop often happens in these lengthened monophthongs. Interestingly, he notes that, “In Farmer City, a slight amount of drawling occurs, and this is expressed by amplitude drop patterns on lengthened monophthongs, rarely by breaking” (187). He adds, “In Farmer City, the slight drawling with amplitude drop often gives an acoustic effect that is perceptually similar to the triphthongal contours of Kentucky speech” (193). As I will show in the sections below, his mention of such a contrast is relevant in Riverton, Alabama, as well.

In terms of linguistic constraints, Habick (1980), like Sledd (1966), points out that breaking occurs only in lax vowel phonemes. Like other literature, his examples show drawl in words containing /æ/, though he emphasizes that he observed triphthongal breaking in words with /ɪ/ and /ɛ/ as well, in the words *lip* ([lɪjəp]), *hill* ([hɪjəl]), and *ill* (ɪjəl]) and in *bet* ([bejət]), *hell* ([hejəl]), and *cents* ([sɪjəns]). He provides some examples plotted on an acoustic graph

showing diphthongal *aunt*, *mash*, *black*, and an ingliding *have* [hæ.əv]. In addition to the above-mentioned words, triphthongal *ham* is shown on the graph as well. In terms of the relationship between this type of breaking and the Southern Vowel Shift (see previous chapter), the observations involving the high and mid front vowels are particularly interesting. I return to this idea below.

In Feagin (1987), some much needed primary focus is lent to drawl, though she also recognizes the difficulties of trying to explicitly describe such a complex dialectal feature that additionally involves a high degree of inter- and intraspeaker variation. She nevertheless contributes a great deal of straightforward information on the feature. Feagin (1987) is summarized and expanded upon slightly in Feagin (2008). In Feagin (2008, 91), an article aimed at a lay audience, she provides a simplified definition of drawl as “the pronunciation of a word having some or all of these characteristics: the main vowel sound in the word is held longer than usual, the vowel sound changes as it is held, and the pitch of the vowel varies greatly.” Like the two works mentioned above, she presents linguistic characteristics of drawl which are summarized here.

For speakers whose repertoire includes drawl:

- 1) A lengthened monophthong does not necessarily also add gliding.
- 2) Drawled (or broken) diphthongs and triphthongs may occur with any vowel followed by liquids (/r/ and /l/); otherwise, only lax vowels may break.
- 3) The addition of gliding to monophthongal front vowels may be realized in different ways (e.g. different directions, number of glides), but monophthongal

back vowels (not followed by liquids) are restricted to an inward moving schwa off-glide.

- 4) Drawl is disfavored by following voiceless stops.
- 5) Drawl is favored in situations of (suprasegmental) stress. The greater the stress, the greater the chance of drawl. Since stressed syllables are the locus of breaking, phrase-final words are more likely to display breaking.
- 6) In a triphthongal drawled syllable, there will be an intrusive glide; for front vowels, it is /j/ (e.g. *hill* [hijəl]) and for back vowels it is /w/ (e.g. *boy* [bɔ̞wi]).

Feagin (1987) additionally stands out from earlier literature because of attention to the co-occurring features of amplitude drop and pitch change. Her article includes waveforms of words in isolation showing what she calls “peaks” or “pulses” which demonstrate the result of the amplitude drop during the course of the syllable. The “pulses” are accompanied by pitch changes within the syllable – often of a *high-low* nature – which present an impression approximating added syllables in a word. Feagin also puts forth the usefulness of the concept of morae in this case as a method for discussing “near syllables” like those found in drawl. That is, it could be the case that a drawled vowel gains morae (Feagin says “accordion-like”), each of which can have separate amplitude peaks, glide directions, and intonation.

Feagin’s two articles (1987, 2008) attempt a system of classification and terminology for the different realization of drawl. Feagin (1987) uses the labels *basic drawl* and *expanded drawl*, where the former refers only to the segmental breaking and the latter to the suprasegmental features of length and pitch. The segmental features can further be classified into *front*, *central*,

and *complex* glides, identified by the direction of the glide, with *complex* having multiple directions and also known as a triphthongs. However, since any drawled segment with a complex glide is also lengthened, a triphthong is part of the expanded drawl under Feagin’s classification. I have tried to summarize this system in Table 3.1 using *past*, an example from Feagin (1987).

	<i>Addition of glides</i>	<i>Wide Variations in Pitch</i>	<i>Added Length</i>	<i>Example transcription of ‘past’</i>
<b>Basic</b>	diphthong	–	–	[p <sup>h</sup> a <sup>i</sup> st]
<b>Expanded (1987)/Extended (2008)</b>	triphthong	–	+	[p <sup>h</sup> a <sup>i</sup> jəst]
	diphthong	+	–	[p <sup>h</sup> a <sup>i</sup> st] + extreme pitch movement
	triphthong	+	+	[p <sup>h</sup> a <sup>i</sup> jəst] + extreme pitch movement

*Table 3.1.* Classification of drawl according to Feagin (1987, 2008).

Feagin (1987) emphasizes the intra-regional variation that exists with drawl, stating that North Alabama (including Anniston, Alabama, where she collected her data) is not the area with the highest frequency of expanded drawl. This implies that expanded drawl might also occur less frequently in the data used for this study, since Huntsville is part of North Alabama.

In terms of social constraints, Feagin (1987) points out that speakers of Southern American English seem to drawl without respect to class or age. However, she proposes that gender and situational factors do have an influence, with women drawling more than men. Casual situations such as talking to babies or pets and situations where extreme politeness and friendliness is called for (e.g. being introduced to a friend of a friend) serve as promoters of drawling. The quote at the beginning of the chapter implies awareness by non-linguists that such

features are associated with “speaking like a Southern girl.”<sup>23</sup> From this information, it can be assumed that using a female voice for the perception experiment in the next chapter will be felicitous in terms of drawl.

The idea of women being heavier “drawlers” than men is echoed in Feagin (1996). Feagin (1996) additionally provides information on drawl within an article looking at all types of behavior of the /æ/ vowel in Southern English. The analysis focuses on gliding and categorizes types of /æ/ gliding into the following types: “‘front’ or upglided” [æ<sup>ɪ</sup>]; “‘central’ or inglided” [æ<sup>ə</sup>]; and “‘complex’, which refers to triphthongs which begin with front glides and then become central” [æ<sup>ɪ</sup>ə] (142). The article also examines these types of /æ/ breaking by following environment, finding that front gliding is favored by voiced velars, nasals, and voiceless fricatives, in that order (146). The pattern for following environment of ingliding /æ/ was not quite as robust, though the favoring environment consists of mostly labials (especially /v/) and non-velar nasals. Following environment proved to be much less important for complex glides, though they tend to occur slightly more frequently before nasals. Instead, Feagin (1996) says that complex glides are most influenced by “suprasegmental factors: extra lengthening combined with heavy stress” (147). Thomas (2001) found triphthongal /aʊ/ (transcribed by Thomas as [æɐp]) in 3 out of 5 Montgomery, Alabama, speakers and (oy) (transcribed by Thomas as [ɔoi], [ɔoi], and [aɔi]) in 4 of 5 of the same speakers. In another, earlier article, Thomas (2003)

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<sup>23</sup> For more information on females’ higher usage levels and their social purposes of drawl, see Feagin (2008), which expands upon these ideas.

acoustically analyzes aspects of drawl at length. These included the relationship between duration and formant movement, particularly the relative *extent* of formant movement and the different trajectories of individual drawled vowels. Here we get not only acoustic confirmation of some of the linguistic characteristics of drawl noted by Sledd and Feagin, but are also offered phonetic explanations for some of them. For example, Thomas proposes that the lack of breaking options for back vowels is related to restrictions on the interaction of rounding and gliding (2003, 158). Additionally, Thomas (2001, 105) asserts that broken (glided) vowels are not as common among speakers born after 1960.<sup>24</sup>

Thomas (2003) uses the insights gleaned from drawling to investigate the more generalized behavior of gliding across time and interlinguistically. For Thomas, the meaning of breaking is essentially equivalent to gliding – more specifically gliding added onto monophthongal vowels in Standard English. “Breaking is the characteristic of the Southern drawl that is easiest to demonstrate and consequently has received the most scholarly attention. Its operation, moreover, provides insights into how gliding occurs, which in turn, shed light on how diphthongs originate and change” (Thomas 2003, 157). It is this article that points to the specific principles of chain shifting relevant to the movement of drawled vowels. Labov (1994, 281) defines Principle V: Upper Exit Principle: “In chain shifting, one of two high peripheral morae becomes non-peripheral.” By “peripheral”, Labov is referring to the outside region of the acoustic vowel space (Labov 1994, 32, 172; Labov, Ash, and Boberg 2006, 16. See Figure 3.2 below). The peripheral track can also be thought of as the position of tense vowels. Lax vowels are located in the “non-peripheral” area.

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<sup>24</sup> Though this might seem to contrast with Feagin’s (1987:142) statements about drawl and age, the “youngest” speakers in her recorded data were born before 1960.

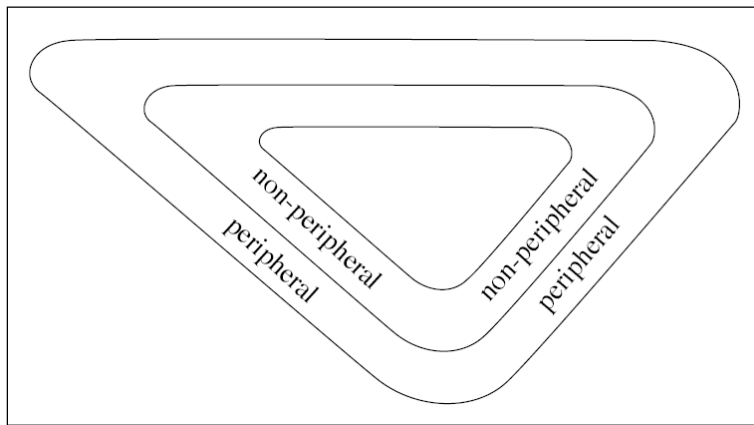


Figure 3.2 Labov's view of peripheral and non-peripheral tracks in English phonological space. Figure from Labov, Ash, and Boberg (2006, 16), Figure 3.1.

Principle V is revised farther on in Labov (1994, 283) to read: “In chain shifting, the first of two high morae may change peripherality, and the second may become non-peripheral.” In other words, if a vowel develops two tense morae, one will become lax. Thomas (2003, 159) uses exactly this interpretation, stating that, when Principle V is applied, *either* mora may become nonperipheral. Such a principle would explain the non-peripheral first morae (the nuclei/first targets) of shifted /i/ and /e/ (whose shifted nuclei are realized almost like [ɛ] and [ɑ], respectively.) It also applies to the non-peripheral second morae of shifted /ɪ/ and /ɛ/ (the schwa vowel offglides), all of which occur in Southern speech according to the pattern of the Southern Vowel Shift. A schematic of the SVS according to changing vowel peripherality is shown in Figure 3.3.

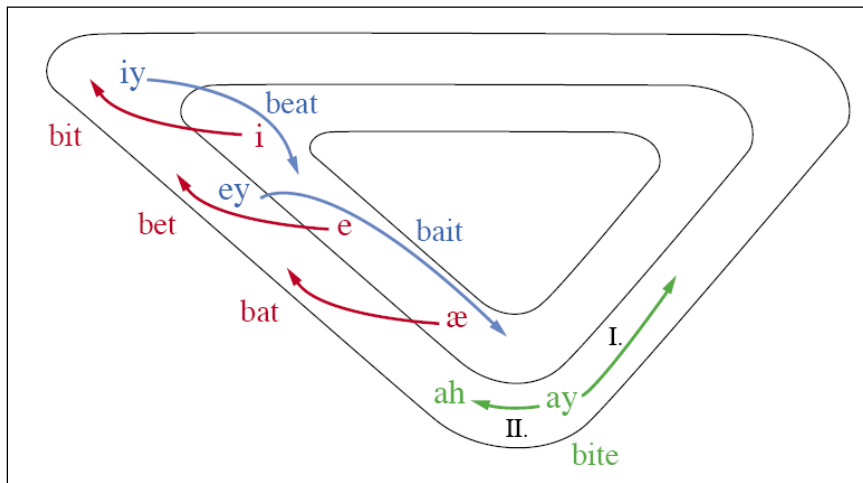


Figure 3.3 Peripherality of shifting vowels according to Labov, Ash, and Boberg (2006, 125), Figure 11.2.

In fact, the arrows in Figure 3.3 indicate the changed position of the nucleus of the front vowels. The glides – which shifted vowels have – all move in the opposite direction. So, for example, while the nucleus of *beat* above lowers to a position near (ey) (becoming lax, or non-peripheral), the offglide still glides up to the high front vowel space near /i/. While the nucleus of *bit* shown here has moved up and fronted, the offglide glides inward toward /ə/. This information about the changing peripherality (or tense/lax distinction) of shifting vowels can be extended to state that drawl is an integral and vital component of the SVS. *Prima facie*, it seems that lax front vowels involved in the SVS must be drawled when shifted. Put another way, lax shifted vowels are always drawled<sup>25</sup>. A shifted (raised) pronunciation of *head* cannot be realized as [hed], but instead must be [hejəd]. The same is true for *did*: the SVS transcription of a shifted version is [dijəd], not [did]. The SVS and drawl are clearly interrelated phenomena.

<sup>25</sup> See below where I suggest another term for the specific process shifted vowels undergo.

Most recently, Labov, Ash, and Boberg mention drawl in their *Atlas of North American English* ANAE (2006). In the ANAE, the low front vowel /æ/ is used for all of the examples and viewed as the canonical drawled vowel. The drawl descriptions provided in the ANAE concern the behavior of /æ/ as in *cat* or /aʊ/ as in *couch*, the latter of which is typically realized as /æʊ/ in Southern speech. Interestingly, they say that even when /æ/ is used as the nucleus of the diphthong in a word like *couch*, the behavior of the breaking and gliding is impressionistically the same as monophthongal /æ/ (258). In other words *couch* should sound impressionistically similar or identical to drawled *catch*. Added to this are Labov et al.’s description of favored following environments. They propose the following ordering of constraints: n > m > ŋ > s, d, t > b, g, c. Nasalization and following place of articulation are the two primary factors contributing to a higher instance of breaking (180). A summary of constraints is included here as Table 3.2. Following environments that were not mentioned are not included in the table.

	<b>Labial</b>	<b><i>Apical</i></b>	<b>Palatal/Velar</b>
<b>Voiceless</b>		<b><i>t, s</i></b>	c
<b>Voiced (oral)</b>	B	<b><i>d</i></b>	g
<b><u>Voiced (nasal)</u></b>	<b><u>M</u></b>	<b><u><i>n</i></u></b>	<b><u>ŋ</u></b>

Table 3.2. Following environments favoring drawl based on Labov et al. (2006, 180).

In Table 3.2, italicized or underlined symbols are more likely to be drawled, with the underlined and italicized /n/ “...showing by far the highest percent breaking...” (180). The other consonants in the table only follow broken /æ/ “occasionally”.

Interestingly, Labov et al. also discuss a phenomenon they call “Northern breaking”, which contrasts with Southern breaking in terms of proportion of steady state of formant and glide. The first and second formants involved in Northern breaking contain two steady states of nearly equal length, whereas /æ/ formants involved in Southern breaking have “a relatively low nucleus, a high front glide, and a following inglide” (179), resulting in very little steady state at all. Essentially, the “shapes” created by the formants in the two types of breaking are very different.

The literature reviewed above demonstrates that previous discussion of Southern Drawl exists, though work on the feature has not been extensive. Questions still remain. Can we readily identify drawl by looking at formants? Where is the perceptual line between a broken and non-broken vowel? How is drawl used in different areas of the South and what are the demographic differences? For example, how is this feature realized in the speech of the seven young North Alabama women in this study? While this project aims to begin exploration of such questions, all that is unknown cannot be addressed in one study. There is a clear need for more work in this area.

### 3.2 UNDERSTANDING DRAWL

In this chapter, the notion of drawl was analyzed from three different angles so that we linguists might have a greater understanding of the phenomenon so often discussed, but so rarely studied. Because of the relatively little work that has been done in this area, some liberty has been used in this chapter to foray somewhat outside of the scope of the immediate research question. The simple research goal here is to find out which linguistic characteristics favor drawl.

This information can be used to inform the stimulus sentence in the next chapter (Chapter 4).

The goal is complicated by the fact that it is difficult to tell what drawl really looks like or what “counts” as a token for a potential drawled vowel. This is part of the reason why a classic variation analysis of drawl would have been difficult. Therefore, in this chapter, the immediate goal has been expanded into three subprojects, or phases, which are interrelated. Each allows us more insight into what drawl is, where it occurs, and what some of its characteristics are.

First, a brief experiment seeks to find a consensus identification of drawl, so that its characteristics may be scrutinized. Such an examination might have ultimately led to a form of drawl measure. A data-driven pilot study is conducted to determine if agreement in identification of the various characteristics of drawl (as defined by linguists) is possible by the general population. The pilot study results indicate that laypeople usually define drawl rather differently than linguists.

Following this, different types of drawl are identified and described based on the sociolinguistic interview data of the seven women (see Chapter 2), past research of drawl by the researchers just described, and through my own knowledge of drawl as a native of Riverton, Alabama. This information is used to create a taxonomy of different types of drawl. Using the taxonomy types as identifiers, tokens are impressionistically coded for drawl. The primary research question is addressed and the most common vowels and following environments for various drawl types are laid out.

Next, an attempt is made to find a measure of drawl. The measuring methods of Euclidean Distance and slope are applied to three of the types; these methods prove successful for triphthongs. Using Euclidean Distance to measure distance between vowels or between

points in a vowel is relatively new in the field of sociolinguistics. Fabricius (2007) used Euclidean Distance as a measurement of British RP (Received Pronunciation) speakers' movement of /ʌ/, as in *strut*, with respect to their realization of /æ/. Looking at different speakers' distances (as in on an F1/F2 Hertz graph) between /ʌ/ and /æ/ allowed her to measure the movement of /ʌ/ in RP (often from positions in back vowel space and/or positions as low as /æ/) during a change-in-progress. She additionally used a measure of angle to determine the relative height of the two phonemes, though it was a different formula than the one used below. Fabricius (2007) found that these vowels have gradually shifted over the last two generations such that British RP speakers' /ʌ/ and /æ/ phonemes are realigning to traditional placement where /æ/ is lower and fronter than /ʌ/. Eberhardt (2009) utilized the Euclidean Distance measure to determine possible glide deletion in /aʊ/ among African Americans in Pittsburgh by measuring the distance of movement in acoustic space from vowel onset to offset. Use of this technique allowed her to demonstrate that gliding in the /aʊ/ diphthong (e.g. *town*) is very robust among African Americans in the Pittsburgh area. Scanlon and Wassink (2010) also used Euclidean Distance to show that the vowels in the *pin~pen* merger for African Americans in Seattle are actually distinguished by the distance of the glide in *pen*. *Pin* had significantly less glide.

In this project, those tokens identified as triphthongs had significantly longer distances of movement in acoustic space than other tokens, including other drawl types as well as tokens

identified as non-drawl. Finding a measure of the triphthong type is promising, suggesting that other measures can be identified for other types of drawl in future work. The types of drawl listed in this chapter form a working taxonomy of drawl, which should continue to be developed. For more information on the sociolinguistic interview data used in this chapter, see Chapter 2, and/or Appendix I.

### 3.2.1 What does drawl mean to you?

In an effort to address the question of drawl as perceived and defined by laypeople, a simple pilot study was conducted to gain insight into the actual features a naïve listener tunes into when hearing “drawl”. Based on the approach in Soukup (2009), I had a small group of listeners label passages for perceived “drawl”. Soukup (2009) explored the use of Austrian dialect as a discursive and positioning tool. As a means of showing that bi-dialectal speakers are able to distinguish between Austrian Standard German and Dialect, she provided groups of naïve listeners with transcripts and audio of Austrian talk shows. The listeners highlighted or underlined the portion of talk they considered to be Dialect as opposed to Austrian Standard German. The method proved successful because participants consistently highlighted the same parts of sentences, demonstrating that the notion of “Dialect” is a relevant category for these Austrian German speakers.

In order to uncover the layperson’s notion of drawl and what kinds of acoustic behavior it entails, I conducted a small pilot study using a similar method to see if such a method might work on a larger scale. A group of nine naïve listeners (all friends or friends of friends) were provided with the transcripts and audio of four passages lasting approximately thirty seconds

each. The listeners were a group of eight people, five women (two Southern, one Northern, and two Western) and three men (two Southern and one Midwestern) – four Southerners and four non-Southerners. One of the Southern women was a linguist with minimal exposure to sociolinguistics. The rest had very little or no knowledge of linguistics.

The passages contained excerpts of speech from the sociolinguistic interviews of two of the seven women from this study (Sierra and Natasha). In choosing the passages, I did not want my own perception of drawl to affect which excerpts were chosen. I therefore numbered each of the seven sociolinguistic interviews and used a random number generator to select two. I then went to the middle page of the selected transcripts and picked the next nearest portion of the interview containing approximately thirty seconds of speech. The second excerpt came from the first thirty-second section following that. My backchanneling and any personal identifiers such as names were removed from the audio files.

I emailed the short transcriptions of the excerpts to the listeners along with mp3 files of the excerpts. The listeners were instructed to electronically highlight (or otherwise indicate) portions of each transcript where they considered the words to be drawled. A definition of the drawl was deliberately withheld from them as a means of exploring what they believed “counted” as drawl. They were instructed not to deliberate too much before making their decisions and to go with their instincts when performing the task. When finished, they emailed their transcripts back to me, along with a description of criteria upon which their decisions were based, insofar as they could describe it.

If this small pilot is any indication of the type of results that would have been obtained from a larger version, it reveals, somewhat unfortunately, that the word “drawl” means very

different things to different non-(socio)linguists. Even the Southerners disagreed on what was drawled or not, highlighting portions that were both fast and slow, containing various accent features, etc. For example, one person said that *library* was drawled because the person thought it sounded like Natasha said “library” (which she actually just pronounced quickly, rhoticizing the entire [rVr] sequence). Few features overlapped with what a sociolinguist might consider drawl, though the pace of the women’s speech was usually mentioned as being part of their drawl. However, different listeners had different perceptions of the pace and dialect features of the same audio speech samples, with some believing a passage contained “normal” speech and others believing the same passage contained very slow speech. (This did not seem to be dependent on whether or not the listeners were from the South.)

A few listeners picked out (Southern) shifted tense front vowels (lowered, but not drawled by a linguist’s traditional definition). Two people believed that “drawl” simply refers to a Southern dialect, with one non-Southerner telling me, “I was tempted to highlight the whole thing.” These are not isolated sentiments. In Niedzielski and Preston (2000), the participants labeled maps of the U.S. according to perceived dialect. Several of the respondents drew large circles around the South or Texas and labeled the entire area “drawl”. One group, “G” and his family, even “believe the word *drawl* is *draw*. (They spell it for the fieldworker.) They have a folk etymology which relates the *draw* to the 'drawing' out (lengthening) of sounds” (340).

This study indicates that “drawl” is not defined in the same way for all speakers of American English or even for all speakers of Southern American English. If a researcher seeks to be able to objectively label drawled tokens and study the pitch fluctuations and triphthongization (for example), the words labeled as “drawl” by laypeople are unlikely to provide this type of

objective information since, with the exception of word/vowel duration, there was little agreement among the participants. While the actual phenomenon of one or more glides being added to lengthened monophthongs may be salient for them (based upon comments in popular media), they may not have a label for it and/or may not group together all the features that we linguists believe comprise drawl.

### 3.2.2 Finding Drawl

In light of the above findings, it was necessary to begin a process of drawled vs. non-drawled categorization so that we might compare the acoustics and other features of the two categories. As mentioned previously, drawl is comprised of a few “sub-features”. Certainly, drawl involves added length to the vowel of a given segment. Often, this increased length is accompanied by formant movement of various degrees within phonetic space. Vowels may have double intensity pulses, the second of which may become a glide. What we know from past literature is that added gliding is often an ingliding offglide. With lax front vowels (and all vowels followed by liquids), two glides in completely different directions in acoustic space may be added, resulting in the stereotypical triphthongs. We also know that these occur most often in phrase-final position or when otherwise emphasized. However, we do not know that any phrase-final or emphasized word is a candidate for drawl, leaving us unable to fully specify the envelope of variation for drawl. This is another reason why the idea of conducting a classic variation analysis of drawl is problematic at this point.

Based on this information and native speaker knowledge, tables were created which laid out the drawl/breaking possibilities for each vowel. Examples of the various types of front vowel

drawl can be found in Table 3.3. This table does not show some of the more general lengthened monophthongs which are also usually considered a type of drawl.<sup>26</sup> First, monophthongal lax front vowels may take on a form whereby they glide to the front high vowel space, creating a diphthong (e.g. Beth's *candy* [kæ<sup>i</sup>ndi]). (See (d) and (h) in Table 3.3.) Examples of this type of diphthong appeared in three of the women's interviews. Feagin (1996) analyzes /æ/ vowels exhibiting this type of breaking within her "front" glide category. Mid vowels have also been known to exhibit this pattern in words such as [ɛ<sup>i</sup>g] *egg*.<sup>27</sup>

	high front glide	centralized off glide	Example
a)ɪ <sup>i</sup> .ə/ i.ə	+	+	[kɪ <sup>i</sup> əd] <i>kid</i>
b)ɪ.ə	-	+	[kɪ.əd] <i>kid</i>
c)ɪ.ɪ	-	-	[kɪ.ɪd] <i>kid</i>
d)ɛ <sup>i</sup>	+	-	[ɛ <sup>i</sup> g] <i>egg</i> (*[bɛ <sup>i</sup> d] <i>bed</i> ) <sup>28</sup>
e)ɛ <sup>i</sup> (j)ə	+	+	[bɛ <sup>i</sup> jəd] <i>bed</i>
f)ɛ.ə	-	+	[bɛ.əd] <i>bed</i>
g)ɛ.ɛ	-	-	[bɛ.ɛd] <i>bed</i>
h)æ <sup>i</sup>	+	-	[kæ <sup>i</sup> ndi] <i>candy</i>
i)æ <sup>i</sup> (j)ə	+	+	[hæ <sup>i</sup> jəd] <i>had</i>
j)æ.ə	-	+	[hæ.əd] <i>had</i>
k)æ.æ	-	-	[hæ.æd] <i>had</i>

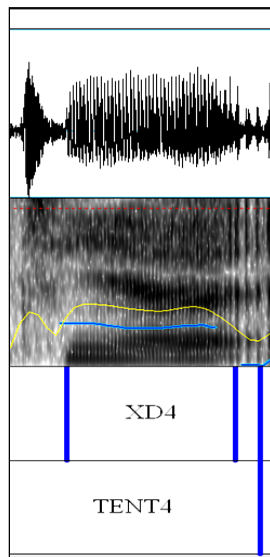
Table 3.3. Possible broken front vowels by height. A period represents a hiatus between vowels.

<sup>26</sup> Often, lengthened monophthongs occur for other reasons. Some of the women in the study make use of it discursively to hold the floor while thinking or use it as emphasis for items while listing (e.g. activities of a vacation). These would not be considered drawl.

<sup>27</sup> There were no occurrences of the latter in this data.

<sup>28</sup> Such a pronunciation would sound like *bayed*, as in what a dog might do.

Another pattern is that of a diphthong with a second glide added after the high front glide, so that one vowel has three distinct targets. A drawled vowel like this results in the somewhat stereotypical triphthong sound of Southern drawl, what Feagin (1996) aptly calls “complex” gliding. When there are two glides, the second will take the form of a centralizing inglide. If the high front glide has reached all the way to the extreme of the high front vowel periphery, the vowel will give the impression of an inserted semi-vowel [j] as noted by Feagin (1986, 2008). Otherwise, it can simply sound like a very brief hiatus in the middle of the vowel. (See (a), (e), and (i) in Table 3.3.) In either case, two pulses of intensity are audible. Figure 3.4 displays the waveform of a triphthongal vowel within the word *tent*. Praat software was used to calculate pitch and intensity. The two pulses of intensity can be seen as noticeable peaks in the light-colored line.



*Figure 3.4* Triphthongal *tent* [tɪənt], Beth b. 1978. Intensity is shown by a lighter-colored line (higher line) and pitch by a darker line (lower line).

The initial high front glide of a triphthong can also be omitted while still following the rest of the pattern, resulting in a slightly different form of drawl. In these cases, they are not

triphthongs. However, they retain the hiatus and centralizing offglide of the triphthong pattern (Table 3.3: (b), (f), and (j)). In yet another permutation, the vowel position after the hiatus is in or near the same space as the initial vowel position (Table 3.3: (c), (g), and (k)).

The patterns for lax vowels shown in Table 3.3 are still possible if the vowel is followed by the liquids /l/ or /r/. In addition, some of these become possible with tense vowels as well when followed by liquids. Examples of this are displayed in Table 3.4.

	high front glide	centralized off glide	Example
i(j)ə	?	+	[hijər] <i>here</i> ; [hijəl] <i>heel</i>
e(j)ə	+	+	[hejər] <i>hair</i> ; [hejəl] <i>hail</i>

Table 3.4. Tense vowel drawling before liquids

There are some confounding issues with the examples shown in Table 3.4. First, as discussed in Chapter 2, the contrastive difference between /e/ and /ɛ/ is neutralized before /r/. What's more, high and mid front vowels before /l/ may be realized variably as drawled or as the merged variant common before /l/ in Southern speech, whether within individuals or across social groups. Since so little research is available on the topic of variability in Southerners' vowel pronunciations before /l/, drawled tense vowels before liquids are excluded from the stimulus in Chapter 4. Despite this, it is still useful to include them in the overview so that the entire picture is presented.

While lengthened vowels with little or no movement and diphthongal vowels such as [kæ<sup>i</sup>nt] *can't* can occur anywhere, words with triphthongal vowels, or any that gain a mid-vowel

hiatus are only observed in stressed positions, such as phrase-finally. Hiatus, or the pronunciation of two distinct subsequent vowels (as opposed to diphthongization where one vowel has two targets), occurs for some people in the Standard pronunciation of several English words such as *naïve*, *theater*, *idea*, *boa*. The addition of a mid-vowel hiatus is the same phenomenon observed by Habick (1980) and Feagin (1986), though they draw attention to the amplitude drop. Feagin also refers to the amplitude as taking the form of “two peaks or pulses” (138). For some vowels, the hiatus is more apparent through a trochaic stress pattern or a high-low pitch within the vowel, rather than by two amplitude pulses.

As discussed before, back vowels are limited to the centralizing offglide type and what Feagin (2008) calls “Two Tones”, though I will refer to it as the “double pulse” type. Back tense vowels may only have a centralizing offglide when followed by a liquid. The center vowel /ʌ/ and monophthongal (ay)<sup>29</sup> may be limited to “double pulse”, though offglides to /ɪ/ or /i/ may be possible as well.

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<sup>29</sup> Feagin (2008, 100) gives *eye* [ʰa, a] as an example.

	Example
ʌ.ʌ	[ʌ.ʌ] <i>mud</i>
ʌ.i (?)	[mʌ.iɪd] <i>mud</i>
<b>u.(w)ə</b>	<b>[pu.əl] <i>pool</i>; [pu.ər] <i>poor</i>; [pju.ər] <i>pure</i><sup>30</sup></b>
ʊ.ə	[kʊ.əd] <i>could</i>
ʊ.ʊ	[kʊ.ʊd] <i>could</i>
<b>o.(w)ə</b>	<b>[mo.ər] <i>more</i></b>
o.o	[mo.or] <i>more</i>
a.ə	[a.ə] <i>pod</i>
a.a	[a.a] <i>pod</i>

Table 3.5. Drawled Back Vowels.<sup>31</sup> Rows in bold represent tense vowels constrained by following environment.

Comparing Table 3.5 to Table 3.3 and 3.4 makes clear the greater number of breaking possibilities of front vowels. Because of this, transcript coding was focused only on front vowel tokens. Based on the compiled information of vowel possibilities, ataxonomy of drawl types was drafted. These categories are meant to be fluid for the time being and not interpreted as final. More research is needed which exposes these categories to more rigorous testing and more data. A tentative taxonomy of drawl types for front vowels is shown in Table 3.6, with the first four types roughly in order of least to most complex. The order of the types below meant primarily to be viewed as a list and not as bearing a particular theoretical meaning. As further research is done on the acoustics of drawl in future projects, these will likely be reorganized and/or recategorized.

<sup>30</sup> All three of these have competing pronunciations in the area. These drawled versions are for residents who would have the following non-drawled pronunciations: [pul] *pool*; [pur] *poor*; [pjur] *pure*.

<sup>31</sup> The /ɔ/ vowel in this area often appears as either a diphthong [aʊ] or merged with /a/, making predictions about drawl difficult.

Type	Example	Front vowels affected
1. Length	Elongated monophthongal vowels	Any
2. Double Pulse	[hæ.æd] <i>had</i>	Any
3. Centralizing offglide	[hæ.əd] <i>had</i>	+ lax
4. Triphthong	[hæ <sup>i</sup> jəd] <i>had</i>	+ lax
5. Diphthong	[kæ <sup>i</sup> nt] <i>can't</i>	- high, +lax
6. Triphthong w/sonorant colored offglide	≈ [ðɪ <sup>j</sup> (ə)n] <i>then</i> with large intensity pulse on /n/	+lax for nasals; any for liquids

Table 3.6. Working Taxonomy of Drawl Types.

Type 1 is different from the others in that it is primarily characterized as being lengthened but lacking any of the other sub-features of drawl. Therefore, all types assume durational lengthening; Types 2-6 have additional characteristics. Type 6 is a form created to set it apart from other triphthongs followed by sonorants. While taking formant measures, it became clear that these should be separated due to the fact that the second intensity burst and pitch lowering occurred outside of the area demarcated as a part of the vowel. Because of the complications of formant analysis caused by sonorants, the formant readings that would be taken during protracted /r/ or /m/ sounds, for example, are not comparable to those of vowels. In some other triphthongs followed by sonorants, the schwa sound preceding the sonorant is fully realized and long enough that formants are reliably assigned in Praat (though these are inevitably still affected by the upcoming sonorant). These triphthongs with following sonorants were measurable and included as Type 4. Triphthongs of Type 6 were excluded from the measurements discussed below. The next section demonstrates how the information laid out in this section can be implemented.

### 3.2.3 Analysis of Breaking Behavior

As a native of the area, I was reasonably able to code the data impressionistically for drawled vowels versus non-drawled ones. All seven interviews were reviewed and coded for all words which impressionistically contained one or more known features of drawl (e.g. noticeable centralized offgliding, double intensity pulses). A binary drawled-or-not method of coding was deemed insufficient with the taxonomy in place since drawl may surface in multiple forms. Since a word with any code is considered drawled while a word with no code indicates a non-drawled word, it is more useful to further divide the drawled codes using the taxonomy.

In order to ensure that a stimulus sentence also contains a front vowel with the “right amount” of breaking or a realistic breaking pattern, it is first necessary to explore what that means. The ultimate goal (even beyond this project) for linguists interested in drawl is presumably to obtain an objective measure of all or part of the phenomenon. That is, we would like to be able to make an objective observation that variant X is more drawled than variant Y, as well as that variant Z is not drawled. Achieving this entails an exploration of different methods in search of patterns that fit the data.

In order to search for patterns, every instance of drawl in the audio files of the interviews with the seven women was coded according to Drawl Types 2-6 laid out in the taxonomy in Table 3.6, above, page 117. To serve as a type of control against which the drawled tokens could be compared, a relatively random selection of non-drawled words containing front vowels were also coded according to vowel and following environment in each of the seven interviews. The exception was the vowel /æ/ for which all useable tokens were coded. This was due to the fact that the bulk of examples from previous literature on drawl (especially Feagin’s work 1987,

2006, and 2008, and Labov, Ash, and Boberg 2006) contained a front low vowel. It was noted that, in addition to tokens with triphthongal patterns like [hæ<sup>i</sup>jənd] *hand*, diphthongal versions such as [kæ<sup>i</sup>ndi] *candy* occurred. Because broken vowels first raise and front toward the vowel periphery near the space for the phoneme /i/, this may make drawled /æ/ more readily perceptible (than mid front vowels, for example) due to the greater distance of movement in acoustic space. This raised the question of whether the front low vowel is drawled more often (as the use of it for all examples would imply) or whether it is simply more noticeable when it does so. In any case, Table 3.7a below reflects the higher number of /æ/ tokens coded and measured.

Tokens were sought that had occurred during periods of little background noise and that contained little or none of the phonation type known as “creaky voice”, which can be a challenge in measuring sentence-final words, since creaky voice often occurs in this position. Vowels with a shorter duration than 0.04 seconds were excluded. *All* tokens perceived as drawled were coded according the schema laid out in the taxonomy (Table 3.6 above) regardless of which vowel or following environment was involved. In all, 997 front vowels were coded. Following environments were sorted into five groups: voiceless (e.g. *bit*), voiced (*bid*), nasal (*bin*), /r/ (*beer*), /l/ (*bill*), and open syllable (*bee*). Although some consonants can be realized in various ways (e.g. /t/ as a glottal stop or a flap, etc), following environments were coded under the canonical label, or phoneme to avoid, in this case, introducing phonetic interpretations into the categories. Given the patterning of drawl (and vowels generally) before /l/ and /r/, the two liquids were not grouped together so that more information would be available for analysis. Tables 3.7a and b show a breakdown of vowels and following environments of all coded front vowel tokens.

	/i/	/ɪ/	/e/	/ɛ/	/æ/	TOTAL
<b>voiceless</b>	36	71	35	46	197	<b>385</b>
<b>voiced</b>	18	62	54	29	90	<b>253</b>
<b>nasal</b>	14	42	29	24	65	<b>174</b>
<b>/l/</b>	12	7	6	15	4	<b>44</b>
<b>open syll.</b>	43	--	36	--	--	<b>79</b>
<b>TOTAL</b>	<b>123</b>	<b>182</b>	<b>160</b>	<b>114</b>	<b>356</b>	<b><u>935</u></b>

Table 3.7a Vowels and following environments of all measured front vowel tokens, excluding /r/.

	High V	mid V	Total
<b>/r/</b>	22	40	<b><u>62</u></b>

Table 3.7b Distribution of measured front vowel tokens before /r/.

Due to the lack of phonemic distinction in the tense-lax vowels before /r/, high and mid vowels preceding /r/ necessitated a separate table so that the total number of tokens for each vowel may be shown in Table 3.7a. The numbers for /r/ are shown in Table 3.7b. The following environment information is also provided for drawled tokens in Table 3.8. Because this project is interested only in broken front vowels with either a large amount of acoustic movement or intensity/pitch changes, only front vowels of Types 2-6 (see Table 3.9a and b below) were used in the calculations below. Because it could be speculated that a great deal of added length would make the other sub-features in consideration more salient (when present), it could be argued that vowel length should be included here. However, incorporating length as another sub-feature is somewhat redundant and necessitates additional considerations of pace, average vowel duration, and a myriad of other issues, which can be reserved for projects examining such phenomena.

Like the researchers of “drawl” before me (see above), I seek to understand the other dynamic sub-features, which provide more than enough for linguistic study. Because of this, Type 1 (elongation) is not included.

	/i/	/ɪ/	/e/	/ɛ/	/æ/	TOTAL
<b>voiceless</b>	1	4	1	4	5	<b>15</b>
<b>voiced</b>	0	7	2	3	5	<b>17</b>
<b>nasal</b>	0	8	0	13	8	<b>29</b>
<b>/r/</b>	5		11		---	<b>16</b>
<b>/l/</b>	0	1	0	1	0	<b>2</b>
<b>open syll.</b>	0	----	1	----	----	<b>1</b>
<b>TOTAL</b>						<b>80</b>

Table 3.8 Vowels and following environments of all tokens coded as drawled

In Table 3.8, 13 tokens of /ɛ/ were drawled before nasals. For consistency’s sake – and because this paper does not touch on the *pin~pen* merger – these were included under the /ɛ/ column, despite the fact that all 13 were pronounced with an [ɪ] vowel, and are therefore rather more telling of the behavior of high vowels. The results here are similar to Labov, et al.’s (2006) findings shown in Table 3.2 which indicate that drawl is favored in vowels followed by nasals. Table 3.8 also shows a very slight favoring of voiced following environments, though the results here are not robust enough to draw strong conclusions about voiceless versus voiced environments.

Type		/i/	/ɪ/	/e/	/ɛ/	/æ/	TOTAL
2	double-pulse	1	9	3	8	9	34
3	Inglides	0	8	1	8	2	23
4	triphthong	0	3	0	5	2	12
5	diphthong	0	0	0	0	5	5
6	triph w/son	0	0	3	0	0	6
	<b>TOTAL</b>	<b>1</b>	<b>20</b>	<b>7</b>	<b>21</b>	<b>18</b>	<b>67</b>

Table 3.9a. Drawl types according to front vowel for all coded tokens.

Type		High V _/r/	Mid V _/r/
2	double-pulse	3	1
3	Inglides	1	3
4	triphthong	0	2
5	diphthong	0	0
6	triph w/son	1	2
		<b>5</b>	<b>8</b>

Table 3.9b. Drawl types that occurred with /r/ as a following environment

Table 3.9a shows the distribution of drawl types by vowel phoneme. Interestingly, among these seven women, the drawl types containing hiatus occur in decreasing frequency as the type gets more complex. For broken vowels, the more dramatic the formant movement, the less often it occurs, at least in the speech situation of a sociolinguistic interview.

While vowel plots are useful for observing placement and glides of individual vowels, they offer little in terms of drawl measurement or large-scale comparison. By contrast, given the gliding movement that occurs in broken vowels, conducting acoustic measurements of distance and direction of movement within acoustic space seemed a promising approach for obtaining an

objective measure of drawl. In terms of distance, triphthongs were predicted to show longer glides in both segments, first in a roughly vertical direction (high slope) and then slightly more horizontally with some lowering as well. The non-triphthongal broken vowels (Types 2 and 3, or double-pulse and inglides) were predicted to have equivalent movements in the first segment to the control, or non-drawled, group. The first segment would have a relatively short distance of movement (if any), rendering slope relatively irrelevant. In Type 2, double-pulse, the second segment would show this or a similar pattern, though the second segment of Type 3, inglides, would show an increase in movement which would be in a roughly horizontal direction (low slope). These measurements can be taken using information from formants to plot position in space, and methodological experiments were undertaken to reveal the usefulness of the techniques as an objective measure of drawl.

Such dynamic vowels obviously demand measurements at more than one point during the duration of the vowel. In this study, vowels were measured at three points, two determined by duration of the vowel and one determined by the highest point of the vowel, or minimum Hertz value of the first formant. The first and last measurements of F1 and F2 were taken at 15% and 85% of total duration, respectively, to reduce co-articulation effect as much as possible while attempting to prevent compromising location of the vowel's onset and offset positions. These duration percentages were chosen after manually evaluating a sample of vowels at various percentages for capture of glide and best representation of formant behavior.

In terms of the middle measurement, the patterns of broken front vowels from Tables 3.3 and 3.4, repeated here as Tables 3.10 and 3.11, indicate that the most dramatic movements involve a glide to the upper corner of the periphery for all front vowels. Therefore, the third

(often the “middle”) point of F1 and F2 measurement was taken during the minimum Hertz value of F1.

	high front glide	centralized off glide	Example
a)ɪ̯.ə/ ɪ̯.ə	+	+	[kɪ̯əd] <i>kid</i>
a)ɪ̯.ə	-	+	[kɪ̯.əd] <i>kid</i>
c)ɪ̯.ɪ	-	-	[kɪ̯.ɪd] <i>kid</i>
d)ɛ̯ <sup>i</sup>	+	-	[ɛ̯ <sup>i</sup> g] <i>egg</i> (*[bɛ̯ <sup>i</sup> d] <i>bed</i> )
e)ɛ̯ <sup>i</sup> (j)æ	+	+	[bɛ̯ <sup>i</sup> jæd] <i>bed</i>
f)ɛ̯.ə	-	+	[bɛ̯.əd] <i>bed</i>
g)ɛ̯.ɛ	-	-	[bɛ̯.ɛd] <i>bed</i>
h)æ̯ <sup>i</sup>	+	-	[kæ̯ <sup>i</sup> ndi] <i>candy</i>
i)æ̯ <sup>i</sup> (j)ə	+	+	[hæ̯ <sup>i</sup> jəd] <i>had</i>
j)æ̯.ə	-	+	[hæ̯.əd] <i>had</i>
k)æ̯.æ	-	-	[hæ̯.æd] <i>had</i>

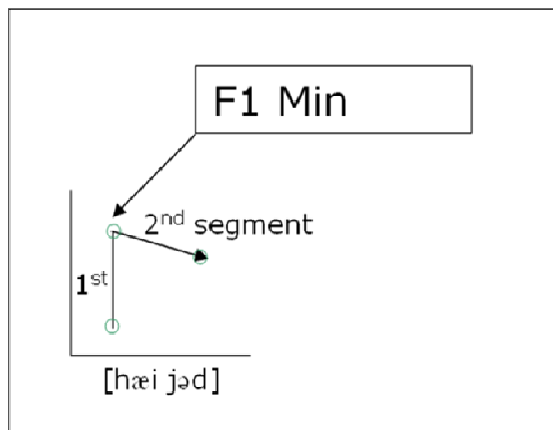
Table 3.10. Broken front vowels by height. A period represents a hiatus between vowels.

	high front glide	centralized off glide	Example
i(j)ə	?	+	[hijər] <i>here</i> ; [hijəl] <i>heel</i>
e(j)ə	+	+	[hejər] <i>hair</i> ; [hejəl] <i>hail</i>

Table 3.11. Broken tense front vowels before liquids

Measurement of this type provided two segments. The two segments are created by the paths of the vowel trajectories, which are similar to the sides of a triangle. Hence, the term “first segment” is used to describe the trajectory of the first glide and “second segment” is used to refer to the second. The first segment occurs between a point near the onset of the vowel and the second target. The second segment is between the point of reversal of directionality (the second

target) and the third target of the vowel. To clarify, if triphthongal broken vowels can be visualized as a ‘7’ turned 90 degrees to the left, it is important to ensure that the point of change in directionality is captured as the vowel moves toward the third target. A schematic pattern of this type of measurement is shown in Figure 3.5.



*Figure 3.5* Schematic representation of a triphthong. In lieu of a midpoint measurement, formants were measured at the point of F1 Minimum.

The measuring process was automated through creation of a script to run within the Praat program for each audio file. Due to physiological differences, such as vocal tract size, the formant measurements for all the women could not be grouped together in their raw form. For this reason, the formant measurements were normalized to Bark Difference values before calculating distance and direction of movement, or slope.

Generally speaking, the measurements given by Bark Difference attempt to mimic the way sounds are perceived. According to Thomas and Kendall (2007), “the Bark Difference method does a reasonable job of filtering out physiological differences while retaining sociolinguistic differences” which are the two most heavily weighted concerns for work in

sociophonetics. The method uses Traunmüller's (1997) critical band rate formula to convert formant Hz values to Bark values:

$$\text{Bark} = [Z_i = 26.81/(1+1960/F_i) - 0.53], \text{ where } i \text{ corresponds to Hz formant value.}$$

After conversion to Bark, values that correspond to normalized formants are calculated through a method initially conceived by Syrdal and Gopal (1986). Following a modification by Thomas and Kendall (2007), this method calculates Bark Difference values using  $Z_3 - Z_1$ , for the F1 axis values, and  $Z_3 - Z_2$  for the F2 axis values, This formula was used to convert the raw formant measures of each woman's tokens into Bark Difference values (Bark) using Microsoft Excel spreadsheets. After conversion into Bark, they were grouped together and sorted according to codes. The calculations discussed below were then performed using these normalized Bark values.

Distances between points 1 and 2 (Length of Segment 1) and between points 2 and 3 (Length of Segment 2) were calculated using the formula for Euclidean Distance<sup>32</sup> as a measure of Hertz movement within acoustic space. In addition to this calculation, Slope, or angle of gliding, was also measured for both Segment 1 and segment 2. The mathematical formulas used for calculating two dimensional distance between two points and for calculating the slope of a line between two points were the following:

$$\text{Distance (point a, point b)} = \sqrt{(a_1 - b_1)^2 + (a_2 - b_2)^2}, \text{ where points a and b are points plotted in acoustic space using formant measures}$$

$$\text{Slope (m)} = (y_1 - y_2)/(x_1 - x_2), \text{ where } x = f2 \text{ axis and } y = f1 \text{ axis.}$$

<sup>32</sup> Also known as Cartesian Distance

After computing each of the measures, the means for both Distance and Slope according to drawl type (as well as a mean for non-drawled tokens) were found by averaging together the individual values (individual distances and slopes, respectively) for each token. In Figure 3.4, the means for gliding distance for each type are shown. As explained earlier, this project focuses on broken versions of drawl, so only three types of broken vowel were measured for angle and length (slope and distance): Type 2 (Double Pulse), Type 3 (Centralizing offglide), and Type 4 (Triphthong). While Type 6 (also a type of Triphthong) has a broken sound, much of the second pulse occurs on the following sonorant, which fell outside of the demarcation for the vowel within the Praat Textgrid such that formants could not be measured in a comparable way. Manual measurements can be completed at a later time to see if they contribute any further understanding to the results.

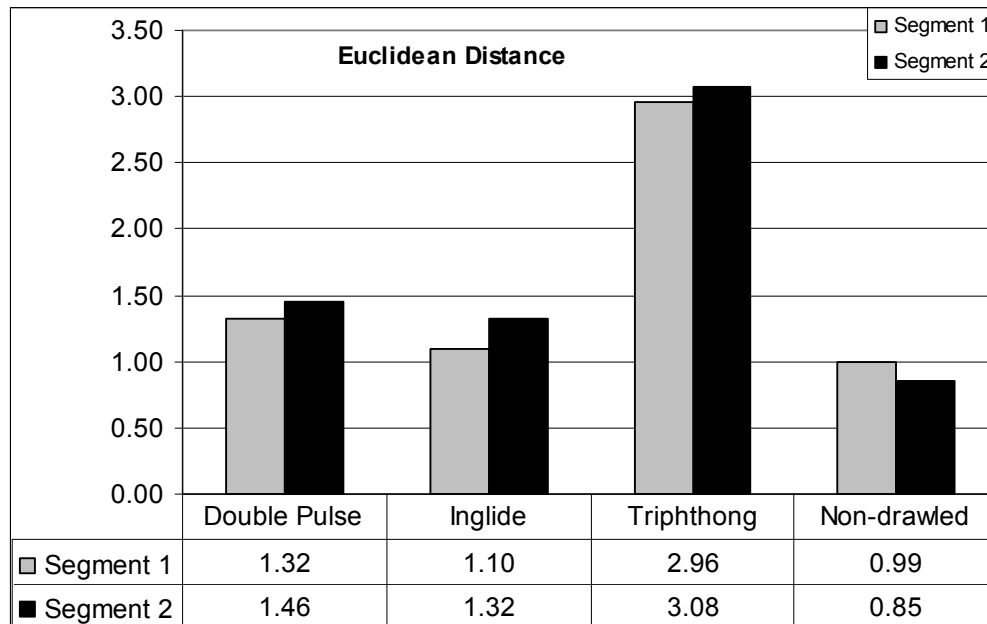


Figure 3.6 Distance means calculated as the average of all distances for a given type of drawl.

While no measured vowel showed a completely static position, triphthongs had longer movement in comparison to the others, which is precisely what was predicted. This result allows us to tentatively say that distance may indeed be a useful measure for distinguishing triphthongal vowels from other breaking types. In terms of value for measuring other broken vowels, the evidence is not clear. For example, the second segment of a vowel with an ingliding second segment should have a good deal more movement than the first segment (as it glides inward) though this chart does not reflect this. The reason for this is very likely that, for Double-Pulse and Inglding Types, F1 minimum is not the best place to measure a third point. For example, Inglding Types could be better measured at F2 maximum, indicating the point at which the ingliding begins. Future work should consequently incorporate additional techniques. Since each type has such disparate acoustic behavior, it should follow that each type would necessitate its own methodological specifics. Measuring the second point at F1 minimum works best for the trajectory of triphthongs, but not as well for the other types.

In contrast to the other types, distance is very promising as a measure of triphthongs, with statistically significant results showing that they have longer trajectories than other vowels. A series of T-tests were conducted comparing the Euclidean Distance means (by respective segments) of the three types of broken vowels in question and the non-drawled category. Each category was tested in a pair against each other category. The results of the tests showed both segments of the triphthong measurements to have significantly longer glides compared to the other types of broken vowels, as well as against the non-drawled vowels.

segment	tested against	t-value	p-value	95%CI
<b>Triphthong<sub>1</sub></b> Mean = 2.96 SD = 2.93 N = 19	<b>Double Pulse<sub>1</sub></b> Mean = 1.32 SD = 1.48 N = 30	2.5969	<b>0.0125</b>	-2.9105 to -0.3695
	<b>Inglide<sub>1</sub></b> Mean = 1.10 SD = 0.88 N = 20	2.7147	<b>0.0100</b>	-3.2483 to -0.4717
	<b>Non-drawled<sub>1</sub></b> Mean = 0.99 SD = 1.32 N = 896	6.2018	<b>&lt; 0.0001</b>	-2.5941 to -1.3459
<b>Triphthong<sub>2</sub></b> Mean = 3.08 SD = 1.74 N = 19	<b>Double Pulse<sub>2</sub></b> Mean = 1.46 SD = 1.59 N = 30	3.3506	<b>0.0016</b>	-2.5927 to -0.6473
	<b>Inglide<sub>2</sub></b> Mean = 1.32 SD = 0.69 N = 20	4.1922	<b>0.0002</b>	-2.6107 to -0.9093
	<b>Non-drawled<sub>2</sub></b> Mean = 0.85 SD = 1.21 N = 896	7.8671	<b>&lt; 0.0001</b>	-2.7869 to -1.6731

*Table 3.12* Statistical significance of Triphthong measures against other types. N= number in sample, SD = standard deviation, CI = confidence interval. Subscripts indicate which segment is being tested.

The tests of distance comparing other pairs of vowel segments were not significant with one exception: the second segment of the double pulse vowels was significant against the second segment of non-drawled vowels ( $p = 0.0074$ ). Additionally, the second segment of the ingliding vowels was suggestive, but not significant ( $p = 0.0839$ ). Figure 3.7 shows the mean values of the slope measurements and is also divided into segments and drawl types, including non-drawl (“None”).

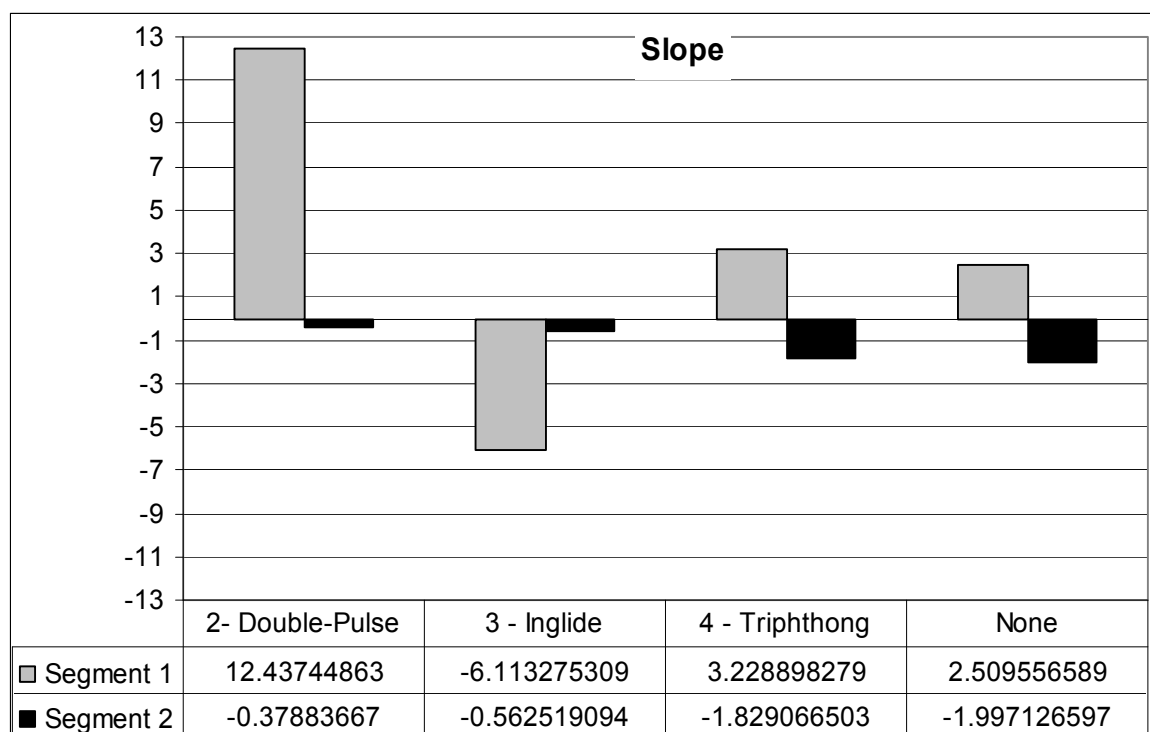
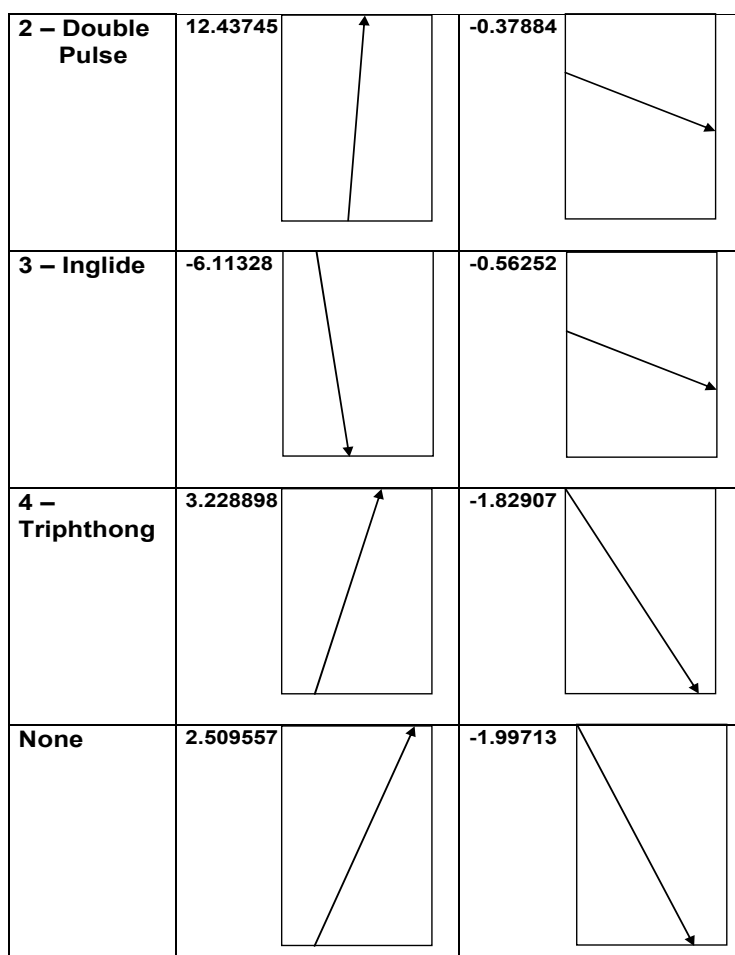


Figure 3.7 Slope means for each type of drawl calculated as the slope of the average of the values.

Slope may be calculated by either taking the slope of the average values (one slope from the average) or by taking the average slope of the individual values (overall slope value is the average of many individual slope values). In this case, both were calculated and the former was the better measure for two reasons. The behavior of the triphthongs – rising relatively steeply then turning and lowering and backing – is known from observation. The first method of calculating slope resulted in measurements that matched this; the second did not. Further, a completely vertical line has an “undefined” slope, which can also be the result of a point which does not move at all between measurement times. Several tokens (many for the non-drawled tokens) had no horizontal movement - and perhaps no movement at all - resulting in quite a few undefined slopes when individual slopes were calculated for the second method above. For the

first method, overall averages of values were used and none were identical, allowing us to calculate slope for all categories. In Figure 3.5 above, lower values indicate a more horizontal direction (slope of a horizontal line = 0), the value '1' indicates a 45 degree angle, and so on. Very high slopes show a near vertical line. In terms of an acoustic graph, positive values correlate with raising and negative values correlate with lowering. To assist with visualization, especially in evaluating any meaningful differences, Figure 3.8 shows the slopes for each measurement, though it should be borne in mind that these arrows represent only direction and not length.

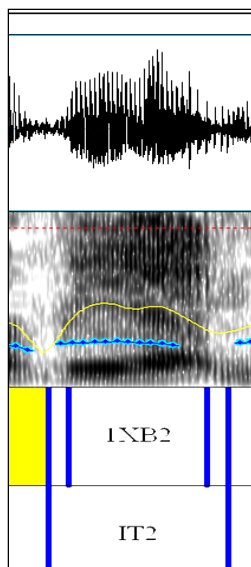


*Figure 3.8* For visualization purposes: Diagrams of lines with the calculated slope means from Figure 3.5.

The specific angles allow a better understanding and visualization of what exactly the slope measurements “mean” and what the vowels are doing, particularly in relation to the Euclidean Distance measurements in Figure 3.4. Figure 3.6 suggests that double-pulse vowels do have some raising and ingliding during the execution of the vowel. The graph also shows that inglides appear to lower a small distance before ingliding a longer distance. While non-drawled has movement at approximately the same angle as the triphthongs, the distance is relatively slight. The triphthong’s distance, however, is significantly farther than all other types (see Table

3.12). The angle movements for triphthongs show approximately what is expected, though the others, especially double-pulse and ingliding are curious, most likely due to the middle point measurement at F1 minimum. I return to this below. It is interesting to see that double-pulse vowels have some ingliding, raising questions about the impressions they may give. In Allbritten (2008), I used a method of categorizing monophthongal (ay) based on being below the percentage of glide which gives the percept of diphthong. Perhaps the behavior of ingliding is an instance where percentage of ingliding needs to meet a threshold before it is well perceived.

Looking at these particular measurements of distance and angle, one finds that these methodologies perhaps serve best as measurements of triphthongs. More research is needed exploring other methods – amplitude/intensity, for example – as measures of the “pulses” that appear in the vowels of Southern speech. An example is shown in Figure 3.9. Here, Beth’s pitch remains fairly steady, but her amplitude has two distinguishable peaks.



*Figure 3.9* Beth, b. 1978: *it*. Two pulses of intensity are indicated by the top measurement line. While measuring intensity peaks such as the straightforward ones seen here would be useful, not all broken vowels contain such simple peaks.

As the drawl taxonomy is improved upon in the future, amplitude, pitch, or other measures may prove useful for the non-triphthongal categories, or for types possibly not yet discovered.

### 3.3 APPLICATION

The results above show that triphthongs definitively have a greater amount of movement than other types of vowel, whether drawled or not. Since this project ultimately concerns itself with perception, it can safely be speculated that, for elongated vowels, adding formant movement to the increased length would make it more salient. Stated in another way, it can be assumed that the greater the number of “plus signs” in Table 3.13 (repeated from Table 3.1 above), the greater the ease of perceiving the phenomenon thereby increasing the chance that a listener cues into the difference between a drawled and non-drawled vowel.

	<i>Addition of glides</i>	<i>Wide Variations in Pitch</i>	<i>Added Length</i>	<i>Example transcription of ‘past’</i>
<b>Basic</b>	diphthong	–	–	[p <sup>h</sup> a <sup>i</sup> st]
<b>Expanded (1987)/Extended (2008)</b>	triphthong	–	+	[p <sup>h</sup> a <sup>i</sup> jəst]
	diphthong	+	–	[p <sup>h</sup> a <sup>i</sup> st] + extreme pitch movement
	triphthong	+	+	[p <sup>h</sup> a <sup>i</sup> jəst] + extreme pitch movement

*Table 3.13* Classification of drawl according to Feagin (1987, 2008).

Table 3.9a, repeated here as Table 3.14, shows words with /æ/ and /ɪ/ to have the clearest results in terms of drawling/breaking. Although the mid-vowels seem to rank highly, the drawled

mid lax vowels before nasals were technically behaving as drawled high lax vowels (raising to a high tense vowel and then lowering, as in *tent* [tijənt]). If the 13 pre-nasal /ɛ/ vowels were counted in the /ɪ/ category, the high lax vowel would have a great number more drawled vowels than any other category, with /æ/ as runner-up. Results suggest that /æ/ and /ɪ/ are both strong players in the drawl phenomenon. In terms of salience, it can be speculated that the more movement that occurs within acoustic space, the more salient it would be. Thus, a triphthongal /æ/ would be more salient than triphthongal /ɪ/, which is important for a perception study such as the one in this project.

Type		/i/	/ɪ/	/e/	/ɛ/	/æ/	TOTAL
2	double-pulse	1	9	3	8	9	34
3	Inglides	0	8	1	8	2	23
4	triphthong	0	3	0	5	2	12
5	diphthong	0	0	0	0	5	5
6	triph w/son	0	0	3	0	0	6
	TOTAL	1	20	7	21	18	67

Table 3.14 Drawl types according to front vowel for all coded tokens.

A valuable addition to the experimentation begun in this chapter would be to test the salience of various types of drawl, including not only movement, but which vowels attract listeners' attention. What's more, it may well be the case that a more subtle version of drawl would better draw out reactions of listeners below the level of consciousness. However, one problem with using a double-pulse vowel that shows a relatively stationary position within

acoustic space is that there is a possibility that such vowels occur outside the south. While it is still possible that people would associate them with the south no matter the reality, we do know, from both previous literature and pop culture that people associate triphthongs with the south. This makes using triphthongs a better choice for the survey, given the lack of thorough knowledge. Yet another benefit of using triphthongs for the stimulus is that they represent a type of drawl that is more traditionally agreed upon among linguists. A triphthongal vowel would be accepted as “drawl” by every author whose work was reviewed above (Section 3.1.2). Though I suggest a redefinition of drawl in the next section, it is still the case that the features represented by a triphthong are part of the phenomenon that seems to interest linguists so much, no matter how it is labeled.

These ideas lead to the conclusion that, for a perceptual survey based on various combinations of features, the presumed most salient version of drawl – a triphthongal /æ/ – should act as representative of this feature.<sup>33</sup> Using the low vowel as the stimulus is also a good choice in that it is compatible with the existing literature, which overwhelmingly deals with drawl in terms of /æ/. Looking back at Table 3.8, repeated here as Table 3.15, drawled vowels occur most often before the following environment of stops in the pattern of *nasals* > *voiced (non-nasals)/ voiceless (non-nasals)/rhotic*.

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<sup>33</sup> To prevent exponential increase in versions of the stimuli sentence, only one representative of each feature should be included at this stage.

	/i/	/ɪ/	/e/	/ɛ/	/æ/	TOTAL
<b>voiceless</b>	1	4	1	4	5	<b>15</b>
<b>voiced</b>	0	7	2	3	5	<b>17</b>
<b>nasal</b>	0	8	0	13	8	<b>29</b>
<b>/r/</b>	5		11		---	<b>16</b>
<b>/l/</b>	0	1	0	1	0	<b>2</b>
<b>open syll.</b>	0	----	1	----	----	<b>1</b>
<b>TOTAL</b>						<b>80</b>

Table 3.15 Vowels and following environments of all tokens coded as drawled

These findings support those from Table 3.2 which shows following environments favoring drawl based on Labov et al. (2006, 180). The ideal stimulus to serve as a representative of this feature is a monosyllabic sentence final word containing /æ/ before a nasal. Drawled and non-drawled versions of the word should approximate the respective findings for each in this chapter in terms of segment length and angle of glide. The measurements carried out in Section 4 allow us to ensure that the stimulus token conforms to the measurements of other triphthongs found in this data.

### 3.4 DRAWLING, BREAKING, AND A CASE FOR CHANGE

As discussed in Section 2, the term *breaking* has been used by some linguists either as a term variably interchangeable with *drawl* or as a term emphasizing the gliding a drawled vowel does. Consistent with past use, ‘drawl’ was used in the first three sections of this chapter as the umbrella term for the overall phenomenon of lengthening, gliding, pitch change, and mid-vowel amplitude drop. The term *breaking* was also loosely used in a sense resembling *drawl*. However, I argue that a terminology change is needed in this area of study.

Drawled syllables are necessarily lengthened; lengthened syllables are not necessarily drawled. Monophthongal syllables employed for reasons such as listing, pausing to think, etc., are not usually considered drawled by linguists, however long the duration<sup>34</sup> However, it seems that laypeople – and linguists who do not work in this area – may consider some long duration words drawled simply because they consider pace and noticeably long word duration the primary considerations for a definition of drawl. For example, WordNet, a lexical database maintained by the computer science department at Princeton and often used within computational linguistics, provides the following definition: “(n) drawl (a slow speech pattern with prolonged vowels)”<sup>35</sup> (WordNet 3.0, Princeton 2006).

It may be possible to use ‘breaking’ to describe the sub-features of amplitude drop and pitch change which result from the introduction of a hiatus into a monophthongal vowel, thereby splitting or *breaking* the vowel into more than one part. However, there is potential for confusion in giving this term two definitions. ‘Breaking’ can be somewhat redundant with ‘gliding’ or ‘diphthongization.’ Even so, this term is well-established within the fields of philology and historical linguistics, particularly for linguists studying the development of Germanic languages (e.g. Lass and Anderson 1975; Hogg 1992; Nakao 1998). *Breaking* is the process of vowel epenthesis, where a diphthong is the result. In other words, it is the process by which a monophthong develops into a diphthong. Breaking does occur with the phenomena outlined in

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<sup>34</sup> Did a dialectal difference in speech pace result in the development of two morae in the sense used by Labov (1994: 281)? The question of pace as an impetus for either the shift of the front vowels in the SVS, breaking, or both is a very interesting one that could benefit from more attention in future research projects.

<sup>35</sup> This same definition can be found in a few places.

this chapter with, for example, Type 4 (*can't* [kænt] → [kæ<sup>i</sup>jənt]) and Type 5 (*can't* [kænt] → [kæ<sup>i</sup>nt]).

However, except for Type 5, the unusual phenomena of Southern speech that have preoccupied linguists most – gliding twice within one vowel, amplitude change, pitch change, especially in the case of triphthongs – have had an added hiatus, and I argue that it is this added hiatus that is central to the phenomenon under study. The introduction of hiatus is usually, but not always, accompanied by a drop in amplitude ranging from slight to extreme, resulting in two peaks in intensity. What a vowel's sudden change in direction within acoustic space essentially achieves is the division of one syllable into two parts, which has been called double morae (Feagin 1987) in lieu of referring to adding a syllable outright. However, since vowels with hiatus in Standard English (c.f. *naïve*) are considered to have two syllables, there is no obvious reason why these vowels gaining a hiatus could not be considered to have an added syllable.<sup>36</sup> Any drop in amplitude during the hiatus increases this percept. These vowels also exhibit a strong-weak, trochaic stress pattern. This stress difference likely additionally heightens the perception that, in Southern speech, words gain "syllables". The pitch differences accentuate the phenomenon for the listener, especially when large amounts of formant movement occur as well, giving rise to meta-commentary such as the GRITS quote at the beginning of the chapter.

In hiatified units in Southern English, the first one usually has greater stress, much like a trochaic two-syllable word like *suitcase*. Further, the hiatification in Southern English may have

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<sup>36</sup> Feagin (1987) states that native speaker intuitions lead her away from saying that the vowel has two syllables and I must agree. However, given that the same behavior in other words (e.g. 'payer') results in two syllables, this description should stand for now until future research shows otherwise.

two equivalent vowels for each portion (e.g. Feagin's (1987) example: *eye* [<sup>1</sup>a ,a]). I propose the addition of a label such as *hiatification*, or the process of inserting a hiatus into a vowel. The addition of this label allows linguists the possibility of defining *drawl* as primarily having to do with slow speech rate and prolonged vowels. We can study hiatification as a possible development out of that lengthening and the host of possibilities which may accompany it. In this way, the linguist's definition of drawl is more closely aligned with the layperson's (which is arguably where it originated in the first place).

In sum, the following processes in Southern English may occur separately, though they are often located together: drawling, breaking, and hiatification. What exactly the relationship among them is and whether any causality can be posited remains an open question. In the remainder of the discussion, the term *hiatification* will be used for specific reference to hiatified vowels. In the next chapter, the term *breaking* will serve as the (more readily recognized) shorthand term for the triphthong used in the stimulus survey, which does include breaking (the first segment is diphthongal).

### 3.5 CONCLUSION

It is hoped that the work carried out in this chapter has shed some light on lingering questions about the interactions of drawl, breaking, and hiatification. Of course, much remains to be answered. For example, what is the best measurement of the so-called "double-pulse" and ingliding vowels? As mentioned earlier, intensity measures or pitch measures may hold promise for these. The Euclidean Distance and Slope measurements using F1 minimum are not well-suited for vowels whose features do not include raising to the high periphery, making F1

minimum less relevant and perhaps even misleading for double-pulse and ingliding vowels. The coding schema should also be tested by looking at more data and by using more coders.

Using sociolinguistic interview data for an investigation of breaking and hiatification also brings up interesting issues. The speech situation under which the data were recorded (sociolinguistic interview) is not certain to be one which lends itself to frequent breaking and hiatification. Data gathered under different circumstances may yield a higher number of vowel tokens exhibiting these processes. This may be especially true of triphthongs, which did not have a large representation in this body of data. In my experience observing language in the North Alabama area, hiatified vowels occur in larger quantities among Southern women during situations requiring extreme politeness, hospitality, and/or friendliness, especially among women who do not know each other well. While Feagin (2008) mentions drawl as a marker of intimacy, this intimacy is part of the search for solidarity that she also discusses:

...Women use it to make visitors feel welcome, in being solicitous, and in flirting...Expanded drawling is also the vehicle for ‘gushing’ – the exaggerated intonation and gliding which expresses admiration or welcoming. Adult women use this as an expression of solidarity. The expanded drawl is used especially in baby talk – to babies or to pets (109).

Talk used in these situations would not necessarily be common in the situation surrounding sociolinguistic interviews, which often take on a slightly more formal tone.<sup>37</sup>

Hiatification appears to be a method by which speakers “sugarcoat” their speech. While some

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<sup>37</sup> Excepting, of course, my own use of it in recruiting participants or in thanking them afterward.

speakers might find the interview an opportunity needing sugar, many treat it as a slightly more serious conversation, or frame the speech event in both ways over the course of the interview. At the same time, it can be speculated that sociolinguistic interviews are a relatively good way to examine this phenomenon compared to other commonly used methods such as having a participant read a story or list of words, for example. From being an occasional drawler myself, it seems that being at all uncomfortable would hinder hiatification. In the case of these particular interviews, it may have helped that the interviewer was a Southern female (me), especially one from the same area and close to the same age.

Using young females for this study brings up other issues, however. While it is certainly the case that females are a natural choice for a drawl study, young females in this area – as in many other areas of the United States – are increasingly using “creaky voice” (Podesva and Lee 2010). While these women use it throughout speech, it is used over half the time in phrase-final words: exactly the environment in which hiatified vowels usually occur. There were several instances where seemingly broken vowels could not be used in the study due to excessive creakiness. While Praat software often does a reasonable job of calculating formants for slightly creaky speech, tokens that are creaky in the extreme may not produce readable formants (or other features such as pitch). Information is still gained from this fact, however; we learn that other, independent features such as creaky voice may be layered over drawl features.

Determining the extent of Hertz movement which cues the percept of one type of drawled vowel over another (as well as whether the vowel is drawled at all) would be a useful exercise to improve the taxonomy. In particular, a vowel may give off a different percept based on what percentage of the duration was involved in gliding or whether the gliding of the vowel was in a

particular direction in acoustic space. Such a method was used in Allbritten (2008) to categorize monophthongal versus diphthongal (ay). Only through a great deal of more focused work on drawl can we answer these questions. Additional investigation on the social constraints of drawl would certainly be interesting, as well. Despite the questions that remain, it is hoped that the work begun here will serve as a starting point for the much needed future research to come.

## CHAPTER 4. ACCENT STRENGTH

*My accent isn't like out in the woods country... It's just an Alabama drawl.*

- Online Q-A forum.<sup>38</sup>

*You're too pretty to sound like a redneck.*

- Viewer email to Suzanne Boyd, anchor for West Palm Beach, Florida, WPEC NEWS 12

*I love a Southern accent, just so that it isn't overboard.*

- Online Q-A forum.<sup>39</sup>

### 4.1 INTRODUCTION

What makes a Southern accent strong? It is a safe assumption that everyone has heard another person say that someone from an area known for a particular accent has a strong version of that accent. Likewise, it may also be said that a person does not have much of that accent at all. What does a comment like this mean in linguistic terms? This chapter is designed to primarily address the following question: which features of a Southern accent contribute most to perception of a strong Southern accent? Based on the pilot study in Chapter 1, it may be hypothesized that front vowels shifted via the SVS and monophthongal (ay) would affect a listener's perception the most. It was also hypothesized that Southerners would be better able to make more fine-grained distinctions within the larger mental construct of "Southern accent."

In this part of the study, knowledge of the linguistic behavior of the seven women from Riverton is used to motivate a study designed to at least partially capture the layperson's notion of a "heavy" vs. "light" ("strong" vs. "weak") Southern accent. Some information about the

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<sup>38</sup> (<http://www.giantbomb.com/forums/off-topic/31/do-guys-like-girls-with-southern-accents/254391/>)

<sup>39</sup> (<http://answers.yahoo.com/question/index?qid=20100120183420AA82Wi7>)

seven Riverton women from Table 2.1 is repeated here as Table 4.1. Further details about the women can be found in Appendix I.

<b>Pseudonym</b>	<b>Year of Birth</b>	<b>Home Location at birth</b>	<b>Moved to area in</b>
Sierra	1987	Montgomery, AL	~ 1992
Kristina	1982	Huntsville, AL	~ 1985
Natasha	1981	North Carolina	~ 1988
Tiffany	1979	Riverton, AL	n/a
Beth	1978	North Carolina	~ 1981
<b>Stacy</b>	<b>1978</b>	<b>Florida</b>	<b>~ 1986</b>
Marcia	1977	Riverton, AL	n/a

*Table 4.1: List of Speakers with emphasis added for speaker of stimulus*

This chapter lays out the details and results of presenting a stimulus sentence recorded by Stacy to naïve listeners in order to gather information about their perceptions. First, results and methods of studies similar to this one are summarized. Background for the various types of methodologies implemented here is additionally provided. After discussion of how the survey was actually carried out, the results of the rating of strength of Southern accent are presented, followed by some interpretation. After analyzing the results of Southern versus Non-Southern listeners, I examine possible effects of listeners' home regions, listeners' ages, and/or the prosody of the stimuli. Last, I include an overview of the perceptions of how rural/urban the speaker sounded. Results show that some of the features and feature combinations used in this survey do strongly prompt the percept of a stronger Southern accent. Additionally, while there are subtle differences between groups of Southerners and groups of Non-Southerners, their perceptions do not differ dramatically. Further, these two groups' perceptions of how urban the speaker was are surprisingly similar.

## 4.2 LINGUISTIC SURVEYS AND ACCENT PERCEPTION

Dialectologists have been conducting surveys for at least 100 years to gather information about how people speak differently in different regions, usually with an eye toward creating an atlas of speech patterns (Kretzschmar 2003). Perhaps the most well-known early dialect geographer in the United States is Hans Kurath, whose linguistic atlases and isogloss-filled maps (Kurath 1939, Kurath et al. 1941, Kurath 1949, Kurath and McDavid 1961) laid the groundwork for much of the dialectology in the U.S. The resulting volumes are still consulted even today. The methods for the Linguistic Atlas of the Middle and South Atlantic States (LAMSAS) set a precedent that has continued to be used for several other, newer surveys (see Kretzschmar 2005). The surveys (loosely) connected with LAMSAS have gathered data primarily via in-person interviews using a lengthy questionnaire. Early surveys were concentrated primarily on lexical variation, though information on pronunciation was recorded as well. Before the 1950's – when audio recording became an option for the interviews – fieldworkers transcribed phonetically the participants' responses (Kretzschmar 2001; Kretzschmar 2005). Specific to the South, the Linguistic Atlas of the Gulf States (LAGS) (Pederson et al. 1986-1993), contributed a great deal of knowledge about Southern speech, including the area of the Tennessee Valley where Riverton is located. The standard LAMSAS questionnaire was altered by Pederson to obtain information on features specific to the South. While data obtained from questionnaire interviews may be complicated by issues that arise from self-perceptions (respondents may not be aware of what they really do), they are still considered more reliable in this respect than other methods, such as a postal questionnaire, where a fieldworker is not present.

Postal questionnaires were utilized by several early linguists, beginning with Georg Wenker, a German dialectologist who, in 1876, mailed questionnaires to teachers around Germany asking them to transcribe (or “translate”) the supplied Standard German sentences into dialectal variants. He obtained copious amounts of data in this way and published atlases, maps, and articles from 1877 onward for over four decades. Such postal questionnaires were additionally used in Denmark for a survey (1912) conducted by Marius Kristensen, and much later in Scotland (1952) by Angus McIntosh (Davis 1971; Chambers and Trudgill 1988). Though self-reporting issues were present in some, postal questionnaires offered dialectologists of the past the ability to gather responses relatively easily from a large geographic area, helping to balance the problems of conducting in-person interviews, which required more time, money, and personnel resources.

One way around the high-resource issues of in-person interviews is to conduct surveys via telephone. Telephones provide original data that can be audio recorded for analysis while conserving time, money, and other resources related to fieldwork. The most well-known by far is the telephone survey TELSUR, conducted by William Labov and his colleagues from 1992-1999. The data from the TELSUR survey resulted in the comprehensive *Atlas of North American English* (ANAE) (Labov, Ash, and Boberg 2006). The ANAE contains maps and analyses of phonological data from all over the United States.

Over the past decade, linguists have increasingly been using the Internet for data-gathering surveys. The survey for this project was conducted using an online survey, which offers some of the same time and money-saving benefits that postal and telephone surveys have previously. In addition to the benefits already mentioned, Dornyei (2007, 121) points out the

ease of administration when surveys are conducted online, as well as the ease of maintaining anonymity of participants. Online surveys are particularly useful for perceptual surveys, allowing participants to access pre-recorded samples of speech (in contrast to, e.g., telephone surveys). Recent and current online linguistic surveys are not difficult to find. For example, the Harvard Survey of North American Dialects (Bert Vaux, <http://www4.uwm.edu/FLL/linguistics/dialect/>) gathered self-reported phonological, syntactic, and lexical variation data from 2000-2005 using 122 questions that mixed direct questioning methods with indirect methods. For example, he used “How do you say caramel?” as a type of the former and “What do you call the insect that flies around in the summer and has a rear section that glows in the dark?” as a type of the latter. Although Vaux’s survey highly resembles “classic” surveys, such as the old postal questionnaires, use of the Internet offers a wide range of experimental possibilities and a relatively easy method of rapid data collection. The area of psycholinguistics is also taking advantage of this new medium; both The Max Planck Institute for Psycholinguistics<sup>40</sup> and a group made up of universities in Scotland and Germany<sup>41</sup> continually run online linguistic surveys and experiments. Another interesting variation is The London College of Communication’s online linguistic color-naming survey.<sup>42</sup> Despite the many positives, the Internet suffers from the same self-reporting dangers that apply to other methods. Wolfram and Schilling-Estes (2006, 177) state that “...caution must be used in interpreting self-report data, since speakers can easily over- or underreport their usage of particular linguistic forms. Nonetheless, survey questionnaires are a useful tool for variationists...” In the near future,

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<sup>40</sup> <http://www.mpi.nl/experiments>

<sup>41</sup> <http://www.surf.to/experiments>

<sup>42</sup> <http://www.colornaming.net/>

however, some online linguistic survey may be able to partially overcome problems of self-reporting since it is now possible to have online surveys which audio record people speaking, saving the file for the researcher. Atkinson et al. (2010) are currently collecting self-recordings of people in North America for dialect research purposes. Given the nature of the present study (language perception with limited choice answers), the Internet is a natural choice for data collection.

One of the primary differences between the online surveys above and this one is that the former are all concerned with linguistic production. The primary purpose of this online survey was to investigate linguistic perception by collecting impressions from the general population. In the past decade, perceptual research has become increasingly popular within the field of sociolinguistics and has been used for several different purposes. For example, perception surveys have been used for investigating the ability of listeners to assign a region to speakers after hearing only a word or short speech clip. One such study, already mentioned in Chapter 1, was carried out by Plichta and Preston (2004) whereby listeners were presented with words with varying degrees of monophthongization. The listeners were asked to assign the words to cities (pre-selected by the authors) that ran along a north-south latitudinal continuum. They found that listeners were remarkably able to distinguish modifications of each progressively more monophthongal synthesized variant. They assigned the least monophthongal stimuli to the cities farther north and the most monophthongal to the few southernmost cities.

Listeners have also demonstrated the ability to assign speakers to an overall region after hearing only one sentence. Clopper and Pisoni (2004a) conducted a perception survey which sought to determine the accuracy with which people could place speakers in their regions of

origin. Naïve listeners were presented with 66 sentences from six regions (11 speakers per region). Because the speech was methodically collected as part of the Texas Instruments/Massachusetts Institute of Technology (TIMIT) speech recognition corpus (and not from, for example, an interview), Clopper and Pisoni (2004a) were able to present listeners with the same two sentences from all 66 speakers. They additionally included a unique sentence per speaker. The two sentences contained eight features identified in literature as features of the six dialects (different features having a different distribution across the dialects). For example, pertinent to this study, the features identified as characteristic of the Southern region were: the voicing of the fricative in *greasy*, as in “greasy”; fronted /u/ (this feature was “shared” with the West in the sense that the feature was expected to correlate with both regions); and less diphthongization in both (ay) as in *buy* and (oy) as in *boy*. The South would be further characterized by the absence of four other features, which they used to identify other language varieties: absence of inserted [r] into *wash* so that it is realized as “warsh”; absence of diphthongization in both [o<sup>u</sup>] as in *bone* and [æ] as in *bag*; and absence of r-lessness in post vocalic environments.<sup>43</sup> Eighteen listeners participated in the survey, which was administered by presenting the six U.S. regions on a touch screen monitor and having them choose as they heard each sentence. The results showed that the listeners were not very good at assigning the precise region, though they performed above statistical chance. However, in terms of greater regions, listeners successfully grouped the speakers into roughly South, North, and West groups, with exact assignments depending on where the listeners were from themselves, suggesting that where

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<sup>43</sup> Clopper and Pisoni (2004) mention that some Southerners are r-less, but all Southern speakers included in their study were r-ful.

a listener is from will affect the way (s)he perceives language. The affected perception can be attributed to an interaction of several factors: depending on where a speaker is from, (s)he may be more likely to hear a speaker as “other” (e.g. Northern speaker conflating Midwestern and Southern features); depending on a speaker’s experience with various dialects, (s)he may be more able to accurately assign where a speaker is from (Clopper and Pisoni 2004b; Sumner and Samuel 2009) or identify an ambiguous word based on the context dialect (perceived dialect of the rest of the phrase) (Evans and Iverson 2004); and depending on a speaker’s dialect, (s)he may interpret individual vowels differently (Kendall and Fridland, 2010; Fridland and Kendall, forthcoming). Recent perceptual surveys such as these last two are helping researchers understand more about the dialect of the listener. While we know that a person’s dialect affects their linguistic *production*, we know less about how a person’s own regional dialect affects perception in terms of recognition or processing. Kendall and Fridland (2010) and Fridland and Kendall (forthcoming) detail experiments whereby listeners are asked to identify words containing front vowels involved in the Southern Vowel Shift, or SVS (see Chapter 2). Their study shows that listeners familiar with the SVS categorize high and mid front vowels differently than listeners who are not. For example, stimuli with seven continuous “steps”, or increments of changes, from *bait* to *bet* were created. Southerners continued to perceive the word as *bait* longer (through more steps) than non-Southerners, which is consistent with the backed and lax nature of Southern shifted /e/. Fridland and Kendall observe that “these results appear to suggest that perception is altered in the direction of regional shifts in production, with centralized /e/ realizations in the South extending the perceptual range of that vowel class for Southern speakers” (16, manuscript). They further find that listeners who participate in the SVS are more

likely to identify /e/ as /ɛ/ at later steps (or /i/ as /ɪ/ for those regions participating in the high vowel subshift). In a previous study looking at perception of the SVS by Southerners and non-Southerners, Labov and Ash (1997) found that Southerners had low recognition rates for shifted words in isolation. Initially, listeners were asked about a shifted word in isolation, e.g. *weight* pronounced toward *white*. Listeners were then given a short phrase (e.g. *weight watchers*) and then given an entire sentence. Once context was provided to Southerners, the rates of recognition were high. By contrast, non-Southerners had a great deal of trouble identifying the words, even with context. This was true even when there was no ambiguity. For example, no word *\*eighting* exists as an alternative to *eating*.

Like many perceptual surveys (including several of those mentioned above), the theoretical framework for the present study is that of a matched guise survey, a technique which has often been used in conjunction with elicitation of language attitudes. The matched guise technique, attributed to Lambert (1967), involves presenting closely related stimuli to listeners under some kind of “guise”, or pretense. Traditionally, what served as the “guise” was that the speech samples (each containing a different dialect or language) that were presented to listeners came from different people, when they were actually produced by the same person. Listeners then provided their opinions of – or attitudes toward – each speaker. However, if the same speaker produces both (all) of the stimuli, we can assume that the attitudes actually pertain to the language itself or, by extension, the characteristics the listener identifies with speakers of such language. In his overview of linguistic work in language attitudes, Fasold (1984) states that “Attitudes toward language are often the reflection of attitudes toward members of various ethnic groups” (148). This can certainly be extended to include any situation where the speaker’s code

is of a low-power status, not just ethnic groups. Within the wider region of the United States, the language of the Southeastern United States is considered to be of low status (e.g. Preston 1996; Soukup 2001). For this project, the part of the survey designed to uncover listeners' percepts of how Southern the stimulus sounded was folded into the usual techniques used within the field of language attitudes, such as using the matched guise technique and providing semantic differentials. The methods section below provides more details.

Lambert's (1967) foundational study used guises of bilingual English and Canadian French speakers to obtain information about local attitudes toward these languages in French Canada. Since that time, the matched guise technique has been adapted to the research goals of dozens of studies. This technique can be used to explore the presumed ethnicity (Graff et al. 1986; Purnell et al. 1999) or age (Koops et al. 2008) of a speaker. An adaptation of the matched guise methodology has also been used to explore the possibility that listeners sometimes perceive what they expect to hear based on preconceived notions. The information about the speaker creates the "guise", though the speech sample is the same. In this way Niedzielski (1999) studied Michigan residents' perceptions of their own dialect compared to that of nearby Canada. She played the same stimuli to listeners, varying only the title of the response sheet, which was labeled as either "Canadian" or "Michigan". In a similar vein, Strand (1999) gradually transitioned the word *sod* to *shod* over nine steps. In showing a man's face or a woman's face while playing the word, listeners placed the transition point from /s/ to /ʃ/ as earlier for a man than a woman, enabling Strand to collect information about listeners' perceptions and preconceived ideas about how a woman's voice should sound versus a man's.

While classic matched guise experiments used wholly different dialects and languages spoken by bidialectal or bilingual speakers for each guise, several studies (e.g. Graff et al 1986) have adapted the technique to narrow the variation to one or a few variables. In these cases, the guises are still from the same speaker, but as little as one variable has changed. These studies have shown that perceptions can change based only on small differences in information. Two studies (Campbell-Kibler 2006; Labov et al. 2006) demonstrated that a single variable, a velar's presence or absence on the suffix *-ing*, can change how a speaker is perceived. In Campbell-Kibler (2006), the changes in the ways that the guises were perceived were somewhat in relation to the other information that listeners had gathered from the speech clips, such as other regional dialect features. The meaning of (ING) was slightly different, depending on what else the listeners heard. In this way, her work serves to show that the social meaning of a given variant is not automatic but rather context-dependent.

The current experiment uses a variation of the technique whereby listeners know that they are listening to the same speaker instead of being led to assume that the speech samples are spoken by different individuals. This adaptation presupposes that listeners accept that a given speakers' language usage does not always remain constant and that the speaker may be perceived differently in different instances based on the language used at that time.

Sharing similarities with the current one, a type of more-or-less Southern perceptual survey was previously done by Fridland, Bartlett, and Kreuz (2004), who conducted a study testing listeners' perceptions of the SVS. Their project elicited reactions from 141 listeners from Memphis, Tennessee. Listeners were presented with a pair of words and asked to circle the more Southern version. Each word had five guises. Apart from the original (deemed slightly Southern

by the authors), there were two manipulated for the SVS, one more advance than the other, and two manipulated for another shift occurring in the Northern United States (the Northern Cities Chain Shift, or NCCS)<sup>44</sup> with, again, one more advanced than the other. The vowels tested were both high front vowels, both mid front vowels, /u/, and /o/. Fridland et al. (2004) found that Memphians were better able to recognize those front vowel shifts that were most prevalent in their own speech. Further, in those front vowel shifts they participated in the most, they were also better able to label (as more Southern) finer distinctions in formant movements toward a more advanced SVS (Fridland, Bartlett, and Kreuz 2005, 370). They conclude, “These results suggest that speakers’ perceptions are sensitive to community norms” (370.)

While also testing listeners’ perceptions using the more common mental “North” vs. “South” division, their study touches on some examination of listeners’ perceptions of intra-Southern variation. The current study extended this line of research by looking more at listener evaluation using only intra-Southern criteria. Further, while studies done by Fridland and her team are highly valuable to build on, they were essentially only concerned with one aspect/feature of Southern speech: the shifted vowel system patterns in the South. The research discussed here contributes to the understanding of the interplay of *multiple* Southern features on perceptions of dialect. The next section elaborates on methods used and choices made for the construction of a survey intended to gather information on listeners’ perceptions of a heavier or lighter Southern accent.

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<sup>44</sup> See, e.g. Labov (1994) for a thorough description of the (NCCS).

### 4.3 CONSTRUCTING A SURVEY: METHODS AND PROCEDURE

#### 4.3.1 Stimulus

The stimulus presented to listeners for this survey was one sentence containing one environment for each of the four features to be “off” or “on”: *She was having a hard time in seventh grade with her history class.* Underlined words here indicate where features were varied. The four features were: monophthongization of the diphthong (ay) as in [ta:m] for *time*; fronting of the velar consonant in the suffix *-ing* such that is pronounced *-in'* such as *havin'* for *having*; a (Southern) shifted mid front tense vowel token so that the nucleus of the diphthong in *grade* lowers, producing a word almost like *gride*; triphthongization<sup>45</sup> of the low front vowel so that a word like *class* is realized like *clayess*. The motivation for choosing these four features is laid out in Chapter 1 with elaboration on specifics in Chapters 2 and 3 for the third and fourth features, respectively.

The four features were presented to listeners in all possible combinations in order to control for each variable. Since each feature has a “more Southern” guise and a “less Southern guise”, sixteen different types of guises are possible. Table 4.1 shows the sixteen permutations for the stimuli. In this table, the symbol ‘+’ indicates that the feature appears in the stimulus sentence in question, while a dash indicates the opposite.

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<sup>45</sup> This feature is referred to as *breaking* throughout the chapter. Chapter 3 discusses terminology for this feature. The realizations of *class* used in the stimuli are all triphthongal, broken, hiatified, and drawled. Therefore, in the interest of being concise, the term *breaking* or *broken* is frequently used for brevity.

Stimulus	Comb.	Factors			
		Monophthong (A)	-in' (B)	Shifted /e/(C)	Broken vowel (D)
1	None	-	-	-	-
2	A	+	-	-	-
3	B	-	+	-	-
4	AB	+	+	-	-
5	C	-	-	+	-
6	AC	+	-	+	-
7	BC	-	+	+	-
8	ABC	+	+	+	-
9	D	-	-	-	+
10	AD	+	-	-	+
11	BD	-	+	-	+
12	ABD	+	+	-	+
13	CD	-	-	+	+
14	ACD	+	-	+	+
15	BCD	-	+	+	+
16	ABCD	+	+	+	+

*Table 4.2* Stimulus Versions. All possible feature combinations available for the stimulus sentence are shown in this table.

In order to find a stimulus sentence in which the features occurred (in some combination) naturally, the sociolinguistic interviews from the seven women (discussed in previous chapters) were reviewed. Unfortunately, no single sentence contained the features in proximity. Therefore, the stimulus was recorded in all permutations by one of the women who had been previously interviewed. The woman I call Stacy volunteered to record several stimulus sentences. Stacy was suitable for this task since she is (at least partially<sup>46</sup>) bi-dialectal, having spent early childhood in a location outside of the Southern dialect region with non-Southern family. It was thought that, relative to the other women, this might give Stacy an advantage in adapting pronunciation and might make her overall accent (in the unchanging parts of the

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<sup>46</sup> When Stacy code switches around family, her speech takes on some characteristics of the non-Southern dialect while retaining other Southern characteristics that the rest of the family does not share. What it means to be partially bi-dialectal is interesting, though not relevant to the present study.

sentence) slightly more neutral. Six sentences that were modified versions of sentences that were spontaneously produced during the women's interviews were chosen as possible candidates. Stacy recorded the stimulus sentences focusing on different parts and versions at different times. Redundant recordings were made, resulting in two or three versions of token pronunciations in each guise. Afterward, the recordings were segmented and organized according to sentence and stimulus version. Though Stacy recorded six sentences, only one was used as the "carrier sentence" for the four features to prevent the survey from being overly burdensome for the listener.

Of the sentences, the one that resulted in the best overall recordings was: "She was having a hard time in seventh grade with her history class." For example, the version of the sentence used for stimulus 7 would approximate "She was havin' a hard [tə<sup>i</sup>m] in seventh [grə<sup>i</sup>d] with her history [klæs]." The version of the sentence for stimulus 10 would approximate "She was having a hard [tə:<sup>i</sup>m] in seventh [gre<sup>i</sup>d] with her history [klæ<sup>i</sup>jəs]."

Given past language attitude results showing a negative correlation between sounding Southern and sounding educated and/or intelligent (see above), the foregrounding of education might affect listeners' reactions to the sentence. At the same time, this variable remains constant for all of the stimuli presented to listeners and should have the same overall effect. Of all the versions of this sentence that Stacy recorded, three were selected to be presented to listeners in their original forms, with little<sup>47</sup> or no modification other than normalizing loudness. These were the stimulus versions labeled as 1, 4, and 8 in Table 4.1 above. The other stimuli were created using

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<sup>47</sup> Stacy's stimulus version 1 contained a long pause after the word *time* and most of that silence was deleted.

cut-and-paste methods similar to that used by Campbell-Kibler (2006). Sentences were often spliced during consonants that were not oral stops to blend transition. For example, a cut might be made during the fricative [s] in *seventh*. The same base sentence was not used as the carrier for all feature variations. That is, different original clips were moved around for best fit with other clips until all sixteen stimulus versions had been created.

Sound clips were tested among a small group of listeners (one of whom was a sociolinguist) for naturalness - especially ease of detection of cut-and-paste - with lukewarm results. While a few people did not suspect manipulation, a few others complained about the strange volume changes<sup>48</sup>, the cut-and-paste sound of stimulus 14, and one broken version of *class* that appeared in three stimuli, which was perhaps too extreme to fit in with the rest of the sentence. One person stated that that particular version of broken *class* reminded him of South Park's "Mr. Hat" character.

Based on suggestions, changes were made using a new version of triphthongal *class* (that had previously appeared in only one other stimulus version) and a different base sentence for stimulus 14. Volume was regulated in two ways. First, perceived dynamic range was altered using the Audacity sound editor software (<http://audacity.sourceforge.net/>). In this way, loud clips that were spliced into quieter clips – and vice versa – could be leveled to match each other in amplitude. Second, the RMS (root mean square) value, or “loudness”, was normalized using a Praat software ([www.praat.org](http://www.praat.org)) add-on called Akustyk ([www.bartus.org/akustyk](http://www.bartus.org/akustyk)), designed by Bartek Plichta. All stimuli were normalized to 72 dB SPL (decibel sound pressure level).

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<sup>48</sup> The volume changes were due to the fact that Stacy's distance from the recording microphone varied during different recordings of the sentence.

Additionally, the “Change Tempo” function of the Audacity software was used to alter some of the speed differences among the source sentences used to make a given single stimulus. The revised stimuli were presented to two of the original listeners (one of whom was the same sociolinguist mentioned above) and two new listeners. The stimuli were much better received the second time, with the original listeners stating that the improvements were vast. The two new listeners did not detect any mechanically-related strangeness. (They did state that Stacy sounded strange in some stimuli but, when pressed, it was revealed that it was related to their opinion of her acting performance.)

A two dimensional plot of Stacy’s tokens used for various stimuli is shown in Figure 4.1. Pasted tokens were matched with their nearby environment according to pitch, loudness, and tempo as well as possible. Three versions of unshifted *grade* were used and the nuclei are shown in Figure 4.1 by dark squares. The nuclei of the four versions of shifted *grade* used are indicated using circles. A high front vowel (in this case from Stacy’s token *feet*) is plotted as well for reference.

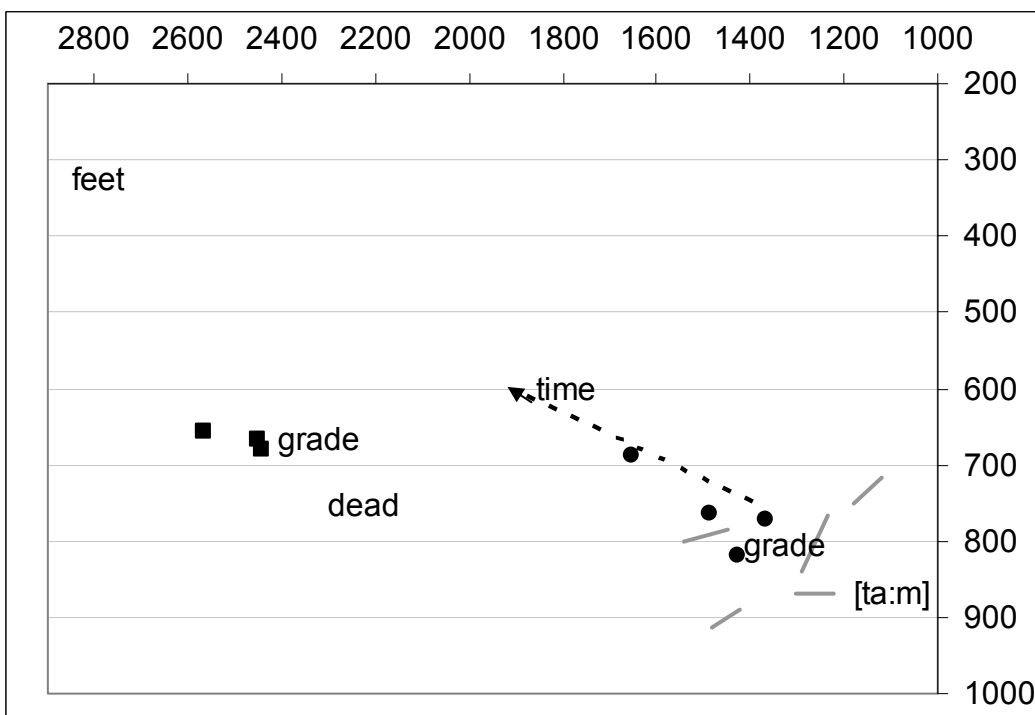


Figure 4.1 Plot of F1 and F2 for stimuli used in perception survey. Squares indicate the nucleus of a relatively standard form of *grade*, while circles indicate a shifted form of *grade*. More Southern (monophthongal) versions of ‘time’ are indicated with solid gray lines. The less Southern version of *time* is shown by a dashed line. Stacy’s *feet* and *dead* vowels are plotted as well for reference.

For Stacy, the most difficult word to produce in the “less Southern” guise was diphthongal *time*. In fact, Stacy had a difficult time even perceiving the difference when I demonstrated monophthongal and diphthongal versions.<sup>49</sup> Because of this, only one recorded *time* was acceptable as relatively diphthongal, while monophthongal *time* had multiple acceptable results. Of these, five were actually used in the stimuli. While her “less Southern” *time* (indicated by a dashed line in Figure 4.1) was not strongly diphthongal, it lacked a consistently steady state. The formant paths, as plotted by Praat, are shown in Figure 4.2, where

<sup>49</sup> Stacy produced diphthongal (ay) on her own several times during the course of her sociolinguistic interview, including in the words *retired*, *slide*, *side*. See Ch. 2 for formant plots.

it can be seen that F2 at least weakly rises and F1 gradually lowers. This *time* token sounds impressionistically diphthongal. By comparison, Stacy's monophthongs have a great deal of steady state as exemplified by one of her *time* tokens in Figure 4.3. Perhaps it is this contrast which lends itself to the auditory impression of a diphthong for this token. Either way, in this particular case, listeners will be told outright that Stacy is from the South. Of more interest is what sounds more Southern or less Southern and her diphthong is sufficient for that purpose.

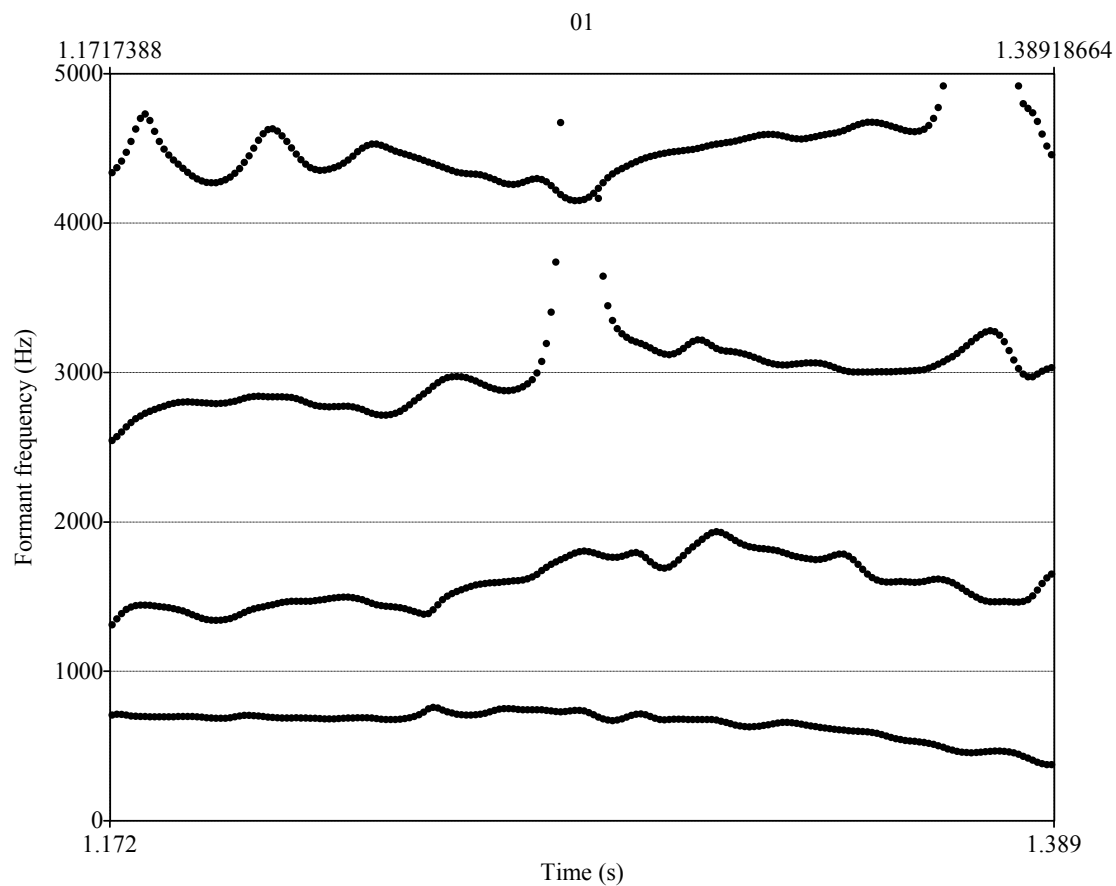


Figure 4.2 Stacy's diphthongal *time*

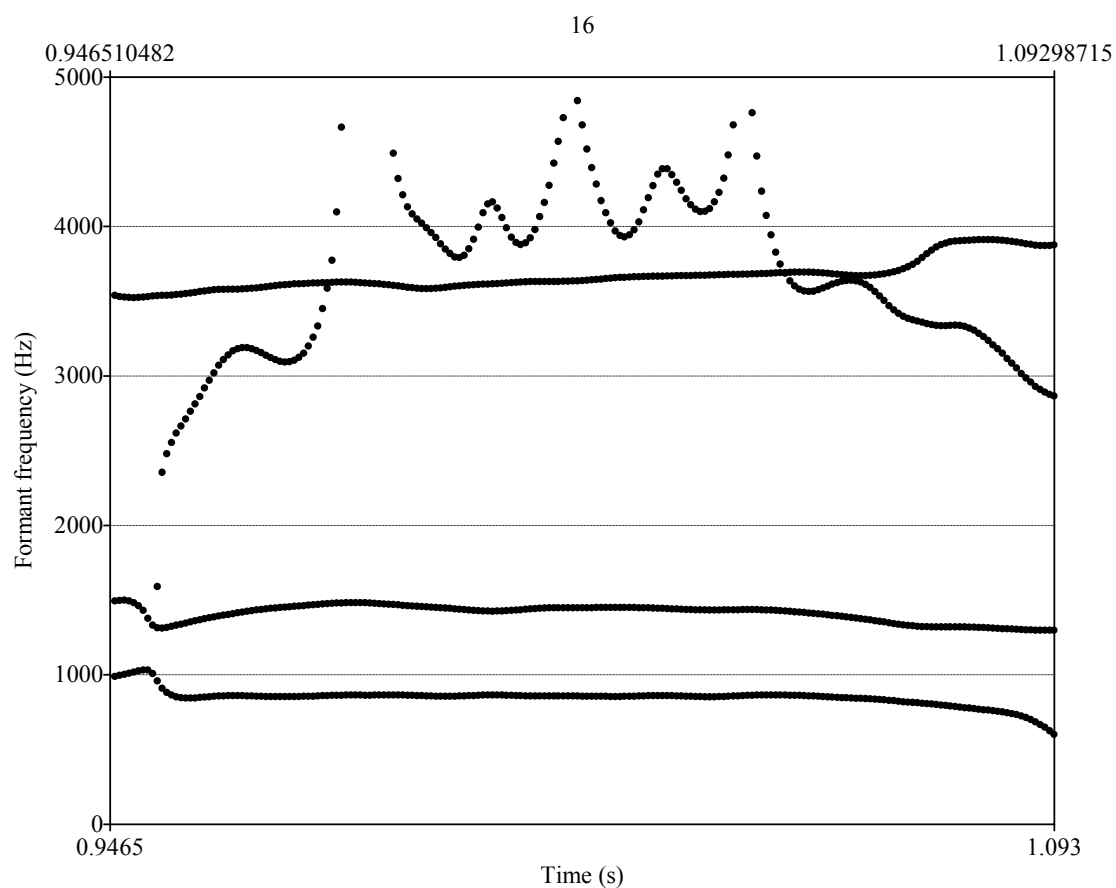


Figure 4.3 One of Stacy's monophthongal *time* tokens

Stacy's recordings resulted in three acceptable versions of triphthongal *class*, which are plotted acoustically in Figure 4.4 along with her monophthongal versions. The "monophthongs" – plotted with two points – were much shorter in duration and contained fairly steady states with small gradual formant movement.

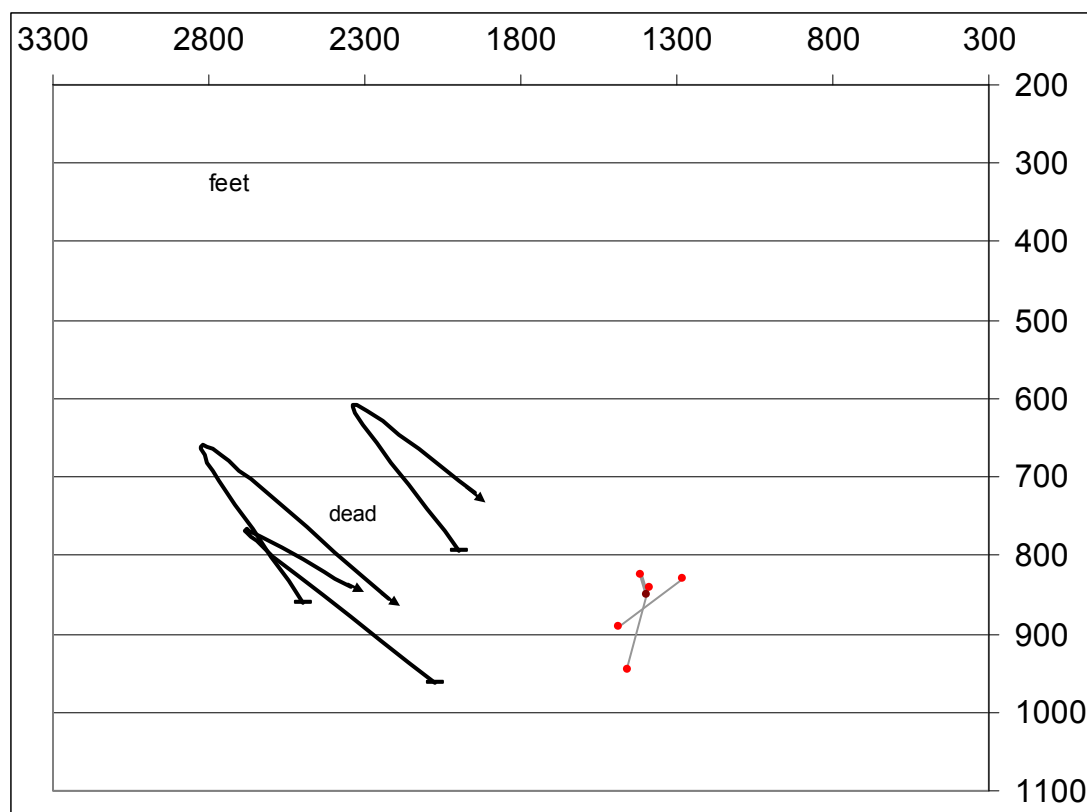


Figure 4.4 *Class*: Three triphthongal versions are in black (with a heavier gauge line); three monophthongal versions are in gray with endpoints in circles. *feet* and *dead* are provided for reference.

#### 4.3.2 Choices

It was decided that listeners would hear all sixteen versions of the stimulus sentence to help control for listener variability. Because this creates an unusual listening experience, it was essential to present the survey in a situation which reduces detrimental effects from this as much as possible. In their perception study of (ING), Labov et al. (2006<sup>50</sup>), controlled for this by telling listeners that the speaker in their survey had made multiple recordings for her job application to be a radio broadcaster. Such a story enabled listeners to overcome the strangeness of listening to

<sup>50</sup> In this chapter, Labov et al. (2006) refers to Labov, Ash, Baranowski, Ravindranath, Weldon, and Nagy (2006). Labov, Ash, and Boberg (2006) is written as such.

the same person speak the same passage over and over again in different ways. For the present experiment, in order to encourage listeners to think in terms of gradients within Southern accent, the situation needed to be one in which it would be acceptable if Stacy sounded Southern. Soukup (2001, 57) stresses that “different ‘priorities’ in the line of language prestige and/or expression of group solidarity apply in different contexts. Thus, to avoid ambiguity of results and the drawing of undue conclusions, it is necessary to choose and closely define a very specific situational setting for any language attitude study.”

In the case of this survey, Stacy was presented as being a non-actor who was auditioning for a radio commercial. Listeners were told that Stacy read and/or recited a script multiple times, and different stimuli were presented to listeners as “takes” from the audition audio. Listeners were told that the producer of the commercial was interested in various characteristics so that it might appeal to specific target markets and that they were to act as the directors, labeling each take for the producer. Research that I had previously done revealed that occasionally listeners can be shy about sharing explicit judgments about another person based solely on an audio passage. Campbell-Kibler refers to this as the problem of “being nice”, saying, “The activity of explicitly evaluating another person is a socially loaded one” (172). The situation of satisfying a fictional producer’s interests was intended to help mitigate this to some extent. The questions were phrased carefully as well in the hope that listeners would use the full rating scale, even if the characteristic is negative. To lend a quality of indirectness to the questions, Stacy’s name was not used. The first question (“Did this take sound more \_\_\_”) asks about the “take” – not about Stacy. The second question used the phrase “Did this take make the speaker sound more \_\_\_” to help listeners distinguish between saying that Stacy *is* a particular way and saying that this take

just *makes her sound* that way. The entire script explaining the situation to listeners can be found in Appendix II, along with an example rating page.

In Appendix II, the demographic questions asked of listeners are also shown. Along with standard demographic questions such as age, sex, geographic origin, etc, information was collected on whether listeners live more generally in a rural or urban area, whether they were from a Southern urban area, if they travel outside of their immediate home region, and/or how much personal experience they have with Southern accents.

The first two of these was an attempt to prevent the kind of confusion experienced by Fridland (2006) where listeners conflated the idea of rural with Southern accent. By drawing attention to the rural-to-urban continuum in the South, I hoped to also draw attention to the heavy-to-light continuum of a Southern accent. Further, from personal experience, I have found that some people who have never really been in the South do not know (or do not internalize) that urban Southern areas exist. The attention drawn to urban and rural Southern areas attempted to prevent listeners from thinking that any Southern accent is a sign of rurality.

The latter two demographic questions listed above (whether they travel outside of their immediate home region, and/or how much personal experience they have with Southern accents) are related to the findings that people who travel outside of their home regions may have a greater awareness of other dialects (Clopper and Pisoni 2004; Clopper and Pisoni 2006; Sumner and Samuel 2009). Further, those who have a moderate to large amount of personal experience with people speaking a Southern dialect may have finer distinctions in their personal ideas of what a Southern dialect means. In other words, all forms of the dialect are unlikely to be lumped together as “other” (e.g. Evans and Iverson 2004).

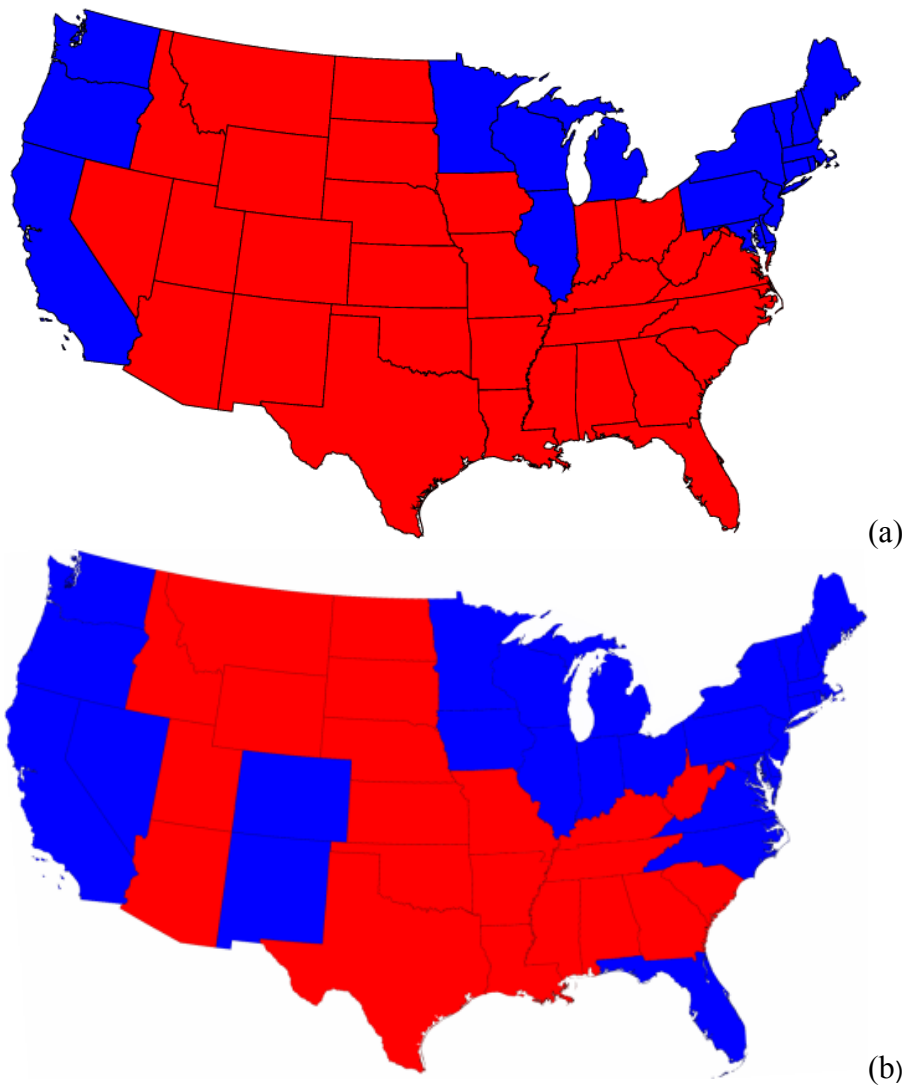
As has become almost standard in matched guise linguistic research (see section 4.2), semantic differential scales were used in the elicitation portion of the survey, using an ipsative (forced-choice) six-point scale in order to avoid having listeners choose a neutral middle point. Semantic differential scales present listeners with semantically opposite attributes on either end of a scale; listeners choose a point closer to the end of the scale that they believe best describes the stimulus (Osgood, Suci, and Tannenbaum 1957). The more closely the participants feel an adjective describes the stimulus, the closer to that adjective they will indicate their response.

While this study is not looking at language attitudes *per se*, the inquiry eliciting the primary interest – how Southern the listener believes the speech clip is – can be couched within a typical language attitudinal study style (see Ryan et al. 1982 and Fasold 1984 for excellent overviews). Further, the responses of the listeners to the attributes may be useful as further evidence of their (possibly subconscious) percepts based on findings of previous research on attitudes toward the Southern dialect.

The primary attribute this survey is concerned with was the scale from “Extremely Southern” to “Not very Southern”. This question explicitly asks listeners what we hope to learn from the survey. In addition, this direct question is reinforced by asking listeners to rate the speech on a variety of Southern stereotypes. If necessary, the redundancy may help bolster the findings. For example, if listeners rate two hypothetical clips as being equal on the level of Southern accent, but rate “clip A” as more kind and less intelligent than “clip B”, a defensible assumption might be that clip A struck the listeners as subconsciously giving off a more stereotypically Southern sound since this persona - kind but unintelligent - has been found to be generally associated with a Southern accent (e.g. Preston 1996). The bulk of the attributes

outside of the primary one (how Southern is the speech) center around Southern stereotypes. Southern stereotypes that were included to help unpack how *more* or *less* Southern a given stimulus sounds were the following: slow ~ fast; friendly ~ unfriendly; uneducated ~ educated; kind ~unkind; politically conservative ~ politically liberal; likeable ~ unlikeable; and unintelligent ~ intelligent. The hypothesis was that the left attribute in these semantic differential pairs would correspond more closely to how the average person views Southern language, including Southerners themselves (e.g. Preston 1996; Soukup 2001). It was also hypothesized that the more Southern a given speech clip sounded, the closer the rating would be to the attribute stereotypically associated with Southern speech. While this hypothesis, may or may not hold, there is precedent for believing listeners would adhere to these stereotypes. If they did, additional knowledge could be gained in terms of picking apart what it means to have a stronger Southern accent.

While less linguistic literature is available on connections between Southerners' language and their political leanings, it has become a stereotype that Southerners are very politically conservative (i.e., Republicans). In the last two presidential elections (2004 and 2008), for example, the southern region of the U.S. was overwhelmingly Republican, which would correlate with the attribute "Politically Conservative" in this survey. That White Southerners currently tend to affiliate themselves with the Republican Party is something generally well-known throughout the United States; the listeners likely would be aware of this.



*Figure 4.5* Results of the 2004 (a) and 2008 (b) U.S. Presidential Elections by state (continental U.S. only). Red indicates a state won by the Republican candidate and blue represents a state won by the Democratic candidate. In black-and-white dissertation copies, the blue states appear somewhat darker than the red.<sup>51</sup>

While there is no evidence that the more politically conservative you are, the stronger your Southern accent, it is plausible to think that the average person might (at least subconsciously) make this connection.

<sup>51</sup> Maps created by Mark Newman (2008) and available through a Creative Commons License at <http://www-personal.umich.edu/~mejn/election/2008/>.

The attribute “drawled” vs. “not drawled” was included with two goals. Based on available non-academic resources (such as Internet blogs and comments), it would seem that laypeople find “drawl” synonymous (or nearly so) with “Southern accent.” If this is the case, it serves as a redundancy measure for asking listeners how Southern a given stimulus is. However, it would also be interesting if listeners tended to rate stimuli containing the triphthong as being more drawled, though it would be difficult to pin down exactly what that means. In any case, the questions were deemed interesting enough to warrant including the attribute.

Additionally, one of the rating scales listeners saw had “Lives in Urban South” at the opposite end of the scale from “Lives in Rural South.” Including such a scale ensures redundancy in reinforcing the mental differentiation between being rural and having a Southern accent and aids in collecting intra-dialectal perceptions to the best of the listeners’ abilities. Including such attributes may reinforce the idea that the survey is not seeking opinions on the dialect as a whole, but rather gradient levels within the dialect, to the extent that they exist within the listeners’ minds. It was hypothesized that Southerners, particularly those from within the Tennessee Valley where Riverton is located, would be better able to make more distinctions. (Information about whether listeners were from the Tennessee Valley was collected in the demographic section before the survey. See Appendix III.)

The remaining attribute, “talented” vs. “untalented,” served as a way for listeners to vent, so to speak, if they believed Stacy to be doing a poor job in her audition. The order in which the stimuli were presented to listeners was changed during collection of the survey so that various listeners heard one of four orders of stimuli. Listeners were also asked to wear headphones or to take the survey in a very quiet location.

The survey itself was created using survey software designed by Bartek Plichta, who additionally housed the survey itself and the accompanying collected data on his server. Due to a technical difficulty, the survey was also replicated using the Survey Monkey software.<sup>52</sup> The survey links were distributed in multiple ways. A link to the survey was emailed to native English speaking acquaintances (non-linguists), the link was passed on to third parties by the acquaintances and by others who were not eligible to take the survey (i.e. close friends and linguists), and a page was created for the survey on the Facebook social networking site, to which dozens of people were invited. Additionally, Facebook advertising for the survey's URL was purchased, targeting U.S. English speakers across the country. Last, flyers were distributed in person, with the primary venues being the library of Georgetown University and coffee shops around Washington, D.C., where people using computers were targeted.

Forty-eight listeners completed the survey. Of these, the responses of three participants were removed. One was taken out after indicating that she was not a native English speaker; in addition, she chose another continent as the region she most identified with. Two others indicated that parts of some "takes" sounded exactly like others which meant "takes" must be spliced together. Therefore, the data from forty-five speakers was included in the analysis. Survey screenshots are included in Appendix II.

#### 4.4 RESULTS OF THE SURVEY

Conducting large surveys of this scale typically results in the collection of vast amounts of data and this project is no different. Relevant to the central question here - "Which feature has

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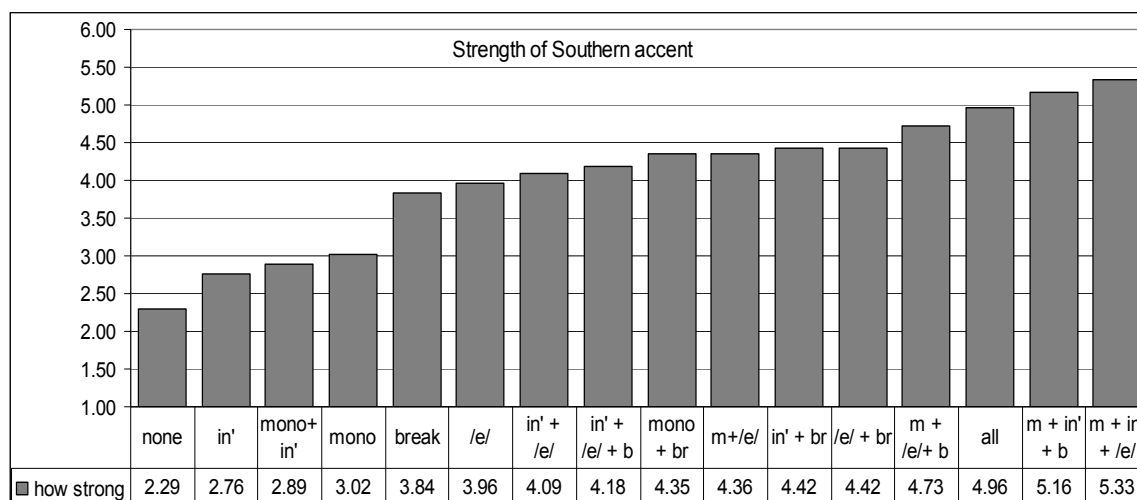
<sup>52</sup> [www.surveymonkey.com](http://www.surveymonkey.com)

a greater relative contribution to a strong Southern accent?” – the results below primarily explore the overall results of the responses to this question. Additionally, the secondary question is whether or not Southerners and Non-Southerners would consider that the same features create a strong Southern accent. These findings are also discussed here. An examination of all of the results according to every available division is beyond the capacity of the immediate study, though this is a rich resource for continued research.

#### 4.4.1 Overall results

Based on the results of the pilot study summarized in Chapter 1, a hypothesis was formed that, of the four features, monophthongization and shifted /e/ (as representative of “front vowels”) would be especially salient as a marker of a Southern accent. Each of these features was mentioned twelve times by the listeners in the pilot study, which is far more than any of the other features mentioned.

However, the results of the online survey indicate that this hypothesis is partially incorrect. The ratings from the 45 listeners completing the online survey revealed that both the shifted front vowel /e/ and the broken /æ/ vowel (breaking) contributed most (and equally so) to the increased percept of how Southern Stacy’s sentence sounded. The next most powerful feature was monophthongal (ay). The feature that appeared to contribute the least to an increased percept of a strong Southern accent was the velar fronting of –ING to –IN. Figure 4.6 displays a summary of the ratings of each combination of features from least Southern to most Southern.



*Figure 4.6* Summary results. The mean ratings of Southern accent strength according to feature combination. The four features represented in the chart are *in'*, *monophthongal (ay)*, *breaking*, and shifted */e/*.

Descriptively, the influence of the two features of shifted */e/* and breaking on perception of a strong accent is immediately apparent, since the two of them rank highest among the stimuli containing a single Southern feature. As a pair, they are ranked equally strong in comparison to the other highest ranked of the double feature stimuli (the other being –IN and breaking). Still, */e/* comes out ahead of breaking in terms of being ranked the highest out of single features, when paired with monophthongal (ay), and when grouped with both monophthongal (ay) and –IN together. While apparently not as powerful as */e/* and breaking, the other two features – IN and monophthongal (ay) – have noticeable effects on ratings as well.

Significance relationships for all combinations is shown in Table 4.3 ( $p < 0.05$ ). Note that although the few highest rated permutations are not significant against each other, adding *any* feature to “none” results in a significant increase in perceived accent strength.

	none	mono	in'	/e/	brkg	mon  in	mon  /e/	mon  brkg	'in  /e/	'in  brkg	/e  brkg	m 'in /e/	m 'in  br	m /e   br	'in /e   br	all
none	-	.000	.008	.000	.000	.023	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
mono	.000	-	n.s.	.001	.001	n.s.	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
in'	.008	n.s.	-	.000	.000	n.s.	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
/e/	.000	.001	.000	-	n.s.	.000	n.s.	.011	n.s.	.033	.009	.000	.000	.001	n.s.	.000
brkg	.000	.001	.000	n.s.	-	.000	.037	.000	n.s.	.001	.001	.000	.000	.000	.046	.000
mon 'in	.023	n.s.	n.s.	.000	.000	-	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
mon /e/	.000	.000	.000	n.s.	.037	.000	-	n.s.	n.s.	n.s.	n.s.	.000	.000	n.s.	n.s.	.001
mon brkg	.000	.000	.000	.011	.000	.000	n.s.	-	.006	n.s.	n.s.	0.01	n.s.	n.s.	.034	.020
'in /e/	.000	.000	.000	n.s.	n.s.	.000	n.s.	.006	-	n.s.	.019	.000	.000	.000	n.s.	.000
'in brkg	.000	.000	.000	.033	.001	.000	n.s.	n.s.	n.s.	-	n.s.	.000	.000	n.s.	n.s.	.012
/e brkg	.000	.000	.000	.009	.001	.000	n.s.	n.s.	.019	n.s.	-	.001	.003	n.s.	n.s.	.033
m 'in /e/	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.001	-	n.s.	.000	.000	.005
m 'in br	.000	.000	.000	.000	.000	.000	.000	0.01	.000	.000	.003	n.s.	-	.018	.000	n.s.
m /e br	.000	.000	.000	.001	.000	.000	n.s.	n.s.	.000	n.s.	n.s.	.000	.018	-	.001	n.s.
'in /e br	.000	.000	.000	n.s.	.046	.000	n.s.	.034	n.s.	n.s.	n.s.	.000	.000	.001	-	.000
all	.000	.000	.000	.000	.000	.000	.001	.020	.000	.012	.033	.005	n.s.	n.s.	.000	-

Table 4.3 Relationships of all stimulus versions of significance at  $p < 0.05$

In Figures 4.7-4.10 below, each of the four features is tested for contribution to a higher rating for strength of accent based on the ratings of all listeners. In these four figures, ‘in’ = velar fronting, ‘m’ = monophthongization, ‘b’ = breaking, and ‘e’ = shifted /e/. The white bars were not statistically significant. The dark (black) and lighter (gray) bars were shown to be significant in T-tests and they alternate in color to make pairs more readily identifiable.

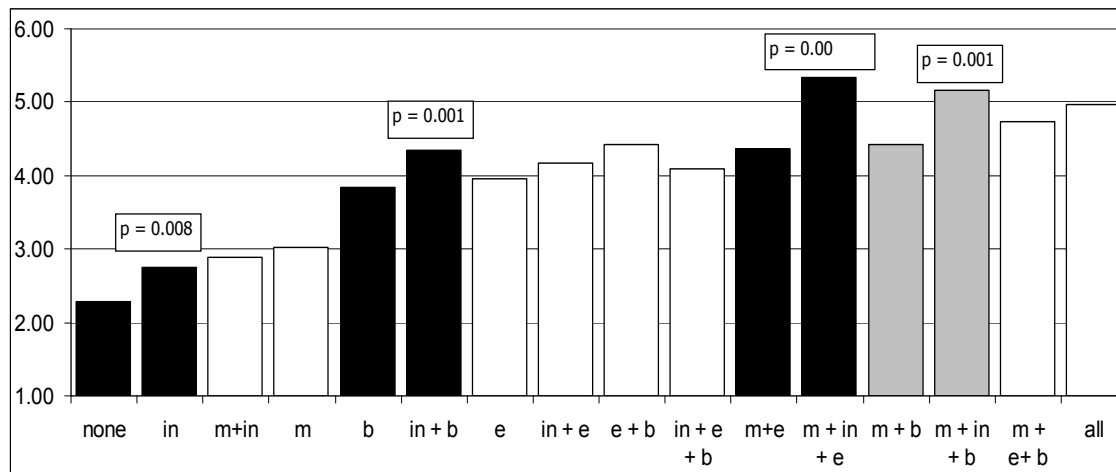


Figure 4.7 The effect of velar fronting (in') on perception of strong Southern accent.

The information shown in Figure 4.7 makes it plain that velar fronting does have an effect on how Southern a particular stimuli is rated/perceived; in four cases, it had a significant effect on ratings by listeners. At the same time, -IN' is rated the lowest out of the single feature stimuli and listeners seemed immune to its effects when monophthongal (ay) was the only other feature.

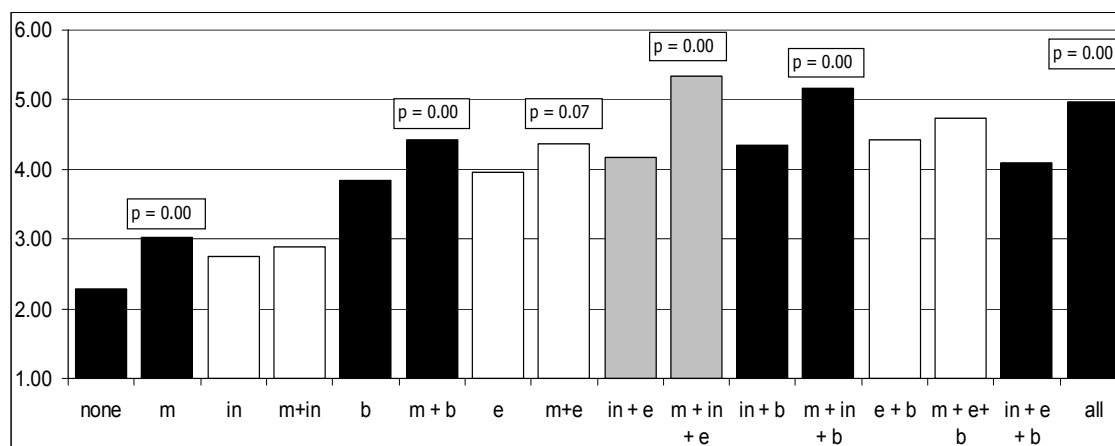


Figure 4.8 The effect of monophthongal (ay) on perception of strong Southern accent

Note that in all cases, pairs were ranked higher when monophthongal (ay) was present. The contribution of monophthongal (ay) was statistically significant in five of eight cases, with a sixth having a noticeable effect (though not significant at  $p < 0.05$ ). With this evidence, it can be deduced that monophthongal (ay) does do work in creating a stronger Southern accent.

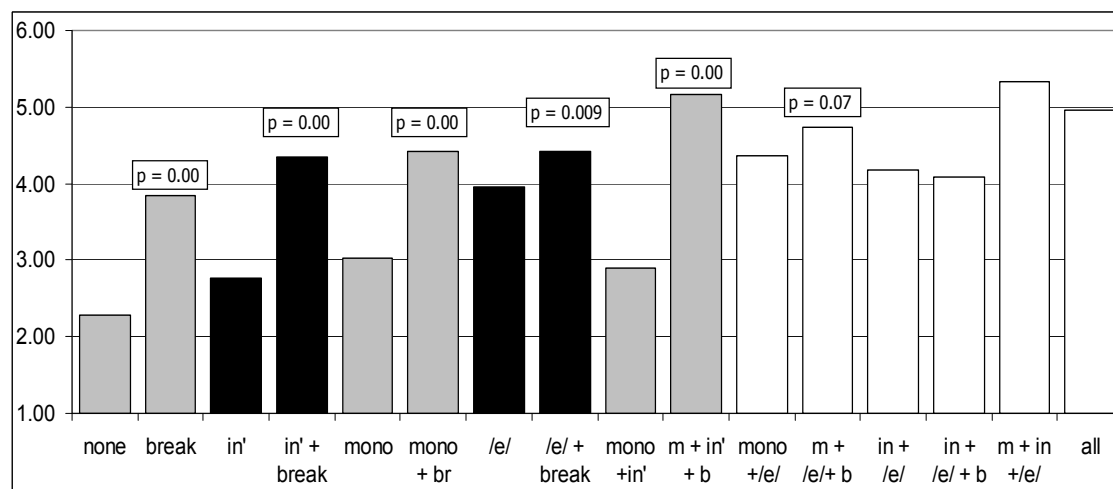


Figure 4.9 The effect of breaking on perception of a strong Southern accent

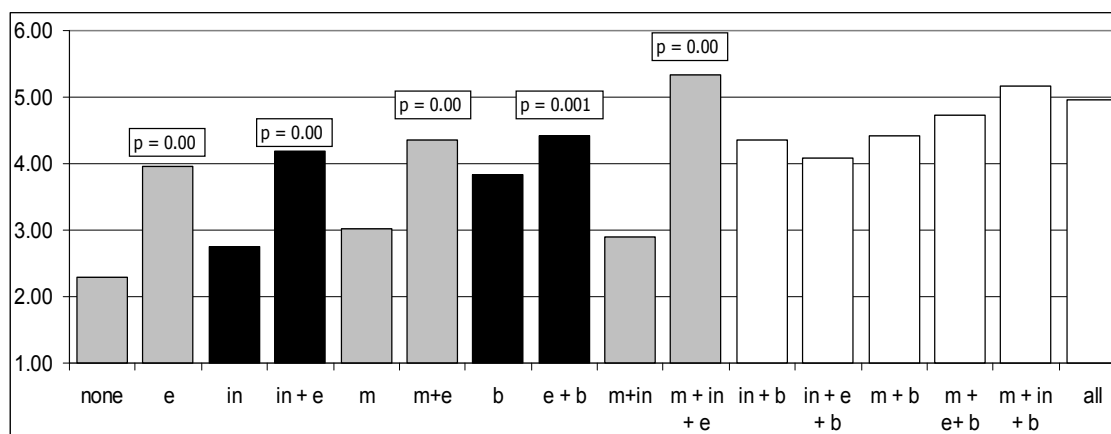


Figure 4.10 The effect of shifted (lowered) /e/ on perception of a strong Southern accent

Figure 4.9 shows that the ratings for stimuli containing breaking were also significantly higher than their counterparts without breaking in five cases and suggestive in a sixth pair. Five pairs also show a significant increase in rating when the shifted /e/ vowel is present. While all of these figures demonstrate an increase in rating when features are added, all of the highest rated stimuli contain /e/, breaking, or both.

In fact, two groupings emerge from the measurements. Monophthongal (ay) and velar fronting both have relatively small effects, while breaking and /e/ both have relatively large effects. Using Pairwise T-tests, comparisons of each of the four features (i.e. any combination a feature is part of) with their counterparts (i.e. the same combination except that the feature being tested is absent) reveal that there are no significant differences between the contributions of shifted /e/ and breaking and there are no significant differences between monophthongal (ay) and –IN. However, there are significant differences across these two groups. For both shifted /e/ and breaking, three of the four possible comparative combinations show that they are each significantly more powerful than monophthongal (ay). For example, shifted /e/ has a

significantly stronger effect than monophthongization in three of four pairwise comparisons:  $e \sim m$ ,  $e/in \sim m/in$ , and  $e/in/b \sim m/in/b$  (but not  $e/b \sim m/b$ ). Shifted /e/ also has a significantly stronger effect than –IN in three of four possible combinations. In all four possible combinations, breaking is stronger than –IN. These relationships are laid out in Table 4.4. While the pairs along the top and left side are not significantly different, the two sets of pairs tend to show differences.

	<i>shifted /e/</i> ←	<i>n.s.</i> → <i>breaking</i>
<i>monophthongal (ay)</i>	3 significant (of 4)	3 significant (of 4)
<i>n.s.</i> ↓ –IN	3 significant (of 4)	4 significant (of 4)

Table 4.4 Number of significant contributions to a given permutation

Though tests show that both shifted /e/ and breaking are more powerful than either of monophthongal (ay) or –IN, the question remains whether shifted /e/ or breaking is a better predictor overall in eliciting a stronger Southern sound. Table 4.4 displays the differences in the ratings scores between significantly different pairs. In this table, we can see that the mean rating difference caused by the introduction of shifted /e/ (versus “none”) is 1.67. That is, the stimulus with only shifted /e/ as the more Southern feature was rated an average of 1.67 points higher (= more Southern). On the other hand, –IN was only rated higher by less than half a point. The total differences in Table 4.5 suggest that shifted /e/ is the most powerful feature, followed closely by breaking. Monophthongal (ay) contributes an intermediate amount of power to the percept, with the –IN feature contributing relatively little. In fact, –IN has only four significant relationships while the other three each have five.

combo	rating	Δ rating	combo	rating	Δ rating	combo	rating	Δ rating	combo	rating	Δ rating
none	2.29		none	2.29		none	2.29				
/e/	3.96	1.67	break	3.84	1.55	mono	3.02	0.73			
in'	2.76		in'	2.76		break	3.84		none	2.29	
in' + /e/	4.18	1.42	in' + break	4.35	1.59	mono + br	4.42	0.58	in'	2.76	0.47
mono	3.02		mono	3.02		in' + /e/	4.18	1.15	break	3.84	
mono + /e/	4.36	1.34	mono + br	4.42	1.40	m + in' + /e/	5.33	1.15	in' + break	4.35	0.51
break	3.84		/e/	3.96		in' + break	4.35		m + /e/	4.36	
/e/ + b	4.42	0.58	/e/ + break	4.42	0.46	m + in' + br	5.16	0.81	m + in' + /e/	5.33	0.97
mono + in'	2.89		mono + in'	2.89		in' + /e/ + br	4.09		mono + br	4.42	
m + in' + /e/	5.33	2.44	m + in' + b	5.16	2.27	all	4.96	0.87	m + in' + b	5.16	0.74
<b>shifted /e/</b>	<b>7.45</b>		<b>Breaking</b>	<b>7.27</b>		<b>monophthongal (ay)</b>	<b>4.14</b>		<b>-IN'</b>	<b>2.69</b>	

Table 4.5 Differences of rating scores for all significantly different pairs.

Pairwise T-tests of the differences in ratings showed that none of the differences in ratings between shifted /e/ and breaking were statistically significant. We can therefore draw the conclusion that shifted /e/ and breaking are *together* the most powerful of the four features tested here in eliciting the perception of a strong accent.

Just like the findings in Table 4.4, we again see two groups in Table 4.5. There were no significant differences between monophthongal (ay) and –IN, but all testable differences between either /e/ or breaking and monophthongal (ay) or –IN did turn out to be significant (against –IN at  $p = 0.000$  and against monophthongal (ay) at  $p = 0.001$ ).

#### 4.4.2 Southerners vs. Non-Southerners

Dividing the listeners into groups of Southerners and non-Southerners (as self-reported) did not result in drastically different results. Of the 45 listeners whose data was included in the analysis, 20 were Southerners and 25 were non-Southerners. Figure 4.11 shows the rankings by the two groups.

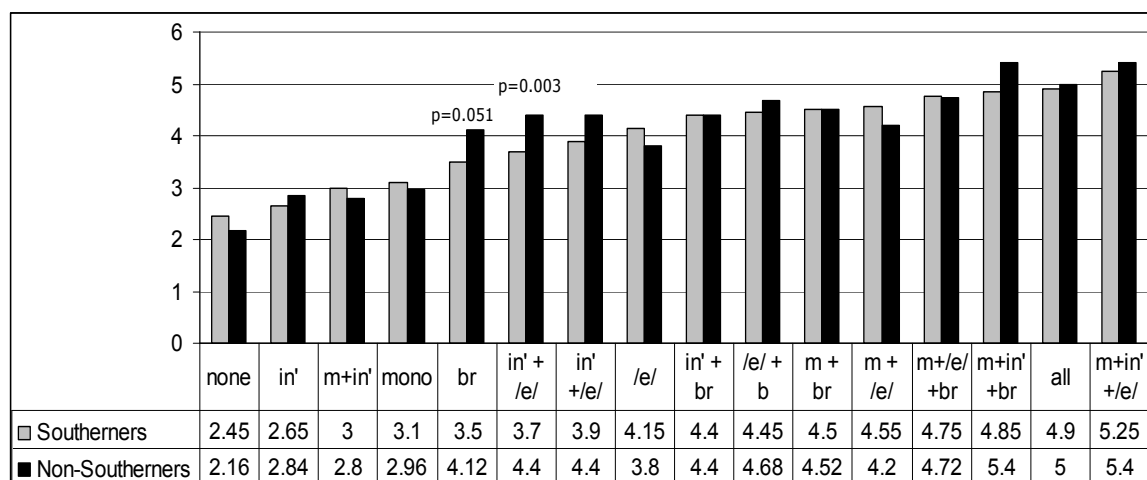


Figure 4.11 Comparison of Southerner and Non-Southerner ratings on strength of accent.

The order of ranking permutations of features from weakest to strongest accent is similar for both groups. Of all categories, there is only one statistically significant difference: –IN+/e/ is rated significantly higher by Non-Southerners ( $p = 0.003$ ). Pairwise T-tests also showed that the differences in rating the breaking feature by itself were suggestive ( $p = 0.051$ ), with Non-Southerners rating it much higher.

Table 4.6 includes the differences in mean ratings between Southerners and Non-Southerners. Though Southerners and Non-Southerners variably rated individual stimuli as more Southern, the Non-Southerners, on balance, judged the stimuli as slightly more Southern overall.

	How Southern						Difference  S-NS
	Southerners			Non-Southerners			
	Mean	N	Std. Deviation	Mean	N	Std. Deviation	
none	2.45	20	1.234	2.16	25	1.248	<b>0.29</b>
in'	2.65	20	1.387	2.84	25	1.155	-0.19
m+in'	3	20	1.622	2.8	25	1.248	<b>0.2</b>
mono	3.1	20	1.41	2.96	25	1.428	<b>0.14</b>
br	3.5	20	1.051	4.12	25	1.291	-0.62
in' + /e/	3.7	20	0.801	4.4	25	1.013	-0.7
in' +/e/ +br	3.9	20	1.21	4.4	25	1.041	-0.5
/e/	4.15	20	1.137	3.8	25	0.707	<b>0.35</b>
in' + br	4.4	20	0.94	4.4	25	1	0
/e/ + b	4.45	20	1.395	4.68	25	1.325	-0.23
m + br	4.5	20	1	4.52	25	0.872	-0.02
m + /e/	4.55	20	0.826	4.2	25	1.069	<b>0.35</b>
m+/e/ +br	4.75	20	0.851	4.72	25	0.891	<b>0.03</b>
m+in'+br	4.85	20	1.089	5.4	25	0.645	-0.55
all	4.9	20	0.641	5	25	0.645	-0.1
m+in'+/e/	5.25	20	0.639	5.4	25	0.577	-0.15

Table 4.6 Mean ratings between Southerners and Non-Southerners. Permutations that Southerners rated higher than Non-Southerners are bolded under 'Difference'.

Looking at the raw numbers alone, monophthongal (ay) and shifted /e/ appear to have more of an effect for the Southerners than they did for the Non-Southerners. In most cases where Southerners rated a stimulus higher than Non-Southerners did, monophthongal (ay) and/or shifted /e/ was present. Additionally, breaking and velar fronting seem to have more of an effect for the Non-Southerners than it did for the Southerners. The latter is further supported by the (limited) statistical findings shown in Figure 4.11 above. In most cases where Non-Southerners rated a stimulus higher than a Southerner did, -IN and/or breaking was present.

As was done with the larger dataset, pairwise comparisons for contribution of individual features were examined for statistical significance within the Southerner and Non-Southerner data subsets. The most striking thing about Figure 4.12 is that most pairs do not show a

significant difference when the –IN feature is added, suggesting that the feature contributed little to a higher rating by Southerners. In fact, only two of eight pairs show a significant increase in percept of strong accent when –IN is added. This is particularly noticeable when comparing the ratings for “none”, containing none of the “more Southern” variables, to the ratings for –IN by itself. The change is minimal. In the next pair – testing the contribution of –IN to the monophthongal (ay) and –IN combination – Southern listeners judged no stronger accent when –IN was present than when it was absent.

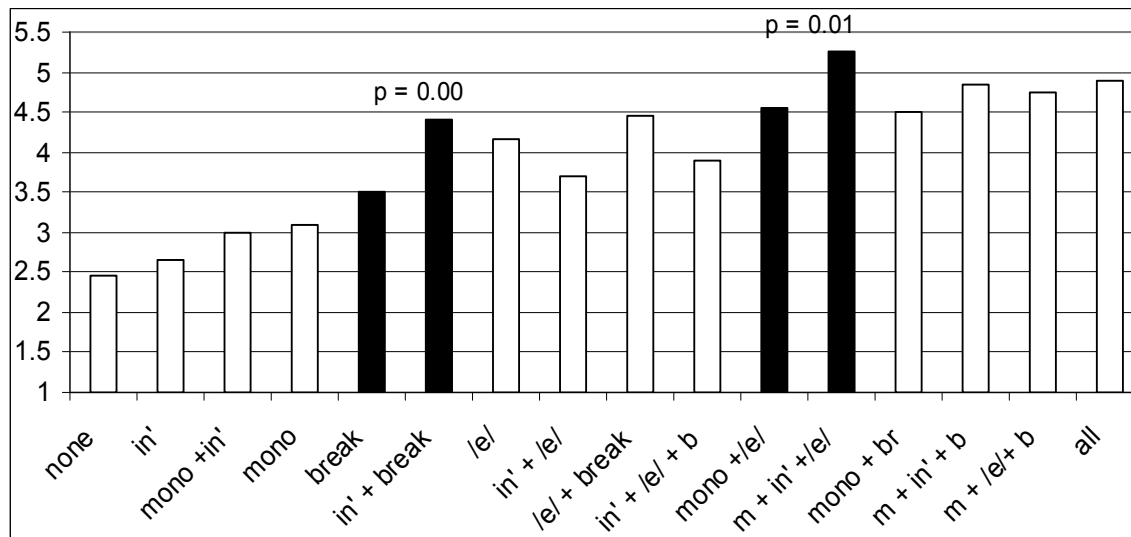


Figure 4.12 Statistically significant contributions of –IN to Southerner percept of strong Southern accent.

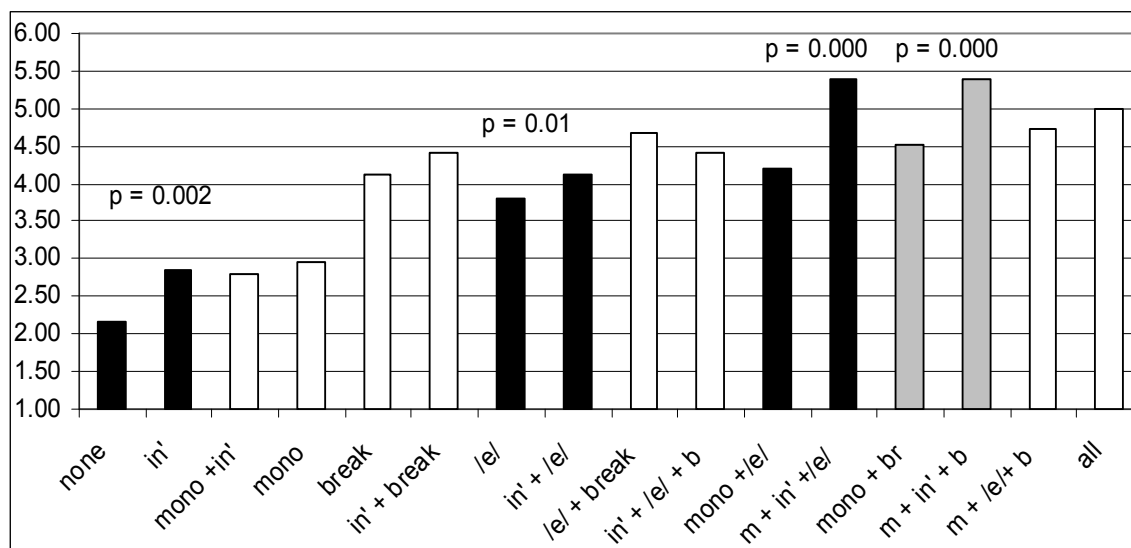


Figure 4.13 Statistically significant contributions of –IN to Non-Southerner percept of strong Southern accent.

Non-Southerners on the other hand, often perceived a noticeable difference when –IN was added to a particular combination. In the first pair, the substitution of the –IN variable for the –ING variable alone caused a significant increase in perceived strength of accent. These two charts also show *decreasing* percepts of Southernness in three cases, though none is significant.

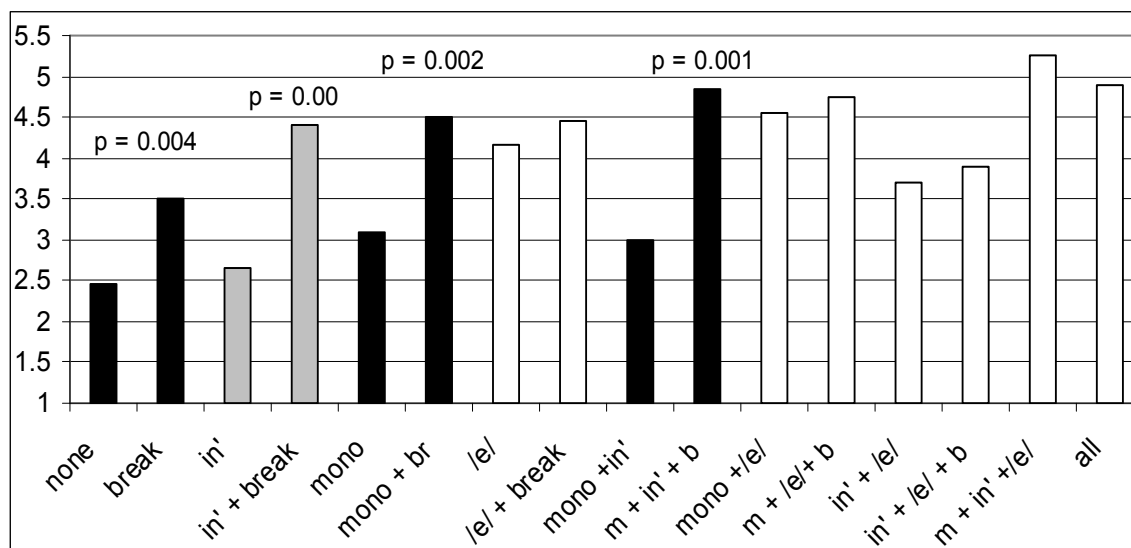


Figure 4.14 Statistically significant contributions of breaking to Southerner percept of strong Southern accent.

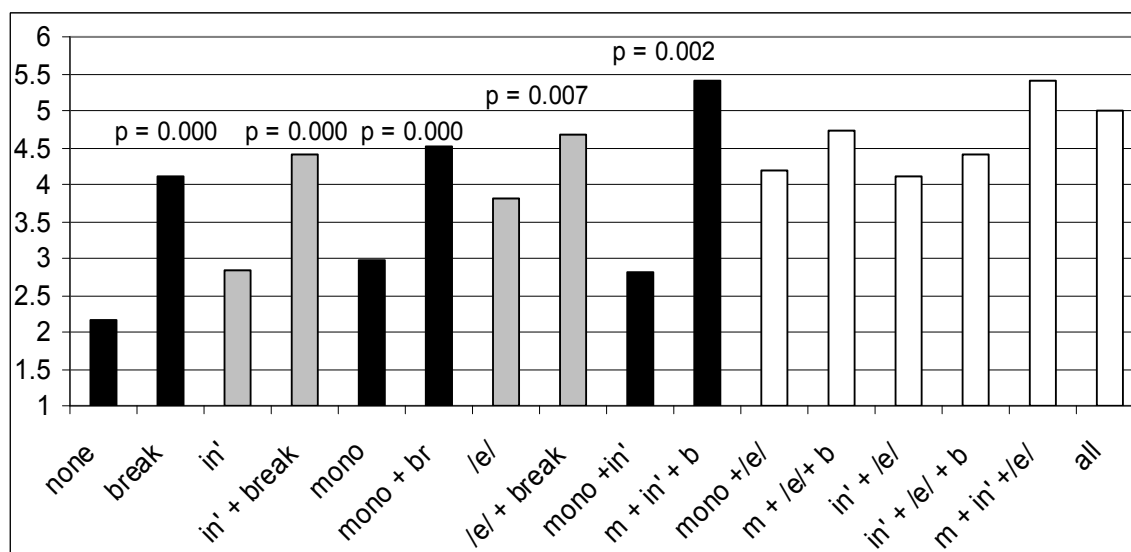


Figure 4.15 Statistically significant contributions of breaking to Non-Southerner percept of strong Southern accent.

Breaking, on the other hand, did have a robust effect for Southerners, seen in Figure 4.14. Still, four of eight pairs are significantly different for Southerners, while five of eight pairs are significant for Non-Southerners. For both groups, breaking has a greater impact when there are

fewer “more Southern” variables present in the stimulus. In other words, the effect of breaking is particularly strong in the single- and double-feature permutations. Figures 4.13-4.16 indicate that breaking is a powerful feature for both groups in terms of contribution to a strong Southern accent. For both Southerners ( $p = 0.049$ ) and Non-Southerners ( $p = 0.47$ ), there was a significant decrease in the rating of the stimulus with “m + in’ + /e/” and the stimulus “all.” This is unexpected, given the other findings, but is explained by the fact that the two stimuli do not share the same carrier sentence and, therefore, are not completely controlled. In fact, the prosody is a likely factor in this result. I return to this explanation in the next section.

While permutations adding monophthongal (ay) were consistently rated as more Southern by Southerners, only four additions resulted in significantly higher ratings.

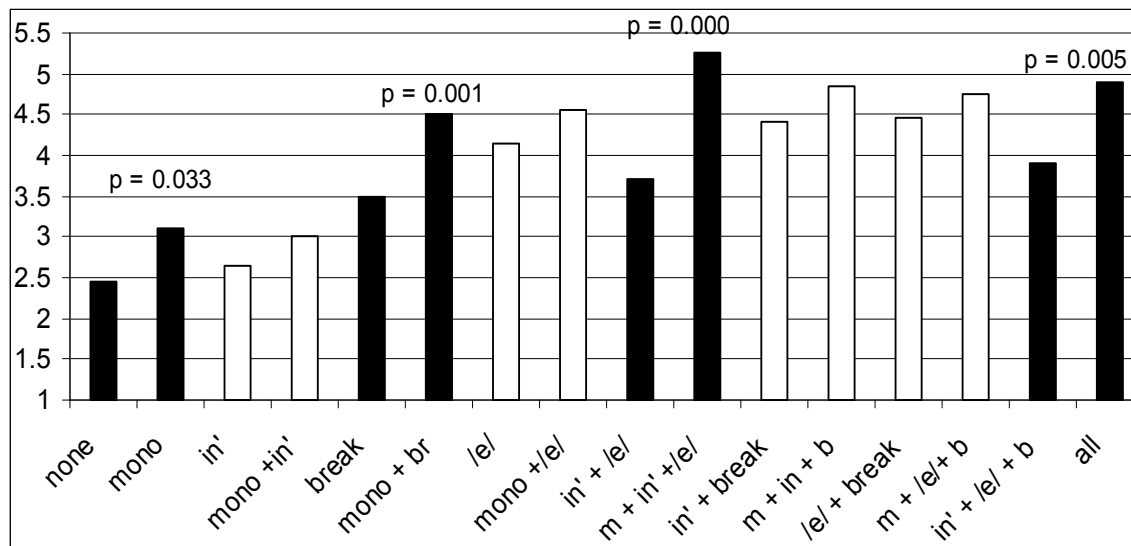
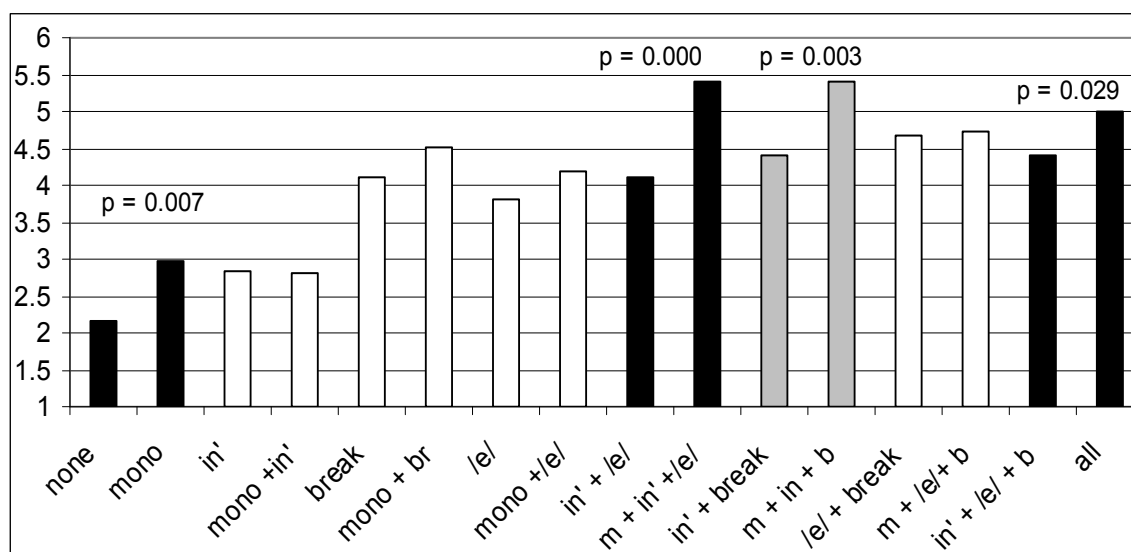


Figure 4.17 Statistically significant contributions of monophthongal (ay) to Southerner percept of strong Southern accent.



*Figure 4.18* Statistically significant contributions of monophthongal (ay) to Non-Southerner percept of strong Southern accent.

The results for monophthongal (ay) for both groups do not initially appear to be very different. Note, however, that the addition of monophthongal (ay) increases the percept of strong Southern accent in every instance for Southerners, while the Non-Southerners have two near-level pairs in which monophthongization seemed to make no difference.

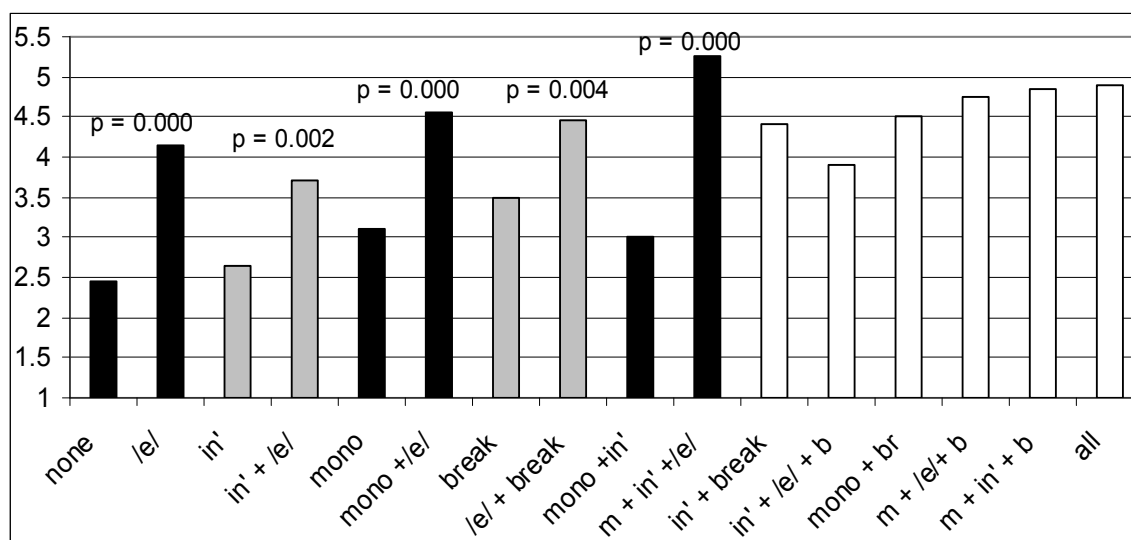


Figure 4.19 Statistically significant contributions of shifted /e/ to Southerner percept of strong Southern accent.

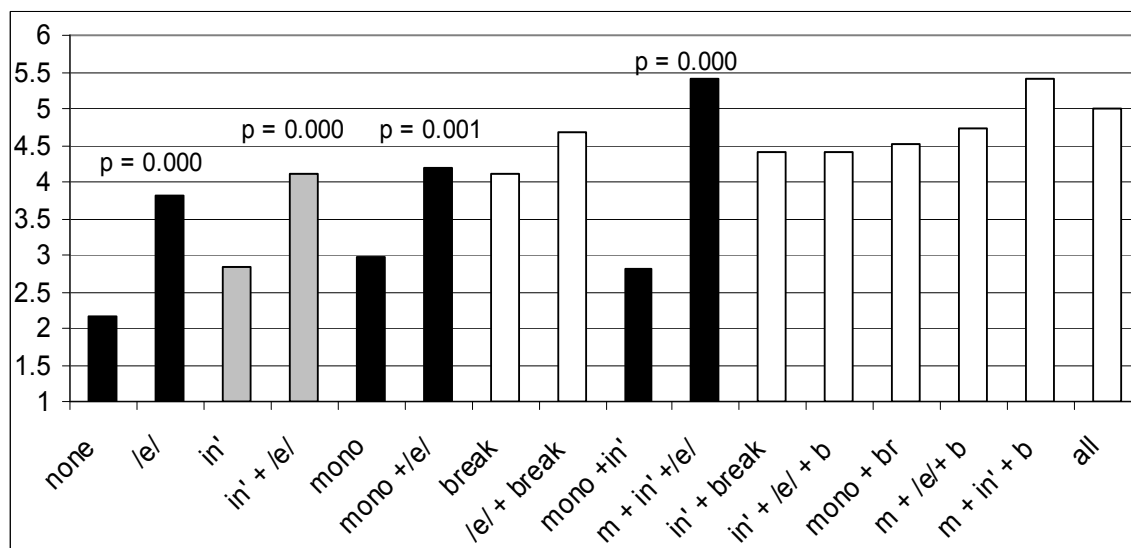
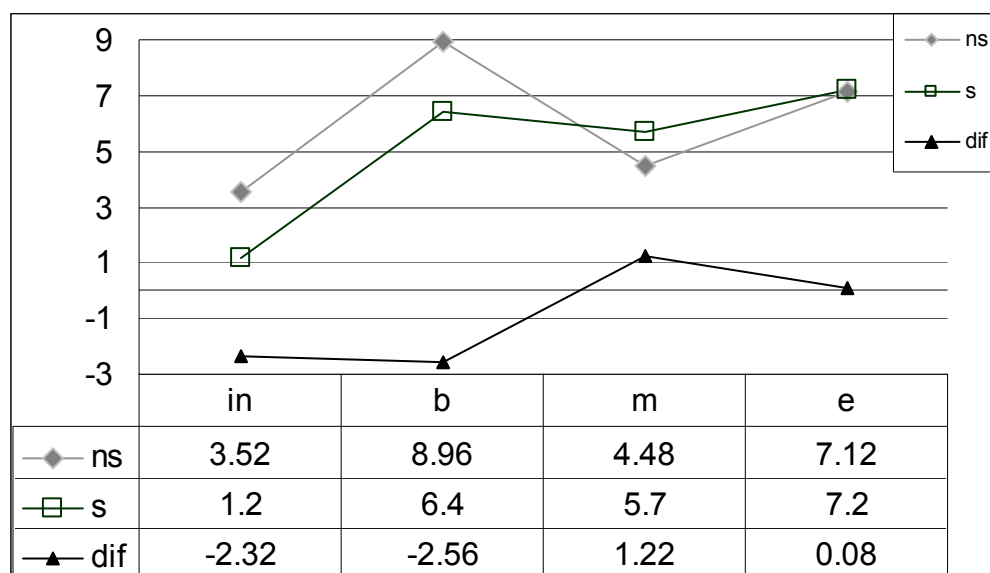


Figure 4.20 Statistically significant contributions of shifted /e/ to Non-Southerner percept of strong Southern accent.

Like the larger data set, a shifted /e/ is the most powerful contributor to the percept of a strong Southern accent by Southerners. The results here mirror the results on breaking, with five of eight pairs significant for Southerners and four of eight pairs significant for Non-Southerners.

Like breaking, shifted /e/ is clearly a powerful factor for both groups, with a general increase in rating when shifted /e/ is added. Note that Southerners did not perceive a stronger accent when /e/ was added to breaking and velar fronting, though it was not a significant difference. By contrast, at a significance of  $p = 0.00$ , Non-Southerners did not perceive a stronger accent when all “more Southern” features were present *vis-à-vis* the permutation which left out only shifted /e/. As above, I suggest that other features in the sentences had some effects; details are provided in the next section.

An examination of the differences in ratings from the two groups is revealing to demonstrate the overall picture of differences in terms of which features were the strongest predictors for each group. In Figure 4.21, the differences in ratings by feature are shown. These differences are divided according to group: Southern vs. Non-Southern. For these calculations, the differences between each pair shown above (the value each feature adds to its counterpart) were added together to obtain a sort of “power score” for each feature, showing how powerful the feature is in contributing to a strong accent. For example, the difference in rating from the first pair (“none” vs. /e/ = 1.64 points higher rating once /e/ is added) in Figure 4.2, above, was added to the ‘e’ category as part of the contribution of ‘e’ to higher ratings of strong accent (for Non-Southerners). Other increases (and one apparent decrease) in Figure 4.20 attributable to /e/ are 1.28 for -in’ vs. -in’+ /e/, 1.24 for “mono” vs. “mono + /e/”, and so on for the remaining differences: 0.56, 2.6, 0, 0.2, and -0.4. Adding these together results in the score of 3.52, or the rating points given by Non-Southerners that can be attributed to /e/. The difference is calculated between the power scores of each feature for each group.



*Figure 4.21* Differences between Non-Southerners and Southerners in total contributions of each feature to ratings of strong accent. (ING) is represented by “in”, breaking is represented by “b”, monophthongal (ay) is represented by “m”, and shifted /e/ is represented by “e”.

This chart reveals that, for Southerners, both –IN and breaking contribute much less to an increased percept of strong accent than they do for Non-Southerners. For Non-Southerners, permutations with breaking were rated a total of 8.96 points higher than their counterparts, whereas Southern ratings only added 6.4 points for breaking. By contrast, Southerners consider monophthongal (ay) to contribute to a stronger accent than Non-Southerners do, though the difference is slight. Apropos to overall results discussed above, note that for both groups, breaking and shifted /e/ contribute the most to a stronger accent and that for both groups, the contribution of –IN is the least.

#### 4.4.3 Effects of Listeners’ Regions and Ages

In addition to looking at the differences between Southerners and Non-Southerners, other listener characteristics were examined for possible effects. Past research has established that –

particularly in the absence of experience with a given dialect – listeners will judge stimuli based on the parameters of their own dialect systems. Willis (1972) found that listeners from Fort Erie, Ontario, Canada, and listeners from Buffalo, New York, U.S.A., perceived vowels differently based on the different realizations within their own dialects. This idea is the premise behind Labov’s Cross Dialectal Comprehension project (e.g. Labov and Ash 1997) as well. Labov and Ash (1997) found that non-familiarity with vowel shifts changed listeners’ interpretations of a stimulus word.

This section looks at possible effects of the U.S. regions and ages of the listeners on their ratings. The additional overviews in this section showed that listener age and sub-region did not show strong very strong effects for this dataset, probably due to low numbers in smaller categories.

As mentioned above, Clopper and Pisoni (2004a) found that where a listener is from affects the way language is perceived, due to the production differences of the listeners themselves. Additionally, Labov et al. (2006) demonstrated that Southerners patterned differently from Northerners in their perception of texts with varying frequencies of velar fronting. Surprisingly, however, reactions of the speakers in New Hampshire more closely matched those of the South Carolina speakers. This suggests that breaking down the category of “Non-Southerners” might reveal interesting differences. The 45 listeners for the present survey (analyzed in this chapter) were asked the open question, “If you had to categorize yourself as being from a particular region, how would you label yourself?” Respondents answered in various ways and these were grouped into six main categories (this is also how the 20 Southerners were

identified). They had also listed 1-3 states where they had spent the most time living, so I was able to compare their chosen region with the states they presumably associate with that region.

The six regional categories were Southeast, New England, Northeast, East-Coast/Mid-Atlantic, West, and Midwest. These categories, for the most part, match how the respondents viewed themselves (and not, for example, my preconceived regional categories). All New Englanders defined themselves specifically in that way. “Northeast” seemed to align more with people who had lived in New Jersey, New York, or Delaware. The four “East Coast/Mid-Atlantic” respondents were from the DC metro area or eastern Maryland (the last naming that as the home “region”). Apart from the Maryland person, three others were placed in a group that differed from the answers given by the listeners. The region answer “Ohio” was grouped with Midwest, “Pacific Northwest” was grouped with “West” (only because there were no other Northwesterners and only four others from the West), and “Rebel ya’ll” was grouped with Southerners. The number of listeners in each category is shown in Table 4.7. The results according to these six categories are shown in Figure 4.22.

Southeast	20
New England	6
Northeast	7
East Coast/Mid-Atlantic	3
West	4
Midwest	5

*Table 4.7* Number of survey listeners from each region

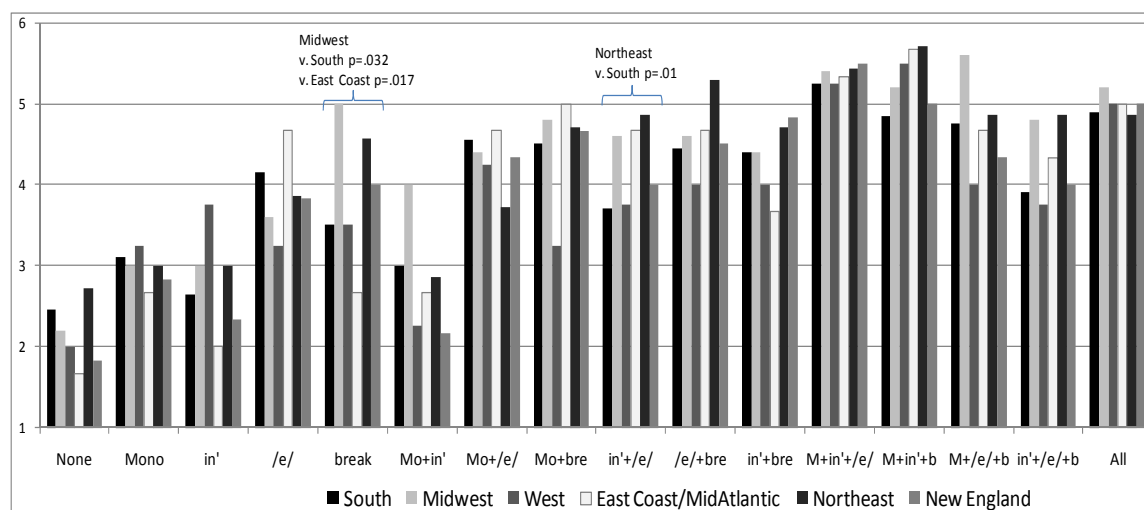


Figure 4.22 How Southern each stimulus was according to 6 U.S. Regions

The results show that strong sub-regional effects did not emerge. A one-way ANOVA analysis showed significant differences for the stimulus containing only breaking and in the stimulus that contained both velar fronting (–IN) and lowered /e/. A post-hoc Bonferroni test revealed that former was due to the Midwesterners’ judgment of the stimulus as much more Southern than both the Southerners ( $p = 0.032$ ) or East Coast/Mid-Atlantic ( $p = 0.17$ ) listeners believed it to be. Why Midwesterners would believe that breaking is so much more Southern is not clear. The Southerners also believed “in’ + /e/” to be significantly less Southern than the Northeasterners ( $p = .01$  as shown by post-hoc Bonferroni). This could be due to the relative insensitivity of Southerners to velar fronting. That is, it sounds “normal” to them. While there are certainly differences in response according to region, they are apparently very fine-grained and/or the numbers within each category are too small to discover any major differences. The regions above were also examined when grouped into fewer categories and tested for

significance. The three categories created were South, East, and West and the number in each category is shown in Table 4.8.

Southeast	20
East (New England, N.E., and East Coast)	16
West (West and Midwest)	9

*Table 4.8* Number of survey listeners from the three region division

Grouping the regions together did not contribute more information in this case. The stimulus containing both velar fronting (–IN) and lowered /e/ held the only significant difference ( $p = 0.01$ ), due to the South’s judging the stimulus as much less Southern than the other two groups did. Even though Clopper and Pisoni (2004a) found that specific region of origin did affect perceptions, their number of participants (listeners) from each region were more balanced than the numbers here. Though these results suggest that the smaller sub-regions within the Non-Southern category did not perceive the stimuli very differently, seemingly contrasting with Labov and Ash (1997), the low N prevents solid conclusions.

In addition to region, age has been shown to be an important factor affecting speech perception. In particular, previous work has shown this to be true when the stimulus in question is involved in a linguistic change (e.g. Hay et al. 2006; Koops et al. 2008). Most of the sociolinguistic literature on feature perception and age is directed at examining the effects of speaker age (or perceived speaker age) on listener perception as opposed to how listener age affects perception. The effects of speaker age are primarily due to listeners’ *expectations* of how the speech will sound based on their understanding of age-based linguistic patterns. Even so,

because speakers judge stimuli based on their own regional dialect patterns (see above), it follows that speakers should react similarly based on their own age-based dialect patterns. Hay et al. (2006, 469), do in fact, show a significant effect for participant (listener) age, stating that older New Zealand speakers, who generally maintain a production distinction between words such as *near* and *square*, were better able to perceive the two vowels than younger speakers (who often merge the two).

At least one of the features (the SVS) used in the stimuli is considered a change-in-progress and it is possible (though not tested to my knowledge) that use of breaking and hiatification is changing (decreasing) as well, though the former is supposed to be changing (with passing generations) in the direction of higher participation. Analysis showed that the change(s)-in-progress in the current study may have been perceived differently by listeners of different ages. Figure 4.23 shows the average ratings for each age category, a group selected by the listener in lieu of writing in the actual number. The category “42-57” below is actually two categories combined, which still resulted in only three speakers. Table 4.9 gives the number of listeners that placed themselves in a given category, breaking this down as well (for interest’s sake) into how many Southerners and Non-Southerners comprised each one.

	18-22		23-28		29-35		36-41		42-57		58-65		66-75	
	nonS	South	nonS	South	nonS	South	nonS	South	nonS	South	nonS	South	nonS	South
	7	0	4	7	7	4	2	3	1	2	4	2	0	2
Total	7		11		11		5		3		2		2	

Table 4.9 Number of survey listeners from each age category

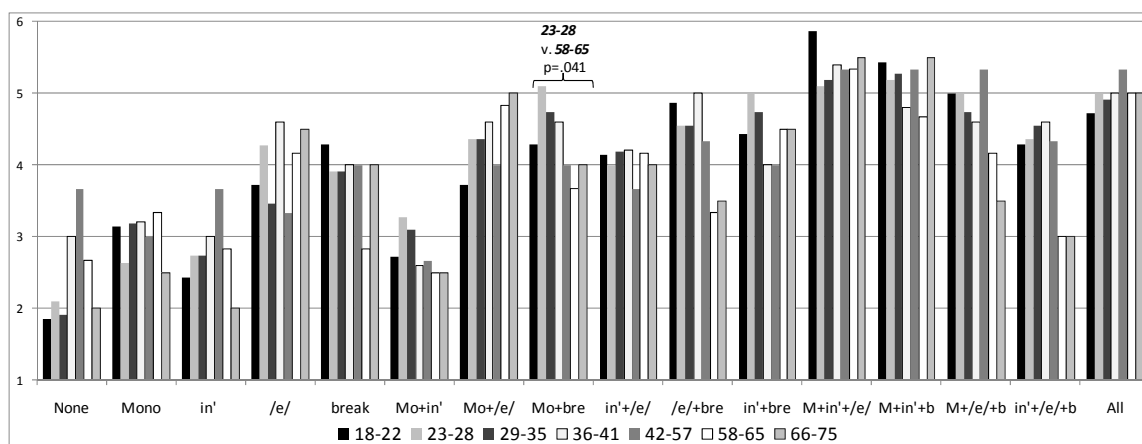


Figure 4.23 How Southern each stimulus was according to age category

Age was significant for only one stimulus (monophthong and breaking), with the group of 23-28 year-olds finding the stimulus much more Southern than the other groups, but especially than the (very small) group of 58-65 year olds ( $p = 0.041$ ). In truth, the age groups are not distributed evenly enough and the older age groups are not populated enough to render these data conclusive without grouping.

Like the regions, the seven age groups were reduced into three groups. The group division that resulted in the most significant relationships (four) was 18-28, 29-57, and 58-75. This is shown in Figure 4.24.

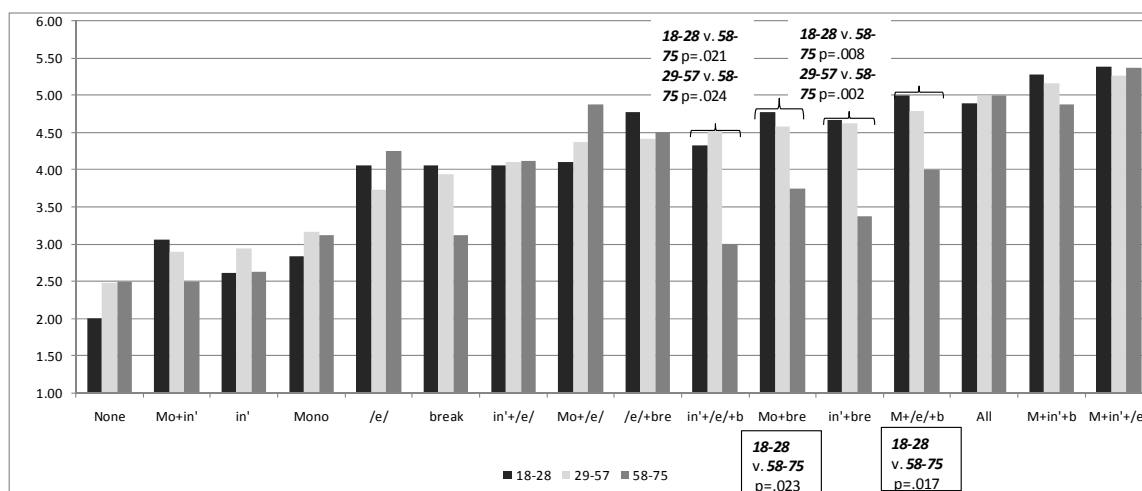


Figure 4.24 How Southern each stimulus was according to three age categories

The oldest group (N=4) is the one most in opposition to the other two, rating four stimuli (“in’+/e/+b”, “Mo+bre”, “in’+/e/+b”, and “M+/e/+b”) as significantly less Southern than the younger two groups did. (Moving the 42-57 group into the “oldest” group reduced the number of significant relationships.) Interestingly, the stimuli rated much less Southern by the oldest group all contain the breaking feature. This suggests that breaking is indeed part of a language change and that older listeners do not associate it as strongly with a heavy Southern accent as younger people who may associate it more with older Southern speech. In any case, it is viewed differently by older listeners than by the younger ones.

Four stimuli were found to show significantly different patterns based on age, suggesting that listener variation according to age (especially in cases of changes-in-progress) is an area requiring research attention in the linguistic community.

#### 4.4.4 Prosodic Effects

Prosody was also informally analyzed for emphasis, intonation, and pace. Although only a few sentence chunks were used to make up the 16 stimuli, they were combined in various ways. Further, as detailed in the methodology section of this chapter, Akustyk and Audacity were used to alter the tempo and loudness for each sentence so that the chunks would “match.” Therefore, prosody was not controlled for. Though this had some interactions with the results, perhaps listeners would not have otherwise (with less variation) accepted that Stacy was repeatedly saying the same sentence in various ways and I consider the slight loss of control a worthwhile tradeoff. This section shows that Stacy’s varying prosody for the different stimuli did have some effect, contributing to the overall explanation of the results.

To look at prosody, a rough measure made up of duration, pitch, and intensity was used to compare each sentence. Praat was used to measure these for each of the following words: *she*, *having*, *hard*, *time*, *in*, *seventh*, *grade*, *history*, and *class*. Only stressed vowel portions were measured except for the words *hard* and *in*, for which the *–ar–* sequence and entire word were measured, respectively. The measured words are the content words of the sentence plus *in*, which she impressionistically stressed in some carrier sentences, but not in others. The overall goal for this exercise was to find out if a given word or words stood out more in a particular sentence than in another, though it reveals a bit about pace as well, in that vowel/sonorant length plays a large part. The three values were made roughly comparable by measuring duration in milliseconds (multiplying Praat measurements by 1000), dividing pitch values by 5, and letting intensity measurements stand. For example, the /i/ vowel of *she* for the “None” stimulus was 33 ms long, had a pitch of 291.11, and intensity measurement of 80.44. After dividing pitch and

adding them together, the result is 142.6. In this type of measurement, duration affects scores the most, capturing the wide variation of the length of the vowels. The example has a duration of 33 ms, though 100-400 ms durations were not uncommon. Figure 4.24 presents the pattern for all 16 of the stimuli, just to convey a very general sense of the stress patterns and where the most variety lies.

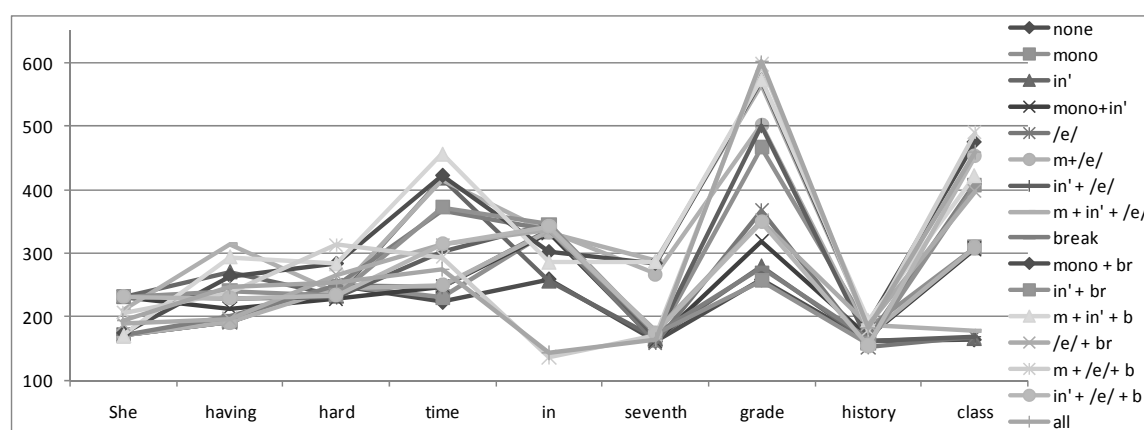


Figure 4.25 Compilation of the emphasis on different words for all 16 stimuli

The most emphasis, overall, is on the words *time*, *grade*, and *class*, though all of the words except *history* are at least sometimes relatively emphatic. The best way to consider Figure 4.25 is comparing a word's different realizations as opposed to comparing one of the nine words to another, since a monophthong in a polysyllabic word is naturally shorter than, say, a diphthong in a single-syllable word. In general, Stacy had a tendency to emphasize the words that I was coaching her to change, perhaps even beyond what would be a natural or expected rhythm. For example, there is a good deal of emphasis on *having* in a few of the stimuli with the –ING guise. She also put a lot of stress on *class*, though one would expect *history* might carry a large portion of the stress in this word pair. In retrospect, having a qualifier preceding *class*

robbed the hiatified tokens of some necessary stress; Stacy compensated for this (subconsciously) by possibly overstressing the word. While the stress patterns made Stacy sound like a pretty poor actress (auditioning for her television commercial), they did usually foreground the words of interest for the listeners. The least stressed of all of the carrier words was *having*, though Stacy managed to make it quite stressed at times. Even so, there is a chance the lower emphasis contributed to the apparently low “power” of velar fronting in increasing the perception of Southern accent. One example – though probably the most extreme – is shown in Figure 4.26.

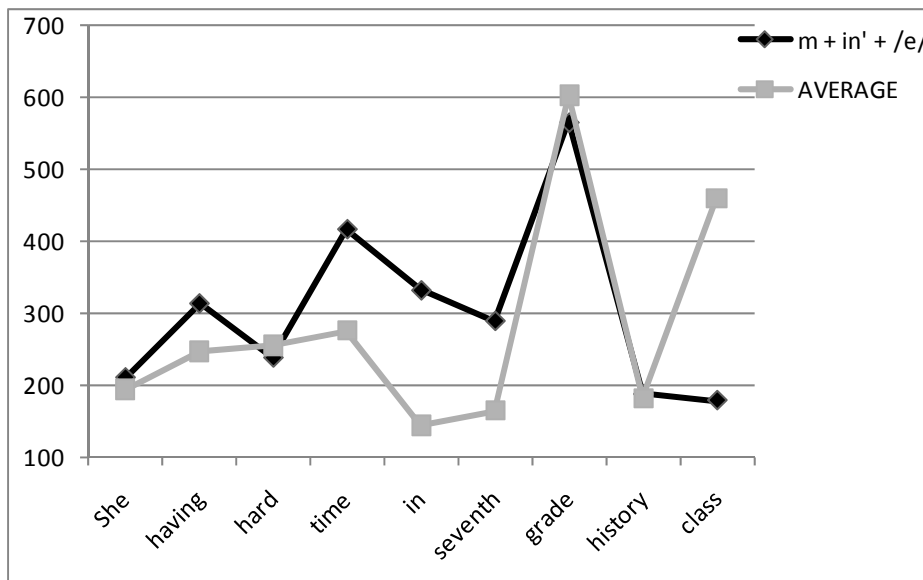


Figure 4.26 Example of stress pattern

Note in 4.26 the increased measurement for *having* in the stimulus “m + in’ + /e/” over the average for all stimuli. It is also rather high considering the other two peaks belong to monosyllables (though *grade* is the only diphthong here).

In Figures 4.14, 4.15, and 4.20 above, the decreased ratings between the “all” stimulus and two of the stimuli with three of the four features were not only surprising, but also statistically significant drops. The rough measure of “prosody” sheds light on a likely reason for these drops. Figure 4.27 below compares the scores for the three stimuli involved.

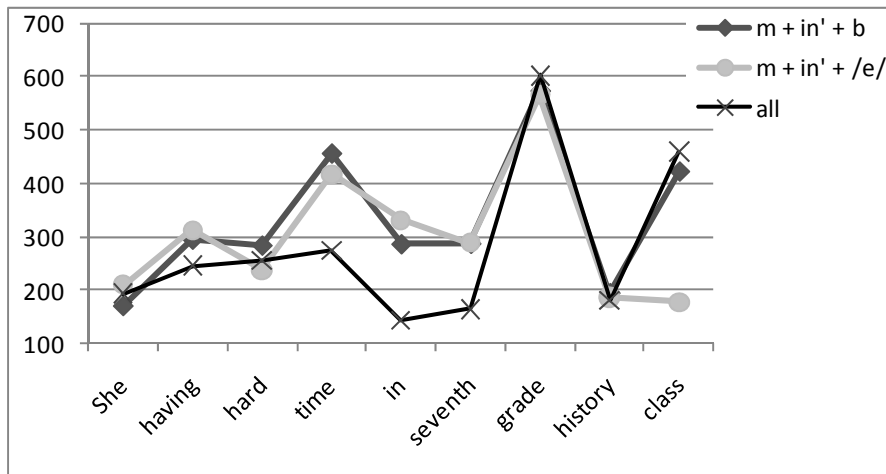


Figure 4.27 Contrasting the “all” stimulus with two rated as having a stronger Southern accent

Figure 4.27 shows what is also obvious to the ear: the “all” stimulus sentence leaves the listener with the impression of being much faster than the other two. These scores are all partially made up of vowel duration measurements, which are low for a large part of the sentence with “all” features. Therefore, pace was uncontrolled in this instance and the slower pace of the “m + in' + b” and “m + in' + /e/” stimuli was influencing the listeners’ reactions. This slow pace “overrode”, as it were, the addition of another feature in “all,” demonstrating that pace is likely another powerful factor in a listeners’ impression that a Southern accent is “strong.” It is striking that listeners would be so affected by prosody in hearing only one sentence.

#### 4.4.5 Rural and Urban within the Southern Context

Given the alleged past confusion of whether the labels “rural” and “Southern” mean more or less the same thing, it is worth a preliminary look at how listeners rated these stimuli on the continuum of “Lives in Rural South” and “Lives in Urban South.” For Southerners, the view of what is rural may more closely align with the reality of population distribution in the South. That is, rural Southerners live in rural areas and urban Southerners live in urban areas. Perhaps Southerners believe that the more rural you are, the stronger your accent is, resulting in a more ideological meaning for a strong Southern accent. For Non-Southerners, especially those that have spent little or no time in the South, the entire South may be assumed to be rural. If this is true, Non-Southerners might conflate the attributes “Southern” and “Rural,” resulting in a more general, regional (or geographic) meaning to a strong Southern accent. More attention is needed in the investigation of the linguistic meaning of “rural” in the context of a Southern accent.

Interestingly, listeners find Stacy much more “Southern,” as a general term, than they find her to sound like she “Lives in the Rural South.” Figure 4.27 shows the overall results of how rural Stacy sounded as compared to how Southern she sounded.

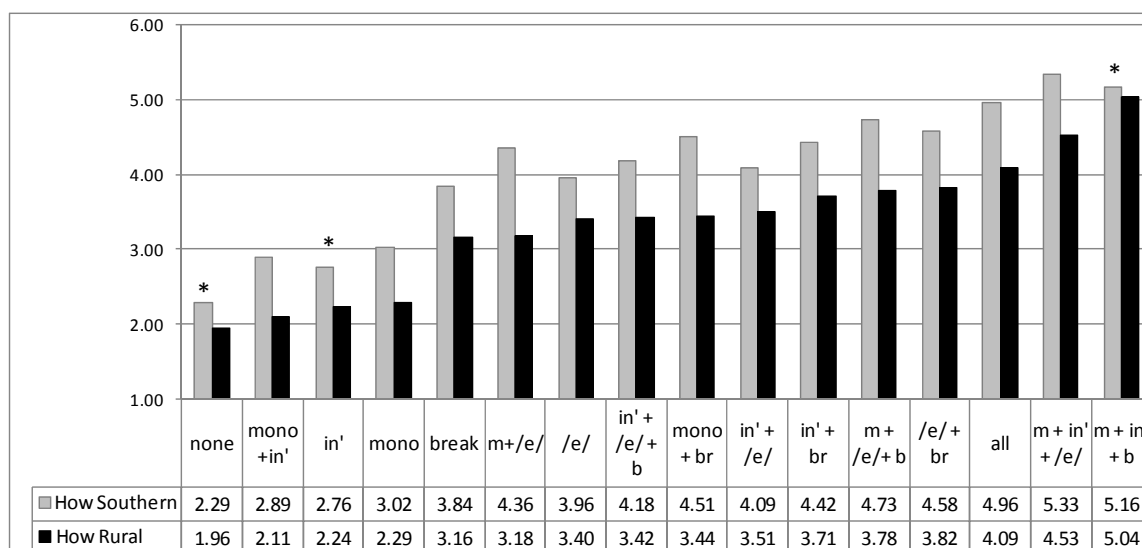


Figure 4.27 Comparison of Stacy as “Southern” (in gray) vs. “Rural” (in black). Non-significant relationships are marked with asterisks.

Though the order of increasing rating is not exactly the same for both groups, it is very similar. All of the ratings for Southern are significantly higher than the ratings for rural *except* “none”, velar fronting, and monophthong+in’+break. Recall that the last one is the one shown to be very slow in Figure 4.26 above, causing confusion in the Southern accent strength attribute results as well. Impressionistically, this is the slowest of all the stimuli. It is possible that this shows evidence that slow pace, at least, is considered rural by a majority of the listeners. Another thing made clear by this and the next figure is that velar fronting and monophthongal (ay) are not as rural as any stimulus containing either lowered /e/ or breaking. The comparison of Southerners’ to Non-Southerners’ perceptions of how rural she sounded is shown in Figure 4.28.

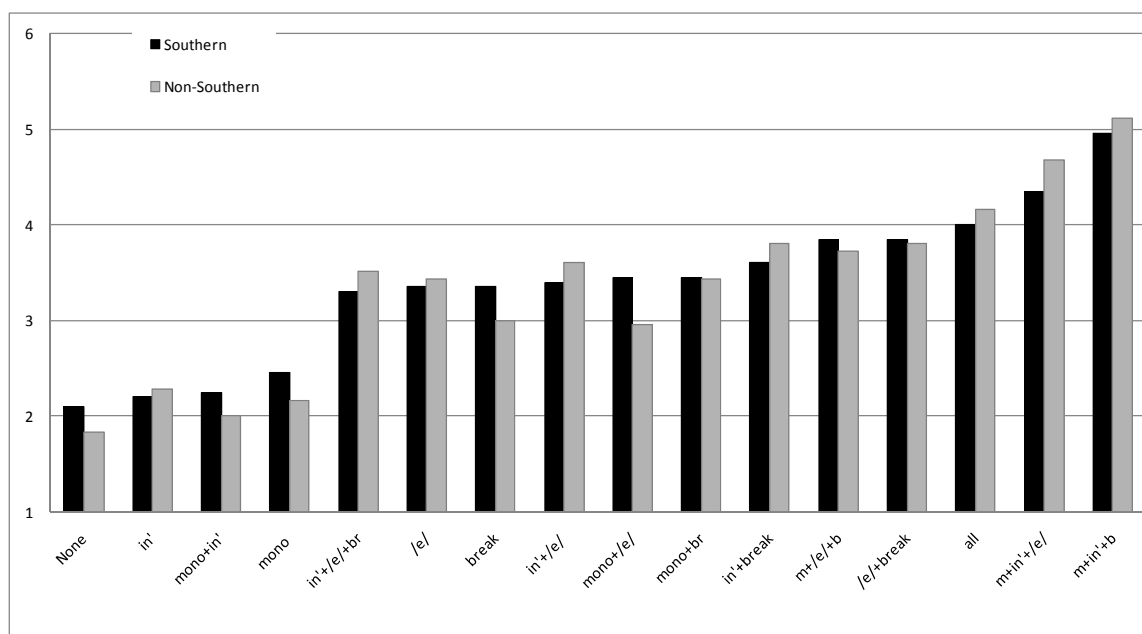


Figure 4.28 Comparison of “Rural” perceptions by Southerners and Non-Southerners

Contrary to hypothesis, there was no significant difference in any of the ratings of the stimuli by Southerners and Non-Southerners. Perhaps it was the foregrounding of the contrast between rural and Southern in the survey that aligned the ideologies. Recall that, before the participants took the survey, I asked them whether they currently live in an urban or rural area. While the answer to this question is not uninteresting on its own, the main reason it was asked was to prime them to distinguish between what *rural* means and what *Southern* means. After they were asked to rate the first stimulus they encountered on the relative “ruralness” of her Southernness<sup>53</sup>, this could only have served to further reinforce that not all Southerners are necessarily “rural.” Note that Figure 4.28 again highlights the contrast between the stimuli with (only) velar fronting and/or monophthongal (ay) (or “none”) and all the other stimuli, which all sound substantially more rural to the listeners.

<sup>53</sup> Providing “Lives in Rural South” and “Lives in Urban South” in the attribute sets the premise that she lives in the South.

Last, I examine this distinction more closely. We know that the ratings of rurality did not differ much between Southerners and Non-Southerners. We also know that almost all of the stimuli sounded more Southern than they did rural. In other words, Stacy is identified as being more or less Southern in the stimuli, but listeners recognize that she does not sound like an extremely rural Southerner. How much did Southerners and Non-Southerners agree on which features made her sound very Southern, but still not very rural? Figure 4.29 shows the resulting differences when the ratings for “Rural” are subtracted from the ratings for “Southern.” This chart demonstrates how Southern a stimulus sounded in relation to how rural it sounded. (It is also divided by Southerners and Non-Southerners.)

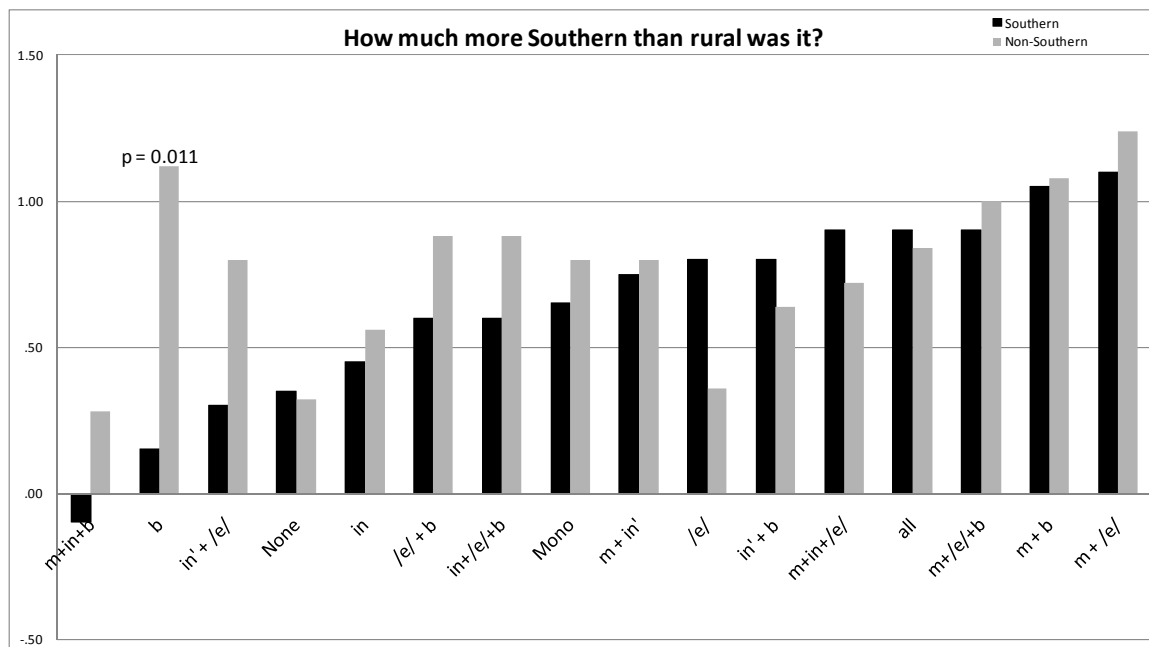


Figure 4.29 How much more “Southern” was the stimulus to listeners than it was “Rural”?

In looking at 4.29, bear in mind that a low score means that it was about as rural as it was Southern. Again, we see the stimulus “m + in' + b” being rated as very rural. In fact, it is the

only stimulus rated more rural than it was Southern, though the difference is very slight. The difference is probably due to features other than the ones focused on in the current study (see previous section). The “none” stimulus is about as rural as it is Southern, which is to say not very. Most of the stimuli show a steady correlation, with most being significantly less rural, but to about the same degree. (In Figure 4.27 above, the non-significant differences are indicated with asterisks.)

The only significant difference in Figure 4.29 is the stimulus containing breaking. Southerners considered this feature to be rural at about the same level as it is Southern (which is about midway at 3.35 – the same rating as /e/). Non-Southerners on the other hand, thought breaking was very Southern (significance at  $p = 0.011$ ), but less rural. In other words, to recall the quote at the beginning of the chapter, the stimulus is not “out in the woods country... It's just an Alabama drawl.”

#### 4.5 CONCLUSION

The results here show that certain features do increase the perception of how strong a Southern accent is. In the case where the features of velar fronting (–IN ~ –ING), monophthongal (ay), Southern shifted /e/, and/or Southern breaking may be present, the survey results here show that the presence of either Southern shifted /e/ or breaking or both are the greatest predictors of percept of stronger Southern accent for naïve listeners. The presence or absence of monophthongal (ay) is also shown to be a very influential factor. Of these four features, the least influential factor was whether the –ING variable was pronounced with a velar consonant (or fronted to a coronal). This feature nevertheless does influence the perception of a

Southern accent to some degree. Such results with velar fronting are foreshadowed somewhat by Campbell-Kibler's (2006) findings. She finds that –IN only sometimes increases the perception of how accented a speaker sounds and only if they have been identified already (presumably from other features) by the listener as being Southern. In her results, the notions of being Southern and being “accented” were separated, making it somewhat difficult to draw a direct comparison. Specifically, “Very Accented” and “Not At All Accented” were presented as semantic differentials with a 6-point scale between, while the information about being Southern was gathered via a “Check all that apply” section asking where the speaker might be from. (“The South” was one of the options.) Campbell-Kibler did not find effects based on the region of the listeners, though she speculated that it may be a result of the two populations she surveyed (undergraduate students at Stanford University and Duke University) (Campbell-Kibler, personal communication, 10/27/2010). Results of this nature are not very surprising, considering that this feature, in contrast to the others, is present in every dialect of English. As a Southern feature, it typically does the most work when *frequency* is noticeably higher to the listener and – apparently – not as much when the issue is simply presence or absence in a sentence with one opportunity for variation. This supports the findings of Labov et al. (2006) who presented listeners with passages containing ten envelopes of variation for velar fronting. The frequency of the –IN variable ranged from 0-100%. Listeners were sensitive to each added occurrence of –IN, rating the speaker as less able to be a broadcaster as each instance of –ING was replaced with –IN.

It was also shown here that in an experiment such as this one, regional affiliation does play a role in which factors affect the perception of a strong Southern accent. While both Southerners and Non-Southerners believed that stimuli containing shifted /e/ and breaking were examples of

the strongest Southern accent, the degree to which breaking contributed to a strong accent was lower for Southerners. For Southerners, monophthongal (ay) was slightly more powerful in creating a stronger accent than it was for Non-Southerners. While –IN contributed the least to a strong accent for both groups, it increased the percept of strong accent much more for Non-Southerners, whereas the feature’s presence or absence made little difference for Southerners. Labov et al. (2006) showed similar results for speakers in South Carolina versus speakers in Philadelphia, though speakers in New Hampshire were more similar to the South Carolina speakers. While this suggested that breaking down the category of “Non-Southerners” would reveal different patterns among this group, strong regional effects were not found, possibly due to low numbers within each non-Southern regional group. Why exactly Southerners and Non-Southerners have slightly differing views on the four features is not transparent. In the case of velar fronting, I would speculate that Southerners either do not front velars significantly more than Non-Southerners or that they (as a whole) are not aware that they do it. Therefore, they do not view velar fronting as particularly Southern, whereas Non-Southerners recognize what they consider to be a stereotype.

While using different carrier sentences added naturalness to the somewhat odd exercise of repeatedly presenting a nearly identical stimulus, it did not allow for total control over the variables. The pace and intonation of the stimuli were not identical, causing results that were initially surprising. The effect of the slow pace on perceptions, however, is interesting and future perception studies attempting to pick “the” Southern dialect apart would benefit from its consideration.

In addition to the detailed analysis of how Southern the stimuli were, I also examined ratings for whether Stacy sounded like she lives in a rural or urban Southern area. Contrary to expectations, Southerners and Non-Southerners largely agreed on how urban/non-rural she sounded, rating her stimuli as less rural than they were merely “Southern” (presumably in a more general sense). At the same time, ratings for how rural Stacy sounded predictably tended to increase as ratings increased for how Southern she sounded, confirming that there is certainly an ideological correlation between sounding “Southern” and sounding “rural.”

Language perception studies such as this one offer important insights into how naïve listeners’ interpret various features when forming accent perceptions. Speakers of English (and likely all languages) comment on various speakers’ accents, not just in terms of having the accent, but also in terms of strength of accent. Conducting controlled experiments enables us to translate these casual comments into linguistic terms so we may better understand the intricacies of speaker-listener interaction.

## CHAPTER 5. CONCLUSION

### 5.1 SUMMATION

Since at least the 1960's, vast amounts of data on human linguistic production have been collected by linguists around the world revealing much about variability and constraints, both linguistic and social. Over the past decade, sociolinguists have become increasingly interested in linguistic perception as well. Research by sociolinguists into how variables are perceived has substantially increased, as evidenced by the sampling of perceptual studies reviewed in Chapter 4. The research presented here is part of the growing trend of studies concerned with both linguistic production *and* perception. Sociolinguists must continue exploring the ways in which speech and perception interact and influence each other, so that we may better understand and contextualize the results from decades of production research.

The work here provides insight into the layperson's enigmatic notion of perceiving stronger or weaker accents. The central question we are concerned with is: Which feature(s) give rise to perception of a stronger Southern (U.S.) accent? The pilot study in Chapter 1 established that listeners do recognize that they have the ability to detect intra-dialectal accent strength. While it was difficult to determine the particulars on which they based their evaluations, it should be noted that no one who participated found the task (question) strange or claimed to not understand what it means to evaluate speakers on the basis of strong or weak accents. This fact is important given that the fundamental assumption behind the experiments here hinges on speakers' abilities to perform such evaluations. Even so, this project's goal necessitated a more controlled version of such an experiment with a finite number of features tested for their relative

contribution to the percept of a stronger Southern accent. On the basis of past literature, four phonological features were chosen because of their potential to produce an answer to the central question: monophthongal (ay), the Southern Vowel Shift, velar fronting in the –ING suffix, and Southern breaking.

Given the variable behavior of the front vowels of the Southern Vowel Shift within different parts of the South (based both on the level of rurality *and* on the specific area), the behavior of the shift within the Riverton area was examined using data from seven young women, reported in Chapter 2. Praat software was used to obtain acoustic measurements of the first two formants in the women's high and mid front vowels. The women's formant measurements revealed that the high front vowels shift for only a few of the women and inconsistently even for them. The mid vowels, however, often shift with a few of the women showing mid front vowels completely reversed in terms of relative height and backness. Consistent with the findings of Fridland (2000), which partially informed the experiments performed by Fridland et al. (2004, 2005), the findings suggest that the mid front vowel subshift is more representative of this community (based on production, e.g., Fridland 2000), occurs more consistently throughout the South, and is likely the most salient element of the Southern Vowel Shift (based on perception, e.g., Fridland et al 2004, 2005). Because of this salience and the fact that the feature does show up in Riverton data, the lowered (shifted) /e/ vowel was chosen for the perceptual survey stimulus. Chapter 2 additionally examined linguistic environments of the most shifted vowels both as an exercise in discovering the relationship between shifting vowels and environment and to assist in finding or crafting a better stimulus for the perception test. Quantitative examination of the following and preceding environments did not reveal robust

patterns, but suggested that the most shifted vowels may occur most often after preceding coronals (including /r/) and before voiced following environments (e.g. *stayed*, *grade*, *played*). The use of a stimulus word with a shifted /e/ would match the patterns of at least some of the community's young women if it were immediately preceded by /r/ or another coronal. A shifted /ɛ/ would not be unusual in a word-initial position or preceded by a coronal. The most usual following environment for a more shifted mid front vowel appears to be a voiced consonant, whether oral or nasal. Further, we know from the vowel plots Chapter 2 that a voiceless environment does not *impede* shifting (since many vowels preceding voiceless environments were shifted), shifting may be less common with a voiceless following environment. The results are not robust enough to state this definitively. The notion of a voiced environment promoting shifting more than a voiceless environment is not particularly unexpected, since vowels are slightly longer when followed by a voiced sound. A longer vowel could promote shifted lax mid front vowels, which tend to be much longer (what some call diphthongal or triphthongal; see Chapter 3) and shifted mid front vowels, which must cover the slightly farther phonetic distance of [a] to [ɪ] in comparison with [e] to [ɪ], e.g. *weighed* pronounced like *wide* whereby the [aɪ] trajectory is slightly farther than the trajectory of the [eɪ] diphthong.

Ample studies on velar fronting and on monophthongal (ay) provided a solid foundation for the inclusion of these two features, particularly in terms of background knowledge of social distribution and perception. The relative lack of information on breaking/drawl, however, necessitated some exploration into the behavior and acoustic features of the Southern feature. In Chapter 3, an attempt was made to define drawl, investigate the linguistic constraints, and find an

appropriate way to measure the movement in acoustic space associated with it. In a small pilot study with four naïve listeners from the South and four from outside the South, listeners revealed that drawl may pertain to slow pace and prolonged vowels, to a Southern accent in general, or to something else which cannot be pinpointed in such a small study. It was therefore necessary to use features discussed in previous linguistic literature along with some intuitions as a native speaker to find perceived drawl and impressionistically code tokens for following environment and specific vowel involved. Additionally, the types of drawl attested in the women's data used for this project were compiled into a working taxonomy of drawl, so tokens were coded according to *type* as well. The working taxonomy from Chapter 3 is repeated here as Table 5.1.

Type	Example	Front vowels affected
1. Length	Elongated monophthongal vowels	any
2. Double Pulse	[hæ.æd] <i>had</i>	any
3. Centralizing offglide	[hæ.əd] <i>had</i>	+ lax
4. Triphthong	[hæːjəd] <i>had</i>	+ lax
5. Diphthong	[kæˈnt] <i>can't</i>	- high, +lax
6. Triphthong w/sonorant colored offglide	≈ [ðɪˈjɪn] 'then' with large intensity pulse on /n/	+lax for nasals; any for liquids

Table 5.1 Working Taxonomy of Drawl Types.

Coded tokens were quantified for patterns, revealing that hiatified and/or broken vowels occur across all front lax vowels, though they are strongly favored by a following nasal. After nasals, quantitative results showed that voiceless, voiced, and /r/ following environments were equally likely to follow a broken vowel.

Presumably, the triphthongal vowels (i.e. [hæ<sup>1</sup>jəd] *had*) would have a great deal more movement in acoustic space than non-triphthongal types. After normalization, Euclidean Distance measurements were taken of the paths of movement toward the upper front periphery and the subsequent centralization and backing of front vowels. Such measurements resulted in two distance calculations, which revealed that triphthongs do in fact have greater movement than the other hiatified vowel types (double-pulse vowels and inglides) within acoustic space. In terms of value for measuring other broken vowels, performing the second measurement point at F1 minimum works well for the trajectory pattern of triphthongs. However, acoustic measurements for an ingliding hiatified vowel should reveal more movement in the second segment than in the first segment (because of the glide trajectory), though the results of the Euclidean Distance measurements performed in Chapter 3 do not reflect this. The reason for this is very likely that, for Double-Pulse and Ingling Types, F1 minimum is not the best place to take a second formant measurement point. Ingling Types would likely benefit from a second measurement at the point of F2 maximum, indicating the point of trajectory change where the ingliding begins. Since each hiatified vowel type has disparate acoustic behavior, it should follow that each type would necessitate its own methodological specifics. The distance measurements for triphthongs were significantly longer than non-triphthongs as shown through paired T-tests.

Chapter 3 additionally pointed out issues with the traditional vocabulary used for describing drawl or breaking. In fact, it is not clear that “drawl” should include the breaking, amplitude pulses, or any of the other characteristics under study. Rather, it seems that drawl should describe (only) prolonged vowels and/or a type of tempo or pace, and that the

phenomenon at issue here is really what I call the *hiatification* of Southern vowels. Though linguists interested in Southern speech have fostered an affection of sorts for the term *drawl*, the term has become opaque and it is not clear to which phenomena it actually refers. This ambiguity may have contributed to the difficulty of rigorous analyses of the phenomena. Pinpointing hiatification changes drawl from a type of overarching “mother” feature into a “sister” feature of breaking and hiatification. Since hiatified and broken vowels are longer than their ordinary counterparts, we might posit that length historically preceded the others, although to my knowledge there exists no historical proof of such a progression. Further, the added length I refer to in hiatification and breaking is intended to reflect lengthening on a more phonetic level. The use of *drawl* I am recommending refers to speech rate or pace, or a general pattern of elongated vowels. (The point at which these elongated vowels become marked for the listeners presumably varies.) To use an example, an utterance in which a person used several diphthongs (e.g. *like*, *face*) would not prompt a listener to comment that the person speaks slowly, even though diphthongs are phonetically longer.

Finally, Chapter 4 implemented some of the knowledge of the previous chapters in motivating a stimulus for a perceptual survey aimed at eliciting the percept of a stronger or weaker Southern accent from naïve listeners. In order to determine how features might work together more holistically to create this impression, four features were used in all possible permutations as different versions of one stimulus sentence. The stimulus sentence used was *She was having a hard time in seventh grade with her history class*. In an online survey, listeners were told that the speaker was a Southern women auditioning for a radio commercial and that each stimulus version was one of her recorded “takes”. This contributed to the aim of obtaining

*intra*-dialectal evaluations. Forty-five listeners completed the matched-guise survey, with results indicating that breaking (triphthongal hiatification) and Southern shifted /e/ were the most powerful in contributing to an increased percept of Southern accent. These two features appeared to contribute equally, such that listeners associated both with an extremely strong accent. The survey found that velar fronting (pronouncing –ING as –IN) contributed the least to the perception of a strong Southern accent. This finding supports that of Campbell-Kibler (2006), in which listeners suggested that –IN sounds “natural” for Southern speech and implied that it does not contribute greatly to *increased* accent once it has been established that one is present. This finding may additionally indicate that listeners are (on some level) aware that the distribution of –IN is not purely the domain of speakers in the Southern U.S. but rather belongs in the repertoire of nearly every native speaker of English. Here, the frequency of the variable plays the dominant role, with such a distinction rendered more irrelevant in a survey such as the one used here, where there was only one opportunity for variation. Though the region of origin of the listeners played a somewhat smaller role than expected, differences in perception of the features nevertheless existed between the two originally targeted populations of Southerners (20 listeners) and non-Southerners (25 listeners)<sup>54</sup>. It was shown that while both groups consider velar fronting to contribute the least to the percept of strong Southern accent, non-Southerners are far more attuned to the “Southernness” of this feature, perhaps particularly when this Southern affiliation is already foregrounded through explicit announcement that the speaker is Southern. There are subtle differences concerning the other features as well, with Southerners perceiving a slightly stronger accent when monophthongization is present and finding shifted /e/ to signal the most

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<sup>54</sup>Listeners were asked which region of the U.S. they self-identified with most.

accented versions of the stimuli as opposed to non-Southerners who slightly favored breaking as the most heavily weighted of the four features.

These chapters work together to find that naïve listeners consider shifted /e/ and breaking to make them hear a very strong Southern accent. In the following sections, the contributions to the field of linguistic variation are discussed, along with their greater implications.

## 5.2 DO YOU PERCEIVE WHAT I PERCEIVE?

Of what interest is it to better understand a listener's perception of the features within an accent? Gathering listener intuitions can be a valuable way to evaluate the categories (e.g. Southern, young, female) so often externally imposed by linguists. Bell (2001) summarizes all sociolinguistic work on style as an attempt to answer: "Why did the speaker say it this way on this occasion" (160)? As language researchers, we should also attend to the dialogic and perceptual aspect and ask: why did the listener hear (interpret) it this way on this occasion?

At the outset of the project, it was supposed that perception of a heavy Southern accent did not simply derive from the addition of more types of Southern features, but rather depended on which specific features were added and probably also on which combinations of features were used together. The current study showed that there is, in fact, some additive effect on the perception of a Southern accent, in that more features generally increase a perception of strong accent, at least with regard to the four used in this survey. However, feature clusters that include the ones that proved most powerful by themselves do produce a stronger accent percept than the clusters which do not. Therefore, while more features do sound more Southern, some features cause exponential increases in percept of strong accent while others do not. Are these

perceptions a reflection of what features Southerners should attend to if they either wanted to “tone down the accent” or “ramp it up”?<sup>55</sup>

How might a speaker evoke the perception of a more Southern linguistic style (or vice-versa)? The use of *style* here does not refer to the meaning used by, for example, Labov (e.g. 1966), to refer to changes in usage levels for features associated with standard vs. nonstandard varieties due to the level of attention speakers pay to speech itself, but conforms more to those meanings in the sociolinguistic literature which to relate using clusters of feature to express identities and take up stances in interaction (e.g. California Style Collective 2003). That is, style is used here to describe how a speaker might take linguistic variation and use it as a tool for creating meaning in social interactions. One of the primary goals of the current study was to look at intra-dialectal perceptions. Therefore, it is presupposed for the listeners that the speaker Stacy may have different Southern styles, or ways of sounding more or less Southern, while still remaining within the boundaries of her own dialect. Chapter 4 suggested that a speech style exhibiting the SVS, or at least a part of it, would contribute to a higher perception of a Southern accent more than a style would without it. The same is true for a style incorporating the feature of triphthongal variants. Listeners, especially Southerners, did not find monophthongal (ay) or the use of –IN’ for the suffix –ING to be as strongly Southern as the other two. Inadvertently, the power of pace and prosody on perception of Southern style was also revealed, showing that these features can make speech sound very Southern as well.

Relevant to perception studies, Bell (beginning with 1984) considers meaning-making to be a recipient-oriented exercise. Bell (2001) says that, at least for the Audience Design

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<sup>55</sup> Depending on the situation, a Southerner may want to invoke overt or covert prestige within the range of his/her ability. This is not meant to imply that these would necessarily be conscious actions by the speaker.

framework, “linguistic features operate as identity markers which is the basis of how style *means...*” (160, emphasis Bell’s). Bell’s ideas were expanded upon and broadened in later work, emphasizing the meaning-making choices originated with the speaker, not (just) the audience. Speaker Design views of stylistic variation (Schilling-Estes 1998, 1999, 2004; Campbell-Kibler et al. 2000; Coupland 2001; Podesva et al. 2002; Podesva 2008) takes a more proactive view of style creation than Audience Design, claiming that style acts not as “a reactive phenomenon but as a resource in the active creation, presentation, and recreation of speaker identity” (Schilling-Estes 2001, 388). If a speaker is “designing” her speech to reflect an identity for her real or imagined audience, but the design is misunderstood, it can be problematic for the use of language as a projection of identity. The survey used in this dissertation demonstrated that such a problem is a distinct possibility.

The focus put on quantitative measurements in this study and the wide net that was cast runs counter to Coupland’s (2007) call for linguists to look increasingly for meaning of styles and identity creation in individual (moment-to-moment) interactions. However, while I agree that much can be learned from the study of individual interactions, I disagree that “big picture” studies are not useful enterprises and instead offer that they provide the context for most of these individual instances of social construction in interaction. At the same time, like Coupland (and many others), I would adamantly dispense with the notion of a static identity, both short- and long-term. There are several studies that integrate Coupland’s ideas well with techniques from quantitative studies (e.g. Eckert 2000; Schilling-Estes 1998, 2004). Meanings may be created in

interaction but speakers draw on pre-existing associations between linguistic forms, social groups, and social meanings to craft their individual meanings in conversation.<sup>56</sup>

Linguistic style is intimately connected with the expression of linguistic identity. I use Mendoza-Denton (2002) to define linguistic identity as “the active negotiation of an individual’s relationship with larger social constructs, in so far as this negotiation is signaled through language and other semiotic means” (475). At any given time, general linguistic identity is made up of the various styles used by an individual. Put another way, in my view, the style a person uses in a given instance derives from some kind of sub-identity. While some of these are crafted impulsively, some of them may be part of the individual’s habitual repertoire. Coupland (2001) says that “dialect style operates primarily in the expression of identity and relational goals...” (190). Given that understanding the expression of both identity and social relationships are goals of interest for variationists, it is worth understanding more about how identity can be compromised if misinterpreted by the recipient.

The current study contributes to the studies of style by drawing attention to the (un)successful reception of a speaker’s style by listeners. As Moore (2004, 393) said, “Variables are only meaningful in as much as they are constituents of a sociolinguistic style.” They are also only meaningful (interactionally) if listeners “get” the style. In Chapter 4 of this dissertation, the results showed that Southerners and non-Southerners do not react to the same features in exactly the same way. This means that, with regard to these features, a Southerner who variably uses them to express an aspect of Southern identity or a certain Southern style may not always be successful in communicating that identity, depending on her audience. What happens when the

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<sup>56</sup> Thanks and credit to Natalie Schilling for this point.

listener doesn't "get it"? We can imagine an exchange whereby a Southern woman uses features that she believes identify her as an educated Southerner, but a listener interprets the features as identifying an uneducated redneck, not in terms of language attitudes, but rather in terms of a wrongly assigned identity by the listener. An example is offered by the social distribution of monophthongal (ay) before voiceless consonants. In most areas of the South, monophthongization of (ay) before voiceless consonants is associated with lower classes, as pointed out by Labov, Ash, and Boberg (2006). Figure 5.1 displays the patterns of monophthongal (ay) before voiced vs. voiceless consonants as shown in Labov, Ash, and Boberg (2006, 129). Brown (darker) symbols indicate monophthongization before voiceless consonants, with brown lines drawn around the areas within the Southeast considered to be monophthongal in all contexts, regardless of class.

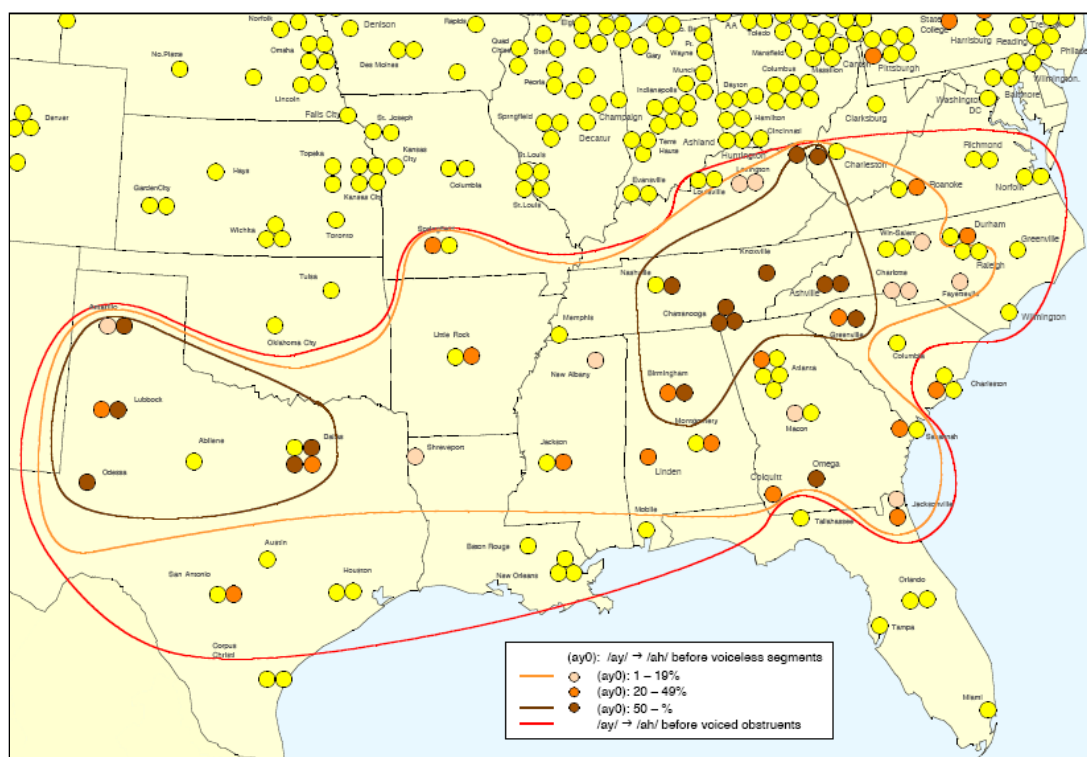


Figure 5.1 Monophthongization in the South before voiced and voiceless consonants (from Labov, Ash, and Boberg 2006, Map 11.5, 129). Dark symbols indicate monophthongization before voiceless consonants. Huntsville lies between Birmingham and Chattanooga on the map.

However, Labov, Ash, and Boberg (2006, 129) found that there are at least two pockets of the South (one of which is the Inland South where Huntsville, Alabama, is located) in which (ay) is monophthongal without regard to following environment by all classes, shown in Figure 5.1.<sup>57</sup> A speaker from one of these pockets may not realize the social evaluation attached to such a pronunciation and may encounter an identity misinterpretation by another Southerner whose home area does have the distinction. Any meaning may be similarly missed if either Southerner encounters a Non-Southerner, who only notices that there is monophthongization, period. This is

<sup>57</sup> However, see Feagin (forthcoming) for an argument against this conclusion. Feagin (forthcoming) found that, in the speech of six upper class speakers and eight working class speakers (all from Anniston, Alabama), none of the upper class speakers had monophthongal (ay) before voiceless, while the working class's monophthongization ranged from 60%-100%. At the same time, all speakers were overwhelmingly monophthongal before voiced consonants and word-finally.

not far-fetched: Bernstein (2006) found that a college student in/from South Alabama thought that others from Texas sounded extremely “country” when she first met them due to their pre-voiceless (ay) monophthongization. The Alabamian got to know the Texans and, upon discovering that they were not actually very country, realized that, for Texas, “that was just normal” (227). A similar *intra*-Southern misunderstanding actually happened to me. Growing up in a completely r-ful Southern area, I had always believed r-less Southern accents to be an indication of a rural farmer near the Gulf or Southern Atlantic Coast. I was quite surprised to be told that the feature is associated with upper class Southerners living all over the South (not only the coast). How pervasive, then, the misinterpretations must be for various other inter-dialectal communication when the same features can subtly invoke different meanings. While the above examples are not intended to relate specifically to language attitudes, there can be ideological – and therefore social – consequences in perceiving that a Southern accent is heavy. In a study of language attitudes toward Southern speech, Soukup (2001) relates an opinion by a speaker from Tennessee: “A regional accent would not matter if it were slight, however an extremely obvious accent usually indicates a lack of intelligence/education.”

Studies in sociolinguistics are increasingly demonstrating that there are additionally consequences of listener variation in perception studies (e.g. Campbell-Kibler 2006). Speakers not only vary in their use of dialectal features, but listeners vary in the way they interpret such features. Eckert (2008) says that while speakers may know who uses different features, “the evaluation of that differentiation can differ across the population” (467). While dialect misunderstanding is a type of pragmatic misunderstanding, this study draws attention specifically to the possibility of disconnect in linguistic understandings of actual style or identity, such that

the meaning of a feature is not equal for both parties involved in a dialogic interaction.

Baugh (2010) offered this question: “What does it mean to sound like a \_\_\_\_.”

Through the results of a perceptual survey of feature combinations, this dissertation has shown that while there is arguably a great deal of agreement, the subjective nature of “sounding like a \_\_\_\_” can be problematic when the same dialect features have different meanings to different listeners. I hope that the recent explosion of sociolinguistic perception studies will continue to shed light on this topic.

### 5.3 CONTRIBUTIONS AND IMPLICATIONS

The research presented here resulted in several contributions to various subfields of linguistics. The findings of Chapter 2 contribute to the ongoing studies of the Southern Vowel Shift by looking at data from young females near Huntsville, Alabama, collected between 2004 and 2007. Since these data are taken from young people, they help give us a sense of the status of this vowel shift’s progression among females in the area. The findings here support the growing trend of publications that show little participation in the high-vowel subshift, e.g. Fridland (2000, 2001). Taken together, they imply that the SVS stopped after the second stage in some areas of the South. Why should this be? Perhaps it is the case that the SVS, known to have begun in rural areas, has only more recently begun spreading to mid-size cities such as Huntsville or even large cities such as Memphis. The progress of SVS in the women of this study is particularly interesting considering that the area where they live is influenced by both the more rural county area and by the relatively urban Huntsville, Alabama, area. Perhaps the speakers of urban areas will continue to progress to later stages of the SVS over the next generation(s) of speakers.

Alternatively, perhaps the SVS was spreading to urban areas, but the progression was halted as Southern cities joined the trend of becoming more globalized. Answers to these questions will only be revealed over time.

For a better understanding of linguistic constraints on the shift, it was also useful to examine the most favorable environments for shifted vowels. The implications of the lack of robust results are that a larger population sample is needed or that the mid-vowel rotation is nearing completion in the area, resulting in a leveling of some linguistic constraints.

This study also builds upon earlier work on the Southern Drawl, also called Southern Breaking. Sociolinguistic interviews of residents of Riverton, Alabama allowed a new categorization of six types of drawl. While this taxonomy is meant to be fluid, it is a useful starting point for future work on drawl. I hope that linguists will devote much more research attention to this phenomenon.

Additionally, new methods of measurement for drawl were introduced. The use of Euclidean Distance to measure the movement of triphthongs revealed that their movement is significantly greater (statistically) than that of other vowels. Both data and past literature were examined before coming to the conclusion that it is the two intensity pulses or intra-vocalic trochaic stress pattern that so attracts linguists to the phenomenon. In Chapter 3, I argued for terminology changes in future work on “drawl”, such that the term should not be used as a label for features other than those such as pace, rhythm, or prolonged vowels. *Breaking* should be used only for the transition of a monophthong to a diphthong and not for the act of what I call hiatification, or the insertion of a hiatus into a vowel. Hiatification results in a vowel divided into two (or more) parts (e.g. *cat* sounding like “cayut”). The analysis of this phenomenon brought up

interesting questions about the lax vowels involved in the Southern Vowel Shift as well, which seem to require hiatification when they shift, with the first portion being the one considered shifted. What is the connection between the SVS and the hiatification of lax vowels? If the shift only occurs in hiatification, perhaps it is not a true shift, since lax vowels would often be realized without shift. However, consider that the first portion of hiatified vowels could, in theory, shift to at least a few possible locations. Instead, they systematically shift in historically precedented patterns (c.f. Labov 1994). Of particular interest would be a quantitative study of exactly how many shifted vowels are hiatified and whether some environments habitually allow shifting without hiatification. A true investigation of connections between the SVS and hiatification would be an excellent tangential study to add to the current one in the future; this is certainly an area requiring research attention.

The terminology suggestions have implications for the term “triphthong”, not only for sociolinguistics, but also for the fields of phonetics and phonology. Vowels are usually termed triphthongs when there is a glide from one phoneme to another and then again to another. In other words, the vowel has three targets. Southern American English would not, then, be the only dialect of English to have triphthongs. Standard English has many so-called triphthongs such as *higher*, *slower*, and *liaison*.<sup>58</sup> Non-rhotic English dialects, such as British English, have even more possibilities since a schwa sound often turns up in place of the elided /r/. However, for the same reasons that one could argue that *neon* is not a diphthong, the above listed words are arguably not triphthongs. Rather, they are hiatified vowels, where one of the vowels is a diphthong and the other a monophthong. Therefore, the pronunciation of the word *cat* as “cayut”

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<sup>58</sup> See [www.fonetiks.org](http://www.fonetiks.org) for lists of examples.

does not turn it into a triphthong, but rather the [æ] is hiatified, where the first portion becomes a diphthong [æʰ] and the post-hiatus portion is a monophthong [ə]. Further, almost all examples of so-called triphthongs (even in Southern American English) contain vowels bisected by one of the two semi-vowels [j] or [w]. Ladefoged (2005) offers the following definition of a diphthong: “a vowel sound forming a single syllable, but including a change from one vowel quality to another” (200). Analogous to the definition of diphthongs, having a triphthong would necessitate three vowels in a single unit. While the definition of a syllable is highly debated among linguists, for our purposes here, let us agree that hiatus versus diphthong is part of what distinguishes the middle vowel portion of *naïve* from *hive*. Perhaps there are no true triphthongs in English.<sup>59</sup> Nevertheless, unlike my stance in Chapter 3, it does not seem a detrimental practice to continue calling these three-target words *triphthongs* for linguists’ convenience. Given the dearth of actual triphthongs, there is little potential for confusion, as long as those who use this label are aware that, in phonetic terms, it is a misnomer.

With regard to this new information on hiatification, breaking, and drawl, this research should be used merely as a jumping off point for future investigations which can delve more deeply into the work begun here.

#### 5.4 LAST BUT NOT LEAST

Since the experiments carried out in Chapter 4 tie together the previous chapters and address the overarching question for the entire dissertation, it is a fitting place to begin the

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<sup>59</sup> One could argue that the sound of a cat [mjau] *meow* is a true triphthong.

overall conclusion. While some implications of the results of Chapter 4 were thoroughly discussed in Section 5.2, there are more straightforward contributions as well. This project is built around a question: “Can a speaker manipulate Southern features to give the perception of a higher or lower degree of Southernness?” The answer is “Yes”; the perceptual survey did indeed find that certain features are more powerful in eliciting the perception of a stronger Southern accent and that others do not prompt the evaluation to the same degree. This study sought to gain insight into *intra*-dialectal variation and perceptual correlations with specific cues in order to learn more about how the presence or absence of individual dialect features in a (Southern) speaker’s speech might affect perception of how Southern the speech sounds. In this respect, the study succeeded in shedding light on how the features used affected this perception.

Given their overall salience, it is not clear why the “breaking”<sup>60</sup> feature should elicit such a strong reaction while monophthongal (ay) does not. Relative frequency of general use does not seem to be the answer, since, as a vowel, a shifted /e/ would presumably be as likely to show up as monophthongal (ay) would in any given stretch of speech. A likely answer is that “very” shifted /e/ is just as socially salient as both “breaking” and monophthongal (ay). However, the last feature is much more ubiquitous in the South, making the other two much more marked. If listeners are so variably influenced, according to the *level* of shifting (lowering) that /e/ does, this is fascinating indeed and worthy of further exploration in the future.

The work here extended previous research into the most noticeable dialect in the United States: Southern English (Labov, Ash, and Boberg 2006, 240). Overall, this project built onto the

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<sup>60</sup> This is the descriptive term that was used for simplicity in Chapter 4.

existing knowledge about the relative contribution of disparate features to the perception of a strong accent and allowed us insight into listeners' intra-dialectal evaluations.

## APPENDIX I

This appendix supplies information about the women whose data was used in the dissertation. From youngest to oldest, details are supplied about each young woman. If the woman's reference is unclear, her word(s) will be supplied in quotes.

Though class is not a strong social factor in the area, classes have been posited for the women and their families. Class below was based on a combination of education, job type, and assumed or known income. The first two factors carry more weight since they may correlate most with social networks in the area, as well as correlating somewhat with personal identity.

### *Summary*

<b>Pseudonym</b>	<b>Year of Birth</b>	<b>Home Location at birth</b>	<b>Moved to area in</b>
Sierra	1987	Montgomery, AL	~1992
Kristina	1982	Huntsville, AL	~1985
Natasha	1981	North Carolina	~ 1988
Tiffany	1979	Riverton, AL	n/a
Beth	1978	North Carolina	~ 1981
Stacy	1978	Florida	~ 1986
Marcia	1977	Riverton, AL	n/a

<b>Sierra</b>	white female, born 1978		
Place of origin	Sierra moved to Huntsville when she was “about five” years old, moving to Riverton about a year later, when she began first grade.		
Parents	Her father has lived in the Huntsville area his entire life.  Her mother was born outside the south and moved “here” when she was a baby.		
Highest education	<b>High School Degree</b>		
Attendance in Riverton’s schools:	Finished <b>Elementary</b> locally	yes	
	Finished <b>Jr. High</b> locally	yes	
	Finished <b>High School</b> locally	yes	
<b>Higher Education</b>	Any portion at community college? <b>n/a</b>	Local University? <b>n/a</b>	Southern University? <b>n/a</b>
Sierra and I had never met prior to the interview. The portion of interview data used for this project was recorded in the office space next door to the café.			
Sierra’s extended family may be part of the area’s prosperous working class. She holds a blue collar job (unskilled category) in the service industry and may be working class.			

<b>Kristina</b>	white female, born 1982		
Place of origin	Kristina’s home location at birth was Huntsville city. She moved to Riverton when she was three years old.		
Parents	Her father lived in the Huntsville area his entire life until “about ten years ago.”  Her mother was born outside the south and moved to Huntsville when she was “in elementary school.”		
Highest education	<b>Bachelor’s Degree</b>		
Attendance in Riverton’s schools:	Finished <b>Elementary</b> locally	yes	
	Finished <b>Jr. High</b> locally	yes	
	Finished <b>High School</b> locally	yes	
<b>Higher Education</b>	Any portion at community college? <b>No</b>	Local University? <b>No</b>	Southern University? <b>Yes</b>
I know Kristina personally. The portion of interview data used for this project was recorded in her home.			
Kristina’s extended family may be middle-middle class. She holds a white collar office job and may be middle-middle class.			

<b>Natasha</b>	white female, born 1981		
Place of origin	Natasha was born in North Carolina. She moved to Riverton when she was “in the second grade.”		
Parents	Her father is from Riverton.  Her mother was born outside the south and first moved to Riverton when Natasha did.		
Highest education	<b>Bachelor’s Degree</b>		
Attendance in Riverton’s schools:	Finished <b>Elementary</b> locally	yes	
	Finished <b>Jr. High</b> locally	yes	
	Finished <b>High School</b> locally	yes	
<b>Higher Education</b>	Any portion at community college? <b>No</b>	Local University? <b>Yes</b>	Southern University? <b>Yes</b>
I had seen Natasha before, but have no memory of meeting her prior to the interview. The portion of interview data used for this project was recorded in the café.			
Natasha’s extended family may be working or lower-middle class, though they are one of the most prosperous in the area. She holds a white collar job in the health industry, serves in the armed services, and may be middle-middle class.			

<b>Tiffany</b>	white female, born 1979		
Place of origin	Tiffany’s home location at birth was Riverton.		
Parents	Her father is from Riverton.  Her mother is from Riverton.		
Highest education	<b>Associate’s Degree</b>		
Attendance in Riverton’s schools:	Finished <b>Elementary</b> locally	yes	
	Finished <b>Jr. High</b> locally	yes	
	Finished <b>High School</b> locally	yes	
<b>Higher Education</b>	Any portion at community college? <b>Yes</b>	Local University? <b>No</b>	Southern University? <b>Yes</b>
I knew Tiffany in high school, but had not kept in touch. The portion of interview data used for this project was recorded in her home.			
Tiffany’s extended family may be lower-middle class, though they are one of the most prosperous in the area. She is not currently employed, does not have a particular career trade, and may be lower-middle class.			

<b>Beth</b>	white female, born 1978		
Place of origin	Beth was born in North Carolina. She moved to Riverton when she was “three years old.”		
Parents	<p>Her father is from another Southern state. (His parents are from Riverton.)</p> <p>Her mother is from another Southern state. Both moved to Riverton when Beth did.</p>		
Highest education	<b>Bachelor’s Degree</b>		
Attendance in Riverton’s schools:	Finished <b>Elementary</b> locally	yes	
	Finished <b>Jr. High</b> locally	yes	
	Finished <b>High School</b> locally	yes	
<b>Higher Education</b>	Any portion at community college? <b>No</b>	Local University? <b>No</b>	Southern University? <b>Yes</b>
I know Beth personally. The portion of interview data used for this project was recorded in an outdoor park.			
Beth’s extended family may be working class. She holds a white collar job in the health industry and may be middle-middle class.			

<b>Stacy</b>	white female, born 1978		
Place of origin	Stacy was born in Florida. She moved to Riverton “in the third grade.”		
Parents	<p>Her father is from another Southern state.</p> <p>Her mother is from a Southern state, but was raised outside Southern culture. Both moved to Riverton when Stacy did.</p>		
Highest education	<b>Bachelor’s Degree</b>		
Attendance in Riverton’s schools:	Finished <b>Elementary</b> locally	yes	
	Finished <b>Jr. High</b> locally	yes	
	Finished <b>High School</b> locally	yes	
<b>Higher Education</b>	Any portion at community college? <b>Yes</b>	Local University? <b>Yes</b>	Southern University? <b>Yes</b>
I know Stacy personally. The portion of interview data used for this project was recorded in her home.			
Stacy’s family may be middle-middle class. She holds a white collar job in the health industry and may be lower-middle class.			

<b>Marcia</b>	white female, born 1977		
Place of origin	Marcia's home location at birth was Riverton.		
Parents	Her father is from Huntsville.  Her mother is from Huntsville. Both moved to Riverton before Marcia was born.		
Highest education	<b>High School Degree</b>		
Attendance in Riverton's schools:	Finished <b>Elementary</b> locally	yes	
	Finished <b>Jr. High</b> locally	yes	
	Finished <b>High School</b> locally	yes	
<b>Higher Education</b>	Any portion at community college? <b>n/a</b>	Local University? <b>n/a</b>	Southern University? <b>n/a</b>
I knew Marcia in high school, but had not kept in touch. The portion of interview data used for this project was recorded in an outdoor park.			
Marcia's family may be lower-middle class. She holds a blue collar job (skilled category) in the service industry and may be middle-middle class.			

In terms of how my relationship with the women affected the interviews, the effects are complicated, and seem to be dependent on the personality of a particular woman.

The two participants I knew least well were Natasha and Sierra. However, I would characterize Natasha's interview as the most stilted of the interviews and Sierra's as the most effusive. Natasha provided information, but never a great deal and never "went off on a tangent", so to speak. My impression is that Natasha was slightly uncomfortable for parts of the interview. She was less forthcoming than many of my other interviewees in terms of relating stories of a personal nature. Sierra, however, talked continuously, impulsively related stories of an increasingly private nature, and told me afterward that the interview "was fun." With the other five women whose data was used in the dissertation, it again depended on the personality of each woman. Each interview with women I already knew contained –always near the beginning –

information that both I and the interviewee knew that I had already known, e.g. that she has a brother. During these times, there may be some quiet laughter, the “sound” of a smile in her voice, or even an aside mention such, “as you know.” However, the bulk of the interview contained information or stories that I had never known about the women, and this was true of every interview. In terms of data, I do not use the demographic sections or the first several minutes of the interview to supply data.

Almost all of the women listed above (as well as my other interviewees) inquire about who will hear the recordings other than me. I tell them that no one else will hear the interview in its entirety, but that various academics may hear portions with identifying information removed and that I may play short clips to various people (such as students or conference attendees) with identifying information removed or avoided. Therefore, all of the women are presumably speaking to me as well as to some imagined potential audience. How this affects the individual women precisely is unknown. Aside from Natasha and Sierra, with whom I had little previous experience, I did not hear any surprising speech styles during the interviews. They all spoke, in my opinion, in ways I had heard them speaking prior to the recorder being turned on or as I remembered speaking with them personally before. Of note, I have numerous other interviews with community members, some of whom I know and some not, and I have not noticed a definitive difference based on whether or not they knew me, with one exception: I have noticed that those who know me (however small the capacity) are more likely to agree to spend an hour doing an interview with me and to allow me to follow up with another meeting in a place quieter than the café.

## APPENDIX II: SURVEY MATERIALS

### Survey Introduction

Do you like listening to accents and talking about language? We're really interested in your opinion.

You are invited to participate in this survey which is part of a language study to understand how a person comes across to people from North America. If you agree to participate, you will be listening to sentences and then giving your opinion about the way a speaker sounds to you.

This survey is completely voluntary and anonymous. The survey will not ask for your name, so your answers cannot be linked to you in any way. The personal details you provide (age, origin, etc.) will be used for research categorization only and will not be passed along to anyone else. Your accurate details are vital to us in making sure we can understand how different people react to different voices.

There are no right or wrong answers for this survey! We're only interested in your opinions as a native speaker of English. The survey should take about 15 minutes. Thank you very much for your help!

If you decide you no longer want to participate in the survey, you may leave at any time by closing your browser window. If you do that, your previous answers will not be recorded (without further consequences).

By clicking next, you are agreeing to take the survey voluntarily. You are also certifying that you are over 18 years old.

## Instructions

[Exit this survey](#)

Please put on your headphones now and adjust the volume to a comfortable level. You won't be able to go back once you leave a page.

You will be presented with some sound clips. The speech that you will hear was taken from recordings of an audition by a woman – Stacy - for a radio commercial. Stacy is from the Southeastern United States and she's not an actor, just a regular consumer.

When Stacy auditioned, she was able to read as many times as she wanted. Because of this, she said the same sentences many times. Of course, she did not always say them the same way.

Remember that this is raw recording, so the quality isn't always great. Some of the "takes" you'll hear are also just Stacy practicing.

Imagine that you are the director for this commercial and you will be sending each of these clips to the commercial's producer. The producer is trying to see which recordings appeal to different audiences or target markets. Before you send them, you will need to label each one using characteristics the producer is interested in, using just your opinion as a basis.

You will hear several "takes" of the same sentence and you may listen to each one three times. After you listen to the sentences, please supply your opinion. Just answer the best you can! It's not a test. Sometimes you will not hear any difference in Stacy's takes, and that's okay. Try to think about the way each one strikes you.

When you see a characteristic with a scale, just click the button closest to your impression.

Are you ready, Director? Let's go!

[Prev](#)

[Next](#)

## Instructions

## Demographics 1: asked before beginning survey

**Demographics**

Please tell us a little about yourself.

**\* 1. Are you...**

☐ Male

☐ Female

**\* 2. Please indicate your age range.**

☐ 18-22

☐ 22-28

☐ 28-35

☐ 35-41

☐ 42-50

☐ 50-57

☐ 58-65

☐ 65-75

☐ 75+

**\* 3. Are you a native speaker of American English? (You may answer "native" if you learned English by the age of 5)**

☐ Yes

☐ No

**\* 4. Please indicate 1-3 U.S. state(s) that you have lived in the longest (or that you most identify with).**

**Tell us a little about yourself.**

**\* 1. If you had to categorize yourself as being from a particular region, how would you label yourself?**

**\* 2. Which of the following do you identify with? Please check all that apply.**

<input type="checkbox"/> European American (white)	<input type="checkbox"/> Christian	<input type="checkbox"/> From the Los Angeles area
<input type="checkbox"/> African American	<input type="checkbox"/> Jewish	<input type="checkbox"/> From Southern Florida
<input type="checkbox"/> Asian American	<input type="checkbox"/> Muslim	<input type="checkbox"/> From the Gulf Coast
<input type="checkbox"/> American Indian	<input type="checkbox"/> Buddhist	<input type="checkbox"/> From the East Coast
<input type="checkbox"/> Pacific Islander	<input type="checkbox"/> From the 5 Boroughs (NYC)	<input type="checkbox"/> From the greater Atlanta, GA region
<input type="checkbox"/> Latino or Chicano	<input type="checkbox"/> From the Tennessee Valley (parts of AL, MS, TN, GA)	<input type="checkbox"/> From a large Texas city
<input type="checkbox"/> Middle Eastern American	<input type="checkbox"/> From the San Francisco Bay Area	<input type="checkbox"/> I travel more than 600 miles from home 2 or more times a year

Prev

Next

Rating Page, First Part

What do you think?

Exit this survey

Listen to this take. Feel free to listen a couple of times, but try not to overthink your impression by listening more than 3 times.

[Click to Play](#)

\* 1. Did this take sound more...

Natural

Unnatural

\* 2. Did the speech in this take sound more...

Slow

Fast

\* 3. Did the Southern accent sound

Extremely strong

Not very strong

\* 4. Did this take sound more...

Friendly

Unfriendly

\* 5. Did this take sound more...

Drawled

Not Drawled

\* 6. Does this particular take make the speaker sound more...

Educated

Uneducated

\* 7. Does this particular take make the speaker sound more...

Unlikeable

Likeable

### Rating Page, Second Part

\* 8. Does this particular take make the speaker sound more like she lives in a Southern...

City	Rural area
<input type="radio"/>	<input type="radio"/>
...	...

\* 9. Does this particular take make the speaker sound more...

Kind	Unkind
<input type="radio"/>	<input type="radio"/>
...	...

\* 10. Does this particular take make the speaker sound more...

Unintelligent	Intelligent
<input type="radio"/>	<input type="radio"/>
...	...

\* 11. Does this particular take make the speaker sound more...

Talented	Untalented
<input type="radio"/>	<input type="radio"/>
...	...

\* 12. Does this particular take make the speaker sound more...

Politically Conservative	Politically Liberal
<input type="radio"/>	<input type="radio"/>
...	...

13. Do you have other thoughts about this take? (Optional)

Prev

Next

Demographics 2: asked after completion of survey

**A little more info...**

**\* 1. How would you characterize the area where you live right now?**

☐ Urban

☐ Suburban

☐ Rural

**2. Are you a native speaker of American English?**

☐ Yes

☐ No

**3. Have you ever been told that you have any hearing problems or have you noticed that you have any hearing difficulties?**

☐ Yes

☐ No

**\* 4. On a scale of 1-10, how much experience do you have listening to Southern speech in person, with 10 being "a lot" and 1 being "none"**

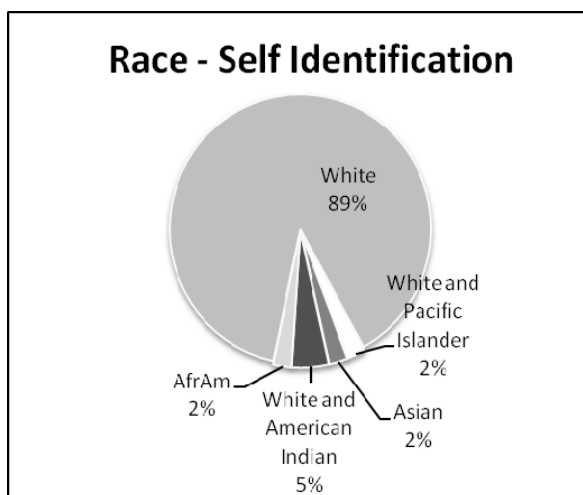
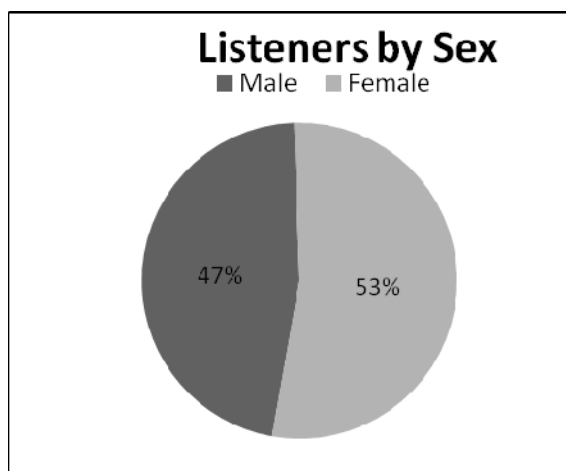
☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10

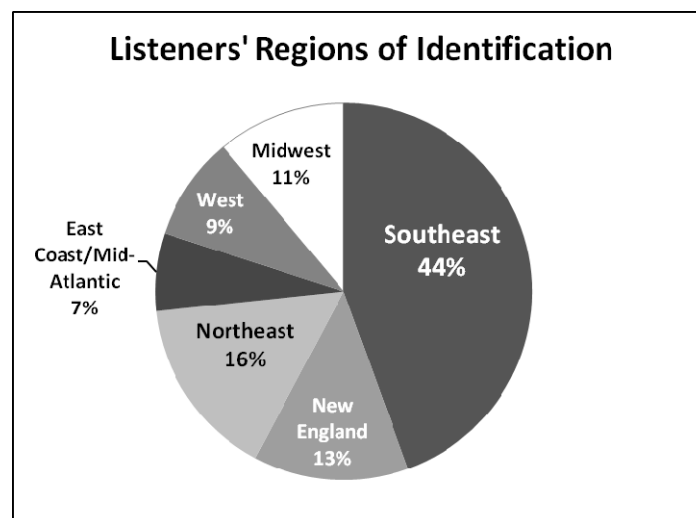
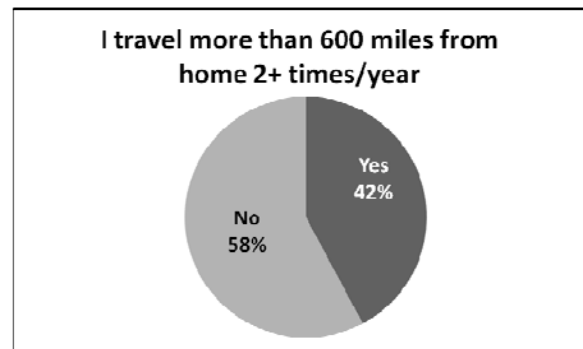
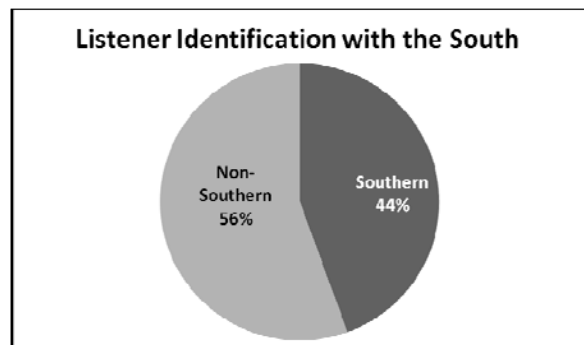
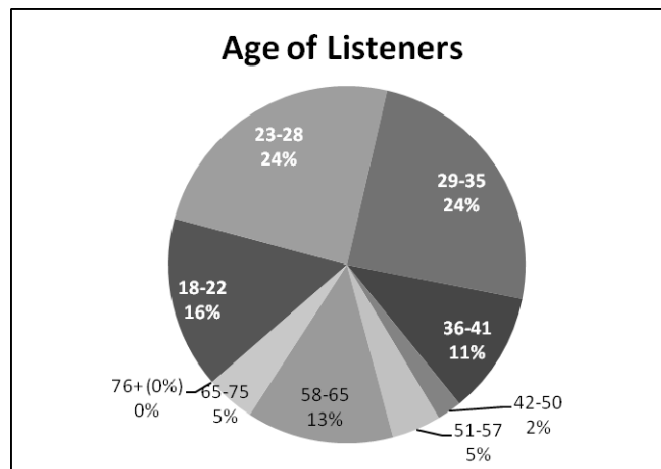
### APPENDIX III

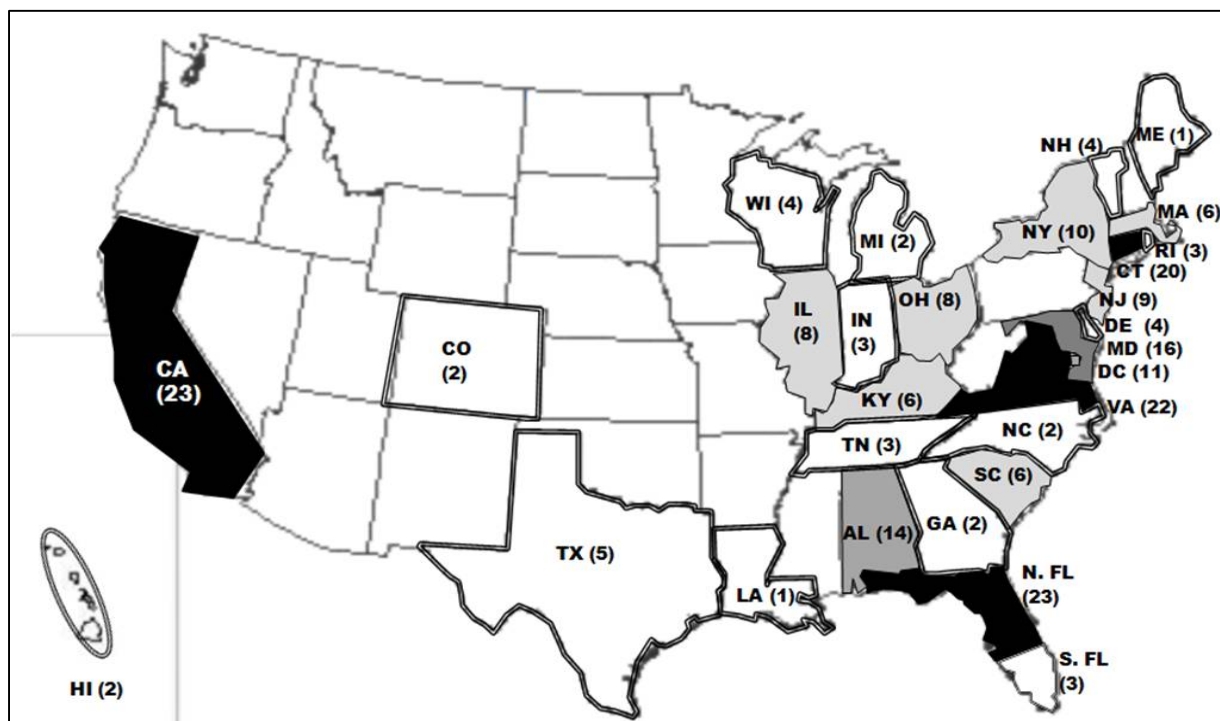
Demographics of the 45 listeners who completed the online survey.

	<b>Sex</b>	<b>Age Group</b>	<b>Race</b>	<b>Region</b>	<b>Lived in AL, TN, or GA ('+'= TN Valley)</b>
<b>1</b>	Female	18-22	White	Midwest	No
<b>2</b>	Female	18-22	White	New England	No
<b>3</b>	Female	18-22	White	New England	No
<b>4</b>	Female	18-22	White	Northeast	No
<b>5</b>	Female	18-22	White	West	No
<b>6</b>	Male	18-22	White	Northeast	No
<b>7</b>	Male	18-22	White	West	No
<b>8</b>	Female	23-28	White	New England	No
<b>9</b>	Female	23-28	White	Northeast	No
<b>10</b>	Female	23-28	White	Northeast	No
<b>11</b>	Female	23-28	White	Southeast	No
<b>12</b>	Female	23-28	White	Southeast	No
<b>13</b>	Female	23-28	White	Southeast	No
<b>14</b>	Male	23-28	White	New England	No
<b>15</b>	Male	23-28	Asian	Southeast	No
<b>16</b>	Male	23-28	White	Southeast	No
<b>17</b>	Male	23-28	White	Southeast	No
<b>18</b>	Male	23-28	White	Southeast	No
<b>19</b>	Female	29-35	White	East Coast/Mid-Atlantic	No
<b>20</b>	Female	29-35	White	East Coast/Mid-Atlantic	No
<b>21</b>	Female	29-35	White	Midwest	No
<b>22</b>	Female	29-35	White	Northeast	No
<b>23</b>	Male	29-35	White	Midwest	No
<b>24</b>	Male	29-35	White	Northeast	No
<b>25</b>	Male	29-35	White	Southeast	No
<b>26</b>	Male	29-35	White+AmInd	Southeast	Yes +
<b>27</b>	Male	29-35	White	Southeast	No
<b>28</b>	Male	29-35	White	Southeast	No
<b>29</b>	Male	29-35	White	West	No
<b>30</b>	Female	36-41	White	New England	No
<b>31</b>	Female	36-41	White	Southeast	Yes +
<b>32</b>	Male	36-41	White	Midwest	No
<b>33</b>	Male	36-41	White	Southeast	No
<b>34</b>	Male	36-41	White	Southeast	Yes
<b>35</b>	Male	42-50	White+AmInd	Southeast	No

<b>36</b>	Female	51-57	White	Midwest	No
<b>37</b>	Female	51-57	White	Southeast	Yes
<b>38</b>	Female	58-65	White	East Coast/Mid-Atlantic	No
<b>39</b>	Female	58-65	AfrAm	New England	No
<b>40</b>	Female	58-65	White	Northeast	No
<b>41</b>	Female	58-65	White	Southeast	Yes
<b>42</b>	Male	58-65	declined	Southeast	Yes +
<b>43</b>	Male	58-65	White	West	No
<b>44</b>	Female	65-75	White	Southeast	No
<b>45</b>	Male	65-75	White	Southeast	No







*Map of Listeners' U.S. States Identification: the darker the color, the more listeners identified with the state.<sup>61</sup>*

Listeners were asked to list 1-3 states with which they identified. The first choice was assigned a score of (3), (2) for the next (if any), and so on. The scores demonstrate not how many participants came from a labeled state, but rather the level of identification of the listeners with a labeled state. For example, no listener identified with the state of Pennsylvania. For Michigan, one person either ranked it as (2) or two people ranked it as (1); the score reveals the overall level of listener identification. Not all listeners listed two or three states.

Notes:

1. Florida was divided into North and South Florida due to generally established dialect differences. See Chapter 4 for more information.
2. No speakers listed identification with Alaska.

<sup>61</sup> Blank USA map from: <http://0.tqn.com/d/geography/1/0/B/H/usa1.jpg>

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