INVESTIGATING THE LOCAL CONSTRUCTION OF IDENTITY: SOCIOPHONETIC VARIATION IN SMOKY MOUNTAIN AFRICAN AMERICAN WOMEN'S SPEECH

by

Rebecca L. Childs

(Under the direction of William Kretzschmar, Jr.)

Abstract

This dissertation examines the social meaning of phonetic detail among two African American women's communities of practice, specifically investigating ways in which these African American women use subtle phonetic variation in the construction of their identity. Over the years, studies of African American English have been a major focus of sociolinguistics; however, this research has often overlooked the place of African American women's language. This research goes beyond these traditional sociolinguistic studies to look specifically at African American women's language and the ways that social practices can affect women's language in a regional context. Using an integration of sociolinguistic and acoustic phonetic methodologies this study accounts for phonetic variables such as coarticulation and duration, and for social variables particular to each community of practice that have an effect on vocalic production.

The results of this study can be used by linguists to compare the phonetic characteristics of different regional and social groups of African American women and to gain a sense of the complexity and heterogeneity that can be found within one small community. This study also provides one of the few quantitative and phonetic studies of African American women's language. Additionally, it will build on the variationist research tradition by analyzing this variety not only with regard to traditional variables such as race, region, and age, but also with these variables as they are manifested in social practice. This research should add to our knowledge about Smoky Mountain English, since it is one of a very few studies that has examined the dialect of African Americans living in this region of the United States.

Index Words: African American English, Appalachian English, African American women's language, Texana, Back vowel fronting, Community of practice, Language Variation

INVESTIGATING THE LOCAL CONSTRUCTION OF IDENTITY: SOCIOPHONETIC VARIATION IN SMOKY MOUNTAIN AFRICAN AMERICAN WOMEN'S SPEECH

by

Rebecca L. Childs

B.A., The University of Florida, 1997

M.A., North Carolina State University, 2000

A Dissertation Submitted to the Graduate Faculty of the University of Georgia in Partial Fulfillment of the Requirements for the Degree

Doctor of Philosophy

Athens, Georgia

2005

INVESTIGATING THE LOCAL CONSTRUCTION OF IDENTITY: SOCIOPHONETIC VARIATION IN SMOKY MOUNTAIN AFRICAN AMERICAN WOMEN'S SPEECH

by

Rebecca L. Childs

Major Professor: William Kretzschmar

Committee: Bridget Anderson
Diana Ranson
Walt Wolfram

Electronic Version Approved:

Maureen Grasso
Dean of the Graduate School
The University of Georgia
August 2005

Dedication

For A

Thanks for the support, love, friendship, and understanding.

Acknowledgements

The completion of this dissertation is the result of the help, support, and guidance of numerous individuals. I would like to thank the members of my dissertation committee for their guidance throughout the dissertation writing process. In particular, I would like to thank Dr. Kretzschmar for challenging me to look at my work in novel and different ways. I would like to thank Bridget Anderson for offering her phonetic expertise and her support throughout my time at UGA. Additionally, I would like to acknowledge Dr. Diana Ranson for her comments on drafts of my dissertation and her kindness. Finally, I would like to thank Walt Wolfram for his unending support throughout my Master's and Doctoral programs. His commitment to his students is remarkable, I have truly benefited from his support and friendship.

There are several friends that deserve recognition without them my educational experience as well as my life would have been much less meaningful. I would like to thank Christine Mallinson for her friendship, kindness, and collaboration. Phillip Carter for his kindness and advice. Sasha Johnson for letting me stay at her place and for helping me to keep things in perspective. I would also like to thank Amy Caison for her support, encouragement, and patience during the last 3 years.

I would like to acknowledge the support of the National Science Foundation (Grants BCS 023683 and BCS 0446888), the University of Georgia Graduate School Dean's Award, and the William C. Friday Endowment at North Carolina State University for their support of this research.

Finally, I would like to thank the residents of Texana, North Carolina. They have taught me much more than this dissertation could ever reveal. Their generosity and willingness to talk with me about their lives is something that has affected me personally as well as academically.

Table of Contents

List of Tables

Page

List of Figures

Page

Chapter 1

Introduction

1.1. The Scope of Variationist Studies

Traditional sociolinguistic studies have focused on the language patterns of a speech community defined by a number of demographic characteristics such as age, ethnicity, and regional or local affiliation. Through description and comparison of the speech of one group to another, sociolinguists have been able to isolate syntactic, phonetic, and morphological variables and then correlate the use of these variables with a particular social class, ethnic group, or region. Early studies like Labov's (1966) study of English in New York City, Wolfram's (1969) study of African American English in Detroit, and Milroy's (1982) study of Belfast English have provided the foundational information about the social basis of language use and have provided the research designs from which many sociolinguistic studies have emerged. These early studies demonstrated that social variables are certainly as important as linguistic variables in understanding and explaining the patterning that occurs in language and that, most importantly, social variables must always be considered when examining language as used by people in their daily life.

Following these studies which highlighted the importance of social variables to language patterns, some sociolinguists have now started to focus more specifically on the social detail that differentiates one speech group from another within the same community. In this way, these researchers are moving away from the "big picture" (Eckert 2000) of language variation, which attempts to explain the ways that variation functions in all language. Rather, these studies are

moving into more detailed social examinations that investigate the ways that speakers locally construct meaning through their language use. These studies try to understand the ways that speakers use language locally as an expression of their social and linguistic place within their local community. By examining language use at the local level using a community of practice framework (Eckert 2000, Eckert and McConnell-Ginet 1998, Holmes and Meyerhoff 1999), we are now beginning to understand the ways that speakers create and negotiate meaning through their use of specific language features and, most importantly, we are coming to understand what these features mean, signal, and signify to the people who use them and to those in their local community. However, this focus on the local does not take away from the larger social structures, such as race, class, and gender, that sociolinguistic studies have been interested in from the inception of the field. In fact, studies using a community of practice framework seek to connect the findings from the local level to these larger social structures, in order to provide researchers with more detailed ideas about how these larger social categories are constructed. In this way, the community of practice is "an attempt to inform the general through the study of the particular" (Meyerhoff 2002, 543).

Following the lead of these more recent studies, the aim of this dissertation is to explore the ways that distinct groups of members of a local community construct meaning through language use. Specifically, this study will examine the ways that members of two Appalachian African American women's friendship groups use vocalic patterns that solidify their participation in their respective communities of practice. By examining the vowel production of these women from Texana, North Carolina, this study will explore the ways that members of the same community use variable vowel articulations that carry social meaning not only within their own community of practice but within the community as a whole. This study highlights the

social importance and salience of variation on a local level. The significance of exploring language practices at the community of practice level is of great importance, if we are to understand the ways that speakers socially and linguistically situate themselves in their daily lives, as well as to understand the ways that social categories are created and perpetuated.

Certainly we cannot forget the goals of the original sociolinguistic studies that have sought to contextualize language within the framework of the "big picture," and the information garnered from community of practice studies does not in any way distract from or take away from these larger goals. Rather, studies at the local level only add to, challenge, and expand the "big picture." By supporting, calling into question, or challenging large-scale assertions about language, local studies make researchers realize that categories such as ethnicity, region, or even age take on local meaning within a community and ultimately affect the way that we create broader social categories. Thus, within the framework of this study, issues of ethnicity (African American English) and region (Appalachian English) are secondary and serve as a backdrop to the ways that speakers are locally using language. All of the speakers included in this study have access to Appalachian English and African American English speech norms; it is not their use of these features that is under investigation, since they all use features of each variety. Rather it is the way that members of each community of practice are using these features that is of interest. The range of social and linguistic variation displayed between and among the two communities of practice, which establishes their presence at distinctly different places on a language continuum, is the interest of this research. Ultimately, the information that is acquired from local community language studies like this can be used to understand the emergence of larger-scale sociolinguistic patterns, particularly with respect to this community's use of African American English and Appalachian English.

1.2. The Texana Study

The goals of this dissertation are to provide a descriptive account of the vocalic patterning of eight Appalachian African American women from Texana, North Carolina, and to examine the ways that their participation in a particular community of practice, their social affiliation, is reflected in their vocalic patterns. By examining the vocalic patterns of the members of these two communities of practice, this dissertation seeks to describe the social meaning of phonetic detail at the local level, describing what the use of particular vowel productions means or signals within the community of practice, and then to understand how this meaning is tied to broader social structures. The vowels included for analysis in this study have all been noted as crucial sites for variation, either as a result of their involvements in the Southern Shift (Labov 1991), their involvement in widespread changes among all English speakers, or their status as vowels that have shown variable production on the basis of ethnicity. Because all of the vowels analyzed have variable status in different varieties of American English and have varying degrees of saliency, the examination of these vowels in this local variety will uncover much about the sociolinguistic status of the groups that are using particular vowel variants. The results of this analysis of vowel patterning among the two communities of practice in this Appalachian African American community will help our understanding of the range of variation found within a small isolated community like Texana that is thought to be relatively homogenous; ultimately, it will highlight the importance of social affiliations in language practices.

Further, through the examination of the vocalic patterns of these women in this study will move beyond simple classification of language patterns as attributable to one or two variables and will consider the constellation of variables, both social and acoustic, responsible for the

vowel qualities of the speakers. In this way, the explanations for vowel variation are less absolute, in that a variant is not simply the result of ethnicity, region, or age. Rather, because all of the women are residents of the same community and have similar linguistic input (i.e., access to the same dialect varieties and contact with similar individuals), this study considers the vocalic variation as a result of the social positioning and social choices made by the women in addition to phonetic constraints on production. Thus, the lens through which the women are viewed in this study is a local lens, the lens that shapes their daily life and practices. Then, as in the case of other community of practice studies, the view from this local lens allows the results from this study to contribute to our understanding of the creation of broader social categories.

This dissertation will also provide a different perspective on vowel patterns found within distinct social groups in a community. By considering coarticulatory effects and duration, variables that are not considered in traditional sociophonetic studies, in addition to F_1 and F_2 measures, this dissertation will explain that, within distinct social groups in a community, speakers will use numerous sites in the speech signal for creating identity. No matter how homogeneous a group is thought to be, there is always a place available in the speech signal to create difference, and speakers will use these opportunities to signal difference or solidarity and to assign meaning within their local communities. Ultimately, I highlight the need for researchers to consider the importance of phonetic detail in speech at the local level, a crucial site where speakers create social meaning and differences in speech every day, and I highlight the need to consider the ways that phonetic detail may help in the construction and description of larger social categories.

1.3. Data and Analysis: An Overview

The dataset used in this study comes from sociolinguistic interviews conducted in Texana, North Carolina. Texana is an African American community located in the Smoky Mountain region of North Carolina, and the female residents of Texana included in this study can all trace their family's history in the area at least two generations. The interviews were conducted between 2001 and 2004 as part of the research carried out under by the North Carolina Language and Life Project at North Carolina State University, and as approved for study by the Institutional Review Board at the University of Georgia. Each of the interviews used in this study was conversational in nature following an ethnographic approach to data collection. This data collection method allowed for interviews in a myriad of social situations and in differing configurations (solo, dyad, group), allowing for the observation of the women on their own, in small groups, and as they engage in their community of practice. More information about the interview design and techniques used in the Texana study can be found in Chapter 4.

Using an integration of sociolinguistic and acoustic phonetic methodologies, this study rigorously examines the vowels patterns among these women and considers not only the typical measures included in acoustic analysis such as F_1 and F_2, but also duration and coarticulation. Duration and coarticulation are relatively understudied in sociophonetic studies; however, as work by Anderson (2003) has shown, duration as well as considerations of the effects that coarticulation can have on vowel production are critical sites that must be examined if the range of variation that speakers utilize and have available to them in the acoustic signal is to be understood. Further, instead of normalizing vowel data for comparison, this study uses distance metrics (Anderson 2003, Di Paolo and Faber 1990) to quantify, compare, and discuss the vowel

patterns of these women as individuals and in their communities of practice. More comprehensive information about acoustic methods can be found in Chapter 4.

1.4 Organization of Study

The present study is organized in eight chapters: Chapter 2 provides an in-depth discussion of the Texana community, beginning with a discussion of the fieldworker as ethnographer, continuing through a discussion of community language studies, and then providing an ethnographic description of Texana. A portion of the chapter is then devoted to describing the Texana communities of practice. Chapter 3 surveys the data on sociophonetic studies of American English varieties, specifically African American English and Southern English, the varieties of English that underlie language in Texana. This discussion will consider the literature on the vowel systems of these varieties, and it will closely examine the research in these varieties on the vowels that are examined in this study. Additionally, Chapter 3 highlights the differing goals of sociophonetic and purely acoustic phonetic studies, and then discusses the ways these can be integrated to provide more fruitful and detailed social and phonetic analysis.

Chapter 4 covers the field and acoustic methods used in this study. This chapter first engages in a discussion of the field methods used in completing this study. This portion of the Chapter 4 considers the ethnographic approach to fieldwork, participant observation, and then describes the individuals included in the study and their communities of practice, and also describes the interview and recording procedures. Chapter 4 then moves on to discuss the acoustic methods used in this analysis. At first, this section provides pragmatic detail such as digitization procedures, temporal locations used for measurements, and a discussion of the type of spectral measurements used. The acoustic methods section then moves on to discuss the research design and methods used for the comparison of acoustic measurements among speakers

and communities of practice. As this section will highlight, the methods used for the acoustic analysis are taken from Anderson 2003, although some adaptations have been made to better accommodate the data in this study.

Chapter 5 begins the vocalic analysis. It examines the fronting of the high back vowels /u/ and /ʊ/. The fronting of these vowels is taking place all over the English-speaking world; however, there some differences are found in the fronting process when coarticulation is considered. As Anderson (2003) found, individuals may participate in the fronting process, although they still may have phonetic constraints on their high back vowel fronting. This chapter examines high back vowel fronting for the women in these two communities of practice; it considers coarticulatory effects and duration and discusses how speakers in the community are using phonetic detail to differentiate themselves from one another. Chapter 6 provides an analysis of /o/, a vowel that when fronted, as shown by Torbert (2004), is perceived as indicative of Southern affiliation. This chapter provides a quantitative analysis of /o/ using distance metrics, the first to date, and discusses the production of /o/ among the members of the communities of practice in Texana. The analysis reveals that there are differences in the production of /o/ among the communities of practice, and then discusses the social significance of the differences.

Chapter 7 examines glide weakening in the diphthong /ai/, a highly salient variable in American English. Like Chapters 5 and 6, this chapter looks at differences in the production of the /ai/ diphthong among the women included in the study and considers the differences that the two communities of practice display. This investigation also considers the coarticulatory context, looking specifically at prevoiced and prevoiceless environments when considering /ai/. This quantitative investigation will reveal that the two communities of practice show distinct

differences in the production of /ai/. The chapter concludes with a discussion of the differential social meaning assigned to the production of this diphthong locally using evidence from acoustic analysis. Chapter 8 discusses the results of the acoustic study and places them within the local context of the Texana communities of practice. Further, this chapter moves on to contextualize the results of the study within variationist studies today and discusses the ways that studies at the local level can provide important detail about larger social constructs that are the focus of "big picture" studies.

Chapter 2

Ethnography of the Texana Community

This chapter deals with the ethnography of the Texana community. The purpose of this chapter is multi-faceted. First, the chapter sets out to describe the role of the field worker in obtaining the ethnographic data necessary for the analysis of community language, and a community of practice study in particular. Next, the chapter contextualizes the type of ethnographic work done in this study in the frame of other community language study work. The chapter then moves on to a discussion of the Texana community and provides specific information about the community history, social structure, and the communities of practice critical to this analysis.

Section 2.3.1 considers the history of Texana from a community perspective and from a broader history of African Americans in Western North Carolina. Section 2.3.2 covers the demography of the community, while section 2.3.3 discusses the social situation within and surrounding Texana. Section 2.4 and all of its subsections provide detail about the communities of practice analyzed in this study. Finally, section 2.5 explains the pilot research done on the communities of practice and places the research in this dissertation within both a local and broader framework.

2.1 The Field Worker as Ethnographer

Analysis of community language and the social organization of a community require familiarity with the residents of the community in order to collect speech like that of the speaker's day-to-day language and to come to a more complete understanding of the social

structure of a community. In order to gain access to language and social data that characterizes the community, and in order to understand the ways that the community members assign and construct meaning in their community, an ethnographic approach to data collection was used in this study. When conducting field work of this sort, the goal of inquiry is to "discover rather than impose" (Eckert 2000); thus the main mode for interaction was participant observation which will be discussed in more detail in Chapter 4. As an ethnographic fieldworker, my main goal was to observe and participate in the daily practices of the community. Typically, this involved much more listening than participation, and after three years in the community, I was able to participate more actively, although still not in the same capacity as a local. This method for the collection of data was quite effective in Texana, because the residents for the most part were open to the presence of outsiders. Also, because I had been visiting the community regularly since May 2001, community members were much more willing to talk with me. Because of my high level of interaction and my regular presence in the community, I was no longer just an outsider.

Although this approach was effective, there were some challenges in the implementation of an ethnographic approach. One of the primary challenges was to remain neutral in terms of my alliances in the community. I needed to establish relationships in the community, but these relationships needed to be situated in a way that made them non-threatening to others in the community. I could not be seen as an ally of one particular group because this would limit my ability to interact with other groups in the community and it could potentially limit the quantity and quality of ethnographic and linguistic information that I would receive from individuals. Thus, I chose the participant-observation method for interaction, wherein I was able to participate in interactions with residents but only in a limited capacity since I was not a member

of the community. In this way, I was able to carry out interviews and collect ethnographic information, but since I was situated as an insider-outsider, someone who was familiar but not fully integrated with the community, as well as with the larger environments of Murphy, Cherokee County, western North Carolina, I still needed to be told specific information that only locals know. This status as an insider-outsider helped me to establish and maintain relationships with residents while at the same time it prevented me from appearing allied with any particular individuals or groups in the community.

Another challenge was that residents were sometimes reluctant to share personal information about day-to-day life with me. Often individuals were unwilling to provide more than simple demographic information until they got to "know me better." As both of the previous situations highlight, the challenge for an ethnographic field worker is to build rapport with a community in a way that allows her to become integrated, to some extent, within the framework of the community. In this situation, being an ethnographic field worker meant that I attended community events and spent a considerable amount of time in the community building solidarity with residents. Additionally, it meant I had to present myself and my research in a way that was non-threatening and that was accessible and available to members of the community. One approach that I used was talking with community members about an oral history project in which the field work team was involved with the community. This topic of conversation helped people warm up to me and accept the questions that I asked because the project made the community members interested in language. Ultimately, my approach of being an ethnographic field worker yielded the quality of information that I needed in order to capture the linguistic and social composition of the community necessary for my analysis.

2.2 Community Language Studies

The tradition of community language studies is strong in the field of sociolinguistics and in studies of language variation. Although much work has been done on large urban areas, there has also been work done in smaller communities, especially in communities in the Southern United States (e.g., work by the North Carolina Language and Life Project, Brice-Heath (1983), Feagin (1979), and Cukor-Avila (1995)). Despite numerous community language studies in the South, the scope of each community study has varied depending upon the goals of the researcher, which has left gaps in our understanding of the ways that language functions in a community.

In Brice-Heath's *Ways with Words* (1983), the foci of the study are two communities, one white and one African American, in the piedmont region of the Carolinas. Specifically, Brice-Heath is interested in the differences in the ways that the children in these communities acquire and use language. In Feagin's (1979) study of Anniston, Alabama, the focus is an examination of the language of white residents of Anniston, which looks specifically at the ways that social class affects the language patterns among whites. There are also comparisons of white English to African American English in the text, but the primary focus is the sociolinguistic pattern of speech among white speakers in the community. In Cukor-Avila's (1995) study of Springville, Texas the focus is on grammatical analysis of African American English, specifically grammatical variation and change in the speech of residents of Springville. Her research explores what linguistic evidence from this community can tell us more generally about changes and patterns in African American English. Although each of these studies has looked at communities in different locations and has examined groups of differing ethnicities, socioeconomic classes, education levels, among a number of other differences, the goals of each have been to understand the ways that speakers linguistically and socially perform their identity.

As the previous examples illustrate, community language studies have had a variety of foci, some more concerned with an exhaustive description of the local language variety, others with the examination of local patterns in an effort to understand the ways that these local situations fit into, shape, and help to create and perpetuate larger social categories. These studies have shown that examinations of local language practices are important to our understanding of the ways that speakers use language within the local community and beyond. Further, these studies of community language in the South have in many ways demonstrated through their analysis of linguistic features and historical contact situations the significant impact that Southern English has had on other varieties of English, namely African American English. Additionally, it has highlighted that Southern English is an evolving, complex variety of English and that small, rural communities in the South can provide important information about the evolution and use of American English from linguistic analysis of long-standing communities that have maintained local language and social practices. Thus, regardless of the focus of the community language studies or the location of the community studied, each community language study has provided an important lens through which we can view the language patterns found in American English today.

This study uses the community and, specifically, two communities of practice within that community as the frame for this study and they serve as the primary data source. Like many other community language studies, the local perspective on language use that is presented in this analysis can be used to extrapolate up to larger more abstract social categories. Perhaps most importantly, because of the location of the community and the demography of the community, this study adds to not only our understanding of local language practices, but also to local language practices within a specific region, the Smoky Mountains. This focus on the immediate

local community and the larger regional community helps us to reconsider our ideas about regional language varieties and ethnic language varieties, thereby causing us to consider whether these social categories are as homogeneous as they are thought to be.

2.3 The Texana Community

Texana is an African American community located in the Smoky Mountain region of North Carolina in Cherokee County. Texana is located in the Appalachian Mountain chain, the white area in Figure 2.1, in the extreme western corner of North Carolina. Texana is situated on a hill and overlooks the county seat of Murphy below. Although Texana is not incorporated, it does have its own community center (Figure 2.2) that bears the name of the community, and a major road runs through the community (Figure 2.3) called Texana Road. Residents of the Murphy area know about Texana and can direct travellers to the community. Texana has its own identity within Cherokee County. Presently, Texana is the largest community of African Americans in North Carolina west of Asheville.

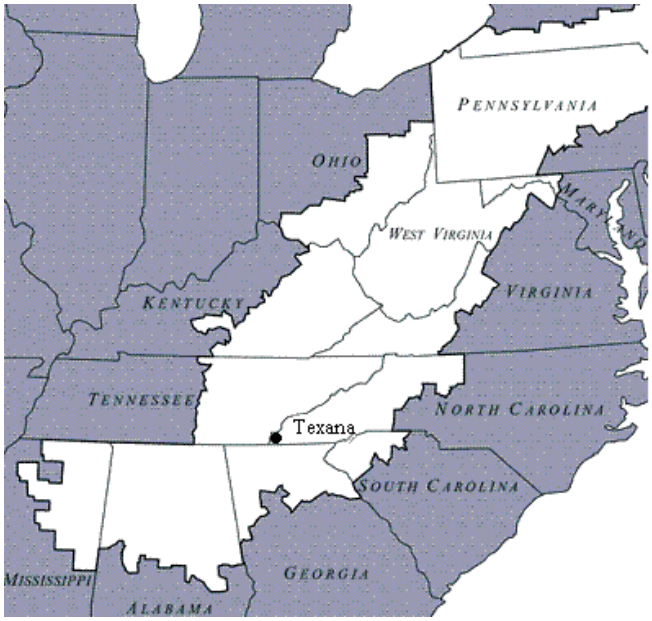

Figure 2.1. Location of Texana, North Carolina

Figure 2.2. Texana Community Building

Figure 2.3. Texana Road

2.3.1 The History of Texana

Little is known about the history of Texana since very few historical records documenting the history of this community exist. A few details have been kept alive through oral tradition or through church-created documents and pamphlets. Local oral tradition situates the founding of the community around 1850, when Texana McClelland, a young African

American girl, met and married Henry McAdams and they settled in the area now named after its first settler.

The history of African Americans in the Appalachian region and in Cherokee County in particular helps to situate and contextualize the founding of the community. An African American presence was emerging in Appalachia as early as 1820 (Drake 2001). African Americans began to inhabit the southern Appalachian region as slaves. The slaves in southern Appalachia accounted for a smaller portion of the total slave population than slaves of the plantation South. In fact, in Cherokee County the slave population in 1850 accounted for only 10 percent of the total population of the county (Inscoe 1996; 60). This low percentage of slaveholdings is to be expected since there were very few large landholdings in the county where slaves would be necessary. Thus, although slave labor was not as necessary in Cherokee County, it was profitable to those who used it. In addition to the slave population of the area, there was also a fairly large free black population in Cherokee County totaling 109 persons in 1850 (Inscoe 1996; 60). However, by 1860 the free black population of the area had shrunk to 38 persons (Inscoe 1996; 61), an indication that many free black residents had left Cherokee County.

Perhaps the most notable reminder of this early situation and its effects on Texana can be seen in the last names of several community members. Abraham Suddereth and John Suddereth, both from Cherokee County, were two of Western North Carolina's largest slave holders (Inscoe 1996; 265). Today, the Suddereth family is one of the largest and most prominent families in Texana with a local heritage that goes back many generations. The family can recount tales of their ancestors who were slaves of the Suddereth's as well as the changes that have occurred in the community over the years. The influence of slavery is not forgotten by members of the Sudderth family, for they still carry a name and history that is a result of their ethnicity. The

influence of the Harshaw family, slave owners in Cherokee County, is also noted in the Texana community. The Harshaw family owned farmland in the area and had many slaves who lived in the vicinity of the farm even after they were freed. There is an African American cemetery in the Harshaw farm area and residents from Texana still travel the few miles to Harshaw farm to visit the graves of family members who passed away many years ago.

As local stories recount, there were three small African American communities in Cherokee County, in the vicinity of Murphy. These three communities all had relatively small populations, with Texana being the largest and containing the primary African American churches and schools in the area. Once slavery was abolished and the African American residents of the area were free to move to the areas that they pleased, many of the residents left the two other communities and came to Texana, since it had more resources. As a result of the exodus of African Americans from the Harshaw farm area, Texana grew rapidly. Today some families in Texana can trace their ancestry through Harshaw farm and, although Harshaw farm is no longer home to African Americans, the heritage and culture of those who lived there is carried on in Texana.

After being established as the primary African American community in the area, Texana grew to about 150 people, a population that has remained steady for some time. The community added many black-owned and run businesses in addition to the local church and school. At one point the community was entirely self-sufficient, having stores and businesses within the community that could provide all the goods and services that one would need. From midwives and nurses, to morticians, cobblers, grocers, and seamstresses, Texana was completely self contained, something that residents today still recall with pride. However, after relations with the white communities of the surrounding areas improved, especially with Murphy, Texana's

local businesses shut down, since residents could now travel to the white community to buy goods. Currently, Texana has no local businesses and all residents must travel outside of the community or use the internet for shopping.

2.3.2 Demography of Texana

According to local residents, the population of Texana is estimated to be around 150 at the present time. While no records exist for the population of Texana since it is not an incorporated town, the population of Texana can be inferred from county-specific statistics available from the state of North Carolina. At the time of the 2000 census, the African American population of the census tract of Cherokee County in which Texana is located was 231 (http://census.osbm.state.nc.us/lookup/). Although 231 is a somewhat larger number than Texana residents' estimate, there are several African American families that have moved out of Texana and into Murphy and would be counted in the same tract.

There is little socioeconomic diversity among the residents of Texana, at least to the objective outsider. For the most part, residents are employed in "blue collar" occupations such as factory work, road construction, domestic work, and food preparation. There are a few residents in the community who work in home healthcare professions or are employed by social services as nurses and health aids. For those in the community who are "blue collar", they must work shift labor. The primary factory jobs available in the community are with a yarn-making company and a company that makes brakes for automobiles. Interestingly, most of the residents of Texana who are employed by factories tend to be assigned the late night shift, meaning that they must work through the evening and do not arrive home until the early morning. The assignment of this shift is something that the Texana residents feel is a result of their ethnicity, although no legal action has been taken by the employees to question or challenge the trend. For

those employed in the food service industry, Burger King, McDonalds, Kentucky Fried Chicken, Long John Silver's, Pizza Hut, Wendy's and a myriad of other chain restaurants offer opportunities for employment. However, scheduling and the actual number of work hours that an employee is assigned in a given week vary, and as a result, many do not have enough economic security in food service employment.

In addition to the typical food service jobs, there are several members of the community who are employed as domestic and kitchen help at a nearby folk school, where female residents of Texana occupy many of the positions. These jobs are desirable since they provide a stable and regular work schedule and salary including benefits. Additionally, the working hours are ideal, day work from about 6 a.m.to 2 p.m., so employees can still enjoy time with friends and family. As a result, most residents of the community desire a position with the folk school and as soon as one community member stops working there, others from the community apply for the vacancy.

Driving up Texana Road, one sees the homes and trailers of community members, many of which have been there for over 50 years (Figures 2.4. and 2.5.provide pictures looking North and South on Texana Road). In several instances, the homes of family members, brothers and sisters especially, are situated close to one another making it a few steps from one family member's home to the next. The reasons for the proximity are tied to issues of inheritance, but the close-knit nature of families in the community make the proximity a benefit instead of a burden. There are a few side streets that come off Texana Road, and they contain mostly double-wide and single-wide trailers and a few houses. Often after inheriting a home and land, residents will choose to add on to or repair the trailer or house rather than rebuild. Thus, little new construction occurs in Texana.

Figure 2.4. View of houses looking north on Texana Road

Figure2.5. View of houses looking south on Texana Road

2.3.3 Social Situation Within and Surrounding Community

The Texana residents are proud of their friendly and welcoming spirit. As one community member in Texana states, "In Texana if you're not kin, you're kin." Like other communities in the Smoky Mountains, Texana has been a relatively isolated community. Yet recently the Smoky Mountain region has become considerably less isolated with the creation of more roadways and routes leading through the mountains and with the growing appeal of the outdoor activities, such as rafting, hiking, and rock climbing available in the area.

Historically, the geographic isolation of Texana was compounded by the social isolation that the residents experienced as a result of their race. Thus, in many ways, early residents of Texana were much more isolated socially than the residents are today. This situation can be seen in many of the stories that older residents share about their lives and the lives of their parents. For example, after the completion of grade school in the community, many of the older residents had to travel to Asheville, Hickory, and even Atlanta to attend high school, since there were no black high schools in the immediate vicinity. These teenagers would be sent via bus to stay either with extended family members or in boarding houses provided by the schools that were on average over two hours away. The state of North Carolina provided money for African Americans who had to travel away to attend school. However, many residents of Texana were never paid the money for their educational expenses. Thus, the burden of paying for boarding, if a student chose to board, in addition to food and other necessities fell to the parents, since the state did not provide the monetary support. Often, teenagers from the same community would not even attend the same high school because they would choose to go to the school located in a town that provided them the convenience of less expensive accommodations, which usually meant a town where they had family. They rarely saw their families while they were away,

because neither they nor their parents could afford the bus fare back home, so these young students stayed away from the community for extended periods in order to achieve their educational goals. Other teenagers in the community who did not have family members in other towns where there were black high schools did not achieve a high school education because of the financial difficulty that it posed to the family.

Although education was a hardship in these early years, the Texana community has always placed an emphasis on it. After the integration of schools, all of the children from Texana attended elementary through high school in Murphy. Students were then able to participate in more formal athletic and academic events that they had previously not been allowed to participate in. Currently, nearly all of the seniors from Texana who graduate from high school attain some form of higher education by attending colleges and universities such as Western Carolina University, Mars Hill College, and University of North Carolina - Chapel Hill, some on athletic scholarships. Parents are actively encouraging their children to complete a college education, as they see education as a way for their children to achieve a better standard of living. However, some residents have noted what they feel is a disappointing trend in the community, that their children are graduating from college and then returning home to Texana and not using their college degrees because of the lack of professional jobs in the area. This situation highlights the importance of community and the sense of community that is fostered in Texana.

Relations between the African American residents of Texana and the white residents of the surrounding community were often tense, but they have greatly improved. Even though students who attend the high school will comment about the racism that they may encounter in the hallways, they seem to have a general feeling that race relations in the area are much

improved from those of 20 to 30 years ago. Despite the improved relations, middle-aged and older residents cannot forget the racism that they encountered during their younger years. From being kept out of school, to the process of integration, to restrictions placed on African American children using the public swimming pools in the area, the residents of Texana have encountered many of the same issues as other African Americans around the United States.

As a result of their struggle for civil rights, residents of Texana take great pride in their African American heritage. Every year the Texana community hosts a Martin Luther King breakfast in January, inviting the local white community from Murphy to join them. In addition, they often take trips, organized by the church or members of the community center, to Atlanta to visit the Martin Luther King Jr. museum and other civil rights monuments. Perhaps most importantly, older residents of the community were concerned about the younger community members losing their sense of black heritage and history, so they started an oral history and quilt project to help collect and preserve the important historical detail. This project was designed by community members and it involved young people going into the community to interview and talk with older residents about what Texana was like when they were growing up. It encouraged young people to see their history as something that was real, rather than something that just happened in a textbook. Because the residents felt the project was important, but they were unable to finish themselves, the project is now being continued with help from Christine Mallinson and me, and a grant from the North Carolina Humanities Council. The final product should provide a book and audio materials that situate Texana as a strong, black community, a long-time goal of its residents.

Although residents of Texana are proud of their African American heritage, many do not refer to themselves as African Americans. Because they have been in a situation where they

have had to grapple with issues of their identity and race relations have been tense, they often refer to themselves as black. Although this is not completely widespread in the community, many members of the community, especially the women included in this study and the middle aged and older residents, do refer to themselves as black. Their reasons for choosing the label may vary somewhat, but the basic consensus for it is their mixed ancestry. Since members of their families are African American, Irish-European, and Native American, most community members choose to simply describe or categorize themselves by their skin color. One community member explained her choice to use the label "black" for her ethnicity in this way:

> "I call myself black because that is the color of my skin. Most everyone here is so mixed with black, white and Indian [Native American] blood. We really aren't one thing. So that's why I call myself black, it's the color of my skin and it describes me." (Zora).

Even though they choose to label themselves as black and point out their mixed ancestry, the Texana community still identifies strongly with African American culture. This can be noted by their activities to promote a sense of black heritage and pride in the community. Thus, the use of the term black by community members should not be seen as a way to diminish their status as African Americans; rather, it should be seen as a descriptor and as a way that community members recognize and embrace their true heritage.

Church is an important part of life in Texana. The Mount Zion Baptist Church is the only church in Texana presently. At one point, though, there was a Methodist Church, a Baptist Church, and an Episcopal Church in Texana. Mount Zion serves as a place of worship and a place of friendship in the community. It is a place where community members can gather to have worship services, but they can also use the social hall area to have meetings, luncheons, weddings, and dinners. Some members of the community have started attending churches in

Murphy. For these residents the reasons for attending a church outside of the community are simple; the only church in Texana is Baptist and if they are not Baptists they must travel outside of the community to attend a worship service at a church of their denomination.

Most of the community members were born in the community and have continued to maintain their residency in Texana. There are some persons who were born in Texana that have moved outside of the community into neighboring towns such as Murphy, Marble, or Topton. However, even those who moved into town as a result of financial gain or employment still choose to come back to Texana to visit friends and family and to attend church and other social functions at the community center. In fact, the population of Texana, according to residents, has remained relatively stable over the years despite some movement out of the community and the deaths of many from the older generations. Certainly, the primary reason for the maintenance of the population is the birth of new children in Texana, but an additional source of residents is the emerging white population that is moving into the community. Many of the Texana residents are married to or partnered with white people from the surrounding communities and these white people choose to move to and join the Texana community, rather than force their partner or spouse to leave Texana. The reasons for the marriage or partnering with white people from surrounding communities varies for each person, but one major reason why Texana residents now marry whites is because of the interconnectedness of the community. A result of marriage and partnering with whites is the great number of biracial children in the community at this time. In fact, the majority of the children under five years of age in the community are biracial. This integration of the community, which is considered to be a positive change by most residents, will undoubtedly have an effect upon the life and language of Texana in the coming generations.

Regardless of their affiliation within the community or whether they have moved away from Texana, people maintain a close tie with the community. Returning home for homecoming celebrations at the church, attending the Martin Luther King breakfast, participating in the oral history project, or just visiting family and friends, are all activities that those who have called Texana their home return to the community to participate in. Proud of their community closeness, residents sometimes comment it is too close because of the small fights that may result. Nevertheless, the community is a place that they feel is safe, being free of crime, and as they well tell you "Texana is a great place to grow up and live." This resounding support and love of the community is obvious from their words and actions.

2.4 Texana Communities of Practice

This study specifically examines the social practices and vowel patterns of two women's communities of practice in Texana. The choice to examine communities of practice within the community became a point of interest when, during the first stages of field work in the Texana community, beginning in May of 2002, the field work team began to notice social divisions among several women. The social divisions seemed, at first, to be based upon whether the women shared the practice of attending the community church, Mount Zion Baptist Church, on Sunday mornings for worship service and for weekly devotional group and bible study, or whether they chose to hang out with friends on Sunday mornings and during the weeknight evenings. After the social divisions were noted, the field work team began to examine the two women's friendship groups much more closely and observe their social interaction and language patterns.

2.4.1 The Church Ladies Community of Practice

The first interaction with one of the communities of practice, the church ladies, occurred when one of the key participants from the initial interviews invited the field work team to attend an evening meeting at Mount Zion Baptist Church (Figures 2.6 and 2.7) where she and other women gather formally, once a week, to discuss devotional readings and visit with each other. This was the first introduction to the core members of the church ladies community of practice, whose members range in age from 47 to 72 years old. The church ladies are a cohesive group who share many of the same goals, interests, and outlooks on life which will be described later in this section.

Figure 2.6. Mount Zion Baptist Church


Figure 2.7 Mount Zion Baptist Church

One of the most important aspects of the church ladies' identity as individuals and as a group is that they all highly value church as being a cornerstone of Texana and as a fundamental component of their daily life. Not only is the church the central activity that they all participate in and identify with, but for these women the church serves as a place of worship and of friendship. Although these women gather as a devotional group on one or two days during the week in addition to the weekend, they each try to participate in devotions daily in their own homes, serve as prayer partners for one another, and try to promote and encourage a Christian spirit among themselves. The church ladies are also very active in all of the church activities, from their service as deaconesses to participation in Vacation Bible School, which makes it easy to see the influence that the members of the church ladies have on the day-to-day workings of the local church.

Additionally, the church ladies have a notion of community that is deeply rooted in history and tradition. Most of the women, particularly the core individuals, are members of the oldest families in Texana. The fact that they are longstanding community members gives them some measure of social capital, since people come to them to find out the history of Texana. Their sense of ownership over Texana leads them to be very protective of the community. For example, they occasionally lament that outsiders have contributed to community degeneration by introducing drugs into Texana. At the same time, the women are also actively dedicated to building respect for and appreciation of Texana among the young residents. They are also particularly determined to keep the young residents from losing a sense of their black heritage. As a result, the church ladies have spear-headed the Texana oral history and quilt project and they are the community members most actively involved in the current oral history project.

The church ladies emphasize education and are committed to the promotion of education among the young residents of Texana. All of the women in the church ladies community of practice attended high school and many attended college or vocational schools. Understanding the financial difficulty that these women and their families faced to attend high school underscores their commitment to and emphasis on education. Because of their emphasis on education and their belief in the ability of education to help people out or "raise you up" as many of them say, the church ladies are the most vocal members of the community concerning the academic achievements and utilization of academic training among the younger generations. They are often upset by the lack of professional employment for the young, college-educated community members who move back to Texana after completing their degrees, and the difficulty that African Americans face in obtaining jobs given the social climate of the surrounding communities. Often, college graduates move home and remain unemployed because they are too educated for factory and food service work, but they are unable to acquire a more professional job. The church ladies find this trend disappointing, and as a result, it is not uncommon to hear them encourage young people to stay away from home and to find a job that uses their skills and educational experience.

At the time of introduction to the church ladies, the community of practice had eight participants. However, about two years into the interviews with the church ladies, in May of 2004, an event occurred that separated the group and created a smaller but more cohesive group of women who are now identified in this study as the church ladies. There was a meeting at the church that the entire congregation was invited to attend. At the meeting, decisions were being made about the ways that the church was to be run and about the installation of new deacons and deaconesses. A disagreement arose about the choices made in the meetings and four of the

church ladies split from the local Texana church, while the other four members, hereafter referred to as the Mount Zion ladies, decided to stay. As a result of this schism, the church ladies included in this analysis are the four women who decided, as a group, to leave the church. The reasons why these women were chosen as the focus of analysis and the reason why they retained the name church ladies will be explained in detail below.

One of the most salient characteristics of the women who now compose the church ladies is their commitment to the goals and ideology of the community of practice as it was originally established. The church ladies are committed to an idea of a strong and fair community. They embrace a community where each and every voice is heard and where the dealings around town, especially in the church, are mutually agreeable to all of the involved parties. The women believe that their faith is the most important part of their religious identity and that enacting their beliefs is their duty. However, in the case of the schism, the beliefs, principles, practices and goals of the group became an issue of focus and it was this issue that ultimately created the split among the women. The church ladies felt that it was important to speak up about what they felt was a questionable practice in the church. Because the events that were occurring were in contrast to their group and personal beliefs and ideologies, they felt that they had no choice but to leave the church because the church's practice and their practice were in conflict. On the other hand, the Mount Zion ladies, although they may have been uncomfortable or not fully supportive of the church's decisions, chose to stay with the church because these women were more committed to the church and less committed to the principles and goals of the original community of practice. Ultimately, the Mount Zion ladies were not as invested as the church ladies in the principles and goals of their community of practice.

After the schism, the church ladies immediately emerged as the women who had been creating and driving the practices and ideologies of the original community of practice. The Mount Zion ladies had only participated in the original community of practice because it was tied to a particular church that they identified with. For the Mount Zion ladies, participation in the original community of practice was more of a way to support their church or to enact their membership in their church, while for the church ladies participation in the community of practice meant a shared set of beliefs and practices. Therefore, for the church ladies the particular church that they attend is not nearly as important as the set of beliefs that the church embodies.

Another notable social feature that differentiates the groups is their level of involvement in the community. The church ladies were the members of the group that were highly active in the community, performing outreach programs both at the church and in the larger Texana community. For example, members of the church ladies were active in a diabetes awareness program designed to educate men about the dangers of diabetes and to provide free diabetes testing. Additionally, members of the church ladies were instrumental in leading Vacation Bible School at the church because they felt that it was a service that the young people in the community needed. While members of the Mount Zion ladies would participate in the programs, it was the church ladies who have continually organized and directed all of these programs.

One of the most solidifying activities and an action that has been quite indicative of their commitment to their group goals and ideology is the process that these women have undertaken in finding another place of worship. The church ladies have attended several churches looking for the church whose practices and beliefs most closely resemble their own. They have chosen a church that they are all comfortable with in a town nearly 20 miles away. For these women, the

process of finding a church was a shared group venture where they all had input about the final choice that was made. It is the shared group goals and the mutual creation of identity and ideology that led to the focus on the church ladies instead of the Mount Zion ladies. As a result of their commitment to their community of practice, the church ladies embody what it means to be an active, vital, and equal participant in a community of practice.

2.4.2 The Porch Sitters Community of Practice

In contrast to the church-centered lives of the church ladies, the social lives of a different group of four women in the community, called the porch sitters, center around community life and, more specifically, gossip. These women range in age from 45 to 67 years old. The part of the day that they look forward to most is gathering informally each evening on the front porch of one of the women's trailer to talk, laugh, tell stories, and gossip (Figure 2.8). They also monitor the goings-on in Texana. They look at the cars that drive past on the single road leading through their community to see who is doing what and going where, and they also casually observe a group of men (the "Oak Tree Gang"), who gather across the street every night at a local hangout to drink beer and visit.

Figure 2.8. The porch where the Porch Sitters gather

The porch sitters are women who enjoy spending time with one another in a more informal situation where the goals of interaction are to enjoy oneself and unwind from a day of work. The women will often sit on the front porch of the trailer where they gather and smoke, drink, curse, as well as gossip. Unlike the church ladies who have formal interaction each week, namely in church, as well as informal interaction, the porch sitters' interactions are exclusively informal. There is never really a set time or day that they meet. Rather, they all show up at the trailer when they get off work, and they hang out and gossip until it is time to eat dinner or it becomes too dark outside.

These women pride themselves on and have a group ideology that is focused on being laid-back, fun-loving individuals. For these women, the important part of their participation in the community of practice is their involvement in the daily talk and the sharing of details of their daily life. They are concerned about the events that happen to their friends and family and to the community at large, but they are not as willing to participate in the larger activities of the community. Thus, porch sitters do not attend church and do not consider themselves to be close friends of the church ladies, although they are related to one another (typically cousins). The porch sitters also do not attend or participate in any of the functions that occur at the Texana community center. In fact, the porch sitters are rather unconcerned about the oral history project. They think that it is a good idea, but they are unwilling to serve on organizing committees and they are unwilling to take any type of leadership role in the project. In sum, the porch sitters are content with the community as it is and they see no reason to change the direction of the community.

Rather than being suspicious that outsiders will be a bad influence on Texana as the church ladies are, the porch sitters are the first to know what's going on in and around their

community and are very open to the presence of outsiders. The porch sitters were quite receptive to field workers and were more than willing to share their true feelings about the community with us from the very beginning. Their welcoming and inquisitive spirit regarding outsiders can be seen most clearly through the actions of their children, many of whom date individuals from outside the community. Unlike the church ladies, the porch sitters embrace a concept of Texana as more of an open than a closed social community.

The porch sitters are all second-generation members of the Texana community. Although all of the porch sitters spent their childhoods in Texana, they can recall stories about when their parents moved to Texana. Thus, all of the porch sitters were the first generation of their family to be born and raised in Texana. Now, each of these women is raising her family in the community and each of them have all married members of long-standing Texana families. The church ladies, on the other hand, are all members of long-standing families in Texana, and they are able to trace their families' ancestry and heritage in Texana back for several generations.

Like the church ladies, education is important to the porch sitters. Nearly all of the porch sitters have children who have attended college or will be attending college. Many of the children of the porch sitters have attended college on athletic scholarships and, as such, their children are less likely to come home on the weekends for visits because of games and practice. Although the porch sitters claim to like the freedom that they have acquired from their children leaving home, they still travel on the weekends to see their children participate in athletic events at their college. Like the church ladies, the porch sitters take their roles as mothers quite seriously and always strive to provide their children with the best that they possibly can.

At the time of recording of the porch sitters, there were four members of the community of practice. However, since the recording and analysis of the data, one of the members of the

porch sitters has passed away. This woman was a vital member of the porch sitters' community of practice, and she was an important source of information to the field work team as we collected our social and linguistic data. Undoubtedly, the porch ladies will and have changed since she has passed away; however, it should be noted that this analysis is based upon the porch sitters with her included, since she was part of the community of practice at the time of recording and at the initial stages of analysis. Recent visits to the community and with the porch sitters indicate that they still gather for gossip sessions but not nearly as frequently as before. In fact, the community of practice only gathers once a week now, on Sunday afternoons. Thus, the activities of the community of practice have changed as has its number of participants.

2.4.3 Ethnographic Differences in the Communities of Practice

Many social differences have been noted that distinguish the two communities of practice. The church ladies and porch sitters present themselves visually and socially in ways that set them apart from the other community members and specifically from the other community of practice. Interestingly, though, the two communities of practice do not see themselves in opposition to one another. Table 2.1 provides an overview of the ethnographic differences in the two communities of practice.

Table 2.1 provides information about the ages of the women in each community of practice. There is no notable difference in the ages of the women in each community of practice. Additionally, the table indicates the primary in-group, the aspect that drives each community of practice, of the two communities of practice. For the church ladies, the primary in-group is the church, while for the porch sitters the primary group is the gossip network. As previously noted, the church ladies are members of longstanding Texana families, while the porch sitters are relatively new to the community, being the first generation of their particular families born in

Texana. However, it should be highlighted that many of the porch sitters have married men who are members of longstanding Texana families, making their children's heritage in the community a bit different than their own. The general attitudes toward change in the community are one of the primary characteristics that sets the two communities of practice apart.

Table 2.1: Community of Practice Ethnographic Detail

Social Attribute	**Church Ladies**	**Porch Sitters**
Ages	47, 49, 70, 72	45, 46, 50, 67
Primary In-Group	Church	Porch Discussions and Visiting
Community Ties	Longstanding Families	First-generation Families
Feelings about community change	Nostalgic for past	Unconcerned about change
Naming System	Double names (e.g., Mary Sue")	Nicknames (e.g., "Doodlebug")
Other	Conservative dress and appearance	More urban hairstyle (e.g., braids) and style of dress

One of the most notable characteristics of the church ladies community of practice is that all participants in the community go by both their first and middle name, while the members of the porch sitters all use nicknames to refer to themselves and one another. Another notable difference in the two groups is the general appearance of the women in each community of

practice. The church ladies tend to be more conservative in their appearance, looking more like typical middle-aged women dressing in more conservative clothes and having hairstyles typical of women their age. Meanwhile, the porch sitters have a more urban style of appearance in general. The porch sitters all wear more urban clothes opting for brands like FUBU, Tommy and Sean John. They also wear their hair in more urban-oriented styles choosing different braid styles and patterns for their hair by having extensions, or hair weaves, put in their hair.

2.5 Pilot Research with the Communities of Practice

Pilot research conducted on the two women's communities of practice in the Texana community (Childs and Mallinson 2004 and Mallinson and Childs 2004) has shown that in general, these women exhibit social and linguistic differences that are indicative of their affiliation with a particular community of practice. As this research has indicated, the different social practices of these women and the social meaning that their participation in a particular community of practice carries within the broader Texana community can be noted in subtle difference in the phonetic variants and morphosyntactic variants used by participants in each community of practice. The use of morpho-syntactic features such as 3rd plural *–s* attachment, an Appalachian English feature, has been found in higher levels among the church ladies, while features such as habitual *be*, *is* copula absence, and 3rd singular *–s* absence, linguistic variables characteristic of African American English, have been found in higher levels among the porch sitters.

Preliminary analysis of the phonetic patterns of the two communities of practice, indicates very slight differences in consonantal variables among the communities of practice; however, cursory analysis of the vowel patterns of the two communities of practice indicate that there are significant differences in the ways that the members of the church ladies and porch

sitters produce particular vowels. Thus, because of the alignment that the communities of practice show with regard to the morphosyntactic variables, this study will examine vocalic variables characteristic of the two dialects that appear to have the most influence on English in Texana (Appalachian English and African American English). In particular, this dissertation will explore the ways that each community of practice aligns it self in regard to the production of a particular vowel and then it will consider the ways that this production may be reflection or creation of the social practice of each community of practice. The vowels analyzed are all of variable status in both Appalachian and African American English and as such appear to be ideal sites for exploring the ways that social and linguistic identity mutually reinforce one another. The vowels will all be examined in the following pairs (see Chapter 5 for a discussion of the methodological reasons for this method of analysis): /i/ and /u/, /ɪ/ and /ʊ/, /e/ and /o/, and / ɑ/ and /ai/. The status of each vowel in reference to Appalachian English, specifically Smoky Mountain English, the local variety, as well as African American English will be discussed in Chapter 4.

Chapter 3

Theoretical Background

This chapter discusses the theoretical background that underlies this study. The research questions in this study draw theoretically from several areas of linguistic study. First, they draw on previous phonetic and sociophonetic work on American English vowel systems. More specifically, the study pulls from previous work on African American English vowel systems and studies of Smoky Mountain English, the dialects that are present within and around Texana, as a way to understand the social and linguistic patterns found within this study. This section will detail the vowel patterns that have been described for each particular variety with special attention to the vowels considered in this study. This means that vowel patterns like the fronting of /u/ and /ʊ/ will be investigated with a concern for the ways that they have been described for all speakers of American English and then, more specifically, for speakers of African American English and Smoky Mountain Appalachian English. Further, this section will be concerned with descriptions of the /ai/ diphthong in American English and in African American and Smoky Mountain English, as well as the status of /o/ in these varieties. Additionally, this chapter will highlight the different goals of sociophonetic and purely acoustic phonetic studies and then discuss the ways these goals can be integrated to provide more fruitful and detailed social and phonetic analysis. Finally, the chapter will conclude with a discussion of the community of practice framework and an explanation of the ways that a community of practice framework can and has been used in the study of vowel patterns, and more importantly the ways that community

of practice theory can be used to help researchers understand local categories as well as broader social categories.

3.1 American English Vowel Patterns

Sociolinguists have studied the vowel patterning found in American English for quite some time. This section describes the major vowel patterns of American English that have been identified and discussed by Labov (1991), Thomas (2001), Labov, Ash, and Boberg (2005), and other sociolinguists. As research has shown, these major patterns of American English such as the Northern Cities Shift, the Southern Shift, and the /ɑ/ -/ɔ/ merger all have both linguistic and social explanations that are essential in understanding vowels as used in American English today. Because the vowel patterns found within and surrounding the Texana local English variety are of great importance to this study, detail will be provided about one of the major American English vowel shifts, the Southern Shift, as well as information about African American English and Smoky Mountain Appalachian English vowels.

3.1.1 The Southern Shift

The Southern Shift, which encompasses the general area in which Texana in located, is a series of sound changes that is considered to be taking place among Southern white speakers. This sound change pattern covers the area traditionally considered the South; however, the spread and advancement of the change is not similar throughout the South. The Southern Shift is more advanced and widespread in rural areas of the South, while it is less advanced and widespread in more urban areas. Thus, the influence of other dialects in more urban settings has stifled the spread of the Southern Shift among metropolitan southern residents (Wolfram and Schilling-Estes 1998). Given the explanations and social detail provided about the Southern Shift, it would seem then that despite the community's location and rural status in the South, the

members of the Texana community would not be able to participate in vocalic patterns associated with the Southern Shift as a result of their ethnicity.

The Southern Shift is characterized by the raising of short front vowels, the backing and lowering of front high vowels, the fronting of the back vowels /u/, /ʊ/, and /o/, and the glide reduction of the diphthong /ai/ (Wolfram and Schilling-Estes 1998, Thomas 2002). A diagram of the shift is provided in Figure 3.1. Certainly, all of these shifts are occurring in various degrees in different regional and social groups in the South, as has been discussed by Wolfram and Thomas (2001) and the North Carolina Language and Life Project in various locations in North Carolina, Feagin (1986) in Alabama, Fridland (2001) in Memphis, and Bailey et. al. (1996, 1998) in locations throughout the Southwest. The rationale and explanations for the shifts are varied and the data, location, and social history of the communities examined in each study of Southern vowels seem certainly to have an effect on the interpretation and ultimate outcome of studies that involve the Southern Shift. A more detailed discussion of the specific studies involving the Southern Shift will be provided in the following sections that cover work on particular varieties of Southern English as well as vowels involved in the Southern Shift.

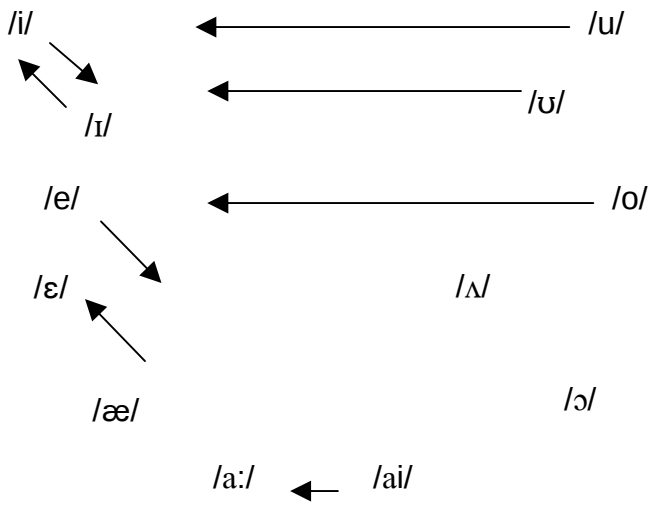

Figure 3.1. The Southern Shift adapted from Labov (1991) and Wolfram and Schilling-Estes (1998).

Although the Southern Shift is a vowel shift that occurs to a number of vowels in Southern dialects, it is not considered to occur in as orderly a way as the Northern Cities Chain Shift (Labov 1991). Rather than being one uniform vowel rotation governed by a push/pull effect like the Northern Cities Chain Shift, the Southern Shift is composed of a series of sound changes that are not all necessarily dependent upon one another. In fact, there has been considerable debate about the internal constraints on which the Southern Shift operates (Labov 1994, Stockwell and Minkova 1997, Fridland 1999), with some arguing that the changes should be considered part of a chain shift (Labov 1994), others arguing that the changes should not be considered part of a chain shift (Stockwell and Minkova 1997), and still others arguing that the Southern Shift is a set of changes that simply affect subsystems rather than an entire vowel system (Fridland 1999).

Certainly the disagreement over the Southern Shift highlights problems with its application to all speech situations and locales in the South. However, regardless of the ways which one believes the Southern Shift operates, it serves primarily as a framework for the examination of vowel production, especially in a community study, and it allows researchers to discuss specific features of speakers'vowel systems in detail. The framework (the Southern Shift) allows sociophonetic work to problematize and closely examine the sound changes characteristic of the Southern English dialects and detail the ways that the changes in particular regions, locales, and among specific ethnic groups operate in comparison to other areas of the South. In sum, rather than being an absolute account of Southern vowel patterns the Southern Shift functions more practically as the template from which researchers on Southern English can describe particular varieties and patterns.

3.1.2 Studies of African American Vowel Systems

African American English has received widespread attention from sociolinguistics. In fact, a survey of publications from 1965 through 1993 showed that African American English has nearly five times more publications devoted to it than any other ethnic or regional dialect. Despite the abundance of research on African American English, we are now just beginning to understand the more nuanced details of the variation found within this variety of English, and more importantly we have only recently begun to see considerable examination of African American speech in a number of regional contexts. Sociophoneticians like Fridland (1999), Thomas (2001), Anderson (2004), and others have begun exploring in detail the vocalic patterns of African Americans in the South and have illuminated not only the ways that African Americans are participating in more mainstream vowel patterns like the Southern Shift, but they have also highlighted the ways that African American speakers may be adopting, creating, and challenging the local language patterns that surround them.

Work in sociolinguistics has noted that African American English norms are becoming more supraregional (Rickford 1999, Wolfram, Thomas, and Green 2000, Labov 2001, Poplack and Tagliamonte 2001, Wolfram and Thomas 2002). As a result of this supraregional characterization, African American English vocalic systems have been considered a special case apart from widespread "white" regional shifts (Labov 1991, 1994). Thus, earlier work by sociolinguists has limited its analysis of vowel patterns to ethnicity, rather than considering the combination of regional and social factors which may have greater influence on African American English speakers' vowel systems.

Several studies (Singler 1988; Henderson 1996, Wolfram and Thomas 2002, Jones 2003) point to instances where African American English and White English varieties share a core set

of common features but still maintain ethnolinguistic distinctiveness both phonetically and syntactically. Often, these shared features are attributed to isolation, small community size, or high contact of the black variety with the white superstrate. Because of the diversity of settings and the varied populations, the findings of Anderson (2003), Fridland (1999, 2003), and Mallinson and Wolfram (2002) note that the presence of typically southern features in the speech of African Americans cannot be limited to African Americans in the South, nor can it be the result of isolation or of a black minority surrounded by an white majority. Rather, it seems that the presence of Southern language characteristics, especially vowel characteristics, are likely the result of a combination of the above variables, as well as issues of speaker identity.

This recent work (Anderson 2003; Fridland 2003; Kretzschmar et al 2004; Mallinson and Wolfram 2002) indicates that methods of classification based on ethnicity are limiting and do not accurately reflect the vowel patterns of African Americans in various regions of the United States. For example, Anderson (2003) reveals that African Americans in Detroit are fronting high back vowels in ways similar to those of white speakers in the American South and English speakers all over the world. Fridland (2003) also finds similar patterns of back vowel fronting for African Americans in Memphis. Additionally, recent work in Atlanta (Kretzschmar et al. 2004) also underscores the importance of regional identity when examining the vocalic characteristics of African American residents of the area. These three studies, as well as work by Mallinson and Wolfram (2002) with African Americans in Appalachia, indicate that categorization of speakers based on ethnicity is not always satisfactory in the description of African American vowel patters. In each of the previously mentioned studies, African Americans, regardless of age, participated in vocalic changes characteristic of the Southern shift, thus highlighting their affiliation with regional language characteristics. Because of the

widespread implementation of Southern vocalic characteristics among these various African American populations in Detroit, Memphis, Atlanta and regions of Appalachia, regardless of age, one can certainly not attribute their occurrence to "old - fashioned speech" patterns (Thomas 2001) or retention from a high contact situation with white English varieties. Rather, these present-day studies make researchers question and reconsider why we have separated White English varieties and African American English varieties throughout our studies when linguistically they share many features.

Studies of African American vowel patterns in the South have been one of the most active areas of sociophonetic investigation in recent years, in large part because of the presence of African Americans who speak a variety of regional or local English characterized as white (like the residents of Texana), while they maintain a African American identity. Because of this apparent disconnect with sociolinguistic theory, sociophoneticians have worked to describe both the linguistic and social variables at work in each of these situations. For example, work by Fridland (2001) in Memphis has argued that speakers are better classified by their region than their ethnicity. Fridland found that her African American speakers participated in the Southern Shift causing her question the validity of phonetic classifications based purely on ethnicity. Similarly, work in Atlanta by Kretzschmar et al. (2004) has shown that African American speakers used shifted variants (Southern variants), while white speakers in Atlanta did not use Southern variants. Sociophonetic work by Anderson (2003) has shown that the use of Southern Shift characteristics among African Americans, even African Americans not currently in the South, can be a reflection of their identity and affiliation with the Southern region of the United States. Thus, Anderson argues that we must consider issues of identity and language ideology and their relation to regional affiliation when considering the vocalic characteristics of speakers.

In their study of Hyde County, North Carolina, Wolfram and Thomas (2002) argue that despite the widespread movement away from white varieties, African American speakers, even younger speakers, are still maintaining local vocalic patterns.

3.1.3 Studies of Smoky Mountain English and Vowel Patterns

Although comments like,

> "… the mountain people, both within and without the park boundaries (The Great Smoky Mountain National Park), have been made increasingly conscious of the regional peculiarities in their speech and are gradually bringing their language into conformity with standards recognized elsewhere" (Hall 1942: 1),

often describe the language situation in the Smoky Mountain region, there has been relatively little descriptive or analytic linguistic work done. Joseph Hall undertook the first large-scale study of the area with the major results published in 1942. Hall, like most researchers of this region, chose an ethnographic approach to data collection. He examined the speech of white residents of the region from the perspective of an insider rather than as an outside researcher. His time spent in the community and close affiliation with several communities and their key residents allow his data to be considered highly representative of Smoky Mountain speech at the time of its collection.

Hall (1942) examines the "Southern Appalachian Mountains" with a focus on the Great Smoky Mountains, a region he describes as a portion of the middle of the three mountain chains that run through Southern Appalachia, "which for most of its distance through Tennessee and North Carolina forms the boundary line between these two states" (5). The focus of Hall's study was a descriptive phonetic account of the variety of English spoken in this area. Hall examines the history of the area and the ways in which early migration as well as long-standing residents

of the area may have had an affect on the language of the area. While Hall's account of the history of the region points out the presence of both Native American and White populations in the area during the late 18th century and 19th century, it seems to overlook the diversity that existed in the Smoky Mountains even in these early times.

Knowing the assumptions and stereotypes that surround the area, it is no surprise that Hall's study of Smoky Mountain English details the speech of whites in the area. Hall presents a detailed description of the phonetics of Smoky Mountain speech and reveals ways in which the residents of the Smoky Mountains have maintained and adapted their phonetic inventories as a result of their presence in the region. Although, Hall's work is somewhat unreliable because there is no credible phonetic analysis or transcription of the vowels presented in this study (McDavid 1943), his work on the vowel systems of earlier residents of the Smoky Mountains does provide an idea of the phonetic variation that existed in the area. In addition, this earlier description of speech allows researchers broadly to examine the ways in which the language of the area has been maintained or has changed.

In his book *Southern Mountain Speech* (1992), Cratis Williams also provides a description of the speech of Southern Appalachia, the area that encompasses the Smoky Mountains and Texana. His book provides a less detailed account of the linguistic features; rather, it provides a more detailed explanation of the ways that Southern Mountain (Smoky Mountain) speech patterns reflect the people, history and culture of the region. Although Williams was not a linguist, he does point out specific features of the speech of the area and devotes a chapter to vowels and diphthongs in mountain speech. Williams provides examples of the Southern Appalachian and general Southern Shift features, such as the raising of short front vowels and the fronting of /u/ (1992:14-15). He also provides a discussion and examples of

glide weakened /ai/ in this region (1992:14). Overall, Williams provides a local perspective on the speech patterns of the area that helps to contextualize and validate Smoky Mountain speech.

Anderson (1998, 1999) examined the vowels /e/, /o/, /oi/ and /ai/ in Graham County, North Carolina, a county adjacent to Cherokee County, the county in which Texana is located, and within in the Smoky Mountain region. Anderson's investigation focused on the production of these vowels among white residents of the county. Her analysis revealed that residents of this Smoky Mountain community were following the patterns of the Southern Shift in terms of their production of /e/ and /o/. That is, their productions of /e/ were lowered and backed while their productions of /o/ were fronted. She also found that residents were using glide reduced /ai/ in all phonetic environments and that the /oi/ diphthong had a lowered and backed nucleus that was gliding forward and upward. Anderson's study serves as the only acoustic study of community vowel patterns in the Smoky Mountain region up to this point.

Other studies have examined vocalic patterns of the Smoky Mountain region describing it within the framework of a broader dialect area such as Appalachian English, Southern Highland Speech, and the South Midland Dialect region. Although this work does not exclusively cover the Smoky Mountain region, it has been useful in illuminating features and changes that have occurred within the speech of the Smoky Mountain region. Work on Appalachian Speech (e.g., Wolfram and Christian 1976; Montgomery 1989, 1991; Burkette 2001) typically covers the entire Appalachian region, with the majority of works covering the speech from Pennsylvania to Georgia and portions of Alabama. The Southern Highlands area covers the general area from West Virginia to Northern Georgia. Studies of the South Midland dialect region covers the areas described by Mc David as,

> the Shenendoah Valley, southern West Virginia and south-western Virginia, the Carolina-Georgia Piedmont, and the Carolina-Georgia mountains-the last until recently a striking relic area. (McDavid in Kretzschmar et al 1993:150).

Thus, within studies of each of these areas, general and specific information can be gained about the vowel patterns of the Smoky Mountain region. Details of the phonetic findings from studies of each of these areas will be provided in the discussion of specific vowels in the following sections.

Although there is a significant amount of research on Appalachian English and the general region that encompasses Texana, research on African American English in the Smoky Mountain region of Appalachia and Appalachia is relatively scarce. In fact, studies of Appalachian African Americans or African Americans located in the mountain regions of North Carolina are just beginning to emerge (Mallinson 2002, Childs and Mallinson 2004, Mallinson and Childs in press). Since African Americans have been a significant part of "mountain culture" for quite some time, these studies will help to illuminate yet another source of social and ethnic variation in Appalachian region.

3.1.4 Studies of /u/ and /ʊ/

Labov (1991) notes /u/ fronting as one of the features of the Southern Shift, making it a feature used exclusively by white speakers in the South. However, work by Thomas (2001) notes that the fronting of /u/ has spread much farther than Labov may have originally thought. Thomas states that for /u/

> the fronting process has spread widely. It has spilled out of the South: it is now firmly

> entrenched in areas such as Central Illinois, central Ohio, and Philadelphia and is making inroads into California, the Inland Upper North and even New England and Canada. (2001:33).

Thomas notes though that this change has not become a feature of African American English. Although it occurs in a few African American speakers that Thomas examined, he states that avoidance of this shift may be "an identity marker for African Americans" (2001:34). Thus, although Thomas shows that the geographic boundaries of /u/ fronting are not as Labov had originally hypothesized, the ethnic differentiation in regard to /u/ fronting is remarkably similar.

The fronting of /ʊ/ as noted by Thomas (2001) is a feature of Southern white speech. In fact, in Thomas' research, the speakers with the most fronted forms of /ʊ/ are the speakers from North Carolina and Texas. Thomas adds that the African Americans typically have F_2 values for /ʊ/ that are higher than that for /u/. This result reflects the importance of rounding in the production of /u/ and leads to the conclusion that African Americans also have less fronted variants of /ʊ/ when compared to Southern white speakers.

Although these sociolinguistic studies of American English varieties have pointed to the importance of geographic and ethnic variables in the patterns of /u/ and /ʊ/, recent work has problematized both the geographic and ethnic classifications that surround the production of these vowels in American English and in English in general. Studies by Mallinson (2002), Anderson et al. (2002), Wolfram and Thomas (2002), Fridland (2003), Anderson (2003) all report findings of /u/ and /ʊ/ fronting among African Americans in areas such as Detroit, Michigan; Memphis, Tennessee; Hyde County, North Carolina; and Beech Bottom, North Carolina. Likewise, Fought (1999) reports /u/ fronting among Chicano youth in California,

while Habbick's (1991) study of /u/ fronting among younger speakers in Illinois notes a strong correlation with gender. Hall-Lew (forthcoming) reports /u/ fronting among residents of Flagstaff, Arizona, and she examines correlations between rural (rancher) and urban orientation as explanatory variables for this process. Thus, it seems that ethnic and regional classifications that have predicted the fronting of these vowels may in fact be suspect. As this research shows, people (African American, European American, and Hispanic) in various locales around the United States, both urban and rural and Southern and Northern, participate in the fronting of the high-back and mid-back vowels.

The fronting of these vowels among African Americans throughout the United States should not be a surprise when looking at studies of high-back and high mid-back vowel fronting among other varieties of English. For example, Stockwell and Minkova (1997) point to the fronting of these vowels in British English, Borowsky and Kiesling (2001) find it in Australian English, and Trudgill (2001) points to the fronting of these vowels in New Zealand English. As a result of the fronting of these vowels in other varieties of English, we should not predict American English or African American English speakers to behave any differently, if this is a feature that is widespread in all varieties of English. Recently, this has been confirmed by Johnson (2003) who stated that the fronting of high back and mid-high back vowels is a process that is happening throughout American English as well.

Although there is little research on this vowel in the Smoky Mountain region, descriptions and analysis of /u/ and /ʊ/ by Hall (1942) indicate that the white residents of the area have historically had fronted /u/ and /ʊ/. Accordingly, Linguistic Atlas materials (http://hyde.park.uga.edu/lamsas/) report the fronting of these vowels among the two speakers from Cherokee County, North Carolina. Thus, the fronting of these vowels is a longstanding

characteristic of Smoky Mountain speech, and it appears to now be a feature of all American English speakers in general, including African Americans.

3.1.5 Studies of /o/

Unlike the fronting of /u/ and /ʊ/, the fronting of /o/ is not a widespread process in American English. Even though the fronting of the /o/ nucleus is found in a number of American English dialects, it is not as prevalent as other vocalic changes that have occurred within American English. Descriptions of /o/ fronting continually describe the fronting of /o/ as lagging farther behind that of /u/. Therefore, Labov (1994) claims that /o/ nuclei never front without corresponding fronting of /u/. Thus, this association views the fronting of /o/ as a process that can only occur after /u/ has been fronted. These constraints on the fronting process of /o/ point to the need to examine both the linguistic and social factors at work in vowel productions in order to understand the motivations behind vowel changes or shifts.

Several studies (Thomas 2001, Feagin 1986, 2003, Conn 2002, Luthin 1987) have examined and commented on the status of /o/ among local and regional varieties of American English as well as ethnic varieties of American English. Early work according to Thomas indicated that the fronting of /o/ originated in three areas of the United States:

> The first center is Pennsylvania and adjacent parts of southeastern Pennsylvania, southern New Jersey, and Delaware. The second center is an area including western Pennsylvania, northern West Virginia, and parts of central and southern Ohio….The third center is eastern North Carolina. (2001:28).

Despite the original manifestations of /o/ fronting that arise in these more geographically defined areas prior to the 1900s and in many cases before the Civil War, fronting of /o/ has since spread rapidly in American English. In fact, it can now be found as a feature,

> predominate in the speech of young whites throughout the South and as far north as Pennsylvania, north-central Ohio, central Illinois, Kansas, and California, and possibly farther north in the West. (Thomas 2001:29).

Although the fronting of /u/ is a feature that has spread across the United States, it has remained localized in many ways. The northeastern United States appears to be an area that has generally avoided this feature. Likewise, there are a great many other areas throughout the United States, including areas of the Great Plains region that have avoided this change.

Although both internal (i.e., linguistic) and geographic explanations and descriptions have been offered to elucidate this process, social explanations from examinations in a variety of locales have been offered as well. The social information about /o/ fronting that is the most important to this study is the finding that African Americans are not participating in this process as widely as whites. As Thomas (2001:29) notes, "the fronting is largely confined to white speech." Thus, this fronting process, like other parts of the Southern Shift, is thought to best characterize the vocalic patterns of white speakers. Other work has also illuminated social factors that seem to be at work in the fronting process. Eckert's (2000) study of jocks and burnouts in a suburban Detroit high school indicated the strongest correlation between gender and /o/ fronting. In her study, the female students had more advanced variants and as such she posits that for the local high school community, the fronting of /o/ may be in some way associated with being female. Similarly, work by Hall-Lew (2004), has examined /o/ fronting among rural and non-rural whites in Flagstaff, Arizona. Hall-Lew has found that /o/ fronting within her corpus correlates, again like Eckert, with gender and, more interestingly, also with age. Her study indicates that in Arizona, the fronting of /o/ is a feature of young females and as she states, "the younger the female, the further fronted her /o/ production will be" (2004:27).

This evidence helps to confirm Labov's (2001: 496) "target principle", as it relates to /o/, which predicts that "in changes that hold constant or increase the amount of phonetic substance, the phonemic target for succeeding generations is not the general mean, but is shifted (by some undetermined amount) toward the salient outliers in the direction of the change" (2001: 496). According to Labov, then, the spread of /o/ fronting and the high degree of /o/ fronting found among younger speakers, is a natural and expected consequence of the variable being present in an area. Thus, while geographic and internal explanations reveal interesting information that helps to describe sound changes, it is apparent that social factors can illuminate more detailed and more subtle variation, perhaps allowing for the examination of changes in progress as they spread from a target out through an area.

Because the fronting of /o/ is not a widespread characteristic of American English, its salience must be considered when its patterning is considered. Resistance to or adoption of a sound change has much to do with the perception, salience, and social qualities attributed to a particular variable. Speakers may choose to adopt a speech pattern as a result of social prestige, as in the case of Valley Girl speech, or they may refuse to adopt speech patterns that surround them as an effort to differentiate themselves from those who surround them. Discussion of this can be found in Thomas (2001), where he states that African Americans in the South may avoid local speech patterns in an effort to differentiate themselves from the surrounding white population. Perception tests of /o/ conducted by Torbert (2004) have shown that the fronting of /o/ is strongly correlated with listener's perceptions of a speaker's identity. In Torbert's experiment, listeners overwhelmingly associated the fronting of /o/ with whiteness. As this experiment highlights, the adoption of /o/ fronting, or resistance to it, has much to do with a speaker's identity as well as their linguistic repertoire.

3.1.6 Studies of /ai/

The diphthong /ai/ is one of the most studied sounds in American English, especially in the South. The salience of /ai/ (Plitchta and Preston 2004, Torbert 2004), as well as the ways that ethnic and regional variables have been shown to affect the production of the diphthong (Bernstein 1993, Schilling-Estes 1996, Wolfram and Schilling-Estes 1997, Bailey and Thomas 1998, Thomas 2001, Anderson and Milroy 1999, Anderson 2004, Mallinson 2002) make it a site ripe for sociolinguistic investigation. Because of the variable production of the glide, the relative levels of /ai/ glide weakening, recent work (Moriello and Wolfram 2003, Anderson 2004, Wolfram, Carter, and Morriello 2004) has shown that acoustic studies of /ai/ production reveal more subtle but significant variation in the acoustic signal that reflects not only linguistic but also social variation.

Studies of /ai/ have observed that glide-shortening of /ai/ occurs among both white Southerners and African Americans. However, the patterns for /ai/ glide-shortening (also referred to as /ai/ glide weakening) are quite different for Southern whites and African Americans (Bailey and Thomas 1998, Bailey 2001, Thomas 2001). Within the South and regions where there was a large Southern-settlement (Thomas 2001), /ai/ glide weakening is said to occur for the most part in prevoiced and prevoiceless consonant environments, except in areas of the plantation South where there is a difference. Among the plantation South, we find /ai/ glide weakening in all phonetic environments but prevoiceless. Thus, in areas like coastal North Carolina and the low country of South Carolina and Georgia we see this split of glided /ai/ diphthongs in prevoiceless environments. However in other regions of the South, especially Appalachia, the literature suggests that there is no phonetic conditioning of glide reduction (Hall

1942, Anderson 1999, Thomas 2001). That is to say that, in Appalachia and in particular the Smoky Mountain region, all white speakers have glide weakened /ai/ in all phonetic contexts.

The /ai/ diphthong in Appalachia is noted as glide weakened or monophthongal variant in all phonetic environments. Folk perceptions of the variant in the Southern Mountain region (which includes the Smoky Mountains) by Williams (1992:14) describe the production of /ai/ as barely making out the first sound of the diphthong. In fact, he goes on to state that the production of /ai/ as in the word "ice" in this region and in the South in general is a kin to the way that New Englanders would pronounce "ass". More linguistic-oriented descriptions of /ai/ in this region by Joseph Hall (1942) describe /ai/ as glide reduced in all phonetic environments. Further description of the region, taken from Linguistic Atlas records from the LAMSAS survey (http://hyde.park.uga.edu/lamsas/), shows that production of the /ai/ variant in the region among white speakers, specifically in Cherokee County, North Carolina, was glide-reduced at the time of collection. More recent work in Graham County, North Carolina (Anderson 1999), the county that borders Cherokee County, indicates that all the white residents of the county included in the study were using glide-reduced variants in all phonetic contexts. As these studies demonstrate, /ai/ glide weakening is a long-standing feature of the Smoky Mountain region. Although other areas of the South show considerations for phonetic context in their patterns of glide weakening, the Smoky Mountain region appears to have had glide reduction in all contexts for quite some time.

The patterns of /ai/ glide weakening for African Americans are similar to those of the plantation South. It seems that contact may have played a role in the patterning of this variable among these two groups who have a noted history of language contact. Looking at the contact situation which may have led to this, Bailey (2001) comments that indeed the high level of

contact between white Southerners and African Americans in the plantation South certainly seems to be one of the reasons that their vernaculars share many features. Despite the claim that African Americans typically show a split in /ai/-glide weakening (Wolfram and Schilling-Estes 1997, Thomas 2001, Bailey 2003), recent work (Fridland 1999, Mallinson 2002, Anderson 2004) has indicated that African Americans, especially those in the South or those who identify with the South, use glide-weakened /ai/ in all phonetic contexts. While the ways that we may have previously examined /ai/ may have demonstrated more generalized patterns of this variant in ethnic and regional dialects of American English, these studies underscore the need to consider the social meaning associated with a particular variant.

Work on the perception of /ai/ (Preston and Plitchta 2003, Torbert 2004) indicates that it is a highly salient marker of Southern identity, both within and outside of the South. Preston and Plitchta (2003) have shown that glide reduced variants are perceived as Southern, even by those who are not from the South. Further, perception work by Torbert (2004) in North Carolina has shown that /ai/ glide weakening is highly correlated with identification of a speaker as a Southerner. However, when the same interlocutors were asked about the ethnicity of the speaker, they were much less reliable with correctly identifying the ethnic category of the speaker. It seems then, that /ai/ glide weakening does in fact correlate most strongly with interlocutors' perceptions of region, rather than ethnicity. Because /ai/ glide weakening is indicative of regional affiliation with the South (including all the negative stereotypes that accompany Southern identity), this perception work seems to support Thomas's (2001:37) claim that even within the South there are considerations of prestige, with speakers that glide-reduce in all environments viewed as speaking a less prestigious variety than those Southerners who maintain the split in production of /ai/.

3.2 The Interface of Laboratory Phonetics and Sociophonetics in Studies of American English

This section discusses the interface of laboratory phonetics and sociophonetics as it relates to the study of American English and this study. Studies of American English vowel systems have been conducted by both laboratory phoneticians and sociolinguists. The research of both groups has yielded interesting, detailed information about the internal and external constraints that affect American English vowel patterns. However, despite having a similar goal, to understand vowel patterns of American English, the data sources and methods of analysis have differed and as such, the union of the two areas has been minimal.

Laboratory phoneticians have focused on the internal constraints that are thought to be predictable for American English (Hillenbrand et al. 1995, 2001; Lindblom 1963). Often, these phonetic studies of American English have tried to eliminate as much dialect or vernacular interference as possible in an effort to get to the internal constraints of language; those which are believed to be the most significant by laboratory phoneticians. Thus, these studies tend to deal exclusively with ideal speakers or varieties that are thought to be the best exemplars of American English. Thus, these studies (Peterson and Barney 1952, Hillenbrand et. al 1995, 2001; Lindblom 1963) have provided us with standard phonetic information for American English. Additionally, these studies have provided information about the ways that preceding and following consonants may affect vowel production and the acoustic signal. Taking a more rigorous laboratory approach, this work has contributed not only to our notions of what standard American English vowel systems are like, but more importantly, they have also contributed quite a bit to the understanding of the internal phonetic constraints such as coarticulation as the organization of sounds within a speaker's vowel space.

Although these laboratory studies have provided information which is regarded as representative of American English as a whole, work by sociophoneticians has shown that the descriptions that these studies provide do not accurately reflect current American English. While the tightly controlled experiments (e.g., Hillenbrand et al. 1995, 2001) of laboratory work have provided much detail about the ways that internal variables may affect the acoustic signal and in turn vowel production, they have limited their samples to ideal speakers (who have been tested and found to speak a standard or desirable variety), and missed much of the way that American English works today. The diversity found within the vowel patters of American English speakers around the United States (Labov 1991, 1994, 2001; Thomas 2001) certainly calls into question the vowel patterns of American English that laboratory phoneticians set forth. Further, with sociophoneticians (Di Paolo and Faber 1999, Fridland 1999, Eckert 2001, Anderson 2004; Kretzschmar et al. 2004) finding that internal constraints, such as the preceding or following phonetic environments are important to the production of a vowel among different social groups, the social meaning of more phonetic detail in American English emerges. Thus, we see through studies such as these that the most beneficial way to understand American English vowel patterns today is to use a methodology that uses the rigorous acoustic methods of laboratory phonetics in conjunction with the real-language data and concern for social variation found in sociophonetic studies.

3.3 The Community of Practice Framework

The community of practice framework as applied to the research in this study owes much to Eckert's work on jocks and burnouts (1989) and young Latina girls in California (1996). Within these studies, Eckert set out a framework for examining the speaker as a social agent who constructs local social meaning (for themselves and their communities of practice) through their

everyday practices (including language). In this way, Eckert is able to examine the local relationship between a linguistic variant, specifically a phonetic variant and the social identity of those who use it (2004). Further, in these studies Eckert has shown that through community of practice analysis, sociolinguistic work it better able to understand the social significance of variation. She shows that it is possible to apply the results of a micro-level studies to our understanding of macro-level categories (e.g., social class), an application that often challenges sociolinguists to rethink the ways that social classification is typically performed.

Eckert and McConnell-Ginet (1992) define a community of practice as "an aggregate of people who come together around mutual engagement in an endeavor". As Meyerhoff (2002) notes, "the community of practice domain is rather smaller than that usually circumscribed by the term "speech community" (527). Thus, examinations of a community of practice tend to look more critically at micro-level detail making the focus the social significance of language variation. Three criteria have been noted (Wegner 1998) as characteristic and necessary for the identification and classification as a community of practice. These three characteristics of a community of practice are: mutual engagement of members, a jointly negotiated enterprise, and a shared repertoire. Although these criteria may overlap in some ways, they are all required for a group to be considered as a community of practice.

A friendship group is a highly influential community of practice (Eckert 2001), therefore, this study will explore the social and linguistic practices of two friendship groups of black women in Texana. The two communities of practice which will be investigated are the "church ladies," a group of women whose talk achieves and mirrors an orientation toward local community and traditional ways of life. In contrast, the language of the "porch sitters", the second community of practice examined, performs and represents an identification with

urbanness and extralocal norms. The "church ladies" community of practice consists of women who are longstanding members of an evening devotional group, who gather formally at the local church once a week to discuss devotional readings and visit with each other. In contrast to the church-centered lives of the church ladies are the women of the second community of practice, the "porch sitters", whose interactions center around community life and more specifically community gossip (cf. Coates 1997, 1998) (more detailed ethnographic information about each of the communities of practice can be found in Chapter 2 section 2.4).

Traditional studies of language and social membership have often examined speech communities or social networks. While both of these methods do allow for the examination of social attributes, the attributes and groupings that individuals are assigned in these studies may not accurately reflect the choices that individuals make on a daily basis. Solely judging someone on the basis of where they live, work or their gender of skin color (external variables that one may have little control over) overlooks the complexity of an individual's identity and the conscious choices people make in shaping their identity. Within the community of practice framework, the researcher views the participants in the communities of practice as individuals who are fluid and multi-faceted who are constantly negotiating these identities. As noted by Meyerhoff (2002: 533), membership and the criteria for membership in a community of practice are subjectively salient to the members of the community of practice. Thus, members of a community of practice are aware of what is necessary to be a participant in their particular community of practice, and members can participate in the community of practice at varying degrees throughout their membership. This stands in contrast to the analyses of language and social membership that use the speech community or social network as the frame for analysis. In analyses which use the speech community or social network as a framework for analysis, the

criteria for inclusion/exclusion are based on externally salient criteria (location /socioeconomic status/work cohorts), which may not accurately reflect or overlook the deliberate social choices that individuals make when defining themselves.

It has been noted (Dubois and Horvath 1999) that one potential shortcoming of using the community of practice model for analysis is that it can lead to results that cannot be applied outside of the community; that is, it is difficult to make larger generalizations from community of practice analysis. While the community of practice framework does take a more micro-level look at the groups and the social practices of the participants being studied, which can elucidate the social meaning of linguistic variables on a local level, the community of practice framework also allows researchers to examine the ways that micro-level variation relates to larger patterns of variation, thus not losing the ability to make generalizations about language. By employing the community of practice framework to the two women's friendship groups in Texana, I will be able examine the ways that the women construct their identity as members of a particular community of practice in a local context. The analysis can then be further expanded beyond the local community to apply the findings to our understanding of how broader categories often cited in sociolinguistic research such as affiliation and participation in a particular region, ethnic group, or urban or rural identity, among others (factors often overlooked in much research on speech communities), are created and understood by those who participate in them. Given the scope of community of practice studies, I will then be able to expand the findings of this well-defined local study in an effort to understand how the local categories within Texana help in configuring and understanding larger more abstract social categories.

Chapter 4

Methodology

This chapter covers both the field methodology and the acoustic methodology used in this study. The chapter begins with a discussion of the methods used in the collection of the language and ethnographic data in this study, looking specifically at the ethnographic approach to field work and participant observation as a method of linguistic inquiry. Additionally, the chapter provides specific information about the members of each friendship group in the communities of practice investigated. Finally, the section on field methods examines the situations in which the interviews took place and the recording procedures used in each interview. Section 4.3 covers the acoustic methodology used in this study, including the methods used for digitization of field recordings and the temporal location of the measurements as well as details of the spectral measurements. The methods for comparison and analysis of the acoustic measurements are then given, with a discussion of each vowel examined.

4.1 Field Methods

The central goal of many sociolinguistic studies and this study in particular is to understand the ways that language is utilized by speakers in their daily lives. However, as many sociolinguists have noted (Labov 1972, Feagin 2002), collecting data and observing individuals using language is difficult to do without making them self-conscious or inserting any bias. The "Observer's Paradox" has been discussed in detail by Labov (1972) and it is a major methodological concern that must be addressed when one is designing a study that examines language use and practice. Many methods of data collection have been proposed for language

data (survey methods, sociolinguistic interviews, archival research, ethnography, and mixed methods); however, the methods that one chooses for a study depend most importantly on the goals of the study. For comparison work from one region to another, such as Atlas project work (Kretzschmar et al. 1993), survey methods are best, while within community language studies sociolinguistic interviews have traditionally been used to capture the broad social detail that differentiates speech patterns. Ethnographic approaches to community language study have emerged more recently. These approaches look more closely at the ways that variation is used in a community, examining the multiple ways that speakers construct social categories and the ways that they use these social categories in their daily life (Eckert 2002).

4.1.1 Ethnographic approach to field work

Ethnography is a method for collection that Eckert (2000; 69) describes as an "exploratory methodology":

> Rather then testing hypotheses against predetermined categories, ethnography is, among other things, a search for local categories. Thus while survey field work focuses on filling in a sample, ethnographic field work focuses on finding out what is worth sampling (2000; 69).

Thus, an ethnographic approach involves studying a community and community life as it happens. In this way, the linguistic researcher is collecting as much information about daily life and practices as about language patterns. By utilizing this approach the researcher discovers, through interaction and involvement in the community, the social categories of the community, and can then explore the ways that the social categories are constructed within the local community.

In this study, initial contacts were made in the community via the friend of a friend method (Milroy 1987). After introduction and interviews with the initial contacts in the Texana community, the field work team then asked if they knew of other residents who would be interested in participating in the research. Following several visits to the community and numerous interviews, we were then invited to attend a devotional meeting with one of the communities of practice (the church ladies). After this event and previous encounters with individual participants and small groups of participants in this community of practice, we began to observe the church ladies community of practice, since they were a cohesive group with a strong group identity.

Not long after discovering the church ladies, we noticed the habits of another active women's community of practice in Texana. Although we had previously spoken with several of the porch sitters individually, and in small groups, and even as a whole group, it was not until after sufficient ethnographic work that we could accurately consider these women a community of practice. Once this community of practice had been established, the field work team spent time observing, recording, and interviewing the women.

The ethnographic approach to field work was quite beneficial to this study (a discussion of the field worker as ethnographer can be found in section 2.1). By observing the community, I was able to uncover the communities of practice on which this study is based, and more importantly, I was able to come to a better understanding of social categories within the Texana community and each community of practice. Ultimately, ethnography helped to reveal the speakers used in this study, through the observation of their everyday practice, just as it helped to elucidate the ways that speech within a community is both different and similar from one community of practice to another.

4.1.2 Participant Observation

An outsider studying and observing the speech and social structure of a community must overcome many limitations. However, by using an ethnographic approach to observe a community and elicit data, one can employ strategies to overcome the observer's paradox. As Milroy and Gordon (2003) state,

> [Researcher's] outsider status poses a challenge to their ability to overcome the observer's paradox. In an attempt to change this status, investigators may adopt the role of participant observer. (2003:68).

Participant observation is an approach to data collection that comes about when the researcher becomes involved in the community. Through the participation in and with the community, the researcher can understand the local categories in the community and the ways that residents construct these categories. This method allows for much more detailed and culturally rich information about a community than sociolinguistic studies and surveys. The participant observation method has been used successfully by several researchers interested in community language and their relation to community practices (Eckert 1989, 2000; Cukor-Avila and Bailey 1995; Wolfram and Schilling-Estes 1996).

In order to become an involved participant in the interactions, I spent a considerable amount of time in the community attending community functions, such as church meetings, athletic events, and even Thanksgiving dinner. I also kept in touch with community members via email, telephone and instant messenger, which provided access to community information and helped to maintain my participation in the community even while absent from the physical location. Another activity which helped to build my solidarity with the community and that allowed further observation and participation with the residents was my involvement with the

community in an oral history project. By becoming involved with the oral history project, the residents saw that I was interested in the community and that I was committed to actively helping them achieve a community goal. In this way, although always an outsider (not having been born in the community nor having lived there), I was familiar with the community which was beneficial in understanding the norms, standards and categories in the community. Certainly, the participant observer method of data collection is much more time consuming than a sociolinguistic questionnaire, but this approach allowed me to have more intimate knowledge of the local community and a level of familiarity with the residents.

Ultimately, in the participant observer framework, the interviewees directed and chose the topics of conversation, but I was allowed to participate in the conversation with little apparent observer effect on the data collected. One of the benefits of participant observation was the type of data that I collected. I collected a significant amount of data about each community of practice from the community of practice members themselves in varying configurations, and I was also able to collect information and opinions about both the church ladies and porch sitters from other members of the community. Ultimately, adopting the role of a participant observer allowed for the collection of language data and social information that was necessary to understand the local categories within the community.

4.1.3 Speaker Selection

After initially entering Texana and interviewing several members of the community, it appeared that there were distinct differences the linguistic and social behaviors of two groups of women in the community, as presented in the discussion of the communities of practice in section 2.4. Following this initial observation, numerous follow-up interviews and observations were conducted with various participants in the two women's friendship groups. Once sufficient

ethnographic and linguistic data were collected, a pilot analysis (Mallinson and Childs, in press) was performed to examine the use of several key linguistic features (morphosyntactic, phonological, and phonetic) among a few members of both the church ladies and the porch sitters. The results of the pilot study indicated that there were significant differences in the use of 3rd plural –*s* attachment, 3rd singular -*s* absence, copula absence with *is*, as well as differences in the fronting of the high back vowel /u/, the mid back vowel /ʊ/, /o/ and /ai/. Thus, the results of the pilot study pointed to the need to investigate the linguistic and social differences that seem to emerge among the women of the two communities of practice and the ways that social habits may be reinforcing the linguistic habits of the women. The research presented here further investigates the acoustic differences in the vowel production among the two communities of practice, providing a more comprehensive examination of the phonetic and social detail that set these women within the same community apart.

Ultimately, the selection of speakers for this study was actually dictated by the social configuration of the women. Understanding and correctly identifying the women to be included was a function of the ethnographic approach to data collection that was used. However, because social forces within any community are constantly changing, the configuration and participants in any community of practice can change. Thus, this analysis is based upon the configuration of the communities of practice at one point in time. If one were to revisit the community today and look for the same communities of practice, they would most likely still exist, but they might contain new members. Table 4.1 contains demographic and social information about each of the women in the study, including their status (noting in particular the core participants) in their community of practice.

Table 4.1: Speakers included in the Study

Community of Practice	Name	Age	Participant Status
Church Ladies	Gail Anne	72	core participant
Church Ladies	Zora	49	participant
Church Ladies	Gina	47	participant
Church Ladies	Joan	70	participant
Porch Sitters	Emily	45	core participant
Porch Sitters	Melissa	67	participant
Porch Sitters	Debbie	46	participant
Porch Sitters	Michelle	50	core participant

4.2 Interview Situation

The interviews all took place in the Texana community, but the locations and persons present at each interview varied. The variety of configurations, locations, and contexts in which the interviews took place yielded on average about 3 to 6 hours of conversation with each woman. In addition to the larger interview setting of the community of practice, each woman was recorded either in a solo interview, a dyad, or a triad interview. In many cases, as in the case of Gail Annee, who was recorded on over 7 different occasions, the women were recorded in every possible combination (solo, dyad, triad, and community of practice).

For the interviews with each community of practice as a whole, interviews took place at their usual places of interaction. For the church ladies, this meant that the interactions took place at some event surrounding a church activity or at a devotional meeting, while for the porch sitters this meant that the interviews took place on the porch of the trailer where the women meet each day after church. During the solo, dyad, and triad interviews the locales were varied. Some of

the interviews occurred in the homes of the women while they were visiting one another, while others occurred on front porches and patios or even while they were cooking or eating dinner.

Since an ethnographic approach and participant observation were used in the sampling and data collection phase, the topics of the interviews were dictated by the interviewees. During the recordings with the communities of practice as a whole, the topics and conversation were guided by the women with little interaction from the field workers. On the other hand, in solo or dyad interviews, the interviewers participated in the conversation much more actively. Much of the conversation in all of the interviews dealt with daily life and recent events in the community. In general, the majority of the conversation collected was the day-to-day language and gossip of the women. However, if a lull occurred in conversation during recording, the fieldworkers would often ask questions relating specifically to recent events in the community or questions about changes in life in the community in order to spur conversation and help the women to develop more spontaneous topics of conversation on their own. Each interview was from 45 minutes to 90 minutes in length depending upon the situation.

4.2.1 Recording procedures

All of the interviews conducted with the Texana women were recorded using Marantz PMD-430 stereo cassette field recorders and the Sony TCM -5000 EV professional portable field recorder. Two different microphones were used in the recording process, the Sony ECM-55B lavalier condenser microphone as well as a Shure VP 64A omni- directional handheld microphone. The lavalier microphone was used for interviews that occurred outdoors in an effort to avoid any effects that potential environmental noise may introduce. Both the omnidirectional and lavalier microphones were used for interviews indoors. The recordings were made on Maxell XLII high-bias chromium oxide tapes.

In all recording situations, care was taken to ensure the best acoustic conditions possible. If interviews occurred outdoors, the speakers were interviewed using lavalier microphones and in areas where there were minimal environmental influences. In indoor recordings, care was taken to place the microphone on a soft surface, like a couch, carpeted floor, or pillow to reduce sound reflection. Additionally, if there were electrical appliances in the rooms where recording was happening, care was taken to turn off the appliances (like televisions, computers, etc.) to avoid any interference or outside noise. As a result of the numerous recordings that were made with each speaker, sections of a recording that had background noise that made it difficult to measure or extract vowel tokens were excluded from analysis. As is the case with most sociolinguistic field work, it is difficult to control the recording conditions completely. However, the natural conversation that sociolinguistic interviews gather is vital if we are to understand language as used in the day to day interactions of speakers.

4.3 Acoustic Methods

The sections below cover the methods used for converting the field recordings to digital format as well as the methods used while analyzing the acoustic data. All of the acoustic measurements performed in this study were done with PRAAT, a freeware program available on the internet (http://www.fon.hum.uva.nl/praat/). All of the speech used in the analysis is taken from the interviews described in sections 4.1 and 4.2. The vowels measured in this study include /i/, /u/, /I/, /ʊ/, /e/, /o/, /ai/ and /ɑ/. Acoustic measurements were taken for all of the vowels in all phonetic contexts; however, tokens that occurred before nasals, /l/, and /r/were excluded since these environments exhibit the greatest coarticulatory effects.

4.3.1 Digitization of Field Recordings

In order to analyze the field recordings in PRAAT acoustically, the analog tape recordings from the field had to be digitized and burned on CDs. The analog tape recorded interviews were lined into a computer and digitized using Goldwave software (www.goldwave.com). In the Goldwave program, the recordings were digitized at sampling rate of 22 kHz and low pass filtered at 11kHz. The recorded speech was cut into tracks of approximately five minutes of continuous speech. Care was taken to avoid cutting words in half when making the tracks, resulting in actual track times of five minutes to five and a half minutes. After the interviews were divided into five-minute tracks, each individual vowel token of the vowels under investigation was extracted from the tracks and edited for acoustic analysis.

4.3.2 Temporal Locations for Measurements

Measurements were taken at three temporal locations in each vowel: the onset (25 milliseconds into the vowel), the midpoint (the total duration divided in half), and 25 milliseconds before the offset. Although measurements were taken at three temporal locations, pilot study results indicated that the preceding phonetic environment was not significant when examining coarticulation and phonetic contexts for this data set. Thus, only measurements from midpoint and offset are used in this analysis even though values are available for all three temporal locations. The duration of the vowel was determined by measuring the time from the first periodic pitch pulse (the first zero crossing) to the last periodic pitch pulse (the last zero crossing). Figure 4.1 below illustrates the duration measurement for a vowel token and Figure 4.2 illustrates the onset, midpoint, and offset of a token.

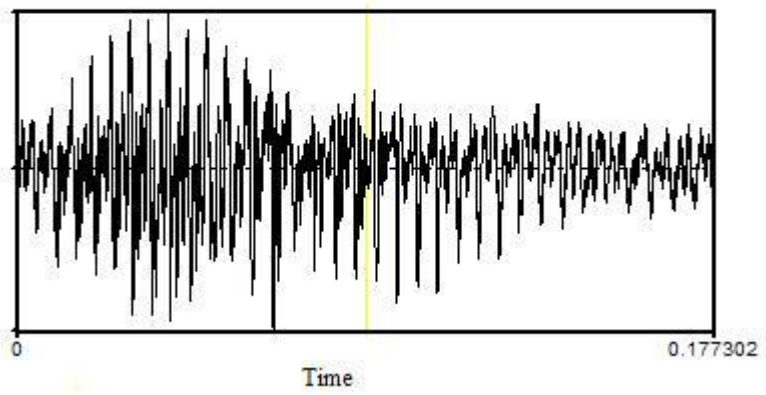

Figure 4.1: Duration measure of /o/ in the word ‘goes’; duration = .177 seconds.

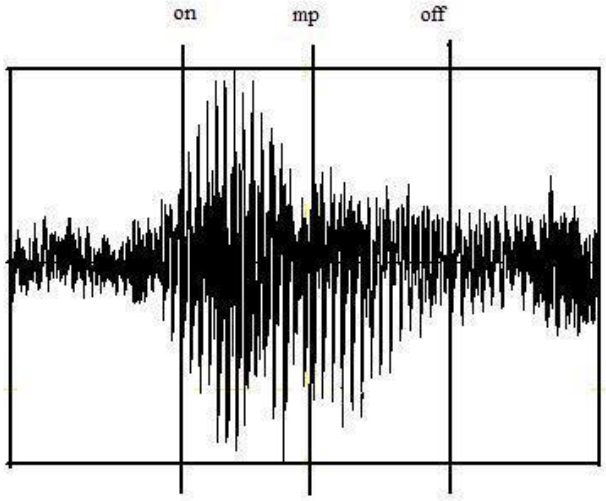

Figure 4.2: Location of the vowel onset (on), midpoint (mp), and offset (off) in the word ‘goes’.

4.3.3 Spectral Measurements

Vowel measurements were taken from FFT spectrum using a 25 millisecond Gaussian window with spectral measurements taken for the first three formants (F_1, F_2, F_3) of each token. A FFT spectra was used for analysis, since FFT spectras provide more precise formant measurements than LPC formant measures because the approximations of formants made by LPC measurements are avoided. FFT formant measurements were obtained by manual choice of

the highest amplitude harmonic for each formant. However, if difficulty arose in choosing the formant from a FFT spectra, an LPC spectra was used to help in the location of the formant. Figure 4.3 provides a visual representation of the first three formants in a FFT spectra.

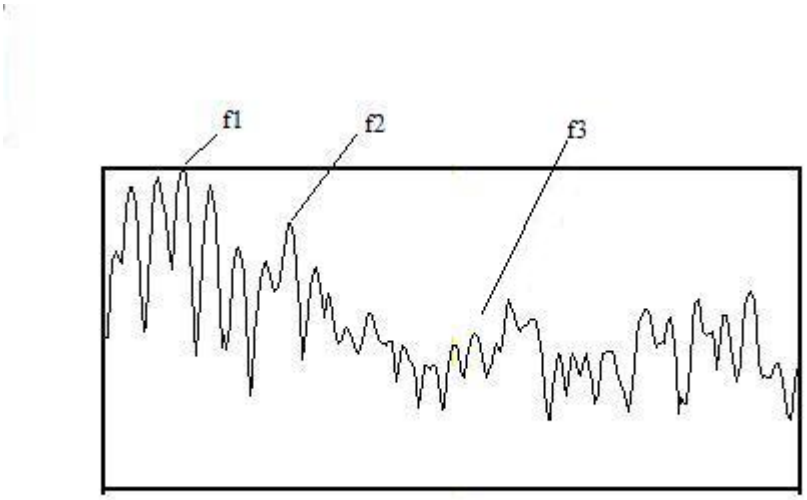

Figure 4.3:The first three formants of a FFT spectra at midpoint for the word 'goes'.

4.3.4 Comparison of Acoustic Measurements

The following phonetic environments were noted for each token, since phonetic environments have been shown to have effects on formant values as a result of coarticulation (Bedor et al. 2002; Hillenbrand et al. 1995, 2001). Following alveolar environments have been found to promote the most fronted back vowel variants, while following velar and labial environments do not promote the front movement of vowels as much. The choice for an integrated methodology was made to ensure that study had adequate data to account for coarticulatory effects that may skew data, while still being able to account for social variables that can only be reached by sampling an adequate number of speakers. As a result, the data were divided on the basis of phonetic environments following Anderson's (2003) study with a maximum of 35 tokens per vowel, per environment with no more than 3 lexical items per cell for

each speaker. Thus, only three tokens of a word in a particular context were allowed in the data set. Often the threshold of 35 tokens was not achieved in each situation because some vowels such as /u/ are less common in spontaneous speech than /i/. Ultimately, the data yielded a total token count of 2698 tokens for the eight speakers. Note, however, that some of the tokens were not used in the final analysis as the phonetic environments for the vowel pairs being analyzed and compared must be the same. For example, although labial measures were taken for /i/ (as in *peep*), they were not used as /ʊ/ preceding a labial (as in *lube*) does not occur often in English. Therefore, some of the phonetic environments which were measured and recorded were not included in the analysis due to phonotactic constraints. Table 4.2 provides token count averages per speaker. Since this study is based exclusively upon women's speech, normalization of the vowel data was not needed.

Table 4.2: Token averages per speaker, per vowel

	Mean	Standard Deviation
Tokens per speaker	215.13	93.27
Tokens per speaker, per vowel	26.89	12.89

4.3.5 Analysis of /u/ and /ʊ/

Following Anderson's (2003) methods for examining back vowel fronting, this analysis of /u/ and /ʊ/ among the porch sitters and church ladies in Texana accounts for the coarticulatory effects of the following phonetic environments. The phonetic environments considered in the analysis of the /u/ are alveolar, velar, and labial and the phonetic contexts considered in the analysis of /ʊ/ are alveolar and velar. The analysis of /u/ and /ʊ/ focuses on the F_2 distances between /u/ and /ʊ/ and their corresponding front vowels /i/ and /ɪ/. Since traditional accounts

put these pairs in the same F_1 spaces, the most salient formant differences are expected in the F_2 dimension.

The fronting of /u/ and /ʊ/ was quantified on a speaker-by-speaker basis. Similar to Anderson's (2003) methods, the average F_2 values of /u/ and /ʊ/ were examined in reference to the average F_2 values of their front counterpart, in their respective preceding and following phonetic environments. For example, subtracting the average F_2 value for pre-alveolar /u/ from the average F_2 value for pre-alveolar /i/ would yield the distance metric between pre-alveolar /i/ and pre-alveolar /u/. Thus, by creating a distance metric for each vowel in each environment, it becomes possible to discuss fronting among the speakers and vowel normalization is not necessary since the distance metrics are derived from each speaker's own vowel space. Ultimately, this process allows the researcher to discuss which speaker or speakers have a relatively more fronted /u/ (or other back vowel) in general and in specific contexts, but it is not possible from this analysis to say with absolute confidence that a speaker necessarily has a fronted /u/; rather, the analysis allows the researcher to comment only on a particular vowel in relation to the other vowels in a speaker's vowel space. Additionally, the use of distance metrics will also allow me to compare and discuss differences in the production of /u/ and /ʊ/ in the two communities of practice. Table 4.3 displays the token counts for /u/ and /i/ in their following phonetic environments for each speaker as well as community of practice totals. Tables 4.4 displays the token counts for /ʊ/ and /ɪ/ in their phonetic environments and by individual and community of practice.

Table 4.3: Token counts for /u/ and /i/ by following phonetic environment. Cells are shaded by community of practice (gray= church ladies, white =porch sitters).

Speaker	/u/ alveolar	/u/ word boundary	/u/ labial	/i/ alveolar	/i/ word boundary	/i/ labial	Total
Gail Anne	12	6	9	16	35	9	87
Gina	4	10	6	28	14	10	72
Joan	6	8	5	14	18	10	61
Zora	9	18	5	27	35	12	106
Church Ladies Total	31	42	25	85	102	41	326
Emily	10	12	8	30	34	24	118
Melissa	4	14	6	26	4	26	80
Debbie	4	4	2	10	14	6	40
Michelle	4	12	2	10	16	4	48
Porch Sitters Total	22	42	18	76	68	60	286

Table 4.4: Token counts for /ʊ/ and /ɪ/ by following phonetic environment. Cells are shaded by community of practice (gray =church ladies, white=porch sitters).

Speaker	/ʊ/ alveolar	/ʊ/ velar	/ɪ/ alveolar	/ɪ/ velar	Total
Gail Anne	5	9	32	8	54
Gina	12	6	10	14	42
Joan	10	6	8	5	29
Zora	5	6	31	18	60
Church Ladies Total	32	27	81	45	185
Emily	18	10	24	9	61
Melissa	18	8	23	5	54
Debbie	4	6	14	20	44
Michelle	8	8	20	8	44
Porch Sitters Total	48	32	81	42	203

4.3.6 Analysis of /o/

Very little quantitative acoustic analysis has been done on the /o/ vowel in American English. Studies have indicated that fronted /o/ variants are diagnostic of the Southern vowel shift but have provided little descriptive detail about the process (see the discussion of /o/ in chapter 3). Typically in acoustic sociophonetics, as in the work of Anderson (2003) and Thomas (2001), /o/ is used to define the back of the vowel envelope, making it only an anchor vowel by which to judge the placement of other vowels and with little information given about the phonetic detail of the vowel in specific phonetic contexts. As a result of this lack of explanatory detail, the analysis of /o/ in this study aims to discover not only if the communities of practice in Texana are participating in the southern /o/ fronting process and potential social correlations with /o/ fronting, but also it hopes to uncover the ways which phonetic context affects /o/.

In order to quantify the fronting of /o/, this study uses distance metrics as well. By subtracting the F_2 value of /o/ from the F_2 value of /e/, /o/'s front counterpart, a distance metric can be achieved and the fronting of /o/ can be quantified. This analysis of /o/ like the analysis of /u/ and /ʊ/ considers the following phonetic environments surrounding /o/ in order to account for the coarticulatory effects that following consonants may have on the fronting of /o/ among the communities of practice. For the analysis of /o/, F_1 and F_2 measurements were taken in order to examine the height and the frontness or backness of the vowel. By examining both formants in /o/, the analysis yields information about the status of /o/ within the communities of practice, and helps to uncover whether the same context effects that govern /u/ and /ʊ/ fronting also govern /o/. Table 4.5 provides token counts for /o/ considering following phonetic environment, speaker, and community of practice variables.

Table 4.5: Token counts for /o/ and /e/ by following phonetic environment. Cells are shaded by community of practice (gray =church ladies, white=porch sitters).

Speaker	/o/ alveolar	/o/ word boundary	/e/ alveolar	/e/ word boundary	Total
Gail Anne	19	8	6	5	38
Gina	6	10	8	6	30
Joan	6	6	8	10	30
Zora	5	27	12	5	49
Church Ladies Total	36	51	34	26	147
Emily	8	24	26	6	64
Melissa	16	28	12	4	60
Debbie	6	8	12	14	40
Michelle	8	14	8	6	36
Porch Sitters Total	38	74	58	30	200

4.3.7 Analysis of /ai/

Like the other vowels considered in this analysis, the analysis of /ai/ also quantifies the phonetic realization of the vowel. Similar to Anderson (2003), the quantification of dipthongization of /ai/ was done by comparing F_1 and F_2 measurements of /ai/ with F_1 and F_2 measurements from the /ɑ/ vowel, a vowel which is expected to show little dipthongization. Unlike the other analyses of coarticulatory effects of surrounding consonants, this analysis considers only the following context with regard to voicing (either voiced or voiceless) since

data from previous studies (see discussion of /ai/ in chapter 3) indicates that voicing of the following segment effects the dipthongization of /ai/. Thus Table 4.6 below gives the token counts for /ai/ and /ɑ/ by speaker and environment.

Table 4.6: Token counts for /ai/ in prevoiced and prevoiceless environments. Cells are shaded by community of practice (gray =church ladies, white=porch sitters).

Speaker	/ai/ pre-voiced	/ai/ pre-voiceless	/ɑ/ pre-voiced	/ɑ/ pre-voiceless	Total
Gail Anne	10	19	2	12	43
Gina	6	16	6	8	36
Joan	6	12	5	5	28
Zora	15	24	7	24	70
Church Ladies Total	37	71	20	49	177
Emily	12	28	4	30	74
Melissa	6	19	4	16	45
Debbie	8	18	2	8	36
Michelle	12	10	6	14	42
Porch Sitters Total	38	75	16	68	197

Chapter 5

/u/ and /ʊ/

This chapter provides a discussion of the results of the analysis of /u/ and /ʊ/ among the women in the study. As noted in the methodology chapter (Chapter 4), this analysis of the high-back and mid-back vowels relies on the use of the distance metrics, which quantify the F_2 dimension of the vowels, for the discussion of vowel fronting. Specifically, this analysis requires the use of the front vowel counterparts of /u/ and /ʊ/, /i/ and /ɪ/, in order to quantify, compare and analyze the vowel patterns among the communities of practice and the women themselves. The chapter also examines the effect that phonetic context and duration may have in the production of the vowels. Finally, the chapter investigates the individual women who compose each community of practice and presents their individual vowel patterns in order to better understand the ways that they fit into and create group norms.

5.1 /u/

Table 5.1 provides the average values for the production of /u/ and /i/ among the communities of practice. From the table it is noted that the church ladies have a more fronted production of /u/ with only 471 Hz between /i/ and /u/ at the midpoint and 420 Hz at the offset, while the porch sitters have a more backed production with 794 Hz between /i/ and /u/ at midpoint and 749 Hz at the offset position. Comparison of this data with Anderson's (2003) work on African American and Appalachian migrants in the Detroit area indicated that women in both friendship groups were fronting /u/ (Table 5.2). However, the degree to which each group used fronted /u/ variants is different. In Anderson's study, the distance metrics for /i/ and /u/ at

the midpoint for African Americans and Appalachians were 852 Hz and 705 Hz, respectively. At the offset, the distance metric for the African Americans was 918 HZ and 884 Hz for the Appalachians with the differences in midpoint and offset measures providing an indication of vowel movement for each group. The church ladies have distance metrics that are smaller than those of the Appalachians in Anderson's study, an indication that /u/ is more fronted for the church ladies than it was for those who identified themselves as Appalachian in Anderson's work. The porch sitters have distance metrics that fall between the African Americans and Appalachians at the midpoint and are smaller than both groups at the offset. Although the porch sitters have a more backed production of /u/ than the church ladies, they still have a fronted production of the vowel when compared to other groups like those from Anderson (2003) and Hillenbrand et al. (1995). Midpoint values and differences for /u/ and /i/ can be seen in Figure 5.1, while offset values and differences can be found in Figure 5.2. Table 5.2 provides the values for /i/ and /u/ at midpoint and offset as well as distance metrics for the church ladies, porch sitters and Anderson's (2003) African American and Appalachian groups.

Table 5.1: /i/ and /u/ F_2 Values for the Communities of Practice at midpoint and offset

Community of Practice	/i/ midpoint	/u/ midpoint	Difference /i/-/u/midpoint	/i/ offset	/u/ offset	Difference /i/- /u/ offset
Church Ladies	2108	1638	470	2085	1665	420
Porch Sitters	2206	1412	794	2190	1441	749

*All values are in Hz.

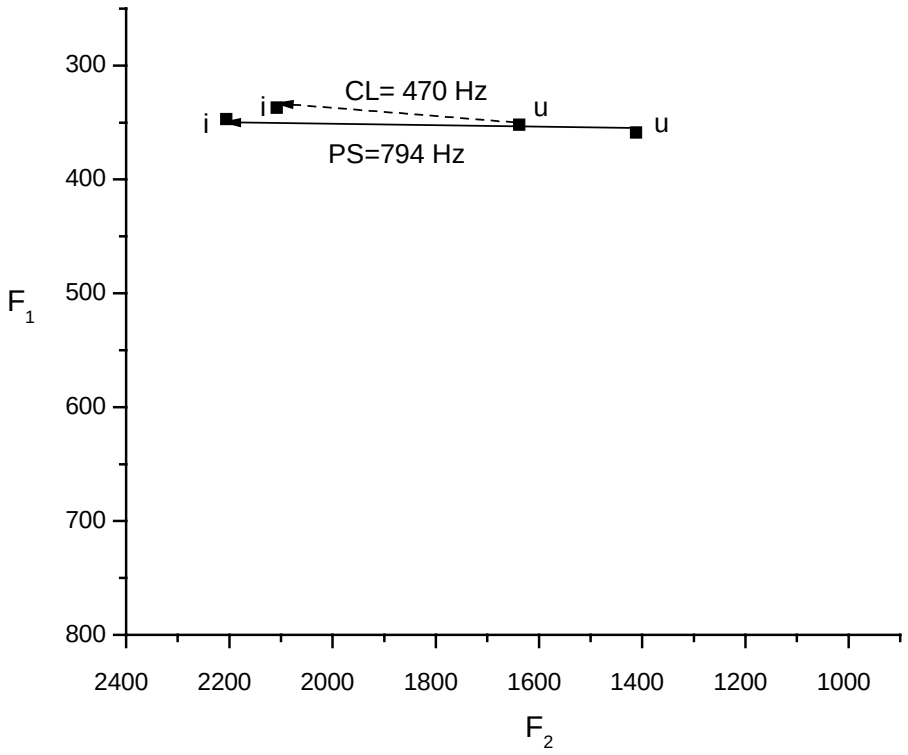

Figure 5.1. Mean /i/-/u/ F_2 distance metrics at midpoint (CL=Church Ladies, PS= Porch Sitters).

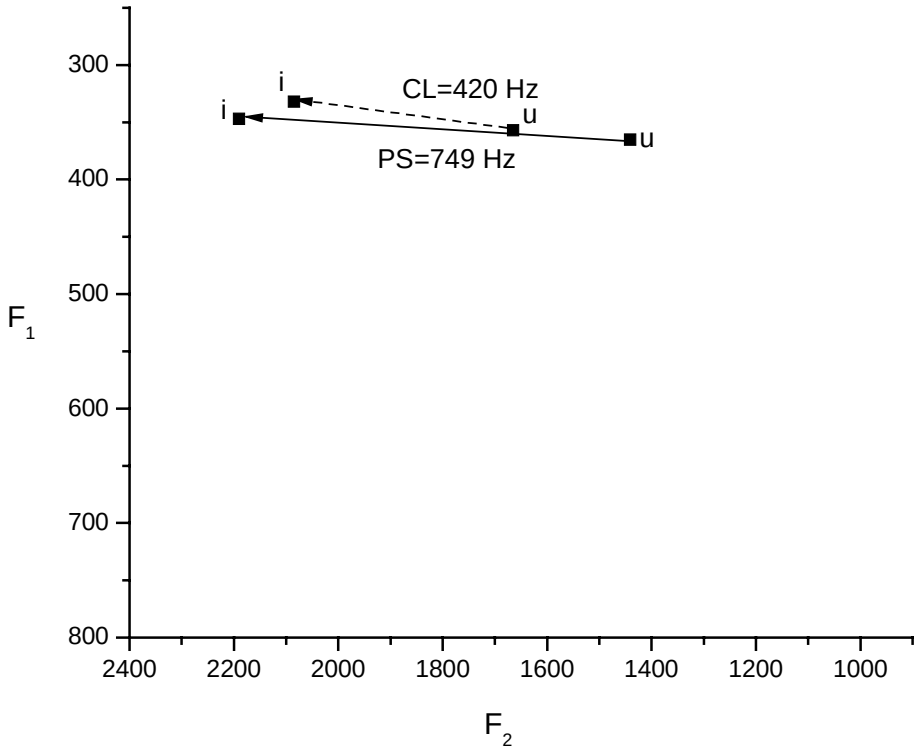

Figure 5.2: Mean /i/-/u/ F_2 distance metrics at offset (CL=Church Ladies, PS= Porch Sitters).

Table 5.2: F_2 Values for the Communities of Practice and Anderson 2003 data at midpoint and offset

Community of Practice	/i/ midpoint	/u/ midpoint	Difference /i/-/u/ midpoint	/i/ offset	/u/ offset	Difference /i/- /u/ offset
Church Ladies	2108	1638	470	2085	1665	420
Porch Sitters	2206	1412	794	2190	1441	749
African American	2529	1677	852	2488	1570	918
Appalachian	2478	1773	705	2476	1592	884

* All values are in Hz.

The contextual effects on vowel fronting at both the midpoint and offset position were also considered and the results can be seen in Table 5.3 and Figures 5.3 and 5.4. Unlike Anderson's (2003) work on /u/ fronting, phonetic context (coarticluation) does not seem to be an important factor for vowel fronting among the two communities of practice. Anderson found that regardless of the ethnicity, the most fronted tokens were those that occurred in pre-alveolar environments, followed by the word boundary position and the pre-labial position, respectively. She also found that these constraints were constant, occurring in the same pattern at both midpoint and offset positions. However, the women in this study show no such patterns. As table 5.2 indicates, the hierarchy of constraints for the church ladies is consistent at midpoint and offset, but does not following the pattern found by Anderson (2003), and showed word boundary as the most fronted followed by pre- alveolar and pre- labial, respectively.

For the porch sitters, the contextual constraints on /u/ fronting are more complex. The porch sitters had several different patterns for /u/ fronting and are not consistent across the temporal locations. At the midpoint, the contextual constraints on fronting showed that the most advanced tokens are in the pre-alveolar position, followed by word boundary and pre-labial

positions. This pattern fits the one found by Anderson; however, at the offset, pre-alveolar tokens are the most fronted with pre-labial and word boundary contexts following in fronting, respectively. Although the porch sitters' pre-alveolar tokens of /u/ were the most fronted, there is a lack of consistency in the rest of the phonetic contexts which makes it difficult to attribute a pattern of vowel fronting for them from the raw data.

Table 5.3: F_2 Values for the Communities of Practice including phonetic context at midpoint and offset

Community of Practice	Context	/i/ midpoint	/u/ midpoint	/i/-/u/ distance midpoint	/i/ offset	/u/ offset	/i/-/u/ distance offset
Church Ladies	Alveolar	2086	1625	461	2099	1675	424
	Labial	2147	1594	553	2113	1663	450
	Word Boundary	2093	1695	398	2045	1658	387
Porch Sitters	Alveolar	2220	1551	669	2168	1517	651
	Labial	2229	1358	871	2237	1454	783
	Word Boundary	2169	1328	841	2164	1351	813

* All values are in Hz.

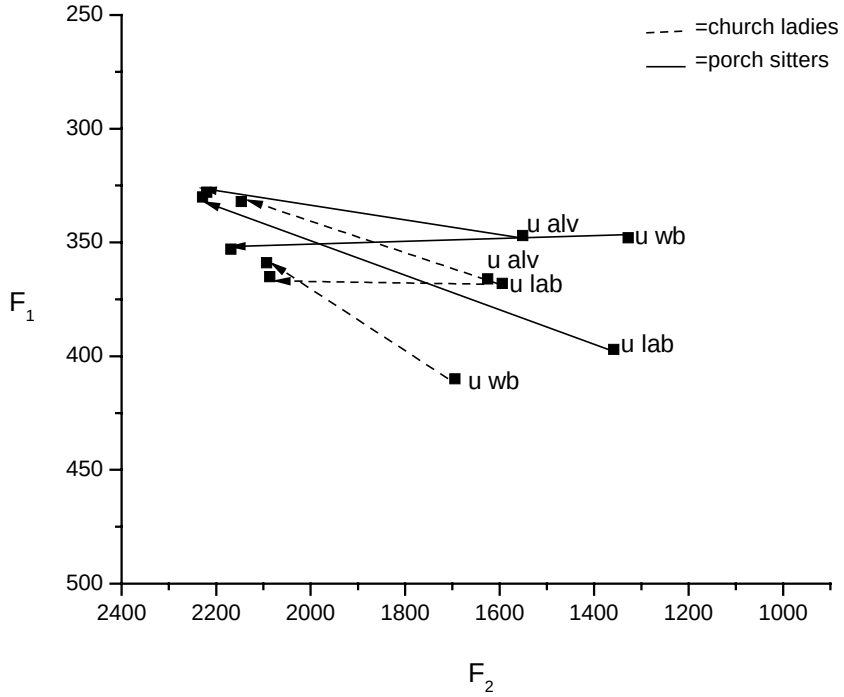

Figure 5.3: Midpoint F_2 in Hz for /i/ and /u/ in all contexts. Lines connect front and back counterparts of the same context. Dashed lines=church ladies, solid lines=porch sitters.

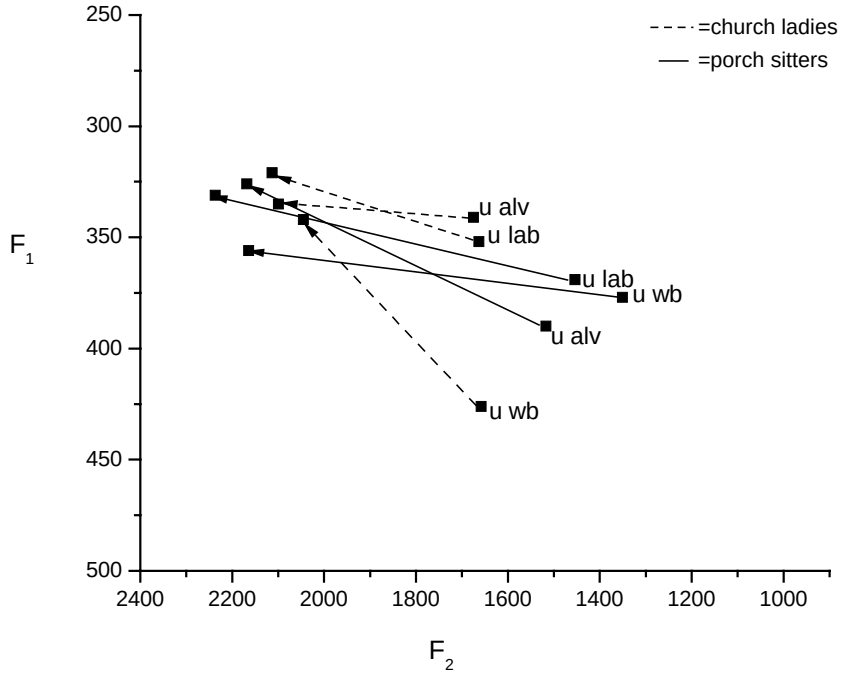

Figure 5.4: Offset F_2 in Hz for /i/ and /u/ in all contexts. Lines connect front and back counterparts of the same context. Dashed lines=church ladies, solid lines=porch sitters.

5.1.1 Statistical Analysis of F_2 distance metrics for /u/

An ANOVA was performed to test whether there was a significant difference in the F_2 distance metrics for /u/ among the church ladies and the porch sitters. This test considered not only the effect of community of practice on F_2 values, but also the effect that phonetic context may have on F_2 values. Additionally, separate ANOVA analysis was performed for both the midpoint and offset to insure that any significance was attributable to the entire vowel segment. The results of the statistical analyses are provided in Tables 5.4 and 5.5.

Both ANOVA analyses confirmed that there were significant effects for community of practice, but that context is not a significant factor in the fronting of /u/. F_2 distance by community of practice was significant at the midpoint ($F=15.15$, $DF=1$,$p> 0.0011$), as well as the

offset (F=10.75, DF=1, p> 0.0042). Although community of practice was significant at both the midpoint and offset, phonetic context was not significant as a single variable at either the midpoint (F=1.04, DF=2, p > 0.3730) or at the offset (F=0.18, DF=2, p > 0.8356). Further analysis on interaction between community of practice and phonetic context indicated that there was no significant interaction between the two at the midpoint (F=0.70, DF=2, p>0.5117) or at the offset (F= 0.37, DF= 2, p> 0.6927), which meant that there were no significant contextual effects within each community of practice.

Table 5.4: ANOVA Results for /i/-/u/ F_2 distance at midpoint

Source	DF	F Value	*p*-Value
Context	2	1.04	0.3730
Community of Practice	1	15.15	**0.0011**
Context*Community of Practice	2	0.70	0.5117

*Bold indicates significance at α=.05.

Table 5.5: ANOVA Results for /i/-/u/ F_2 distance at offset

Source	DF	F Value	*p*-Value
Context	2	0.18	0.8356
Community of Practice	1	10.75	**0.0042**
Context*Community of Practice	2	0.37	0.6927

*Bold indicates significance at α=.05.

5.1.2. Statistical Analysis of Duration

In addition to F_2 distance metrics of /i/-/u/, differences in the duration of /u/ by community of practice were examined. Data for the duration of each community of practice are given in Table 5.6, data for each context are found in Table 5.7, and data for the duration of /u/ in each phonetic context within each community of practice are provided in Table 5.8. Work by Bailey (1968) Wetzell (2000) has shown that the "Southern drawl" one of the most stereotyped of all Southern features is associated with prolongation of certain vowels. Thus, the use of a vowel of longer duration is another means that speakers use to distinguish their speech from one another in vowels such as /u/ which undergo a process of fronting among all English speakers.

Ultimately, the use of a vowel of longer duration may be a way for speakers to signal Southern identity or affiliation, while use of a /u/ vowel of shorter duration may be a way to distance oneself from Southern language patterns.

Differences in the duration of /u/ by community of practice, context or a combination of both were tested using an ANOVA. The results of the ANOVA confirmed that there is a significant difference in the duration of /u/ by community of practice, with the church ladies having a mean /u/ duration (167 ms) longer than the porch sitters (139 ms). There is no significance for context or for context within each community of practice. The results of the ANOVA analysis of duration of /u/ are given in Table 5.9.

Table 5.6: Mean /u/ duration measures for communities of practice

Community of Practice	Mean Duration	Std. Deviation
Church Ladies	167 ms	57.5 ms
Porch Sitters	139 ms	55.6 ms

Table 5.7: Mean /u/ duration measures for context

Context	Mean Duration	Std. Deviation
Alveolar	155 ms	59.1 ms
Labial	145 ms	44.8 ms
Word Boundary	146 ms	64.6 ms

Table 5.8: Mean /u/ duration measures for communities of practice and context

Community of Practice	Context	Mean Duration	Std. Deviation
Church Ladies	Alveolar	157 ms	49.7 ms
	Labial	157 ms	51.3 ms
	Word Boundary	189 ms	67.6 ms
Porch Sitters	Alveolar	153 ms	64.1 ms
	Labial	134 ms	35.2 ms
	Word Boundary	130 ms	56.2 ms

Table 5.9: ANOVA Analysis of /u/ duration

Source	DF	F Value	*p*-Value
Context	2	0.27	0.7615
Community of Practice	1	8.03	**0.0055**
Context*Community of Practice	2	2.27	0.1085

*Bold indicates significance at α=.05.

5.1.3. Summary of /u/ Analysis

The analysis of /u/ fronting showed that although all of the women used fronted /u/ variants, there were significant differences in the fronting which are correlated with membership in a particular community of practice. The church ladies have more fronted /u/ variants than the porch sitters at both the midpoint and offset. However, despite reports of the significance of contextual effects on /u/ fronting (Anderson 2003; Nyugen forthcoming), the results of this analysis do not show a correlation with phonetic context. Additionally, there was no significance for phonetic context within the communities of practice. Thus, although all of the women in this analysis use fronted /u/ variants, membership in a community of practice is a significant indicator of the fronting of /u/ for the speakers.

5.2 /ʊ/

Table 5.10 provides the mean values for F_2 distance between /ɪ/ and /ʊ/ at the midpoint and offset. At the midpoint, the church ladies have a mean F_2 value of 2106 Hz for /ɪ/ and a mean F_2 value of 1649 Hz for /ʊ/ which produces a distance metric of 457 Hz. The porch sitters have a mean F_2 value at the midpoint of 2159 Hz for /ɪ/ and a mean midpoint F_2 value of 1559 Hz for /ʊ/ which indicates a distance metric of 600 Hz. Comparison of the distance metrics for the communities of practice at the midpoint shows a 143 Hz difference in the mean F_2 distances between /ɪ/ and /ʊ/. The greatest difference in the distance metrics of the communities of practice is at the offset where the two groups have a difference of 165 Hz. Figures 5.5 and 5.6 provide vowel plots for the mean F_2 values for the two communities of practice.

Table 5.10: /ɪ/ and /ʊ/ F_2 Values for the Communities of Practice at midpoint and offset

Community of Practice	/ɪ/ midpoint	/ʊ/ midpoint	Difference /ɪ/-/ʊ/ midpoint	/ɪ/ offset	/ʊ/ offset	Difference /ɪ/- /ʊ/ offset
Church Ladies	2106	1649	457	2080	1693	387
Porch Sitters	2159	1559	600	2090	1538	552

* All values are in Hz.

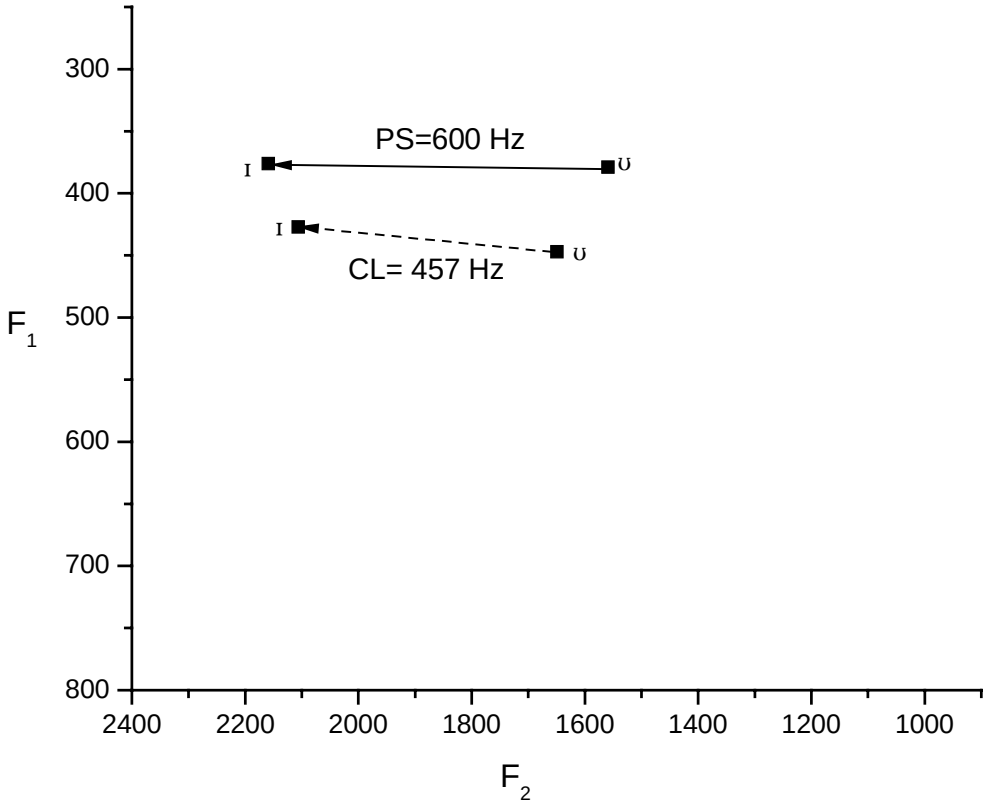

Figure 5.5: Mean /ɪ/-/ʊ/ F_2 distance metrics at midpoint.
CL=Church Ladies, PS= Porch Sitters

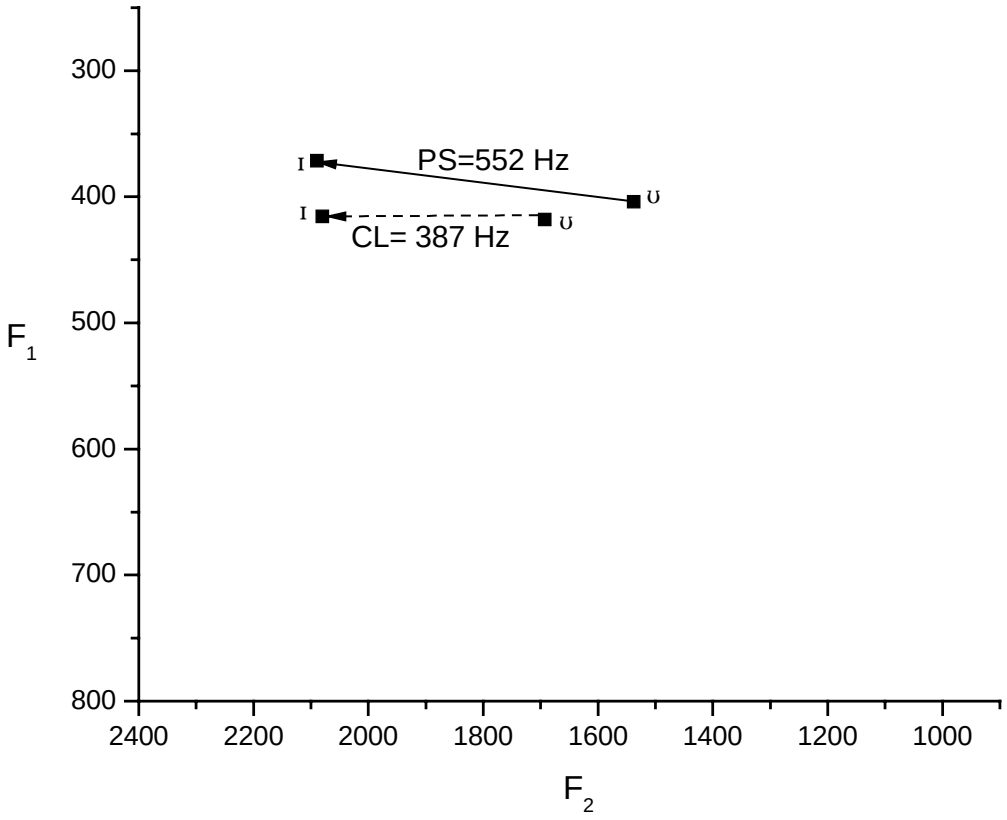

Figure 5.6: Mean /ɪ/-/ʊ/ F_2 distance metrics at offset.
CL=Church Ladies, PS= Porch Sitters

Comparison of these data on /ʊ/ with Anderson's (2003) work indicates that these women are fronting back vowels. Table 5.11 has the midpoint and offset F_2 values for /ɪ/ and /ʊ/ for the women in both communities of practice as well as for Anderson's Appalachian and African American groups. The table shows that the church ladies have distance metrics quite similar to the African American group from Anderson's study, while the porch sitters have values that are different from both groups in Anderson's study.

Table 5.11: F_2 Values for the Communities of Practice and Anderson 2003 data at midpoint and offset

Community of Practice	/ɪ/ midpoint	/ʊ/ midpoint	Difference /ɪ/-/ʊ/ midpoint	/ɪ/ offset	/ʊ/ offset	Difference /ɪ/- /ʊ/ offset
Church Ladies	2106	1649	457	2080	1693	387
Porch Sitters	2159	1559	600	2090	1538	552
African American	2175	1757	418	2149	1763	387
Appalachian	2111	1586	525	2108	1656	452

* All values are in Hz.

F_2 values and distance metrics for /ʊ/ in each phonetic context are given in Table 5.12 and in Figures 5.7 and 5.8. As in the case of /u/, the phonetic context does not seem to be an important factor in vowel fronting. Other work on the fronting of /ʊ/ by Anderson (2003) and Nyugen (forthcoming) has found that the pre-alveolar environment promoted /ʊ/ fronting more that pre-velar contexts and that the contextual constraints on /ʊ/ fronting were consistent at both the midpoint and offset. However, the phonetic constraints for African Americans and Appalachians in the Detroit area do not apply to all of the Appalachian African American women in this study. As the data in the tables show, the phonetic constraints for the church ladies are consistent at the midpoint and offset with the pre-alveolar context being the most fronted (418 Hz between /ɪ/ and /ʊ/ at midpoint and 318 Hz between /ɪ/ and /ʊ/ at the offset) and the pre-velar context being the least fronted (536 Hz between /ɪ/ and /ʊ/ at midpoint and 439 Hz between /ɪ/ and /ʊ/ at the offset). However, the porch sitters do not maintain the same phonetic contexts for vowel fronting across both temporal locations. At the midpoint, the pre-velar

environment is the most fronted (614 Hz between /ɪ/ and /ʊ/), while at the offset the pre-alveolar context is the most fronted (555 Hz between /ɪ/ and /ʊ/).

Table 5.12: F_2 Values for the Communities of Practice including phonetic context at midpoint and offset

Community of Practice	Context	/ɪ/ midpoint	/ʊ/ midpoint	/i/-/ʊ/ distance midpoint	/ɪ/ offset	/ʊ/ offset	/ɪ/-/ʊ/ distance offset
Church Ladies	Alveolar	2077	1659	418	2042	1724	318
	Velar	2175	1639	536	2117	1678	439
Porch Sitters	Alveolar	2089	1475	614	2037	1482	555
	Velar	2205	1610	595	2142	1566	576

* All values are in Hz.

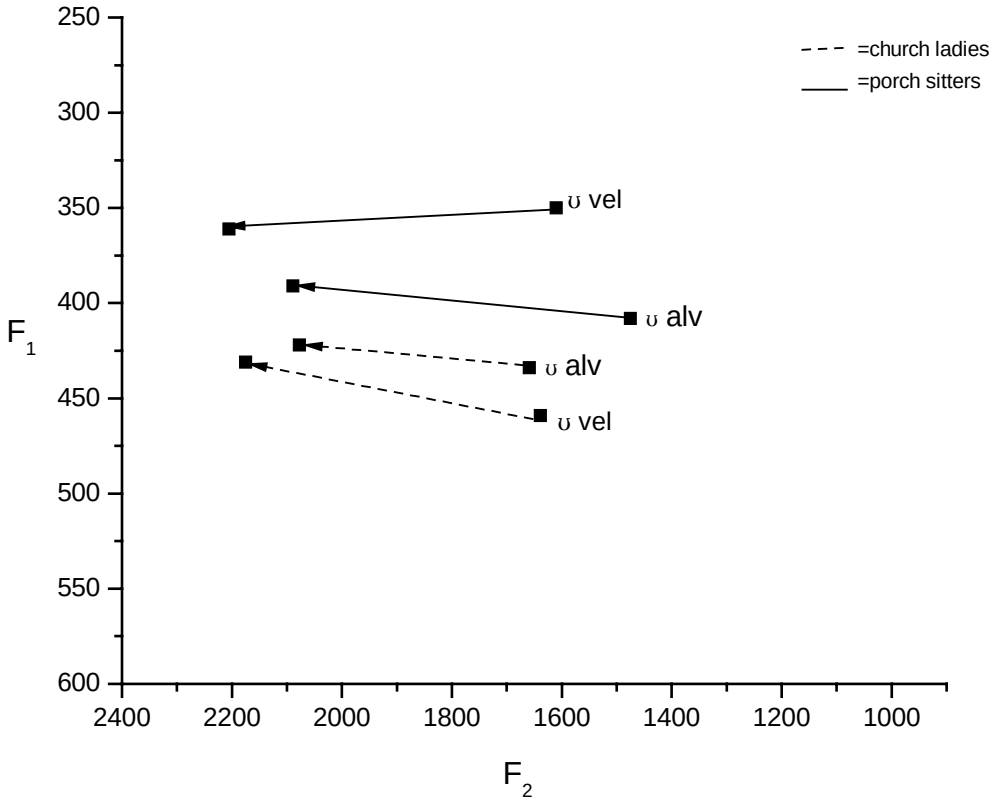

Figure 5.7: Midpoint F_2 in Hz for /ɪ/ and /ʊ/ in all contexts. Lines connect front and back counterparts of the same context (dashed lines=church ladies, solid lines=porch sitters).

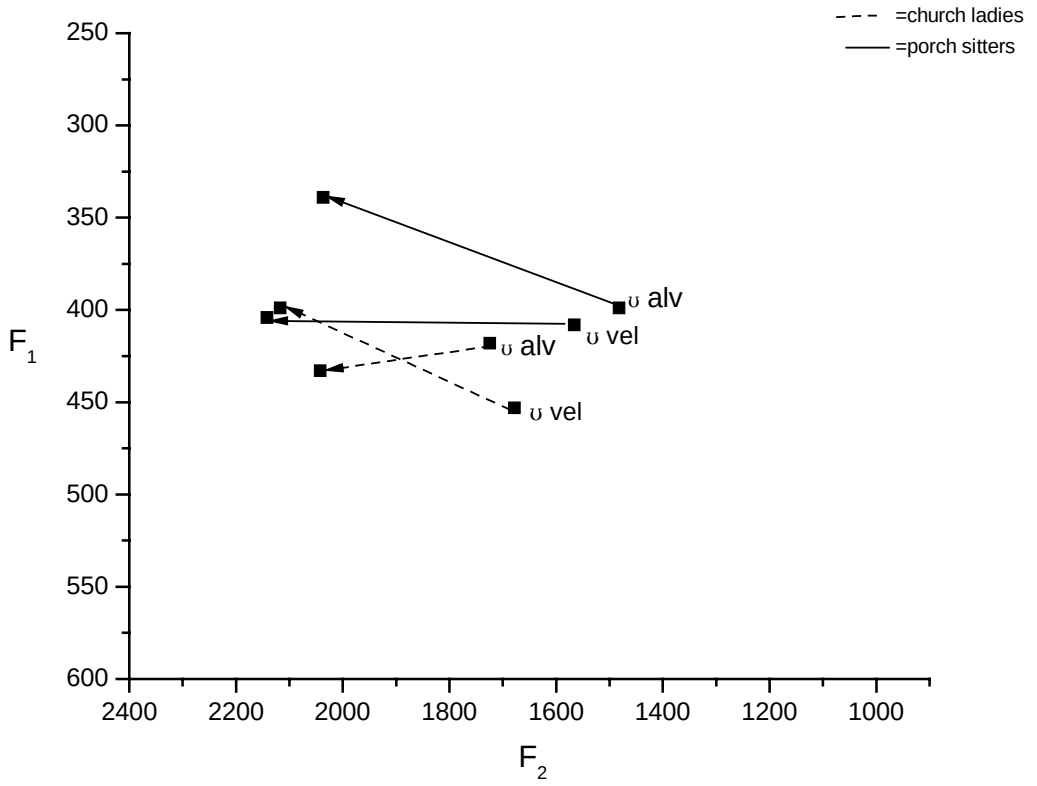

Figure 5.8: Offset F_2 in Hz for /ɪ/ and /ʊ/ in all contexts. Lines connect front and back counterparts of the same context (dashed lines=church ladies, solid lines=porch sitters).

5.2.1 Statistical Analysis of F_2 distance metrics for /ʊ/

The raw data for /ʊ/ provided in section 5.2, indicated differences between the two communities of practice for F_2 distance metrics. ANOVA analyses was performed for /ʊ/ to determine if there are any significant differences in vowel fronting as a result of the community of practice of the women or phonetic context in which the vowels occurred. The results of the ANOVA at the midpoint, seen in Table 5.13, show that there is not a significant difference in the F_2 distance between /ɪ/ and /ʊ/ at the midpoint for the communities of practice ($F=1.34$, $DF=1$, $p> 0.2695$) nor for the context ($F=0.48$, $DF=1$, $p> 0.5011$). Similarly, analysis of the interaction of context and community of practice showed that there was no significant interaction between

the two at the midpoint (F=0.90, DF=1, p> 0.3626). Unlike /u/ where community of practice is a significant indicator of fronting or F_2 distance at the midpoint, /ʊ/ does not have any factors which are found to be significant in its fronting at the midpoint. The ANOVA analysis at the offset also showed that there is no significant difference in the F_2 distances by community of practice (F=1.34, DF=1, p> 0.2695) or context (F=0.48, DF=1, p> 0.5011) at the offset. There were also no significant differences in the F_2 distances for each community of practice by context (F=0.43, DF=1, p> 0.5224).

Table 5.13: ANOVA Results for /ɪ/ - /ʊ/ F_2 distance at midpoint

Source	DF	F Value	*p*-Value
Context	1	0.48	0.5011
Community of Practice	1	1.34	0.2695
Context*Community of Practice	1	0.43	0.5224

Table 5.14: ANOVA Results for /ɪ/ - /ʊ/ F_2 distance at offset

Source	DF	F Value	*p*-Value
Context	1	0.35	0.5660
Community of Practice	1	1.49	0.2450
Context*Community of Practice	1	0.43	0.5224

5.2.2 Statistical Analysis of Duration

The raw data for the duration of /ʊ/ in each community of practice is provided in Table 5.15 and the data for the duration of /ʊ/ in each phonetic context presented in Table 5.16. Data for the mean duration of /ʊ/ by community of practice and context is provided in Table 5.17. The results of the ANOVA which can be found in Table 5.18 conclude that there are no significant differences in the duration of /ʊ/ for the communities of practice, the context, or a combination of both. Unlike /u/, the duration of /ʊ/ is not a variable that is linked to community of practice.

Table 5.15: Mean /ʊ/ duration measures for communities of practice

Community of Practice	Mean Duration	Std. Deviation
Church Ladies	112 ms	48.1 ms
Porch Sitters	133 ms	66.9 ms

Table 5.16: Mean /ʊ/ duration measures for context

Context	Mean Duration	Std. Deviation
Alveolar	120 ms	62.1 ms
Velar	126 ms	55.3 ms

Table 5.17: Mean /ʊ/ duration measures for communities of practice and context

Community of Practice	Context	Mean Duration	Std. Deviation
Church Ladies	Alveolar	109 ms	47.7 ms
	Velar	115 ms	49.7 ms
Porch Sitters	Alveolar	130 ms	71.7 ms
	Velar	139 ms	59.8 ms

Table 5.18: ANOVA analysis of /ʊ/ duration

Source	DF	F Value	*p*-Value
Context	1	0.18	0.6688
Community of Practice	1	2.77	0.1000
Context*Community of Practice	1	0.02	0.8950

5.2.3 Summary of /ʊ/ Analysis

The analysis of /ʊ/ has shown that like /u/, the women in this study are fronting /ʊ/. Through comparison of the data from these women to that of Anderson's (2003) study, we see that the church ladies used fronted productions of /ʊ/ while the porch sitters have a production that is more backed when compared to the data from Anderson. However, there are no differences in the production of /ʊ/ for each community of practice as was found for /u/. Context as well as context by community of practice were not found to correlate with F_2

distances between /ɪ/ and /ʊ/. Thus, although a fronted variant among the women in this study, /ʊ/ is not a variable that marks a difference in the communities of practice.

5.3 Individuals in the Community of Practice

This section provides vowel plots for the individual participants in each community of practice. Through an examination of the plots of the individual women who compose each community of practice, we may come to better understand the ways that social and linguistic processes are mutually constructed by the women. This section also discusses the role of phonetic context in the production of the vowels among the women as well examine similar vowel patterns and features found among each community of practice.

5.3.1 The Church Ladies

The Table 5.19 and Table 5.20 provide detailed information (from the raw data) for the vowels analyzed in the speech of the church ladies. These charts indicate the distance metrics for the F_2 dimension of each vowel. Additionally, they provide added information about each speaker's vowel system, allowing for a more detailed discussion of each woman's vowel patterns in relation to group norms. As the tables indicate, among the church ladies, there is some variation in the patterns of the individual speaker. In fact, the tables show a split in the values for the church ladies. Gail Anne and Zora tend to pattern more closely to one another, and Gina and Joan tend to show patterns that are similar. Despite this split in the data, the church ladies all have distance metrics that are smaller than the porch sitters, solidifying their group status. A discussion of the individual member patterns and their relation to the community of practice norms follows the tables.

5.3.1.1 Gail Anne

The vowel plot for Gail Anne which can be found in Figure 5.9 illustrates her vowel patterns for /u/ and /ʊ/. At the midpoint position for /u/ and /i/, Gail Anne had an average distance of 281 Hz over all of the phonetic contexts. There is very little distance between /u/ and /i/ in all phonetic contexts at the offset position, with an average offset distance for /u/-/i/ of 170 Hz. All of the /u/ variants showed front gliding with the front gliding of /u/ pre-labial being the longest. Also, the phonetic constraints on the production of /u/ for Gail Anne do not change with the temporal location. The most front variant is in the pre-alveolar position, followed by the word boundary position, and the pre-labial position.

For /ʊ/ and /ɪ/, Gail Anne had mean F_2 distance at the midpoint across all phonetic contexts of 526 Hz, further apart than /u/ and /i/. However, upon closer examination of the raw data in Table 5.20 and at Figure 5.9, it should be noted that /ʊ/ in alveolar contexts is much more fronted than /ʊ/ in velar contexts at both the midpoint and offset; this follows the pattern for back vowel fronting found by Anderson 2003. Similar to /u/, /ʊ/ had a forward glide in all contexts, the longest glide occurred in /ʊ/ in the pre-velar position.

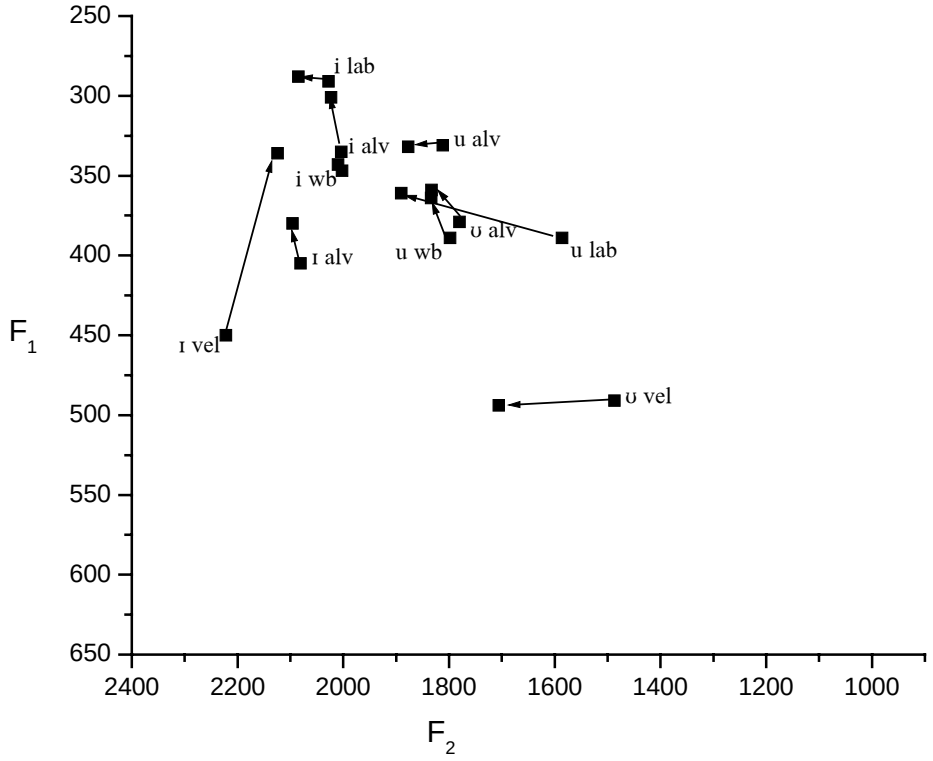

Figure 5.9: F_1 and F_2 values (in Hz) for /i/, /ɪ/, /u/, and /ʊ/ for Gail Anne. Values are for all phonetic contexts accounted for in analysis (alv=alveolar, vel=velar, wb=word boundary, lab=labial).

5.3.1.2 Zora

A vowel plot for Zora can be seen in Figure 5.10. Like Gail Anne, Zora has a very compact vowel space. At the midpoint position for /u/ and /i/, Zora has an average distance of 340 Hz between /u/ and /i/ variants in the same phonetic context. At the offset position, Zora has a mean F_2 distance of 269 Hz between the variants in the same phonetic context. However, unlike Grace Ann, Zora did not follow the same phonetic constraints in her fronting process. For Zora, the alveolar context was the most fronted at the midpoint position (alveolar > word boundary > labial), while at the offset, the most fronted variant was in the word boundary context (word boundary > labial > alveolar). This pattern is due in part to the back gliding of /u/ in the alveolar context. For Zora, /u/glided upwards and back toward the offset, while /u/ word boundary and labial both glided forward to the offset.

As with /u/, Zora did not show consistent phonetic constraints for the production of /ʊ/. At the midpoint position, the velar context was the most fronted with a distance of 191 Hz between /ʊ/ velar and /ɪ/ velar. The mean F_2 distance between the two vowels in the alveolar position at the midpoint was 240 Hz. However, at the offset, Zora showed a mean F_2 distance of 239 Hz in the alveolar context and a mean F_2 distance of 290 Hz in the velar context, some of the shortest among the church ladies. Again, the direction of the glide seemed to be a key factor in the distance metrics and the associated vowel fronting. Specifically, the extreme back gliding of pre-velar /ʊ/ at the offset contributed to the increased distance. Although both pre-velar and pre-alveolar /ʊ/ are back gliding to the offset position, the extreme back gliding in the velar context makes a difference in the production of the vowel.

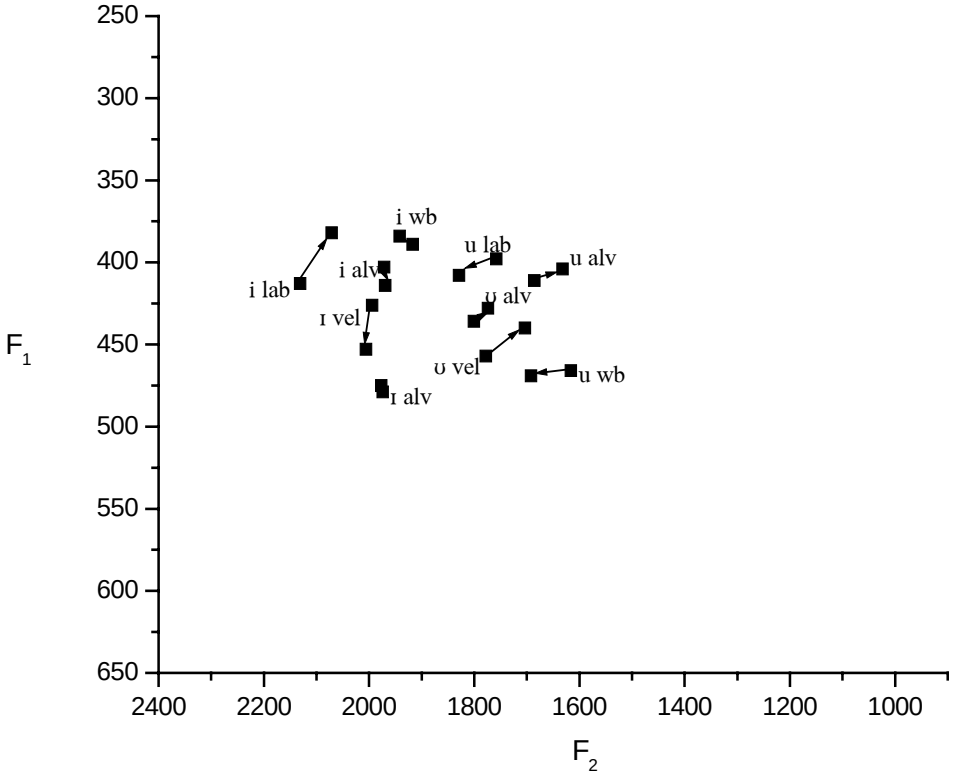

Figure 5.10: F_1 and F_2 values (in Hz) for /i/, /ɪ/, /u/, and /ʊ/ for Zora. Values are for all phonetic contexts accounted for in analysis (alv=alveolar, vel=velar, wb=word boundary, lab=labial).

5.3.1.3 Gina

Gina's vowel patterns (Figure 5.11) are a bit different from those of the previous women. Although her vowel space was not as compact as that of Gail Anne and Zora, the fronting of back vowels can still be noted. Gina did not follow a pattern for the fronting of /u/; that is, she did not have consistent phonetic contexts at the midpoint and offset position. At the midpoint, the word boundary position showed the most fronting, with a mean F_2 distance of 570 Hz in this position. However, at the offset, the alveolar position was the most fronted. Again, the direction of the glide has an effect on the fronting of the vowel and as noted, /u/ word boundary glided back and down toward the offset, while /u/ alveolar glided forward and upward toward the offset.

Unlike the lack of patterning for the phonetic constraints on /u/, Gina clearly showed phonetic patterning for her production of /ʊ/. Table 5.20 and Figure 5.11 both visually and quantitatively note the preference for the fronting of /ʊ/ in the alveolar position with /ʊ/ velar not being as fronted (and showing a greater distance than any of the church ladies in this context). At the midpoint, the mean F_2 distance for pre-alveolar /ʊ/ was 382 Hz, while the mean F_2 distance for pre-alveolar /ʊ/ at the offset was 230 Hz. Additionally, pre-alveolar /ʊ/ had a longer glide than /ʊ/ velar aiding in the fronting process.

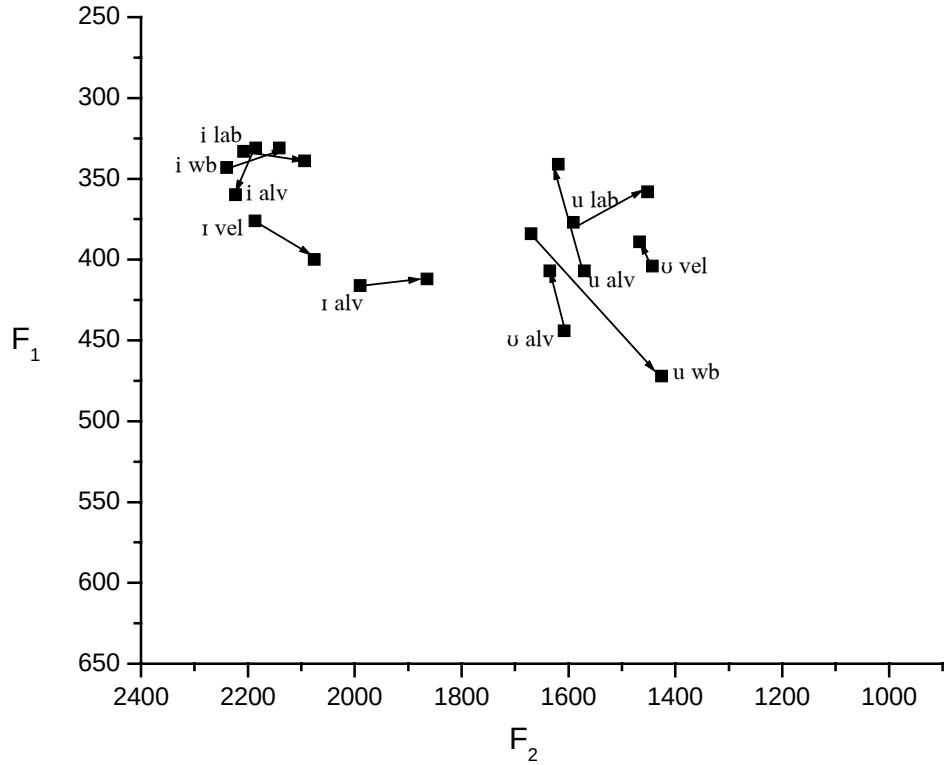

Figure 5.11: F_1 and F_2 values (in Hz) for /i/, /ɪ/, /u/, and /ʊ/ for Gina. Values are for all phonetic contexts accounted for in analysis (alv=alveolar, vel=velar, wb=word boundary, lab=labial).

5.3.1.4 Joan

Figure 5.12 provides a representation of the Joan's vowel patterns for /u/ and /ʊ/. Most notably, Joan showed the longest distance of all the church ladies between her front and back variants; however, when these raw values were compared to the values that Anderson (2003) presents from her study (see Table 5.2 and Table 5.11), we can see that even Joan, the woman with the largest distance between her front and back variants among the church ladies, was still fronting her high-back and mid-back vowels. At both the midpoint and offset of /u/, labials were the most fronted, followed by the alveolar environment, and finally word boundary position. The phonetic constraints on /ʊ/ were similar at the midpoint and offset with the velar context showing the most fronting and the alveolar context showing less fronting. Although Joan does

show phonetic patterning for the fronting of the vowels at both temporal locations, she does not follow the pattern for fronting that Anderson (2003) found among her informants where pre-alveolar variants were consistently the most fronted, followed by word boundary position and then pre-labial as the least fronted.

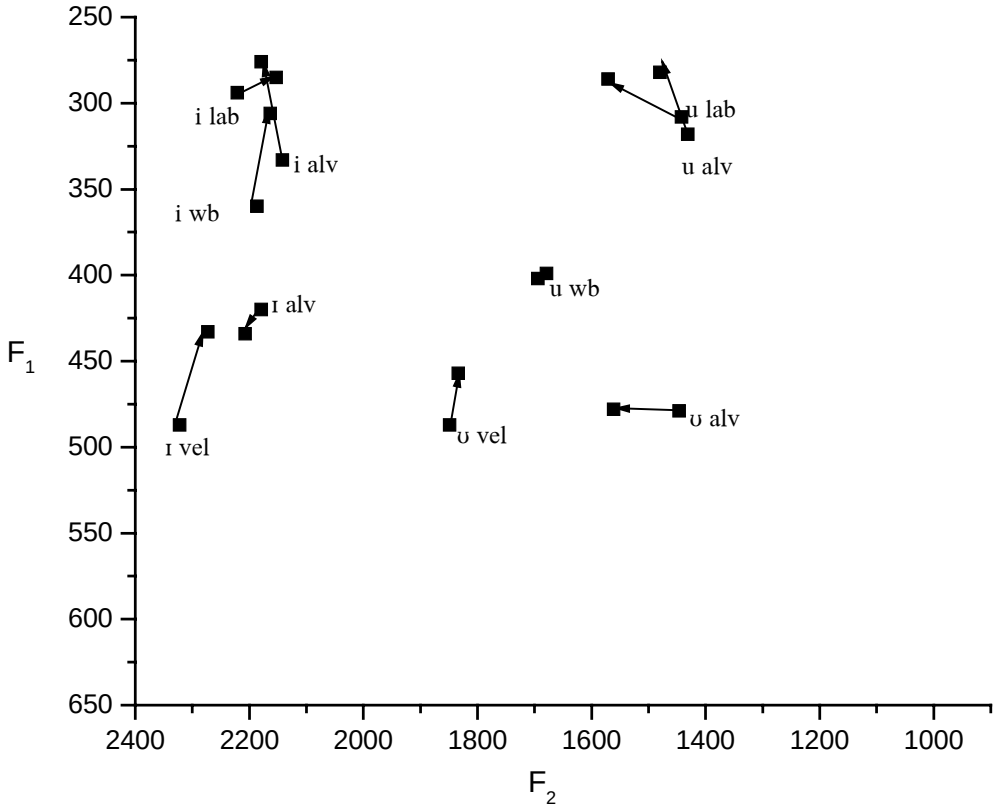

Figure 5.12: F_1 and F_2 values (in Hz) for /i/, /ɪ/, /u/, and /ʊ/ for Joan. Values are for all phonetic contexts accounted for in analysis (alv=alveolar, vel=velar, wb=word boundary, lab=labial).

Table 5.19: F_2 distances in Hz for /u/ and /i/ by context and speaker for the Church Ladies

Speaker	Phonetic Context	/i/ midpoint F_2	/u/ midpoint F_2	Distance metric for /u/ F_2 midpoint (/i/-/u/)	/i/ Offset F_2	/u/ Offset F_2	Distance metric for /u/ F_2 offset (/i/ -/u/)
Gail Anne	Alveolar	2010	1812	198	2023	1877	146
	Labial	2028	1586	442	2085	1890	195
	Word	2002	1798	204	2004	1834	170
	Boundary	2013	1732	281	2037	1867	170
	Total						
Zora	Alveolar	2006	1686	320	1971	1632	339
	Labial	2131	1758	373	2071	1829	242
	Word	1942	1616	326	1917	1692	225
	Boundary	2026	1686	340	1986	1718	269
	Total						
Gina	Alveolar	2185	1570	615	2223	1619	604
	Labial	2208	1591	617	2141	1452	689
	Word	2240	1670	570	2094	1426	668
	Boundary	2211	1610	600	2153	1499	654
	Total						
Joan	Alveolar	2142	1431	711	2179	1571	608
	Labial	2221	1442	779	2153	1480	673
	Word	2187	1694	493	2163	1679	484
	Boundary	2183	1522	661	2165	1577	588
	Total						
Church Ladies Total	Alveolar	2086	1625	461	2099	1675	424
	Labial	2147	1594	553	2113	1663	450
	Word	2093	1695	398	2045	1658	387
	Boundary	2108	1638	470	2085	1665	420
	Total						

*All values are in Hz.

5.3.1.5 Church Ladies Individual Participant Discussion

As the previous analysis of data and vowel plots have shown, the church ladies do show some patterning in their production of fronted variants of /u/ and /ʊ/. Comparison of the data from Anderson (2003) for the patterns of /u/ and /ʊ/ fronting found among African American and Appalachian groups in Detroit with this study shows that the church ladies are indeed fronting /u/ more than the African American speakers (despite the individual variation among the community

of practice) with midpoint and offset distance metrics for /u/ in each phonetic context less than those of the African Americans in her study. In many cases, individual members of the church ladies have fronted /u/ variants similar to the Appalachian speakers in Anderson's study. Likewise, /ʊ/ is also fronted among the church ladies. However, unlike Anderson (2003), the church ladies do not display any contextual effects for their fronting of either vowel.

Table 5.20: F_2 distances in Hz for /ʊ/ and /ɪ/ by context and speaker for the Church Ladies

Speaker	Phonetic Context	/ɪ/ midpoint F_2	/ʊ/ midpoint F_2	Distance metric for /ʊ/ F_2 midpoint (/ɪ/-/ʊ/)	/ɪ/ Offset F_2	/ʊ/ Offset F_2	Distance metric for /ʊ/ F_2 offset (/ɪ/ -/ʊ/)
Gail Anne	Alveolar	2096	1780	316	2081	1833	248
	Velar	2222	1487	735	2124	1706	418
	Total	2159	1634	526	2103	1770	333
Zora	Alveolar	2041	1801	240	2013	1774	239
	Velar	1969	1778	191	1994	1704	290
	Total	2006	1790	216	2004	1739	265
Gina	Alveolar	1990	1608	382	1865	1635	230
	Velar	2187	1443	744	2078	1467	611
	Total	2089	1526	563	1972	1551	421
Joan	Alveolar	2179	1446	733	2207	1561	646
	Velar	2322	1849	473	2273	1834	439
	Total	2251	1648	603	2240	1698	543
Church Ladies Total	Alveolar	2077	1659	418	2042	1724	341
	Velar	2175	1639	536	2117	1678	440
	Total	2106	1649	457	2080	1693	387

* All values are in Hz.

Table 5.21 displays the phonetic constraints for the fronting of /u/ for each woman in the church ladies, and Table 5.22 displays the phonetic constraints on the fronting of /ʊ/. The lack of continuity among the church ladies in terms of the conditioning of fronting due to phonetic context brings about questions of the length of time that the church ladies have been fronting /u/ and /ʊ/. Since there are no significant contexts for the fronting and many believe that the fronting of vowels occurs via a phonetically conditioned process (Beddor et al. 2002, Anderson

2003), it would seem that the fronting of /u/ and /ʊ/ among the church ladies is a long-standing language feature. Further, there are no regularities in glide direction among the women. The women have back vowels gliding in different directions: Gail and Joan glide forward, Gina and Zora glide both forward and backwards.

Table 5.21: Phonetic Constraints for /u/ fronting for Church Ladies

Speaker	Midpoint	Offset
Gail Anne	alveolar>word boundary>labial	alveolar>word boundary>labial
Zora	alveolar>word boundary>labial	Word boundary>labial>alveolar
Gina	word boundary>alveolar>labial	alveolar>word boundary>labial
Joan	word boundary>alveolar>labial	Word boundary>alveolar>labial

Table 5.22: Phonetic Constraints for /ʊ/ fronting for Church Ladies

Speaker	Midpoint	Offset
Gail Anne	alveolar>word boundary>labial	alveolar>word boundary>labial
Zora	alveolar>word boundary>labial	word boundary>labial>alveolar
Gina	word boundary>alveolar>labial	alveolar>word boundary>labial
Joan	word boundary>alveolar>labial	word boundary>alveolar>labial

5.3.2 The Porch Sitters

Data for the production of /u/ and /ʊ/ among women in the porch sitters community of practice is provided in Tables 5.23 and 5.24. As the tables indicate, all of the women except Melissa tend to follow similar patterns. However, Melissa only shows a difference from the group norms in her production of /u/ alveolar and /ʊ/ velar, which may be the result of a low token count. Because Melissa has outlier values that appear to skew the data and potentially the statistical analysis for /ʊ/ provided in Section 5.2.1, the ANOVA procedure was rerun excluding Melissa's outlier values. The results of the analysis excluding Melissa's /ʊ/ values still was not significant. It was not Melissa's values for /ʊ/ that specifically affected the significance between

the communities of practice; rather, it appears that similar values for /ʊ/ among both communities of practice is the cause.

The following section will examine each participant in the porch sitters' community of practice individually, providing discussion of both the values given in Tables 5.23 and 5.24 as well as the vowel plots for each woman.

Table 5.23. F_2 distances in Hz for /u/ and /i/ by context and speaker for the Porch Sitters

Speaker	Phonetic Context	/i/ midpoint F_2	/u/ midpoint F_2	Distance metric for /u/ F_2 midpoint (/i/-/u/)	/i/ Offset F_2	/u/ Offset F_2	Distance metric for /u/ F_2 offset (/i/ -/u/)
Emily	Alveolar	2240	1285	955	2129	1201	928
	Labial	2245	1226	1019	2234	1298	936
	Word Boundary	2060	1245	815	2127	1280	847
	Total	2182	1252	930	2163	1260	903
Melissa	Alveolar	2360	1857	503	2277	2021	256
	Labial	2331	1356	975	2329	1516	813
	Word Boundary	2267	1491	776	2127	1605	522
	Total	2319	1568	751	2244	1714	530
Debbie	Alveolar	2137	1680	457	2104	1425	679
	Labial	2315	1352	963	2331	1505	826
	Word Boundary	2248	1242	1006	2147	1175	972
	Total	2233	1425	809	2194	1368	826
Michelle	Alveolar	2143	1381	762	2161	1422	739
	Labial	2024	1496	528	2055	1496	559
	Word Boundary	2101	1334	767	2256	1342	914
	Total	2089	1404	685	2157	1420	737
Porch Sitters Total	Alveolar	2220	1551	669	2168	1517	651
	Labial	2229	1358	871	2237	1454	783
	Word Boundary	2169	1328	841	2164	1351	813
	Total	2206	1412	794	2190	1441	749

*All values are in Hz.

Table 5.24. F_2 distances in Hz for /ʊ/ and /ɪ/ by context and speaker for the Porch Sitters

Speaker	Phonetic Context	/ɪ/ midpoint F_2	/ʊ/ midpoint F_2	Distance metric for /ʊ/ F_2 midpoint (/ɪ/-/ʊ/)	/ɪ/ Offset F_2	/ʊ/ Offset F_2	Distance metric for /ʊ/ F_2 offset (/ɪ/ -/ʊ/)
Emily	Alveolar	2040	1463	577	1969	1470	499
	Velar	2031	1251	780	2159	1265	894
	Total	2036	1357	679	2064	1368	696
Melissa	Alveolar	2202	1512	690	2176	1478	698
	Velar	2256	1887	369	1964	1874	90
	Total	2229	1700	529	2070	1676	394
Debbie	Alveolar	2081	1637	444	2028	1627	401
	Velar	2276	1671	605	2225	1444	781
	Total	2179	1654	525	2127	1536	591
Michelle	Alveolar	2031	1288	743	1975	1354	621
	Velar	2255	1633	622	2220	1682	538
	Total	2193	1461	682	2098	1518	580
Porch Sitters Total	Alveolar	2089	1475	614	2037	1482	555
	Velar	2205	1610	595	2142	1566	576
	Total	2159	1559	600	2090	1538	552

* All values are in Hz.

5.3.2.1 Emily

The vowel plot for Emily, given in Figure 5.13, illustrates her patterning for /u/ and/ ʊ/.

As the data from Tables 5.23 and 5.24 and the vowel plot illustrate, the vowel space and patterns for Emily were similar to those of some of the women in the church ladies community of practice. Through the examination of Emily's production of /u/, one notes that the phonetic contexts for the fronting of /u/ are word boundary > alveolar > labial at both the midpoint and offset of the vowel. Although, Emily's /u/ was a bit more backed than the women in the church ladies community of practice (a pattern for the porch sitters community of practice that was confirmed by the ANOVA analysis in section 5.1.2), her distances between /u/ and /i/ in the pre-alveolar position were still much less than those found by Hillenbrand et al. (1995), who reports a mean distance of 1656 Hz between /i/ and /u/ and a mean distance of 1140 Hz between /ɪ/ and

/ʊ/. Thus, Emily is certainly participating in the fronting of /u/; however, her level of participation may be less than that of the women in the church ladies' community of practice.

Similar to /u/, /ʊ/ maintained the same phonetic constraints at the midpoint and offset positions, with alveolar contexts being more fronted than velar contexts. In fact, /ʊ/ in the alveolar context was the vowel that was the most forward in Emily's vowel space. For Emily, the /ʊ/ vowel was actually more fronted than /u/, which can be seen both through the graphical representation in the vowel plot as well as in Tables 5.23 and 5.24. Her /ʊ/ alveolar production has a mean F_2 distance of 577 Hz and 499 Hz at midpoint and offset, respectively, while her productions of the same vowel, as well as /u/, in other contexts show much more distance. For the most part, all of her back vowels are glided slightly forward (although some are moving up and some are moving down); however; /u/ in the alveolar context was the exception to this pattern. /u/ in the alveolar context glided backwards and upwards. Ultimately, the direction of this glide affected the hierarchy of contextual effect on fronting for Emily.

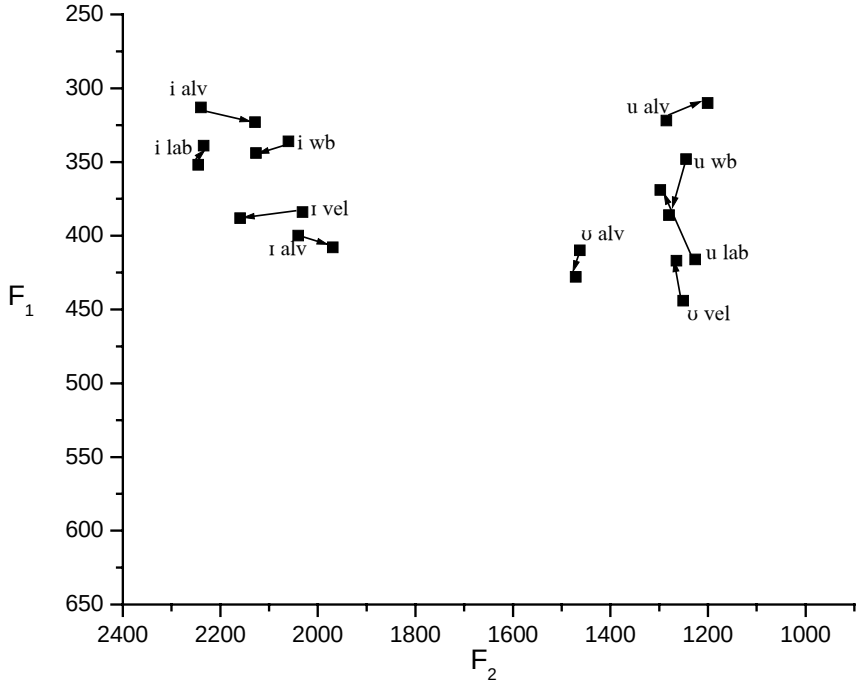

Figure 5.13: F_1 and F_2 values (in Hz) for /i/, /ɪ/, /u/, and /ʊ/ for Emily. Values are for all phonetic contexts accounted for in analysis (alv=alveolar, vel=velar, wb=word boundary, lab=labial).

5.3.2.2 Melissa

The vowel plot for Melissa is given in Figure 5.14 and the raw data for her productions of /u/ and /ʊ/ can be found in tables 5.23 and 5.24. Melissa showed patterns for /u/ alveolar and /ʊ/ velar that were unlike the other porch sitters. As a result of the outlier status of these vowels in these phonetic contexts, they were excluded from the second statistical analysis. Aside from these differences her distance metric values were consistent with the rest of her community of practice. The hierarchy of constraints on /u/ production was pre-alveolar, with pre-word boundary and then pre-labial decreasing in frontness, respectively. All of Melissa's /u/ variants were front gliding with the /u/ pre-alveolar glide being the longest of the three. Melissa was also consistent with her phonetic contexts in the fronting of /ʊ/. At both the midpoint and offset, /ʊ/ velar was the most fronted variant (a mean F_2 distance of 369 Hz at midpoint and 90 Hz at offset)

with /ʊ/ alveolar being further back in her vowel space (a mean F_2 distance of 690 Hz at midpoint and 698 Hz at offset). There was no consistency in the direction of her glides for /ʊ/, with /ʊ/ velar gliding slightly back and down and /ʊ/ alveolar gliding upward and slightly front.

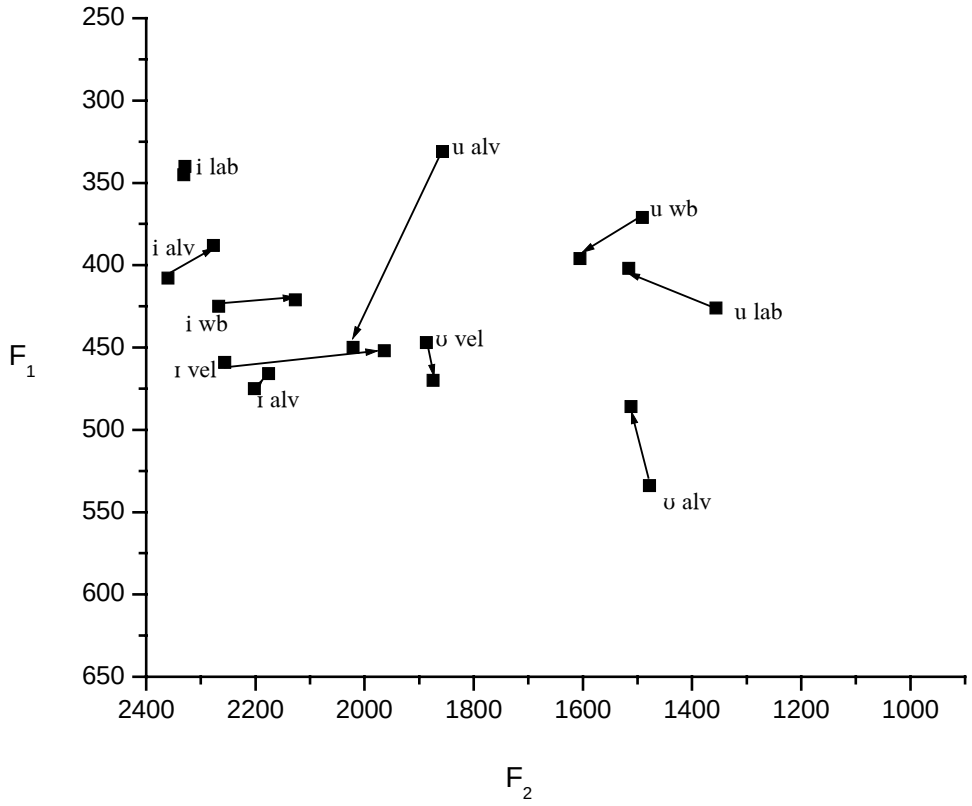

Figure 5.14: F_1 and F_2 values (in Hz) for /i/, /ɪ/, /u/, and /ʊ/ for Melissa. Values are for all phonetic contexts accounted for in analysis (alv=alveolar, vel=velar, wb=word boundary, lab=labial.

5.3.2.3 Debbie

Figure 5.15 shows the vowels of Debbie, a member of the porch sitters' community of practice. Debbie maintained the same phonetic constraints on her fronting of /u/ from the midpoint to the offset. Pre-alveolar was the most fronted context with mean F_2 distances of 457 Hz and 659 Hz at midpoint and offset, respectively. This was followed by the pre-labial context with mean F_2 distances of 963 Hz and 826 Hz at midpoint and offset and then the word boundary

context which had mean F_2 distances of 1006 Hz and 972 Hz at the midpoint and offset, respectively. Debbie had no consistency in her glide direction among her /u/ variants. Pre-alveolar position and word-boundary /u/ glided backward, while /u/ labial glided forward. Like her production of /u/, Debbie maintained the same phonetic contexts for fronting in her production of /ʊ/. At both the midpoint and offset, Debbie had a smaller mean F_2 distance for /ʊ/ in the alveolar context (444 Hz and 401 Hz at midpoint and offset, respectively) than the velar (605 Hz at the midpoint and 781Hz at the offset). Both of the glides in Debbie's production of /ʊ/ moved backward and upward with the greatest movement in the /ʊ/ productions.

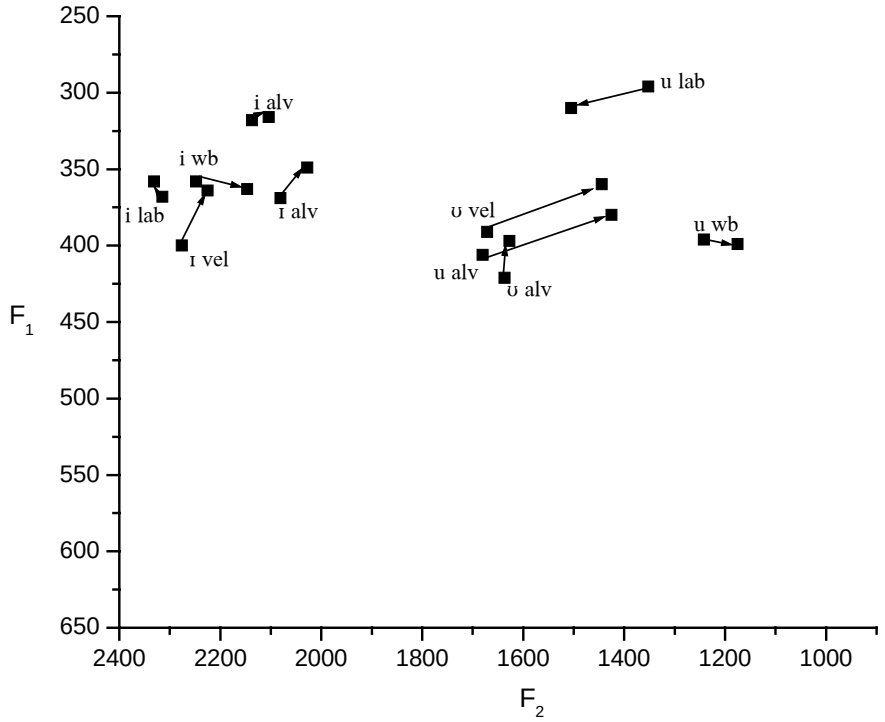

Figure 5.15: F_1 and F_2 values (in Hz) for /i/, /ɪ/, /u/, and /ʊ/ for Debbie. Values are for all phonetic contexts accounted for in analysis (alv=alveolar, vel=velar, wb=word boundary, lab=labial.

5.3.2.4 Michelle

Figure 5.16 provides the vowel data for Michelle, the last member of the porch sitters to be discussed. Like other members of the porch sitters, Michelle maintained consistency in the hierarchy of phonetic constraints on her fronting of /u/ from one temporal location to the next. Michelle's most fronted /u/ productions occurred in pre-labial contexts which have mean F_2 distances of 528 Hz and 559 Hz at midpoint and offset. This was followed by the pre-alveolar context and the word boundary context. Thus, although she did not follow the pattern for back vowel fronting found by Anderson (2003), she did maintain consistency about her hierarchy of phonetic contexts within her own system. Additionally, Michelle did not have a consistent pattern for the glide direction of /u/. /u/ in word boundary and labial contexts glided almost directly upward with little front or back movement, while /u/ alveolar moved nearly directly downward.

As in the case of /u/, Michelle maintained consistency in her hierarchy of phonetic contexts for the fronting of /ʊ/. The mean F_2 distance between /ɪ/ and /ʊ/ in the velar context was 622 Hz at the midpoint and 538 Hz at the offset. Meanwhile the mean F_2 distance between /ɪ/ and /ʊ/ in the alveolar context was 743 Hz at the midpoint and 621 Hz at the offset. Looking at the glides both /ʊ/ in the alveolar and velar contexts glided slightly forward, but the glide for /ʊ/ in the velar context ws much longer than that of /ʊ/ in the alveolar context.

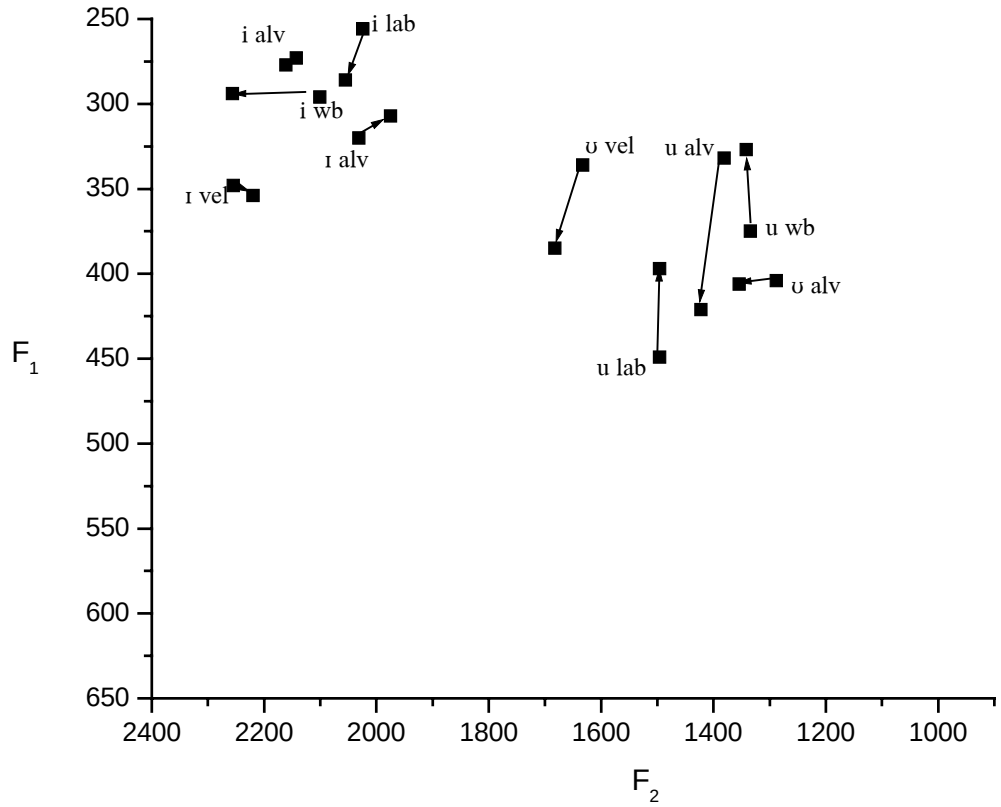

Figure 5.16: F_1 and F_2 values (in Hz) for /i/, /ɪ/, /u/, and /ʊ/ for Michelle. Values are for all phonetic contexts accounted for in analysis (alv=alveolar, vel=velar, wb=word boundary, lab=labial.

5.3.2.5 Porch Sitters Individual Participant Discussion

As a community of practice, the porch sitters displayed some group patterns for the fronting of /u/ and /ʊ/, but each of the women had their own idiosyncratic patterns for the production of /u/ and /ʊ/ in addition to contributing to the more global group model. As the statistical analysis in section 5.1.1 explained, the porch sitters were using fronted /u/ variants, but these were not as fronted as those of church ladies. Additionally, the porch sitters as a group and as individuals had fronted /u/ productions when compared to Anderson's (2003) and Hillenbrand's (1995) data, but they also used /u/ variants that were significantly more backed than those of the church ladies. For /ʊ/, the porch sitters did not show a significant difference in

production from the church ladies. Although the porch sitters had variants that were more backed than those found among the African Americans and Appalachians in Anderson (2003), the production of /ʊ/ among the women was still quite similar to that of the church ladies.

Perhaps the place where the similarities between the two communities of practice can be best noted is in the constraints on the phonetic contexts for the fronting of /u/ and /ʊ/. Tables 5.25 and 5.26 display the constraints on context for each of the women in the porch sitters' community of practice. As the tables indicate, no one pattern emerged for context, which indicates that phonetic context was not a crucial factor in the fronting of /u/ and /ʊ/ for the porch sitters, as was seen in the statistical analysis in sections 5.1.2 and 5.2.2. Again, like the church ladies, this observation leads to questions about the length of time that /u/ and /ʊ/ fronting has been occurring in the dialect of these women specifically and in the speech of residents of Texana more generally.

Table 5.25: Phonetic Contexts for /u/ fronting for Porch Sitters

Speaker	Midpoint	Offset
Emily	Word boundary>alveolar>labial	word boundary>alveolar>labial
Melissa	Alveolar>word boundary>labial	alveolar>word boundary>labial
Debbie	Alveolar>labial>word boundary	alveolar>labial>word boundary
Michelle	Labial>alveolar>word boundary	labial>alveolar>word boundary

Table 5.26: Phonetic Contexts for /ʊ/ fronting for Porch Sitters

Speaker	Midpoint	Offset
Emily	alveolar>velar	alveolar>velar
Melissa	velar>alveolar	velar>alveolar
Debbie	alveolar>velar	alveolar>velar
Michelle	velar>alveolar	velar>alveolar

5.4 Conclusion

The acoustic measurements and statistical analysis reported in this chapter confirm that the women in this study are all using fronted /u/ and /ʊ/ variants. Even though all of the women are using fronted /u/ and /ʊ/, they do not produce the vowels in the same manner. Specifically, the statistical analysis in section 5.1.2 showed that there was a significant difference in the production of /u/ between the two communities of practice with the church ladies maintaining a more fronted variant in comparison the porch sitters. Additionally, the church ladies produced a /u/ variant of longer duration than that of the porch sitters. The results of the analysis of /ʊ/ showed different results in regard to the effect that community of practice may have on vowel fronting. Through this analysis of /ʊ/ it was discovered that there was no significant difference in the degree of vowel fronting between the two communities of practice. Participants in both the church ladies and porch sitters had values for /ʊ/ that overlapped. The overlap in the values displayed the variable status of /ʊ/ in the larger Texana community as well as the communities of practice. Additionally, there were no significant differences in the duration of the vowel between the two communities of practice.

Examinations of contextual effects on the fronting of both /u/ and /ʊ/ showed that the phonetic context of the following segment had no significant effect on the production of the vowel. Unlike studies by Anderson (2003), Beddor (2002) and Nyugen (forthcoming), which all point to the significance of contextual effects on the fronting of /u/ and /ʊ/, the data reported here show no such patterns. The lack of contextual effects on the fronting process brings about questions about the role that phonetic constraints have in vowel fronting. Specifically, it

questions whether the fronting of high-back and mid-back vowels is a process that has reached completion among these women in particular and in Texana in general and has thus leveled over all the phonetic contexts, or whether there were ever phonetic constraints on vowel fronting in Texana.

The results from this examination of Appalachian African American women's vowel patterns for high-back and mid-back vowels first provide evidence that the fronting of /u/ and /ʊ/ is not exclusively a widespread white dialect feature as has been previously stated (Labov 1994, 2001; Bailey and Thomas 1998; Thomas 2001). Indeed, as this study shows, individuals who identify as African American use fronted /u/ and /ʊ/. Additionally, the results of the analysis highlight the significance that variants can take in a local community. The difference in the fronting of the /u/ variant between the communities of practice underscores the fact that, although there may be a widespread pattern with a variable within a community, subtle differences in the pattern of the variable may be used by particular community members to signal difference. In the case of /u/, a more fronted variant of longer duration is used by the church ladies, the group who aligns itself more readily with an Appalachian and local identity, while a more backed and shorter duration variant (although it is still fronted) is used by the porch sitters, the group who identifies more extra-locally and with an African American identity. Since /u/ fronting has been found to be correlated with identification as Southern (Torbert 2004) and vowels of longer duration have been associated with the Southern "drawl" (Wetzell 2000), the use of the more fronted variants of longer duration by the church ladies can be viewed as way that they are highlighting their Southern identity. Thus, the women in these two communities of practice are using the Texana vowel space in different ways to project their identity as individuals and as members of a community of practice.

Finally, the difference found in the production of /u/ on the basis of community of practice that is not found in /ʊ/ is of interest. As perceptual work has shown (Torbert 2004), /u/ fronting is correlated with Southern identification. In addition, acoustic studies of production by Thomas (2001) and Labov (1994) have claimed that the fronting of /u/ and /ʊ/ is a feature of white speech, and that African Americans have resisted the fronting of both of these vowels as a way to distinguish themselves from white speakers. Thus, the difference in the fronting of /u/ and /ʊ/ has grounded itself, at least in academic studies, in issues of ethnicity and region. However, when one vowel shows variable patterning for the two different groups and the other vowel does not, the social salience of variables and the social meaning assigned to them must be considered. Since these women are all members of a region that has fronted /u/ and /ʊ/ and because they all use fronted variants of each of these vowels to some extent, the ways that they choose to differentiate themselves and their communities of practice on one vowel but not the other are interesting and significant. It seems that /u/ may be more socially salient in Texana and, thus, there is a difference in its production because of the social associations with a more fronted or less fronted production. Certainly, more perceptual work and ethnographic analysis is necessary before making a claim about the social significance of /u/ in the community, but the significant difference in the production on the basis of community of practice should be investigated with an eye for what the variable signifies for the people who use it.

Chapter 6

/o/

This chapter gives an analysis of the production of /o/ among the church ladies and porch sitters. The data presented herein are the first quantitative analysis of /o/ using distance metrics. Like the analysis of /u/ and /ʊ/, the distance metrics for /o/ were obtained by quanitifying the F_2 dimension of the vowel. For /o/, F_2 measures were compared with F_2 measures for /e/, /o/'s front counterpart.

The goals for this chapter are to first provide a method to quantify and discuss the fronting of /o/. The second goal of this chapter is to determine whether the church ladies and porch sitters are using fronted /o/ variants. Studies of /o/ have pointed to instances where the production seems to be fronted (Thomas 2001, Fridland 2003) based on impressionistic interpretation of vowel plots, but they have provided little quantitative evidence that can be used to describe the fronting or to compare /o/ production within and among other groups. In fact, /o/ is commonly used as the anchor vowel, as a way to mark the back of the vowel space (Thomas 2001, Anderson 2003), in many analyses of speakers' vowel patterns. Thus, although the front movement of /o/ is a noted characteristic in many dialectal patterns, little discussion or attention has been devoted to it exclusively.

Moreover, the analysis will also consider whether the two communites of practice have similar patterns in their production of /o/, and what, if any, effect phonetic context has on the production of /o/ within the communities of practice and among the women in general. Section 6.1 presents community of practice comparisons for /o/ and phonetic context as well as duration.

Section 6.2 covers the individual speakers and includes a discussion of the individual patterns in the context of each community of practices' norms for production, and 6.3 provides a summary and conclusion.

A small amount of literature and study has been devoted to /o/ in American English. Chapter 3 reviewed the literature relevant to /o/ production, specifically the production of /o/ in the South and among African Americans. Although the front movement of /o/ has been discussed as a process found in Southern English varieties (Labov 1994, 2001; Thomas 2001), the participation of African Americans in this process has been largely overlooked. The results of this chapter provide evidence that challenges assumptions about classifications of vowel production solely on the basis of ethnicity or region. They make us consider the ways that social alignment, namely alignment within a local community, can reveal the ways that language patterns develop out of the practices of individuals and not necessarily as a result of patterns that are attributable to large social categories. Ultimately, the data presented here call researchers to reconsider the ways that language practices such as vowel fronting have been correlated with specific groups or categories of people.

6.1. Community of Practice, Phonetic Context, and Duration Comparisons

For the analysis of /o/, F_2 measures were taken at the midpoint and offset and phonetic context was noted (see Chapter 4). This analysis of /o/ considered two phonetic contexts: alveolar and word boundary. Although velar and labial contexts were measured, there was an insufficient number of tokens in these contexts for statistical analysis; however, future analysis should consider the effects of these contexts. Like the analysis of /u/ and /ʊ/, large distance measures for the F_2 distance between /e/ and /o/ were indicative of a more backed variant, while smaller distance metrics indicated a fronted variant.

Table 6.1 gives the average F_2 values for /e/ and /o/ at midpoint and offset for each of the communities of practice. At the midpoint, the church ladies have 704 HZ between /e/ and /o/, while the porch sitters have 871 Hz. Meanwhile at the offset, the church ladies have 649 Hz separating /e/ and /o/, while the porch sitters have 934 Hz. Ultimately, the porch sitters have the largest distance (distance metric) between /e/ and /o/ at both temporal locations, which indicates that they have a more backed variant of /o/ than the church ladies. Figures 6.1 and 6.2 provide F_2 values and distance metrics for the communities of practice at the midpoint and offset, respectively.

Table 6.1: /e/ and /o/ F_2 Values for the Communities of Practice at midpoint and offset

Community of Practice	/e/ midpoint	/o/ midpoint	Difference /e/- /o/midpoint	/e/ offset	/o/ offset	Difference /e/- /o/ offset
Church Ladies	2122	1418	704	2127	1478	649
Porch Sitters	2052	1181	871	2136	1202	934

*All values are in Hz.

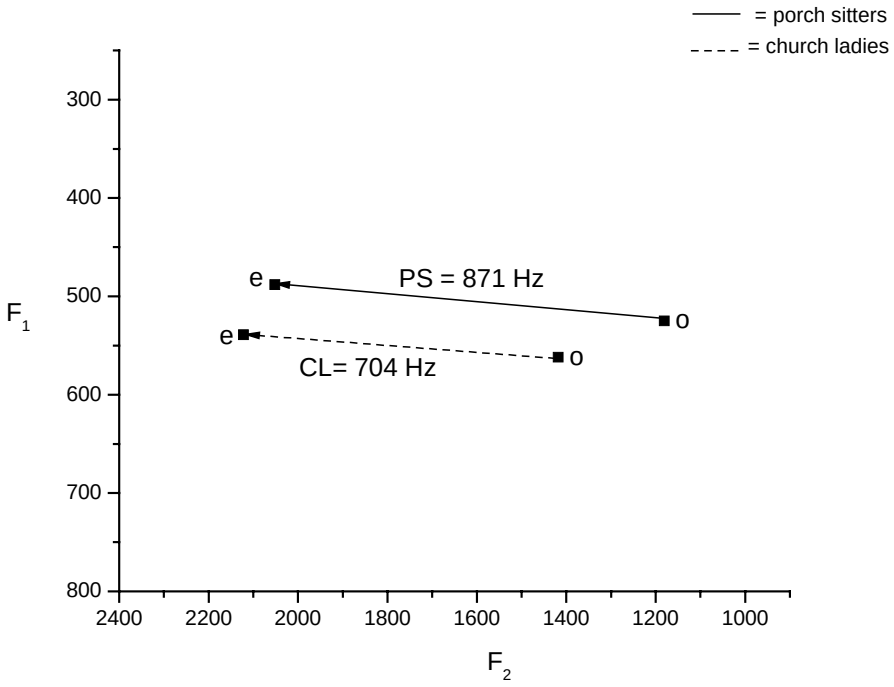

Figure 6.1: Mean /e/-/o/ F_2 distance metrics at midpoint.
CL= Church Ladies, PS= Porch Sitters

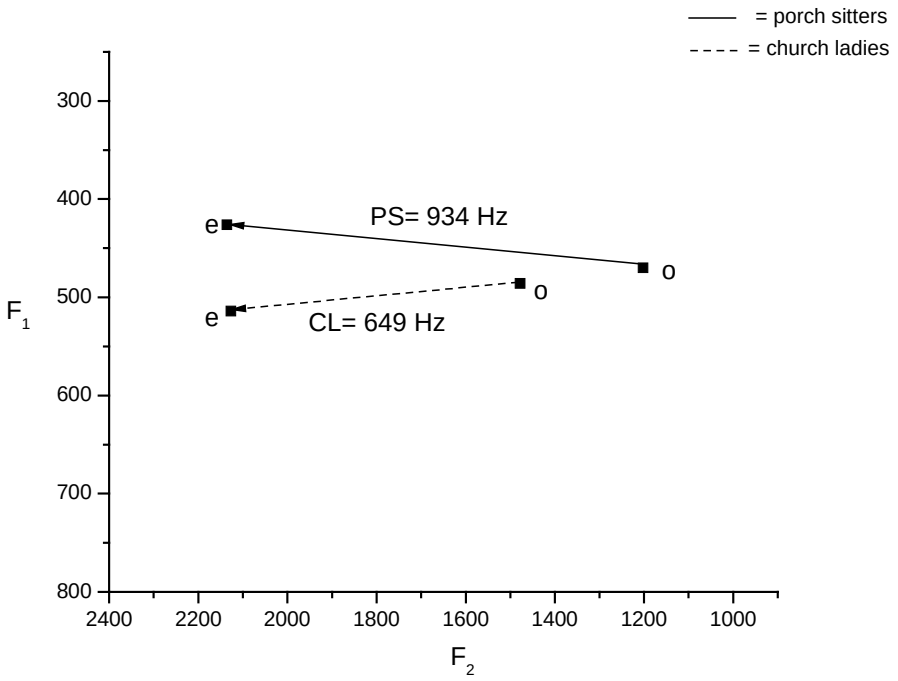

Figure 6.2: Mean /e/-/o/ F_2 distance metrics at offset.
CL= Church Ladies, PS= Porch Sitters

The contextual constraints on the fronting of /o/ can be seen in Table 6.2 and Figures 6.3 and 6.4. As with the analysis of /u/ and /ʊ/, phonetic context does not seem to be an important factor in the production of a fronted /o/ variant. The data in table 6.2 shows that there was no consistent pattern among the two communities of practice for phonetic constraints on the production of /o/. For the church ladies the most fronted variants occurred in pre-alveolar positions at the midpoint, while the word-boundary context promoted more fronted variants among the porch sitters in the same temporal location. At the offset, pre-alveolar tokens were again the most fronted among the church ladies, while word-boundary tokens were the most advanced for the porch sitters. Ultimately, the communities of practice each followed their own individual contextual patterns, but the contextual patterns remained consistent for the duration of the vowel. Thus, it seems, from the raw data, that phonetic context did not have an effect on the

production of /o/ for the women in this study, since there was no one hierarchy of phonetic constraints that both groups followed in their production of /o/.

Table 6.2: F_2 Values for the Communities of Practice including phonetic context at midpoint and offset

Community of Practice	Context	/e/ midpoint	/o/ midpoint	/e/-/o/ distance midpoint	/e/ offset	/o/ offset	/e/-/o/ distance offset
Church Ladies	Alveolar	2122	1433	688	2129	1489	640
	Word Boundary	2122	1403	719	2124	1468	656
Porch Sitters	Alveolar	2075	1157	918	2121	1181	939
	Word Boundary	2028	1206	822	2152	1222	930

* All values are in Hz.

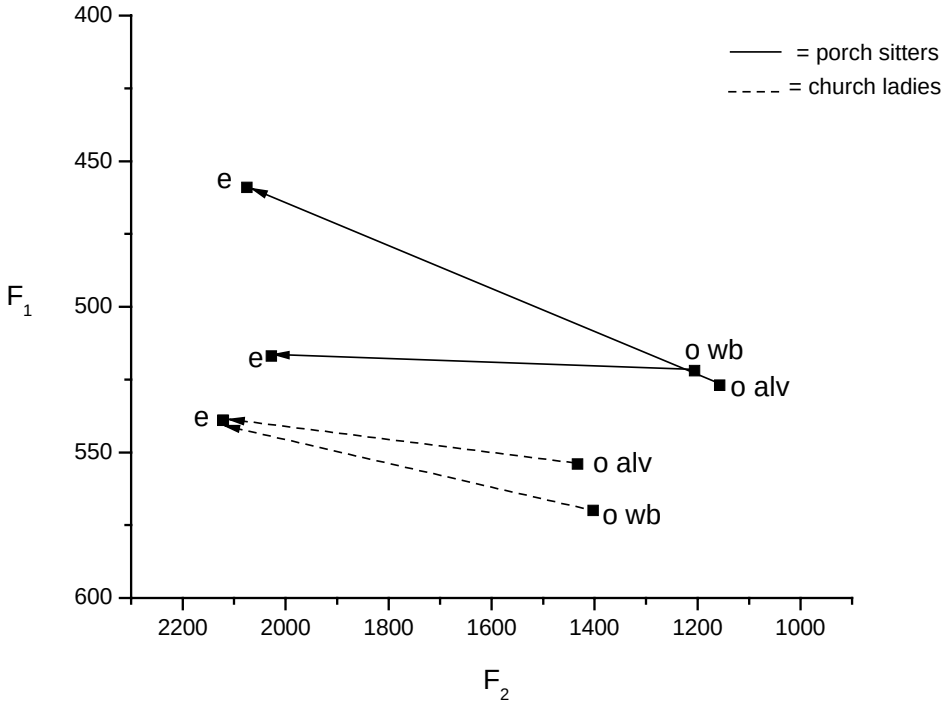

Figure 6.3: Midpoint F_2 for /e/ and /o/ in all contexts. Lines connect front and back counterparts of the same context. Dashed lines = church ladies, solid lines = porch sitters.

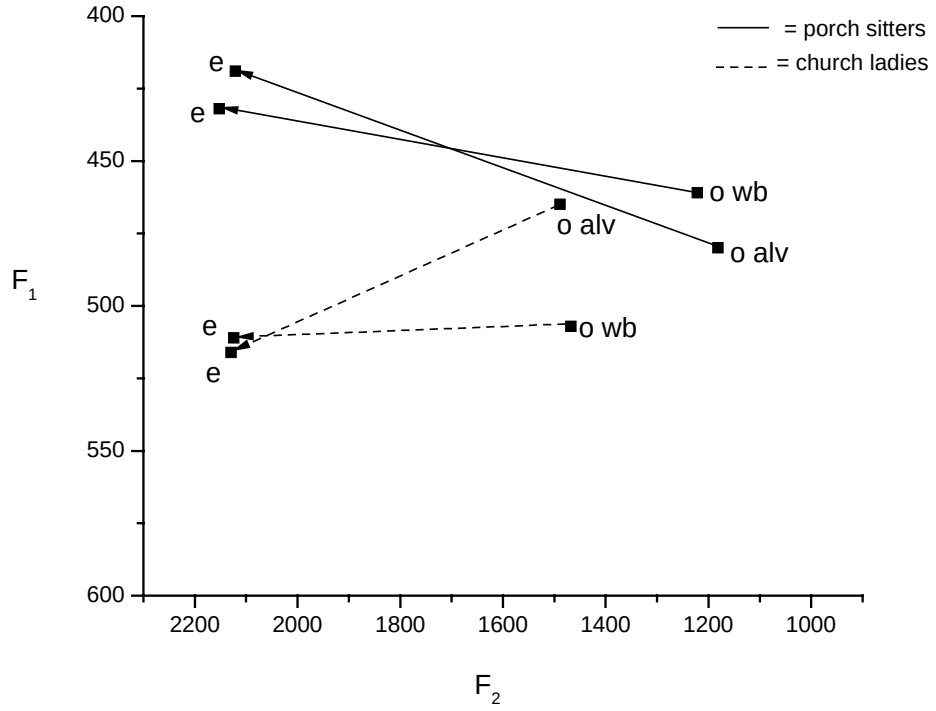

Figure 6.4: Offset F_2 for /e/ and /o/ in all contexts. Lines connect front and back counterparts of the same context. Dashed lines = church ladies, solid lines = porch sitters.

6.1.1 Statistical Analysis of F_2 Distance Metrics for /o/

An ANOVA test was performed to determine whether there was a significant difference in the F_2 distance metrics for /o/ among the church ladies and porch sitters. Additionally, the ANOVA test considered significance in the F_2 distance metrics that may have resulted from context or context within the communities of practice. ANOVAs were run for both the midpoint and offset position to ensure that any significance found was attributable to the entire vowel segment (See Tables 6.3 and 6.4, respectively).

Table 6.3 indicates that there was a significant effect for community of practice in the F_2 distance metrics between /e/ and /o/ at the midpoint ($F = 5.97$, $DF = 1$, $p > 0.0310$). Like the analysis of /u/ and /ʊ/, /o/ did not show any significant effects for context at the midpoint ($F = 0.22$, $DF = 1$, $p > 0.6444$). Similarly, at the midpoint there were no significant effects for context

within the communities of practice (F =0.86, DF =1, p >0.3721). The data followed the same pattern of significance at the offset (see Table 6.4) with community of practice marked as a significant variable (F =8.59, DF =1, p >0.0126), while context (F =0.00, DF =1, p >0.9730) and context within the communities of practice (F =0.02, DF =1, p >0.8989) were not significant. Thus, at both temporal locations, community of practice was a significant factor in the F_2 distance between /e/ and /o/, whereas context and context within each community of practice had no significance at either temporal location.

Table 6.3: ANOVA Results for /e/-/o/ F_2 distance at midpoint

Source	DF	F Value	*p*-Value
Context	1	0.22	0.644
Community of Practice	1	5.97	**0.0310**
Context*Community of Practice	1	0.86	0.3721

*Bold indicates significance at α=.05.

Table 6.4: ANOVA Results for /e/-/o/ F_2 distance at offset

Source	DF	F Value	*p*-Value
Context	1	0.00	0.9730
Community of Practice	1	8.59	**0.0126**
Context*Community of Practice	1	0.02	0.8989

*Bold indicates significance at α=.05.

6.1.2 Statistical Analysis of Duration

The data on /o/ were also examined for any significant differences in duration that may make the groups more distinct. Duration of a vowel segment is one way that we distinguish varieties and dialects from one another (see Section 5.1.2 for a discussion of this) and more importantly, it may serve as a crucial site where speakers can mark differences from another group's norm or create solidarity within their own speech community. Data for the duration of /o/ can be seen in Table 6.5. As the table shows, there was no notable difference in the duration of /o/ between the communities of practice (church ladies =149 ms., porch sitters =151 ms.).

Tables 6.6 and 6.7 provide mean duration information for the production of /o/ in each phonetic context and for each phonetic context within each community of practice. An ANOVA (see Table 6.8) was performed to check for any significant differences in the duration of /o/. The analysis discovered no significant differences in duration for /o/ by community of practice, context, or a combination of both variables.

Table 6.5: Mean /o/ duration measures for communities of practice

Community of Practice	Mean Duration	Std. Deviation
Church Ladies	149 ms	56.2 ms
Porch Sitters	151 ms	62.9 ms

Table 6.6: Mean /o/ duration measures for context

Context	Mean Duration	Std. Deviation
Alveolar	150 ms	53.7 ms
Word Boundary	151 ms	69.2 ms

Table 6.7: Mean /o/ duration measures for communities of practice and context

Community of Practice	Context	Mean Duration	Std. Deviation
Church Ladies	Alveolar	152 ms	62.3 ms
	Word Boundary	147 ms	58.0 ms
Porch Sitters	Alveolar	147 ms	37.2 ms
	Word Boundary	156 ms	81.2 ms

Table 6.8: ANOVA Analysis of /o/ duration

Source	DF	F Value	*p*-Value
Context	1	0.03	0.8595
Community of Practice	1	0.03	0.8656
Context*Community of Practice	1	0.38	0.5381

6.1.3 Summary of /o/ Analysis

Similar to /u/ and /ʊ/, /o/ showed patterning in its F_2 distance metrics by community of practice. The analysis revealed that the church ladies community of practice produced a more fronted /o/ variant than the porch sitters. This difference was noted from the smaller F_2 distance

between /e/ and /o/ at both the midpoint and offset and was confirmed with an ANOVA (see Section 6.1.1). Although there were significant differences in the production of /o/ by community of practice, context did not effect vowel production. Likewise, there were no significant differences in the duration of /o/ by community of practice, context, or both. Ultimately, the use of a more fronted /o/ variant appears to be a characteristic that distinguishes the speech of the church ladies from that of the porch sitters.

6.2 Individuals in the Community of Practice

This section will provide information about the individual vowel patterns for /o/ for the women in each community of practice. Section 6.2.1 will cover the patterns of the four women in the church ladies' community of practice, and section 6.2.2 will describe the patterns of the women in the porch sitters' community of practice. An examination of the vowel data for each of the women allows their individual patterns to emerge and helps us to understand the ways that each individual creates and maintains the community of practice norms.

6.2.1 The Church Ladies

Table 6.9 provides detailed information about the F_2 distances (distance metrics) between /e/ and /o/ for each of the members of the church ladies' community of practice. As the table shows, there is some variation in the production of /o/ among the individual members of the church ladies; however, the individual patterns do not deviate substantially from the community of practice means. The following sections on each member of the church ladies will provide discussion about each woman's patterns for /o/ production individually and in relation to the group norms.

Table 6.9: F_2 distances in Hz for /e/ and /o/ by context and speaker for the Church Ladies

Speaker	Phonetic Context	/e/ midpoint F_2	/o/ midpoint F_2	Distance metric for /o/ F_2 midpoint (/e/-/o/)	/e/ offset F_2	/o/ offset F_2	Distance metric for /o/ F_2 offset (/e/ -/o/)
Gail Anne	Alveolar	2240	1604	636	2208	1637	571
	Word Boundary	2122	1440	682	2194	1711	483
	Total	2182	1522	659	2201	1674	527
Zora	Alveolar	2206	1500	706	2287	1613	674
	Word Boundary	2388	1613	775	2365	1634	731
	Total	2297	1556	741	2326	1624	702
Gina	Alveolar	2083	1342	741	2087	1418	669
	Word Boundary	2018	1290	728	1958	1203	755
	Total	2001	1316	735	2023	1311	712
Joan	Alveolar	1958	1287	671	1932	1279	653
	Word Boundary	1923	1268	655	1981	1325	656
	Total	2008	1277	663	1957	1302	654
Church Ladies Total	Alveolar	2122	1433	689	2129	1489	640
	Word Boundary	2122	1403	719	2124	1468	656
	Total	2122	1418	703	2126	1478	648

6.2.1.1 Gail Anne

The vowel plot for Gail Anne in Figure 6.5 shows her vowel patterns for /e/ and /o/. The plot illustrates the compact nature of her vowel space; she had very little distance (mean distances of only 650 Hz at the midpoint and 527 Hz at the offset) between her front vowel /e/ and back vowel /o/. Additionally, Figure 6.5 and Table 6.9 show that Gail Anne did not have consistent phonetic constraints on her vowel production. At both the midpoint and offset, the most fronted variants were not in the same phonetic context; an indication that she exhibited no preference for context in her vowel production. More importantly, the plot shows the glide trajectory for Gail Anne. While her /e/ was relatively unglided with only a slight upward glide for word boundary positions, her /o/ was quite glided. In both pre-alveolar and word boundary positions, Gail Anne had a front and upward glide with the largest and most notable glide occurring in the word boundary position.

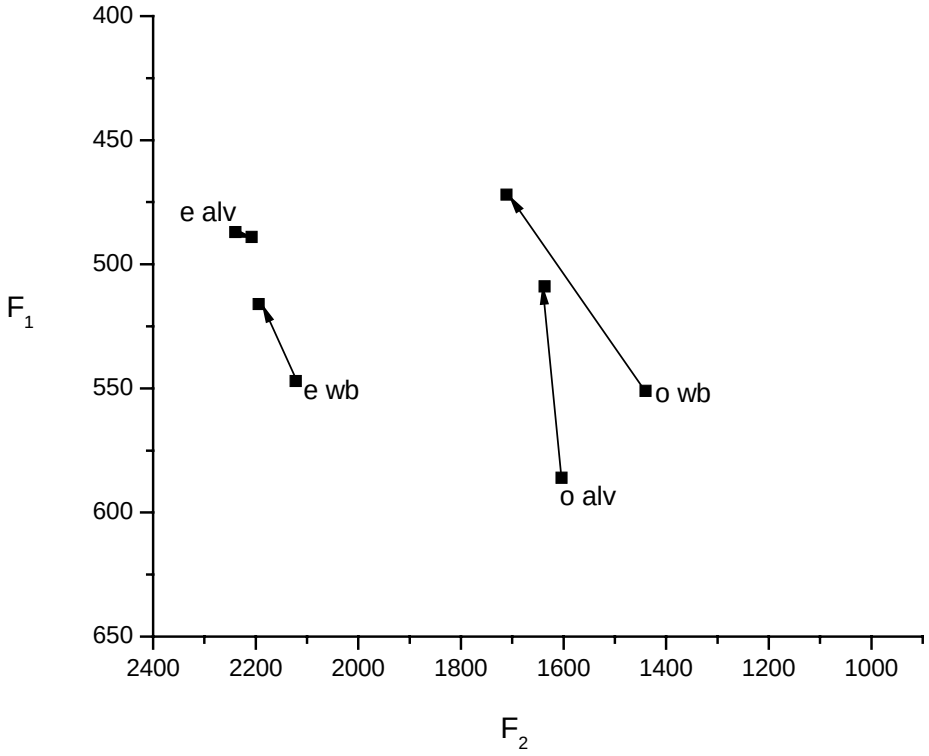

Figure 6.5: F_1 and F_2 values (in Hz) for Gail Anne. Values for all phonetic contexts accounted for in analysis (alv=alveolar, wb=word boundary).

6.2.1.2 Zora

Figure 6.6 provides a vowel plot for Zora. Like Gail Anne, Zora had /e/ variants that were very fronted ranging from 2206-2388 Hz. In fact, Zora had the most fronted /e/ variants among all of the women in this study from both the church ladies and porch sitters. Zora had distances between /e/ and /o/ in each phonetic context that were a bit larger than Gail Anne's, but they were still quite small when compared to the distance metrics of the women in the porch sitters. Her phonetic constraints on the production of /o/ were consistent with the most fronted variants in the pre-alveolar position (706 Hz between /e/ and /o/ at the midpoint and 674 Hz at the offset), and word boundary position showed less fronted productions. Similar to Gail Anne, Zora had /o/ variants that glided forward and upward in varying degrees.

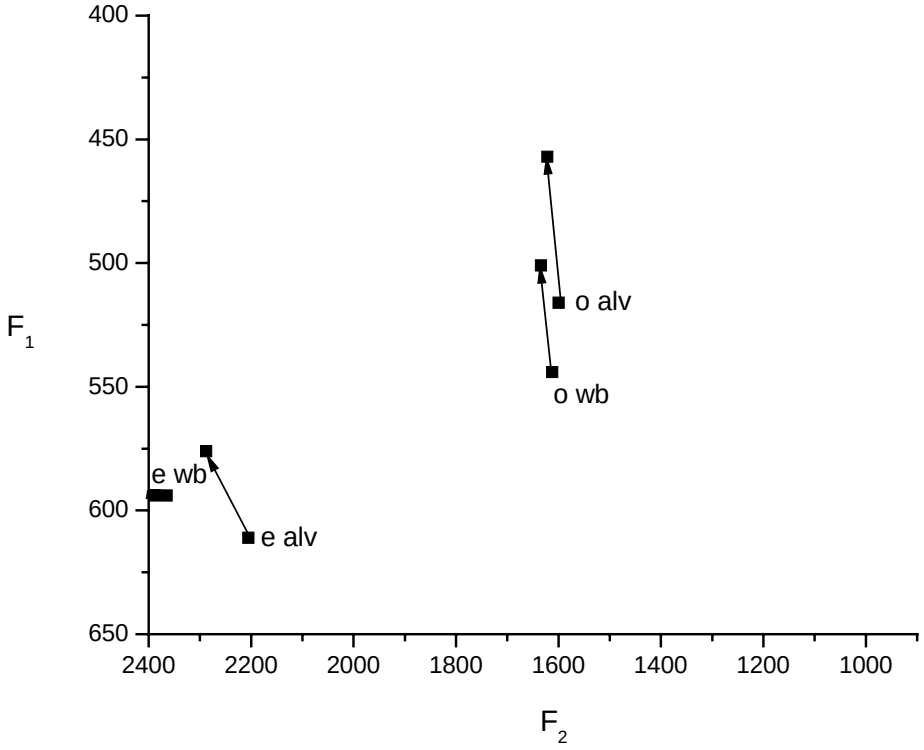

Figure 6.6: F_1 and F_2 values (in Hz) for Zora. Values for all phonetic contexts accounted for in analysis (alv=alveolar, wb=word boundary).

6.2.1.3 Gina

Gina's vowel plot in Figure 6.7 shows her production of /e/ and /o/. Gina, for the most part, had the largest distances between her /e/ and /o/ in each phonetic context (see Figure 6.7 and Table 6.9). Although her distance metrics were often the largest among the church ladies (735 Hz mean difference at midpoint and 712 Hz mean difference at offset), they were still much smaller than those of the porch sitters (see Table 6.10). Additionally, another interesting feature of Gina's vowel plot was her high /e/ F_1 values, which perhaps indicate participation in the Southern vowel shift where /e/ moves up higher in the vowel space.

Gina had no consistent phonetic constraints on her vowel production. At the midpoint, word boundary was the most fronted environment, and at the offset, pre-alveolar tokens were the

most fronted. Gina's /e/ tokens had little gliding, just like the previous two women; however, Gina had a steep glide in /o/ word boundary position which was more a result of F_1 movement than F_2 movement. The glide for /o/ in pre-alveolar positions was a small forward glide which was the result, nearly exclusively, of F_2 changes.

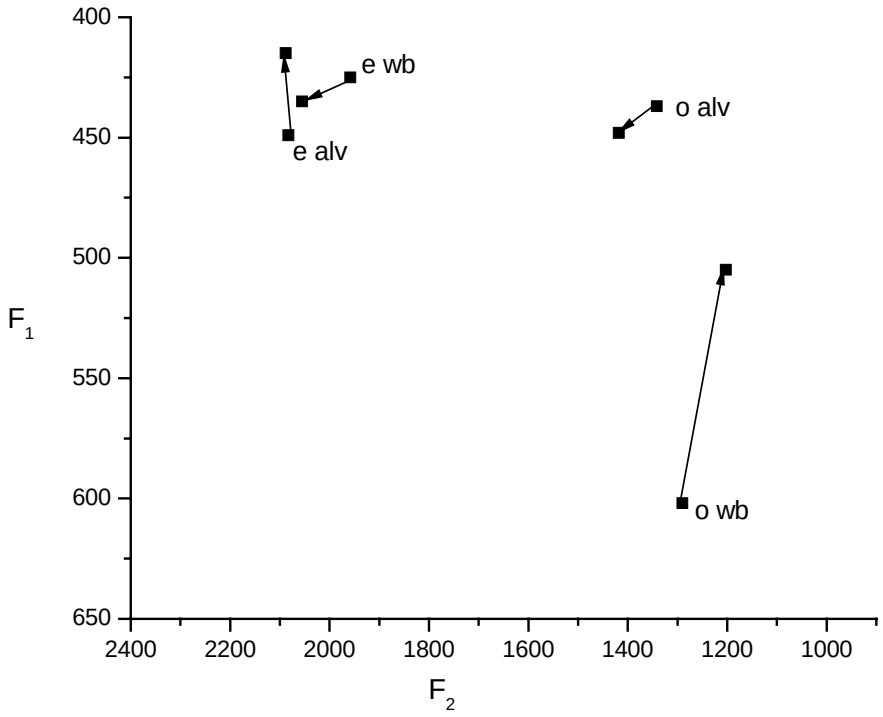

Figure 6.7: F_1 and F_2 values (in Hz) for Gina. Values for all phonetic contexts accounted for in analysis (alv=alveolar, wb=word boundary).

6.2.1.3 Joan

Like the other members of the church ladies, Joan (Figure 6.8) showed distance metrics between /e/ and /o/ that were significantly smaller than those of the porch sitters. She had the second smallest mean F_2 distance metrics of all the church ladies (663 Hz at the midpoint and 654 Hz at the offset), with only Gail Anne's being smaller. Joan did not show any consistent constraints in her vowel production at the midpoint. Word-boundary had the smallest distance metric at the midpoint and was the most fronted variant. At the offset, the pre-alveolar promoted the most fronted variant. Although Joan had small distance metric values, she had some

interesting characteristics in her vowel plot that deserve further discussion. For instance, her F_2 values were in the 1900 Hz range; values that were much lower than the other church ladies. As a result, her /o/ F_2 values appeared to be slightly lower than those of the other church ladies, but actually her F_2 distances between /e/ and /o/ were some of the smallest among her community of practice. Thus, although she has F_2 values that were lower than those of the other women in her community of practice, the overall picture of her patterning for these vowels was quite similar to the rest of the church ladies. Like the other church ladies, Joan showed gliding of /o/ with the word boundary position gliding forward and upward and the pre-alveolar position gliding predominately upward with some slight back movement.

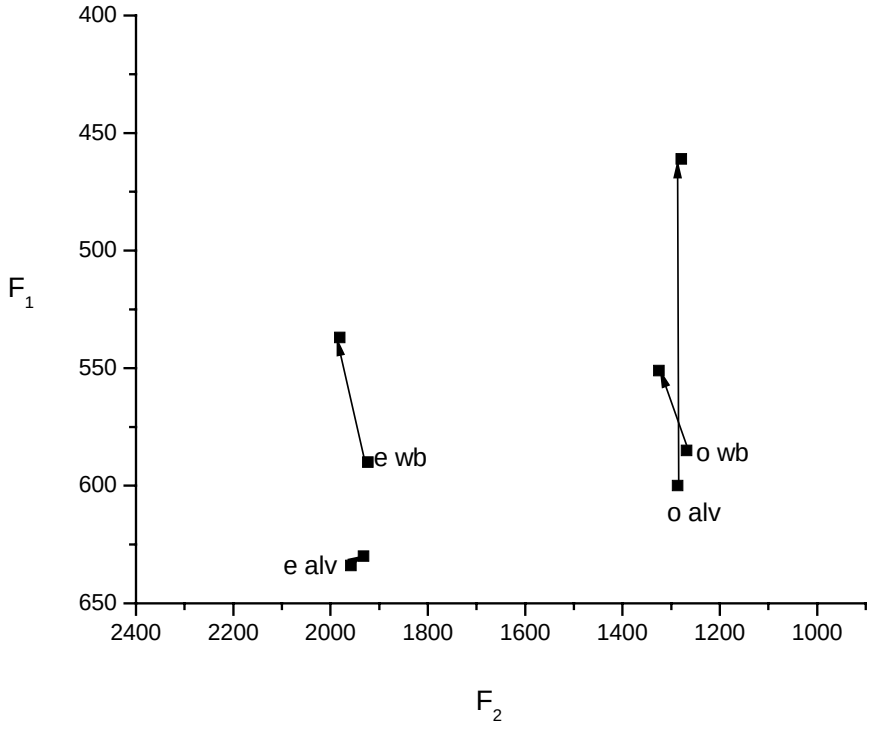

Figure 6.8: F_1 and F_2 values (in Hz) for Joan. Values for all phonetic contexts accounted for in analysis (alv=alveolar, wb=word boundary).

6.2.1.5 Church Ladies Individual Participant Discussion

This analysis of /o/ among the church ladies has shown that the women in this community of practice adhere to a norm in the production of /o/. The women all had distance metrics that were significantly different than the porch sitters (see section 6.1), and the distance metrics among the women in the church ladies did not appear to be substantially different from one another. Thus, all of the women in this community of practice produced fronted /o/ variants. Like the analysis of /u/ and /ʊ/, there were no consistent phonetic constraints on the production of /o/ among the women, so no group norm for phonetic constraints could be established. Table 6.10 shows the constraints on /o/ production for each woman at the midpoint and offset. Since there were no phonetic constraints on the production of the fronted /o/ variant, questions arise about the length of time that the women have produced fronted /o/, as well as about whether phonetic environments necessarily constrain vowel production when looking at fronted /o/ variants.

Table 6.10: Phonetic Constraints for /o/ fronting for Church Ladies

Speaker	Midpoint	Offset
Gail Anne	alveolar>word boundary	word boundary>alveolar
Zora	alveolar>word boundary	alveolar>word boundary
Gina	word boundary>alveolar	alveolar>word boundary
Joan	word boundary>alveolar	alveolar>word boundary

6.2.2 The Porch Sitters

The following five sections provide a discussion of the pattern for /o/ production among the members of the porch sitters' community of practice. This section looks specifically at the F_2 dimension of /e/ and /o/ in order to quantify and discuss /o/ production among the porch sitters. Table 6.11 gives the F_2 values that this analysis and discussion are based upon and the

following sections examine each porch sitter's participation in the group patterns that were found.

Table 6.11: F_2 distances in Hz for /e/ and /o/ by context and speaker for the Porch Sitters

Speaker	Phonetic Context	/e/ midpoint F_2	/o/ midpoint F_2	Distance metric for /o/ F_2 midpoint (/e/-/o/)	/e/ offset F_2	/o/ offset F_2	Distance metric for /o/ F_2 offset (/e/ -/o/)
Emily	Alveolar	2066	1125	941	2061	1104	957
	Word Boundary	1983	1131	852	2137	1223	914
	Total	2025	1128	897	2099	1164	935
Melissa	Alveolar	2186	1228	958	2226	1251	975
	Word Boundary	1992	1298	694	2158	1280	878
	Total	2089	1263	826	2192	1266	926
Debbie	Alveolar	2117	1141	976	2103	1145	958
	Word Boundary	2171	1246	925	2230	1215	1015
	Total	2144	1194	950	2166	1184	982
Michelle	Alveolar	1934	1133	801	2095	1227	868
	Word Boundary	1969	1148	821	2084	1171	913
	Total	1952	1141	811	2089	1199	891
Porch Sitters Total	Alveolar	2075	1157	918	2121	1181	939
	Word Boundary	2028	1206	822	2152	1222	930
	Total	2052	1181	871	2137	1203	934

6.2.2.1 Emily

Emily's vowel plot (Figure 6.9) shows the typical distance that was found between /e/ and /o/ for the porch sitters. Emily had 852 Hz to 957 Hz between /e/ and /o/ in the various temporal locations and phonetic contexts (see Table 6.11). Her distance metric values fell in the middle of her community of practice; they were neither the highest nor the lowest. Her phonetic constraints were consistent across both temporal locations. The word boundary position was the most fronted. However, no clear pattern emerged for production in relation to phonetic context for the porch sitters, so the consistent hierarchy of constraints on context for Emily were a result of her idiolect, and can not be seen as representative of the group. Both /e/ and/o/ were glided for Emily. Pre-alveolar /e/ as well as pre-alveolar /o/, both glided upward and slightly backward,

while /e/ word boundary and /o/ word boundary glided forward and upward. Ultimately, the front and back pairs closely mirrored one another in glide length and direction.

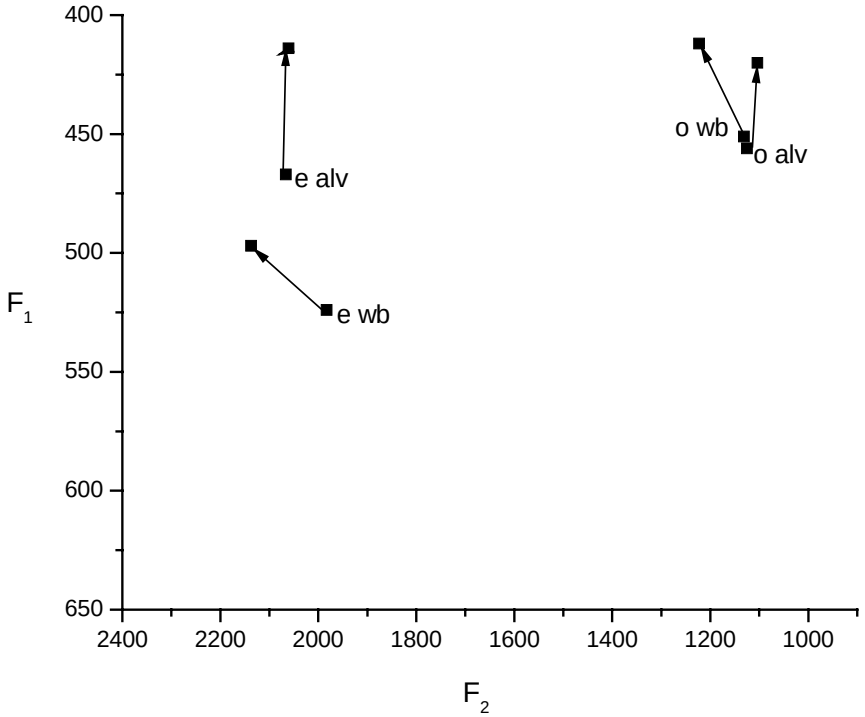

Figure 6.9: F_1 and F_2 values (in Hz) for Emily. Values for all phonetic contexts accounted for in analysis (alv=alveolar, wb=word boundary).

6.2.2.2 Melissa

The vowel plot for Melissa can be found in Figure 6.10. Like Emily, Melissa had a much larger distance between /e/ and /o/ at the midpoint and offset than members of the church ladies did. At the midpoint, the mean F_2 distance between /e/ and /o/ was 826 Hz and the mean distance at the offset was 926 Hz. Melissa showed consistent phonetic constraints across both temporal locations for the production of /o/. Similar to Emily, the most fronted variant occurred for her in word boundary positions. Additionally, her production of /o/ was quite glided; however, the glides moved mainly upward, with little movement in the F_2 dimension. In fact, the movement in /o/ word boundary was 18 Hz backward and the movement in /o/ alveolar was 23 Hz forward. Thus, the F_2 values for /o/ changed very little from one temporal location to the next. /e/ is also

upglided in her vowel space, a potential indication of her participation in Southern vowel patterns.

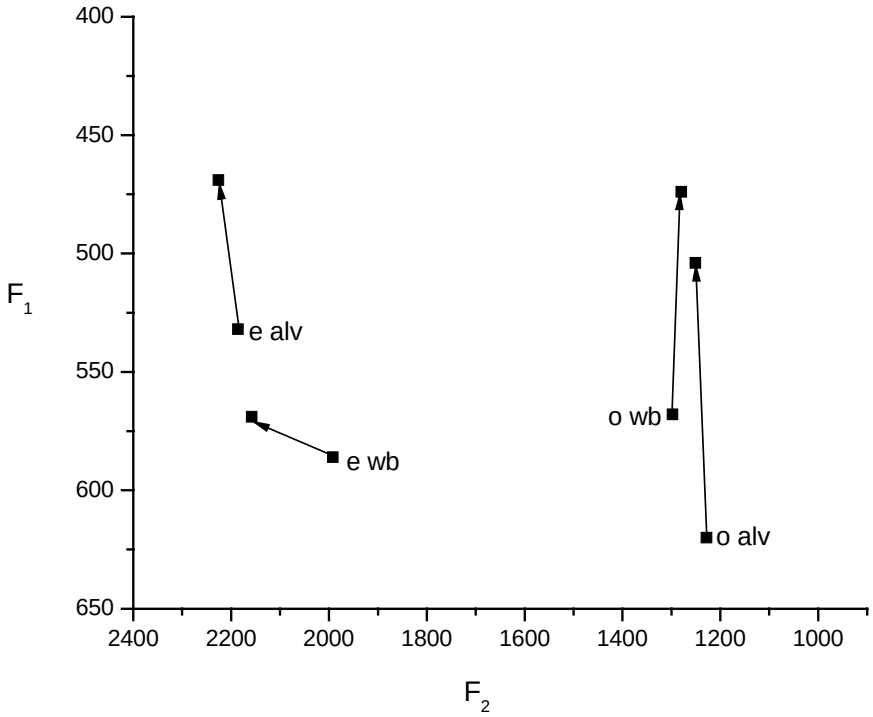

Figure 6.10: F_1 and F_2 values (in Hz) for Melissa. Values for all phonetic contexts accounted for in analysis (alv=alveolar, wb=word boundary).

6.2.2.3 Debbie

Debbie's vowel plot revealed some interesting patterns in terms of her participation in community of practice norms and patterns of her own idiolect (see Figure 6.11). Overall, Debbie had the most backed /o/ variants of any of the porch sitters. Her mean F_2 distance metric at the midpoint was 950 Hz and her mean F_2 distance metric at the offset was 982 Hz. Debbie did not have consistent phonetic constraints on her production of /o/. The hierarchy changed at each temporal location. Another area of interest in Debbie's vowel patterns were her glide directions and the actual placement of her vowel in her articulatory space. Overall, /o/ glided predominately upward for Debbie, with little front or back movement. Additionally, even though /e/ and /o/ are a vowel pair that should differ little in height (F_1) and mostly in frontness (F_2), Debbie's /e/ and

/o/ differed in both F_1 and F_2 values. In Debbie's speech /e/ and /o/ had quite different F_1 values, so that /e/ was much higher for Debbie than /o/ was. This result should not be surprising though, since /o/ is a rounded vowel and the process of rounding is known to pull vowels backward and lower.

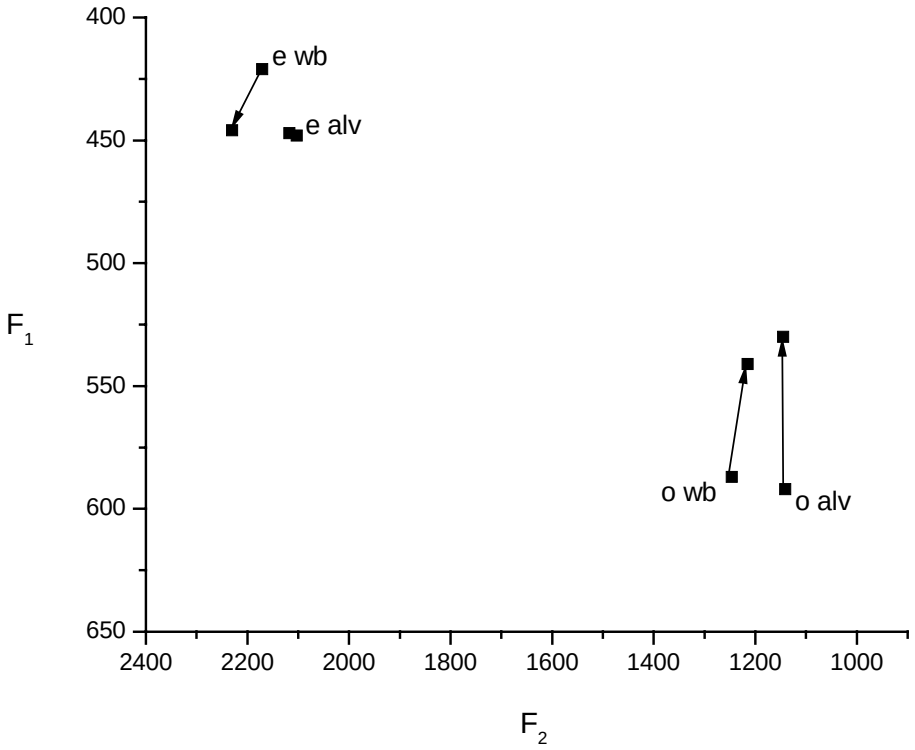

Figure 6.11: F_1 and F_2 values (in Hz) for Debbie. Values for all phonetic contexts accounted for in analysis (alv=alveolar, wb=word boundary).

6.2.2.4 Michelle

Michelle had the smallest distance metrics between /e/ and /o/ of the porch sitters (see Table 6.11. and Figure 6.12). At the midpoint, her mean distance between /e/ and /o/ was 811 Hz and at the offset her mean distance was 891 Hz. Although her distance metrics were the smallest of all the porch sitters, they were still much larger than those of the church ladies. The largest mean distance metrics for the church ladies were 741 Hz at the midpoint for Zora and 712

Hz at the offset for Gina. For Michelle, the most fronted variants occurred in the alveolar position at both the midpoint and offset. Michelle had quite long upward and forward glides for both /e/ and /o/ in the word boundary position. Whereas in the pre-alveolar position, both /e/ and /o/ glided forward, the height (up and down movement) of the glide varied. Thus, her /o/ alveolar glided forward and down, while /e/ alveolar glided forward and up.

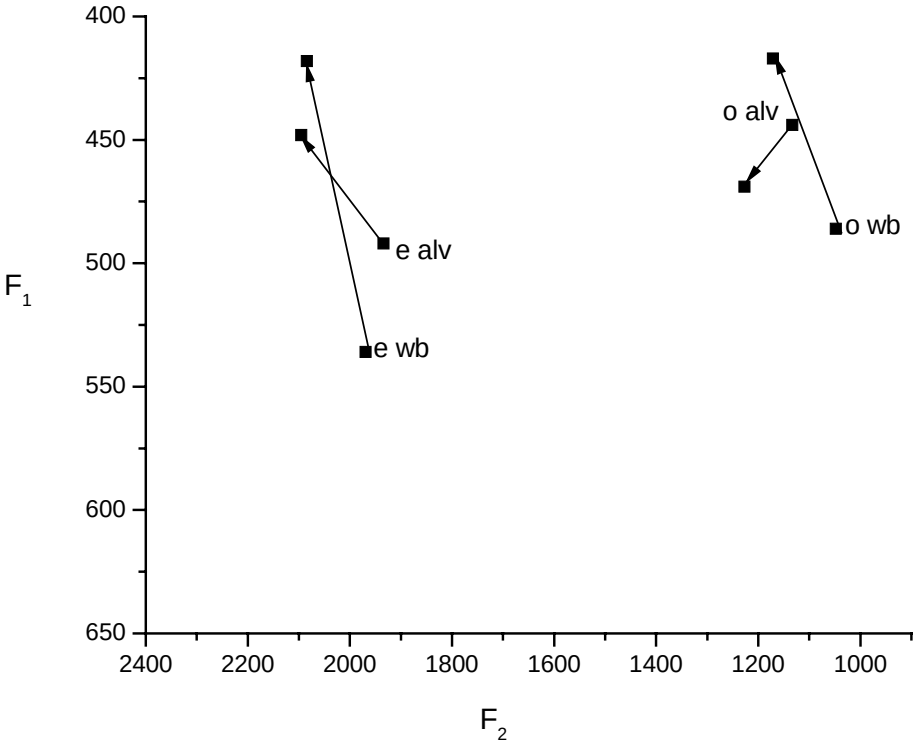

Figure 6.12: F_1 and F_2 values (in Hz) for Michelle. Values for all phonetic contexts accounted for in analysis (alv=alveolar, wb=word boundary).

6.2.2.5 The Porch Sitters Individual Participants Discussion

As Table 6.11 and the Figures in this section show, the porch sitters produced an /o/ variant that was significantly more backed than the /o/ variant used by the church ladies. The production of the backed /o/ variant is a process which all of the women in the porch sitters appeared to be participate in. Further, although each of the porch sitters had their own individual pattern for the production of /o/, they all contribute in their own way to the group norm that has

been established for the production of /o/. Thus, each produced an /o/ variant that fell within an accepted group norm but that was unique to their own idiolect. There were no phonetic constraints on the production of /o/ among the porch sitters due to the great amount of variation in constraints among the women. Table 6.12 gives the hierarchy of constraints on phonetic context for each woman for /o/.

Table 6.12: Phonetic Contexts for /o/ Production for Porch Sitters

Speaker	Midpoint	Offset
Emily	word boundary>alveolar	word boundary>alveolar
Melissa	word boundary>alveolar	word boundary>alveolar
Debbie	word boundary>alveolar	alveolar>word boundary
Michelle	alveolar>word boundary	alveolar>word boundary

6.3 Conclusion

The analysis of /o/ provided results that helped to differentiate the vocalic patterns of the church ladies and porch sitters. As the statistical analysis revealed (see Section 6.1), there was a significant difference in the production of /o/ by the two communities of practice. The difference was attributable to the church ladies' production of more fronted /o/ variants than the porch sitters. Thus, this analysis concludes that the church ladies produced a more fronted /o/ than the porch sitters, but it is difficult to discuss the porch sitters' pattern for /o/. Because there are no other quantitative data on /o/ production to compare the data from this study with, the analysis is limited to the extent to which it can place the porch sitters in a broader framework. Certainly, the porch sitters were using a more backed variant than the church ladies, but it is still unclear whether the backed variant of the porch sitters is truly backed or still fronted, though more backed than that of the church ladies as was the case with /u/.

Regardless, of the relative position of the porch sitters' /o/ with respect to other American English varieties, the significance of the difference between the two women's friendship groups

in Texana is of both linguistic and social interest. The production of /o/ has been noted as having variable realizations which depend predominantly on the region and ethnicity of a speaker. Productions of fronted /o/ variants have been noted (Labov 1994, 2001; Thomas 2001) to be representative of Southern White English varieties, particularly from rural locales. Thus, the production of a fronted /o/ variant by the church ladies is curious, since African Americans are not noted as participants in /o/ fronting. The church ladies participation in fronted /o/ productions highlight the problems with the association of a variable with a particular ethnicity. Further, it underscores how region and, many times, local orientation and identity are much better diagnostic indicators of the dialect patterns of a speaker or group of speakers.

Similar to their production of /u/ and /ʊ/, the fronted production of /o/ as used by the church ladies in many ways reinforces their identity within the community. The church ladies are concerned with local identity and place and their production of /o/ is like those described by Labov (1994, 2001) and Thomas (2001) as representative of Southern white varieties, the varieties that surround and encompass Texana. Thus, fronted /o/ and Southern White varieties of English should not be viewed as unavailable to the church ladies due to racial boundaries, rather they should be viewed as one of the possible dialect choices available to the women. Since these women identify more with the local community, they have adopted the dialect features that more closely and recognizably tie them to the local area.

The porch sitters stand in contrast to the church ladies. Their use of more backed variants of /o/ falls into the patterns that have been predicted for African American English speakers (Labov 1994, 2001; Thomas 2001). However, it is difficult to say whether these patterns are really a result of the speakers' adherence to African American English norms, or rather, their desire to place themselves outside of the local Appalachian framework. Thus, to say that they

align exclusively to African American English norms may be an over-generalization. It seems more likely that these women align themselves with an extra-local linguistic and social identity. This is an identity that is not exclusively Appalachian or rooted in Texana, but rather is rooted in the broader South and in broader African American culture.

Although duration was an important variable in the production of /u/, it had no statistical significance in this study of /o/. Since the two groups show such distinct patterns for the production of /o/, which are most likely easily perceived by interlocutors (Torbert 2004), there is no need to add another type of difference in the acoustic signal. Rather, speakers relied exclusively on the formant differences as perceived by the speakers to evoke the linguistic and, most importantly, the social differences associated with each production.

Although the lack of phonetic constraints on /o/production would typically raise questions about the length of time a change had been established in a community, the lack of constraints in the situations described in these chapters brings about another set of questions. The lack of phonetic constraints for the church ladies is not a surprise, since they have a fronted variant and may level the phonetic contexts on fronting. However, a lack of significant constraints on /o/ fronting for the porch sitters is of interest, since they do not appear to participate in /o/ fronting like the church ladies. Thus, if phonetic constraints were at play, we would expect to see them emerge among the porch sitters who are not fronting or who may be just beginning the process, but they do not. Ultimately, data of this sort question the role that phonetic constraints play in the production of vowels. It calls us to consider whether phonetic constraints are of significance in the examination of vowel patterns and the ways that variables, such as regional dialects and the length of time that a phonetic process (such as fronting) has been in use, may affect phonetic constraints.

Chapter 7

/ai/

The diphthong /ai/ is one of the most salient vocalic features of American English (see the discussion of /ai/ in Chapter 3 for a more detailed explanation on the status of /ai/ in American English varieties). As research has shown, variable glide-weakening of /ai/ carries numerous linguistic and social implications that interlocutors use in categorizing and profiling speakers (Plitchta and Preston 2004, Torbert 2004). This chapter examines the production of the diphthong /ai/ among the church ladies and the porch sitters looking at differences in production between the two groups and what these differences in production signal about the women. The study of /ai/ in this chapter considers the effect the community of practice and of phonetic contexts, pre-voiced and pre-voiceless segments, on the production of /ai/ (see Chapter 3 for further discussion of the significance in examining pre-voiced and pre-voiceless /ai/).

Like Anderson's (2003) study, the first portion of the analysis consisted of comparison of F_1 and F_2 movement for /ai/ and /ɑ/. /ɑ/, a relatively monopthongal vowel, was analyzed alongside /ai/ in order to quantify the diphthongization. Once differences in the two vowels were established, the statistical analysis (see section 7.1.1) turned to examination of /ai/ exclusively. In order to examine the differences in /ai/ by community of practice, phonetic context (pre-voiced or pre-voiceless), or a combination of the two, both F_1 and F_2 values were analyzed. Since /ai/ shows movement in both the F_1 and F_2 dimensions, examination of both formants allows for the isolation of each portion of the acoustic signal that correlates with articulatory

movements, specifically the height or frontness of the vowels. The chapter concludes with a discussion of the individual patterns of each of the members of the communities of practice.

7.1 Community of Practice, Formant, Context, and Duration Comparisons

The data for the F_1 of /ɑ/ and /ai/ by community of practice and context is given in Table 7.1. A t-test was performed to determine whether there was a significant difference in the mean F_1 values for /ɑ/ and /ai/ for all of the women. The results of the t-test confirmed that there was a difference in the mean F_1 values of /ɑ/ and /ai/ ($p > .0225$): the F_1 of /ai/ shows more movement than the F_1 of /ɑ/ for all of the women, as can be seen in the raw data in Table 7.1. The data for F_2 (see Table 7.2) were also examined for differences in the mean values of /ɑ/ and /ai/. Again, the data showed a significant difference ($p > .0001$) for the two vowels, which underscored the fact that /ai/ showed more movement in both the F_1 and F_2 dimensions than /ɑ/. This result was expected since /ai/ is a diphthong and should have more movement (which is seen in the higher values that indicate a raised variant in Table 7.1 and the negative values in Table 7.2 which indicate forward movement), while /ɑ/ is considered to be relatively monophthongal and does not show as much movement. This result highlights that when /ai/ is analyzed it must always be considered a glide-weakened variant, rather than monopthongal, since it shows more movement than /ɑ/.

The vowel plot in Figure 7.1 displays the differences between /ɑ/ and /ai/. Examination of the vowel plot and the raw values highlights the extreme back placement of /ɑ/ in the vowel space of the porch sitters. There was a significant difference in the values for /ɑ/ and /ai/ in both

communities of practice. Finally, the vowel plot illustrates the difference in glide length for /ɑ/ and /ai/ among the communities of practice. For both groups, /ai/ is much more glided than /ɑ/.

Table 7.1: F_1 Movement from midpoint to offset for /ɑ/ and /ai/ by community of practice and context (values are in Hz)

Community of Practice	Vowel	Context	Mean F_1 midpoint value	Mean F_1 offset value	Mean F_1 midpoint - F_1 offset value
Church Ladies	/ɑ/	Voiced	774	729	45
		Voiceless	798	747	51
		Total	786	738	48
	/ai/	Voiced	878	781	97
		Voiceless	843	688	155
		Total	860	734	126
Porch Sitters	/ɑ/	Voiced	706	681	25
		Voiceless	763	722	41
		Total	734	702	32
	/ai/	Voiced	843	711	132
		Voiceless	809	697	112
		Total	826	704	122
Total	/ɑ/	Voiced	740	705	35
		Voiceless	781	735	46
		Total	761	720	41
	/ai/	Voiced	861	746	115
		Voiceless	826	693	134
		Total	844	720	124

Table 7.2: F_2 Movement from midpoint to offset for /ɑ/ and /ai/ by community of practice and context (values are in Hz)

Community of Practice	Vowel	Context	Mean F_2 midpoint value	Mean F_2 offset value	Mean F_2 midpoint – F_2 offset value
Church Ladies	/ɑ/	Voiced	1685	1675	10
		Voiceless	1724	1731	-7
		Total	1704	1703	1
	/ai/	Voiced	1783	1756	26
		Voiceless	1636	1771	-135
		Total	1710	1764	-54
Porch Sitters	/ɑ/	Voiced	1279	1272	7
		Voiceless	1368	1432	-64
		Total	1324	1352	-28
	/ai/	Voiced	1640	1621	19
		Voiceless	1634	1804	-170
		Total	1637	1713	-76
Total	/ɑ/	Voiced	1482	1473	9
		Voiceless	1546	1581	-35
		Total	1514	1527	-13
	/ai/	Voiced	1711	1688	23
		Voiceless	1635	1787	-152
		Total	1673	1738	-65

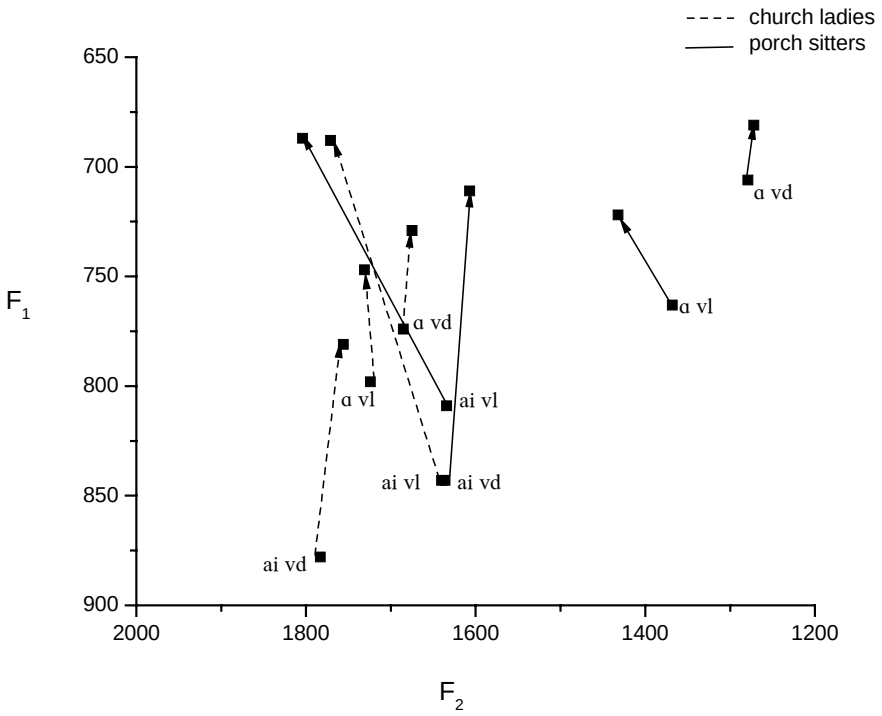

Figure 7.1: /ɑ/ and /ai/ Means for the Communities of Practice in each Phonetic Context (vd= voiced, vl=voiceless).

7.1.1 Statistical Analysis of /ai/ Data

The previous analysis noted that there were differences in the production of /ɑ/ and /ai/ in both the F_1 and F_2 dimensions of the vowels. This section further examines /ai/; specifically, it considers differences in /ai/ production between the communities of practice, production differences as a result of context, and production differences that emerged from context within the communities of practice. No significant differences were found when comparing the mean differences of F_1 ($p > .5525$) and F_2 ($p >. 1201$) for the communities of practice. The examination of context found that there was a significant difference in context, or voicing, for F_2 ($p >.0059$) but not for F_1 ($p >.6303$). Thus, the phonetic context is a significant factor in the forward movement of /ai/ but not the height.

Once the significance of the phonetic context was noted, closer examination of the role of constraints within each community of practice was investigated. T-tests were run which considered the effect of the phonetic context (pre-voiced or pre-voiceless) on each formant (F_1 or F_2) within each community of practice. This resulted in 4 separate t-tests whose results indicated that there were no significant differences in the production of /ai/ in either the F_1 ($p > .4178$) or F_2 ($p > .1831$) dimension for the church ladies (see Table 7.3). This finding demonstrates that for the church ladies, neither the F_1 nor F_2 dimension is significantly affected by the phonetic context of the following segment. However, there was a significant difference when phonetic context was considered for the F_2 dimension of the porch sitters ($p > .0016$) but not F_1 ($p > .8003$) (see Table 7.4). Thus for the porch sitters, the phonetic context of the following phonetic segment significantly affected the F_2 dimension or frontness of the vowel.

Table 7.3: t-Test Results for Effects of Voicing on /ai/ F_1 and F_2 Movement (midpoint- offset) for the Church Ladies

Formant	DF	t-Value	*p*-Value
F_1 Voiced/Voiceless	6	-0.87	.4178
F_2 Voiced/Voiceless	6	1.50	.1831

Table 7.4: t-Test Results for Effects of Voicing on /ai/ F_1 and F_2 Movement (midpoint- offset) for the Porch Sitters

Formant	DF	t-Value	*p*-Value
F_1 Voiced/Voiceless	6	0.12	.8003
F_2 Voiced/Voiceless	6	5.52	**.0016**

*Values in bold are significant at a level of .05

7.1.2. Statistical Analysis of Duration

The data for /ai/ were also examined for significant differences in duration by community of practice and context (voiced or voiceless). Research on the duration of /ai/ by Anderson (2003) found that African Americans and Appalachians in the Detroit area showed significant differences in the duration of /ai/. The African American speakers showed a strong correlation

between voicing and duration. Although Anderson does not offer an explanation for this pattern, the interaction between the ethnicity, voicing, and duration in her study highlights the need to investigate the ways that the duration of /ai/ may serve as another way to create difference in the acoustic signal. Raw data for the duration of /ai/ can be found in Tables 7.5, 7.6, and 7.7. The results of the ANOVA of duration (see Table 7.8) showed that there was not a significant difference in the duration of /ai/ by community of practice, nor was there a significant difference in the duration of /ai/ based on phonetic context. Additionally, the data showed no significance for context within community of practice.

Table 7.5: Mean /ai/ duration measures for communities of practice

Community of Practice	Mean Duration	Std. Deviation
Church Ladies	169 ms	62.9 ms
Porch Sitters	174 ms	62.6 ms

Table 7.6: Mean /ai/ duration measures for context

Context	Mean Duration	Std. Deviation
Voiced	184 ms	62.9 ms
Voiceless	165 ms	60.7 ms

Table 7.7: Mean /ai/ duration measures for communities of practice and context

Community of Practice	Context	Mean Duration	Std. Deviation
Church Ladies	Voiced	191 ms	72.3 ms
	Voiceless	158 ms	55.1 ms
Porch Sitters	Voiced	177 ms	53.6 ms
	Voiceless	173 ms	66.3 ms

Table 7.8: ANOVA Analysis of /ai/ duration

Source	DF	F Value	*p*-Value
Context	1	2.90	0.0905
Community of Practice	1	0.00	0.9735
Context*Community of Practice	1	1.82	0.1792

7.1.3 Summary of /ai/ Analysis

The analysis in this chapter shows that, for all of the women in this study, there was a difference in the production of /ɑ/ and /ai/. The difference in the production of the two vowels indicated that the women were not producing fully monophthongal /ai/ variants in any context. Thus, /ai/ can only be said to be glide-weakened among these women when it does not display the full range of diphthongization that is expected in the production of /ai/. The results of the analysis also showed that there were significant differences in the ways that the communities of practice produced /ai/ within each phonetic environment. Specifically, the analysis showed that phonetic context (voicing of the following segment) had no effect on the F_1 and F_2 dimension of /ai/ for the church ladies. Thus, for these women, /ai/ is glide-weakened in all phonetic contexts, and voicing of the following segment has no effect on the height or frontness of /ai/.

The analysis of the porch sitters displayed results that were quite different from those of the church ladies. The porch sitters showed a pattern for the production of /ai/ that indicated that the voicing of the following phonetic context was a significant determiner of the frontness (F_2) of /ai/. For the porch sitters, there were variations in the production of /ai/ that resulted from the voicing of the following phonetic segment, while for the church ladies voicing of the following phonetic segment had no significant effect on the production of /ai/. Finally, the analysis of duration showed that there were no significant differences in the duration of /ai/ by the communities of practice, by the voicing of the following segment, or voicing within the communities of practice. Indeed the women in these communities of practice were using articulatory gestures (the fronting or backing of /ai/) to differentiate themselves, rather than relying on other acoustic cues such as duration to create difference.

7.2 /ai/ Among the Individuals in Each Community of Practice

The following sections provide information about /ai/ for the individual women in each of the communities of practice. Section 7.2.1 describes the patterns of each of the church ladies and section 7.2.2 describes the patterns for /ai/ among the porch sitters. Examination of /ai/ for each of the women will supply more information about individual patterns as well as community of practice patterns.

7.2.1 The Church Ladies

Table 7.9 gives the data for /ai/ among the members of the church ladies community of practice. The table provides the F_1 and F_2 values for /ai/ at the midpoint and offset. There is some variation in the F_1 and F_2 movement among the women in this community of practice. This variation is seen specifically in the F_1 dimension, where some of the women are raising /ai/ toward the offset and others are lowering /ai/ towards the offset. Despite this difference, all of the church ladies show front movement of /ai/ (indicated by a negative F_2 value), although they have a larger range of values for F_2 movement than the porch sitters (see Table 7.10). The sections that follow will provide vowel plots that display each participant's production of /ai/ and a discussion of their patterns for /ai/.

Table 7.9: F_1 and F_2 Movement (in Hz) at Midpoint and Offset for /ai/ among the Church Ladies

Name	Context	F_1 midpoint	F_1 offset	F_1 movement	F_2 midpoint	F_2 offset	F_2 movement
Gail Anne	voiced	905	785	120	1767	1740	27
	voiceless	861	625	236	1716	1731	-15
Zora	voiced	858	677	181	1731	1820	-89
	voiceless	803	726	77	1715	1731	-16
Gina	voiced	739	618	121	1759	1470	289
	voiceless	732	654	78	1473	1660	-187
Joan	voiced	1010	1043	-33	1876	1996	-120
	voiceless	976	747	229	1641	1963	-322
Total	voiced	878	780.75	97.25	1783.25	1756.5	26.75
	voiceless	843	688	155	1636.25	1771.25	-135

7.2.1.1 Gail Anne

The vowel plot for Gail Anne (see Figure 7.2) illustrates her production of /ai/ in pre-voiced and pre-voiceless positions. Gail Anne showed the most movement from midpoint to offset in the F_1 dimension (height) of /ai/. In the pre-voiceless position, Gail Anne had movement of 236 Hz from the midpoint to offset of F_1, while in the pre-voiced position she had a change of 120 Hz from midpoint to offset of F_1. Additionally, she showed very little movement from midpoint to offset in her F_2 values (frontness and backness). The most movement in the F_2 dimension occurred in pre-voiced positions (a change of 27 Hz backward). Gail Anne's glide direction was not consistent for pre-voiced and pre-voiceless /ai/. Pre-voiced /ai/ glided slightly back, while pre-voiceless /ai/ glided slight front, a pattern that was consistent with the rest of the women in the church ladies community of practice.

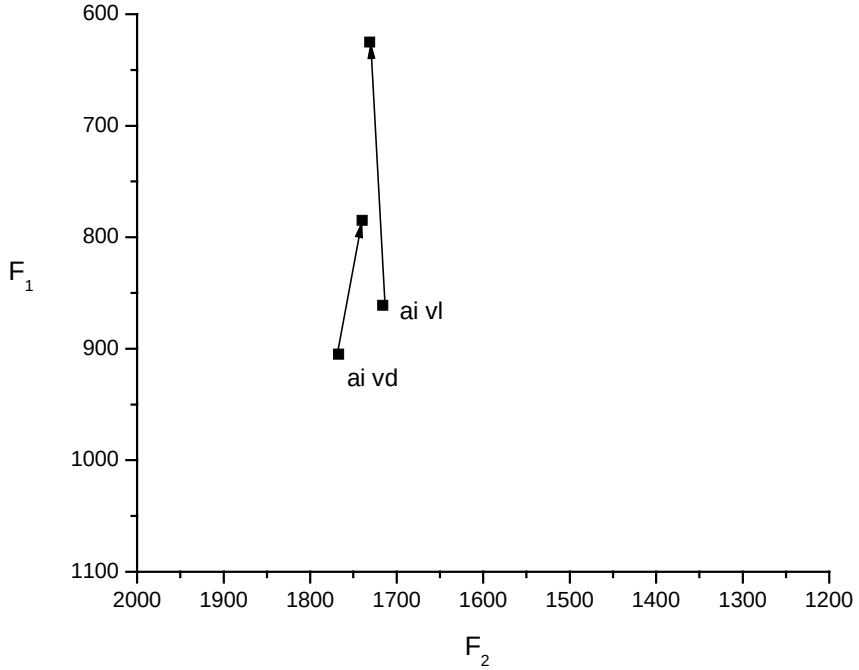

Figure 7.2: Vowel Plot of /ai/ for Gail Anne
vd= pre-voiced, vl= pre-voiceless

7.2.1.2 Zora

Similar to Gail Anne, Zora shows variable glide length in her production of /ai/. For Zora, /ai/ in pre-voiceless position was front-glided, the pattern followed by all of the church ladies. However, /ai/ in pre-voiced positions was also front glided, a pattern different from Gail Anne, thus showing variability among the church ladies. Pre-voiced /ai/ had the greatest movement from midpoint to offset in both the F_1 (181 Hz upward) and F_2 (89 Hz forward) dimensions; whereas /ai/ in pre-voiceless positions was much more glide-reduced.

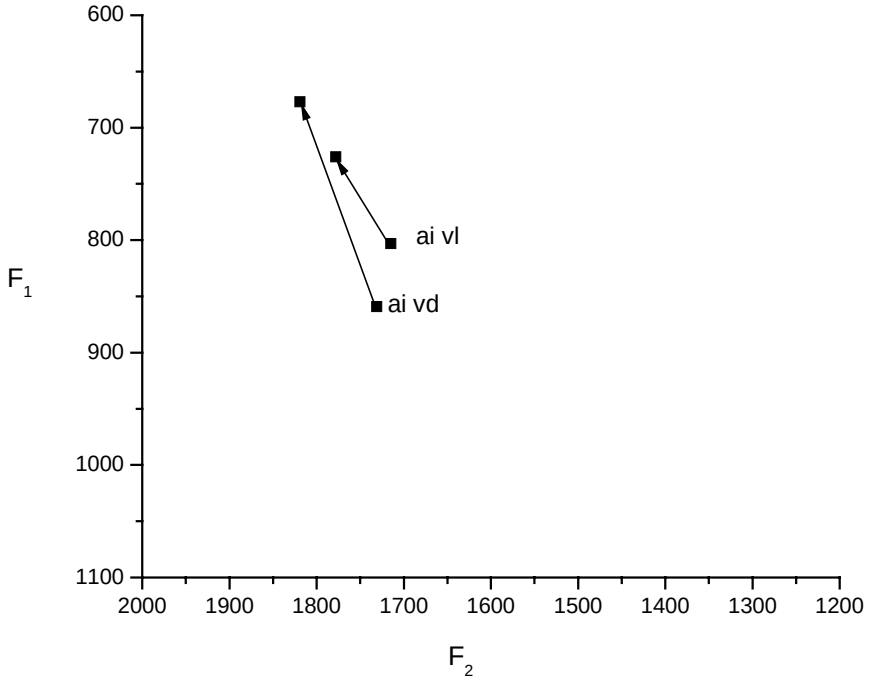

Figure 7.3: Vowel Plot of /ai/ for Zora
vd= pre-voiced, vl= pre-voiceless

7.2.1.3 Gina

The crossed glides for /ai/ that are displayed by Gina (see Figure 7.4) are different from those of the other women in the church ladies group. None of the other women in her community of practice had glide trajectories for /ai/ pre-voiced and /ai/ pre-voiceless that crossed each other. Like Gail Anne's, the glide trajectory for Gina's pre-voiced /ai/ showed back

movement. Pre-voiced /ai/ had the greatest midpoint-to-offset movement in both F_1 and F_2. Gina followed the community of practice pattern which is a front and upward glide for /ai/ in pre-voiceless contexts. Additionally, Gina also had the most backed nucleus for /ai/ in pre-voiceless positions among the church ladies, a fact which made her patterns for /ai/ production unique among the church ladies.

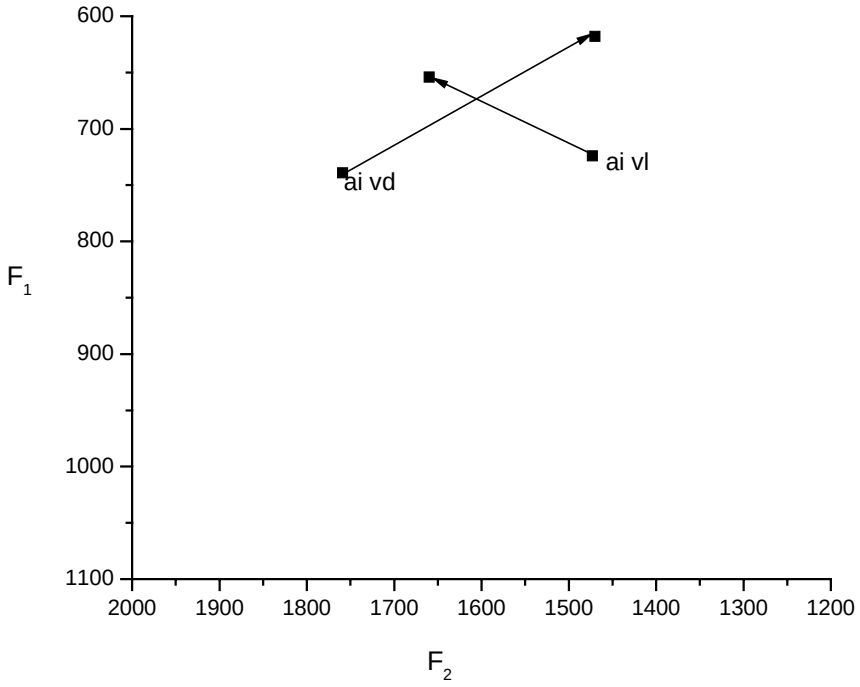

Figure 7.4: Vowel Plot of /ai/ for Gina
vd= pre-voiced, vl= pre-voiceless

7.2.1.4 Joan

The vowel plot for Joan (Figure 7.5) shows her participation in the community of practice pattern of front upglided /ai/ in pre-voiceless positions. Thus, Joan had a steep front and upward glide for /ai/ pre-voiceless. Unlike the other women in her community of practice, Joan had a downward glide for pre-voiced /ai/, but also glided forward, a pattern consistent with production of Gail Anne and Zora. Among the church ladies, Joan also had the most fronted productions of

/ai/ at the offset. Her F_2 value at the offset for /ai/ pre-voiced was 1996 Hz and for pre-voiceless was 1963 Hz, which were some of the longest glides among the church ladies.

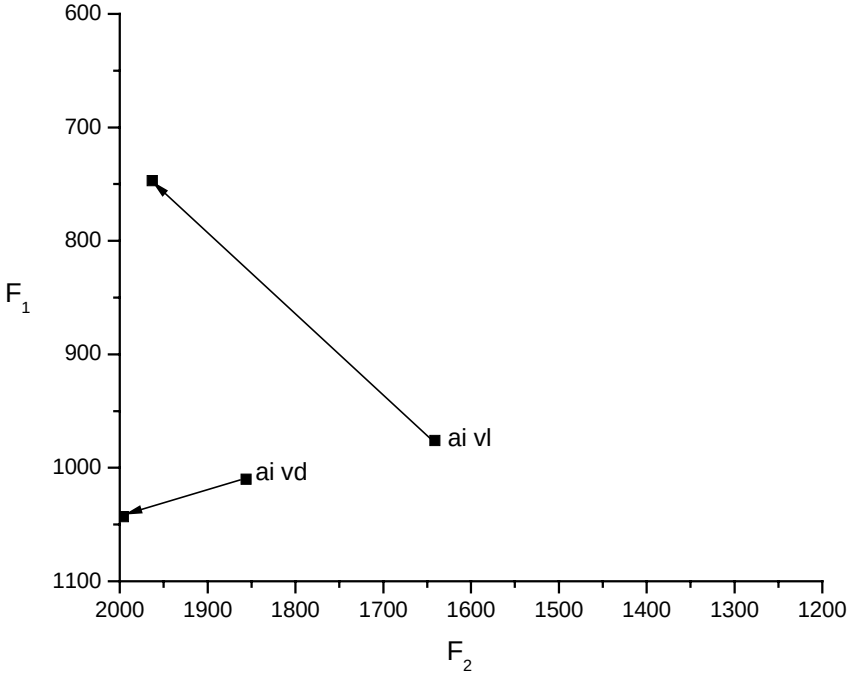

Figure 7.5: Vowel Plot of /ai/ for Joan
vd= pre-voiced, vl= pre-voiceless

7.2.1.5 Church Ladies Individual Participant Discussion

After consideration of the averages and statistics presented for the church ladies community of practice, the lack of phonetic conditioning on the production of /ai/ emerged as noteworthy, leading to the conclusion that the church ladies did not have contextual effects on their glide /ai/ production, and that /ai/ in pre-voiced and pre-voiceless positions was glide reduced. However, upon closer examination of the data for each of the church ladies, variable constraint patterns for the production of /ai/ were noticed based on phonetic context. Two of the women (Grace and Joan) had the most glided production of /ai/ in pre-voiceless environments, while the other two women in the community of practice (Zora and Gina) had the longest glides

in pre-voiced environments. Because the idiolectal patterns of each speaker were evident through the individual analysis of the production /ai/, the group averages for the church ladies must be interpreted with caution. Since the women do not follow one pattern, the averages should be seen as an indication that there is no one distinct pattern for the production of /ai/ among the community of practice.

7.2.2 The Porch Sitters

Table 7.10 and the five sections below discuss the individual patterns for /ai/ among the women in the porch sitters community of practice. The table gives the F1 and F2 values and movement from midpoint to offset. As the table and the statistical analysis in section 7.1 show, voicing of the following segment was a significant factor in F_2 movement. Pre-voiceless /ai/ had significantly more movement (or gliding) than pre-voiced /ai/ (which was more glide reduced). Additionally, all of the porch sitters, like the church ladies, showed forward (indicated by a negative F_2 movement value) and upward (indicated by a positive F_1 movement value) movement in /ai/ pre-voiceless positions.

Table 7.10: F_1 and F_2 Movement (in Hz) at Midpoint and Offset for /ai/ among the Porch Sitters

Name	Context	F_1 midpoint	F_1 offset	F_1 movement	F_2 midpoint	F_2 offset	F_2 movement
Emily	voiced	687	675	12	1485	1452	33
	voiceless	777	659	118	1441	1660	-219
Melissa	voiced	1083	749	334	1698	1650	48
	voiceless	933	763	170	1613	1711	-98
Debbie	voiced	885	830	55	1616	1637	-21
	voiceless	781	709	72	1700	1882	-182
Michelle	voiced	716	592	124	1762	1747	15
	voiceless	744	658	86	1782	1965	-183
Total	voiced	842.75	711.5	131.25	1640.25	1621.5	18.75
	voiceless	808.75	697.25	111.5	1634	1804.5	-170.5

7.2.2.1 Emily

The vowel plot for Emily (Figure 7.6) shows her production of /ai/ in pre-voiced and pre-voiceless positions. Emily followed the community of practice pattern of glide-weakened productions of /ai/ in pre-voiced positions, through the production of /ai/ with less F_2 movement in this context. The F_2 movement for Emily in pre-voiced positions was 33 Hz back, while the F_2 movement in pre-voiceless position was 219 Hz forward. She also had less F1 movement in pre-voiced positions than pre-voiceless which added to the effect of glide-weakened pre-voiced /ai/. Emily also had the most backed nuclei among all of the women for /ai/ in pre-voiced and pre-voiceless positions.

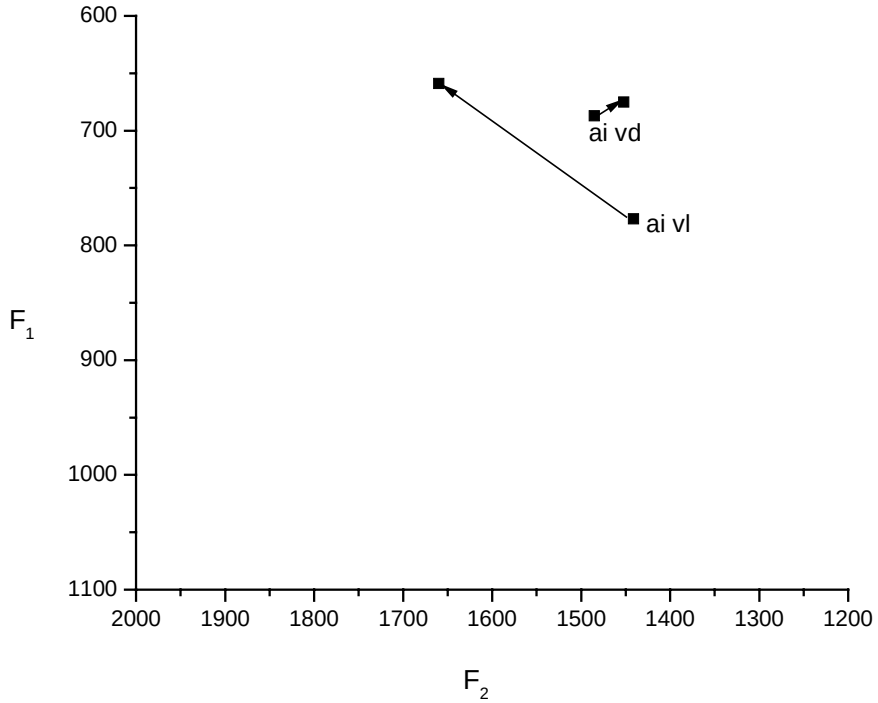

Figure 7.6: Vowel Plot of /ai/ for Emily
vd= pre-voiced, vl= pre-voiceless

7.2.2.2 Melissa

Melissa had patterns that, although they conformed to the community of practice norms, were a bit different in some key ways. Like the other porch sitters, Melissa shows the most F2

movement in pre-voiceless situations (98 Hz forward movement). However, because of her extreme F_1 movement (especially in pre-voiced positions), the forward and backward movement of /ai/ can be overshadowed. Thus, it was necessary to look at the vowel plot and the data to understand the patterns in her productions of /ai/. Like the rest of the women in the porch sitters community of practice, Melissa also had a front-glided, pre-voiceless /ai/.

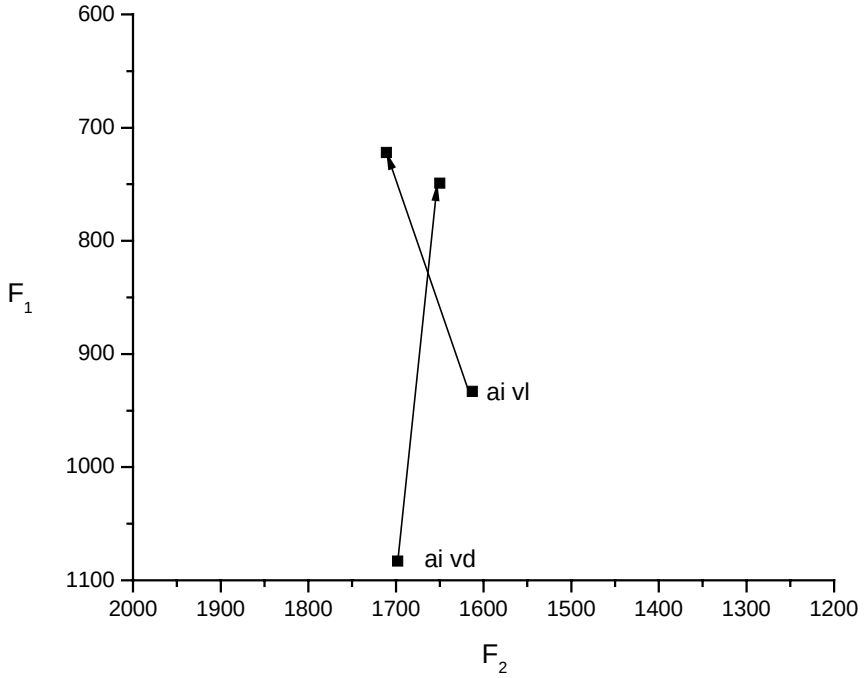

Figure 7.7: Vowel Plot of /ai/ for Melissa
vd= pre-voiced, vl= pre-voiceless

7.2.2.3 Debbie

Debbie's patterns for /ai/ (Figure 7.8) are similar to the other women in her community of practice. The most glided variant for Debbie (both for F_1 and F_2) is in the pre-voiceless position. Debbie had an /ai/ pre-voiceless vowel that glided upward and forward, while her /ai/ pre-voiced vowel glided in the same pattern but more weakly. Her glide-weakened /ai/ pre-voiced variant

was lower in her vowel space than her pre-voiceless. In fact, Debbie was the only member of the porch sitters who had no overlap in the F_1 dimension of /ai/.

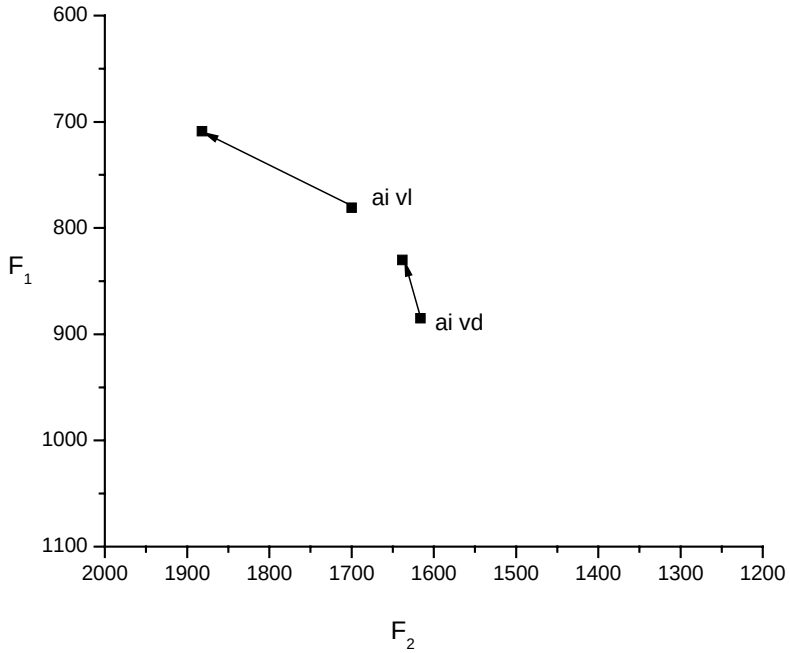

Figure 7.8: Vowel Plot of /ai/ for Debbie
vd= pre-voiced, vl= pre-voiceless

7.2.2.4 Michelle

Figure 7.9 displays the production of /ai/ for Michelle. For Michelle, like the rest of the women in her community of practice, there was a notable difference in her production of /ai/ in pre-voiced and pre-voiceless contexts. Pre-voiceless /ai/ was much more glided, especially in the F_2 dimension, than pre-voiced /ai/. Michelle also had the most fronted /ai/ variants of all the women in her community of practice. Finally, her /ai/ pre-voiceless glided forward and upward, like the other women in her community of practice, but her /ai/ pre-voiced glided upward and backward, the same pattern shown by Emily and Melissa.

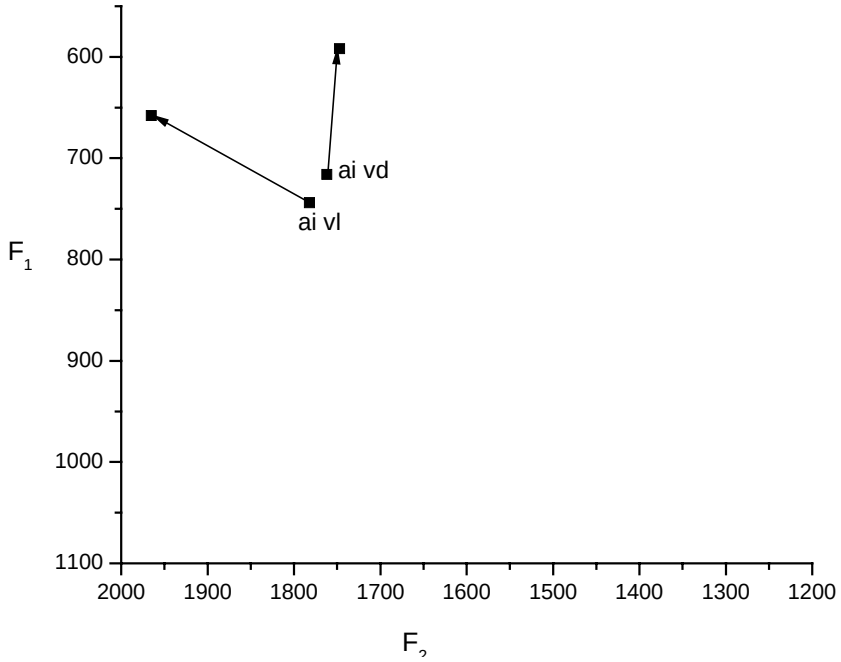

Figure 7.9: Vowel Plot of /ai/ for Michelle
vd= pre-voiced, vl= pre-voiceless

7.2.2.5 Porch Sitters Individual Participant Discussion

The data presented in Table 7.10, as well as the vowel plots for each woman, show that the porch sitters generally had more backed nuclei than the church ladies, thus allowing them more forward movement. Because the data for the women in the porch sitters was much more tightly packed and had less variability from speaker to speaker, the community of practice averages can be viewed as representative of the women, since they more accurately mirror the patterns of /ai/ production among the individual women. As the previous plots and table, as well as the statistical analysis in section 7.1 showed, the voicing of the following segment was a significant factor for the F_2 dimension of /ai/ but not for F_1. Ultimately, this means that for the porch sitters the frontness of the vowel, not the height, is the key variable that marks difference in pre-voiced and pre-voiceless /ai/ and seems to be the key way that they differentiate pre-voiced and pre-voiceless /ai/. The pattern that emerged for the porch sitters from this analysis was that /ai/ in pre-voiced positions is glide-weakened in comparison to /ai/ pre-voiceless.

7.3 Conclusion

The analysis of /ai/ has shown that, for the women in this study, there was a significant difference in the production of /ɑ/ and /ai/. This meant that for all of the women in the study /ai/ was a diphthongal variant; it had movement of some sort (F_1, F_2, or both) from the midpoint to offset. Thus, we cannot assume that any of the productions of /ai/ by the women in this study were monophthongs. Rather, all productions of /ai/ must be considered to have some amount of gliding. Ultimately, this means that /ai/ must be realized as glided or glide-weakened, depending upon the degree of gliding.

The statistical analysis of /ai/ among the communities of practice produced interesting results when linguistic and social behavior were considered in tandem. Although comparisons of mean /ai/ values between the two communities of practice did not produce significant results, investigation of the effect of phonetic constraints on the production of the F_2 dimension of /ai/ was found to be significant. For the women, the frontness of /ai/, not the height, seemed to be the factor that differentiated the voiced and voiceless contexts from one another. Further investigation of the role and significance of phonetic constraints within each community of practice uncovered that, for the porch sitters, the voicing of the following segment was a significant indicator of F_2 movement in the production of /ai/. Specifically this meant that pre-voiceless /ai/ productions had more forward movement (longer front glides) than pre-voiced /ai/ productions (which were glide-weakened). Contrastingly, the church ladies showed no patterns for the phonetic conditioning of /ai/ in either the F_1 or F_2 dimension.

The split in pre-voiced and pre-voiceless conditioning of glide length in the diphthong /ai/ is a pattern that has been noted for African American English varieties (Labov, 1994, 2001; Bailey 1997, 2001; Thomas 2001; Wolfram and Thomas 2002). Thus, the fact that the porch

sitters, the group of women who continually situate themselves within African American culture, have maintained the patterns found attributed to African Americans and African American English is to be expected. The lack of phonetic conditioning for the church ladies community of practice could be the result of a loss of phonetic conditioning for /ai/ in their dialect. The loss of phonetic conditioning for /ai/ is a feature of Appalachian English varieties. However, since there is no discernable pattern among the individual participants in the church ladies (with some having longer glides in pre-voiced others in pre-voiceless), this seems unlikely. Rather, it appears that for the church ladies, there was no group pattern in their production of /ai/. Each of the women had their own pattern that they followed and as a result no norm could be established for the church ladies community of practice.

Chapter 8

Conclusion

In this study, I have presented the results of an in-depth investigation of the patterning of /u/, /ʊ/, /o/ and /ai/ among two women's communities of practice in Texana, North Carolina. This investigation has looked at the status of the variables between and among the communities of practice and has considered the linguistic and social detail that was correlated with the use of specific vocalic patterns. This study has produced a number of important insights about the phonetic and sociolinguistic patterns that surround local-level language use by the two friendship groups in this study, as well as broader insights about the ways that language use and subtle phonetic variations are used by speakers to reflect identity. Section 8.1 provides discussion of /u/ and /ʊ/ among the communities of practice, Section 8.2 revisits the data on /o/, and section 8.3 looks at the results from the investigation of /ai/. In section 8.4, the results from the individual vowel investigations are integrated and examined in relation to each other, with specific consideration of the phonetic and sociolinguistic implications of the results. Concluding remarks and directions for further study are found in section 8.5.

8.1 /u/ and /ʊ/

The data from the analysis of /u/ showed that there was a significant difference in production between the communities of practice. The church ladies produced a more fronted /u/ vowel than the porch sitters. In addition to producing a more fronted /u/ variant, the church ladies also had a /u/ variant that was significantly longer in duration than the porch sitters. This finding was another site of difference in /u/ production among the women's friendship groups

and served as another way that the church ladies and porch sitters differed linguistically. Although there were significant differences in the position of /u/ between the communities of practice, the overall position of /u/ among all of the women was found to be more front than was found by Hillenbrand et al. (1995) and Anderson (2003). Thus, both the church ladies and porch sitters produced fronted /u/ variants when examined in reference to other American English speakers; however, there was a significant difference in the degree of frontness of /u/ which correlated with participation in a particular community of practice. Ultimately, although all of the women fronted /u/, the extreme fronted variants used by the church ladies seemed to reinforce their participation and identification with the local community and dialect of the region, while the production of a more backed /u/ variant (when compared to the church ladies) by the porch sitters underscored their extra-local identity.

The findings for /ʊ/ were different from the results for /u/. The analysis of /ʊ/ did not show differences by community of practice. Although there were differences in the raw data, where the church ladies use a more fronted variant and the porch sitters appeared to used a more backed variant, the statistical analysis did not show any significant results. Even after the removal of an outlier (Melissa) from the porch sitters' data, there were no significant differences in production by community of practice. The lack of a difference in the production of /ʊ/ by community of practice is a result of the variable status of /ʊ/ among all of the women. Because of the variable production of /ʊ/, no clear patterns could be defined for each community of practice and no significance could be found between the groups. Certainly, this analysis shows that the production of /ʊ/ within the communities of practice is quite irregular, and most likely, /ʊ/ is a variable in flux throughout the community.

There were no phonetic constraints on the fronting of /ʊ/ nor where there any for /u/. This result is quite different from those found by Anderson (2003) and Nguygen (forthcoming), studies which each found that the fronting of high-back and mid-back vowels among African Americans in Detroit was phonetically conditioned. Thus, for African Americans in Detroit, the fronting of these vowels is progressing through the phonetic contexts in a patterned manner, which allows them to observe phonetic change as it is happening among these residents of Detroit. However, since no phonetic constraints were found to be associated with the production of /u/ and /ʊ/ among all of the women in this study, it seems that the production of fronted /u/ and /ʊ/ variants has been a feature of Texana speech for quite some time. Although differences in production exist within subsets of the community (relatively more or less fronted variants used by certain groups), the picture of the community from this dataset questions whether the phonetic constraints on /u/ and /ʊ/ production were ever present in the community dialect.

8.2 /o/

The production of /o/ was another vocalic pattern that distinguished the two communities of practice from each other. Comparison of /o/ among the communities of practice showed that the church ladies had more fronted productions of /o/ than the porch sitters. There were no other comparable quantitative data available for /o/ (unlike the data from Anderson (2003) used for the comparison of /u/ and /ʊ/), so the production of /o/ could only be considered from within the dataset. The front production of /o/ by the church ladies underscored their participation in local (Appalachian) dialect patterns, while the resistance of the local patterns by the porch sitters showed their desire to ally themselves with an extra-local identity.

8.3 /ai/

Analysis of /ai/ showed that the production of /ai/ in pre-voiced and in pre-voiceless positions was not significantly different. This means that the church ladies used glide-weakened /ai/ in both phonetic contexts, a pattern characteristic of some Southern white varieties (Bailey 2001, Thomas 2001). However, the porch sitters showed a difference in the production of /ai/ which was a result of the phonetic context in which the vowel occurred. Specifically, the porch sitters used glide-weakened /ai/ in pre-voiced positions and a more glided production in pre-voiceless positions. This pattern is consistent with the patterns found among African Americans (Thomas, 2001; Labov 1994, 2001). Further, analysis of the porch sitters' production of /ai/, showed that for these women, it was the movement of the second formant (F_2), which corresponds with front and back movement in the articulatory space, that was primarily responsible for the glide weakening. Thus, when the porch sitters used glide-weakened variants, they lost the glide movement forward rather than movement upward. The analysis of /ai/ concluded that the church ladies used /ai/ in a manner consistent with patterns found among Southern whites (similar to the surrounding local population), while the porch sitters used patterns consistent with patterns found among African Americans (typical of areas found over 3 hours away from the study community). These linguistic patterns mirrored each community of practice's orientation and identification within the Texana community. The patterns for /ai/ used by the church ladies allied their language practices with the local community, while the contextually conditioned patterns for /ai/ found among the porch sitters highlighted their trend towards linguistic patterns and identity that are not locally affiliated or bound.

8.4 Aggregate Vowel Data

Figure 8.1 provides an aggregate vowel plot for the two communities of practice. The solid black squares indicate the porch sitters' vowels, while the open squares indicate the church ladies' vowels. The plot shows the midpoint and offset measurements for each vowel analyzed in this study. Examination of all of the vowels for both of the communities of practice allows the differences in production to emerge. From the plot, one can see that the porch sitters are maintaining a maximum amount of distance between their front and back vowels; that is, they maximized the "Texana vowel space". Meanwhile, the church ladies were a bit more conservative in their vowel productions, with less distance between their front and back vowels, which showed the fronted nature of their back vowel productions.

/u/ clearly shows a difference by community of practice. Although all of the women in both communities of practice were found to produce a fronted high-back vowel variant when compared to other American English groups (Anderson 2003, Hillenbrand et al. 1995), the variation found among the women is what is of interest for this study. The result of more widespread movement toward high back vowel fronting is not a surprise given that high back vowel fronting is a process that is widely occurring among English speakers in various locales (Anderson 2003, Anderson et al. 2002, Fridland 2003, Fought 1999, Habbick 1991, Mallinson 2002, Hall-Lew forthcoming, Borosky and Kiesling 2001, Trudgill 2001). Despite the expectation of high-back and mid-back vowel fronting among the women, the differences in production found among the communities of practice uncovered more detailed information about the linguistic repertoires and social motivations of the speakers. The church ladies use of more fronted /u/ variant, the variant that is associated with the surrounding white local dialect of Appalachia, underscores their affiliation and identification with the local landscape, specifically

their feelings of ownership and place in the Texana community. In contrast, the use of a more backed /u/ variant by the porch sitters seemed to indicate their resistance to a local orientation. Even though the porch sitters use a fronted /u/ variant, their lack of participation in the extreme fronted productions of the church ladies and the surrounding white community is a means to distance themselves from the local community.

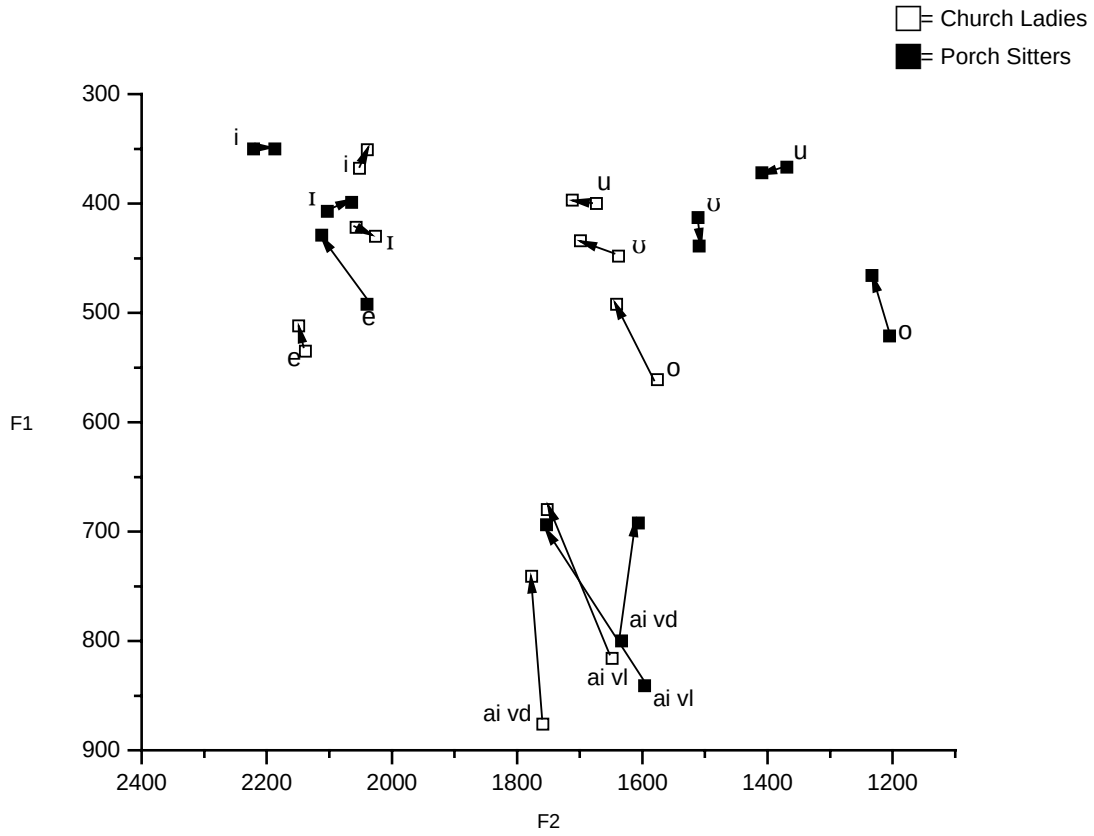

Figure 8.1 Aggregate Vowel Plot for the Communities of Practice

Meanwhile, the lack of significance for the production of /ʊ/ between the communities of practice and the resulting variable status of /ʊ/ among the women in this study underscores and highlights the flux of /ʊ/ within the community. Unlike /u/, the production of /ʊ/ varied from individual to individual within the communities of practice. Because of this, no significant

differences could be found between the two friendship groups. However, tabulation of the raw data for /ʊ/ and comparison of the data with Anderson (2003) showed that the church ladies' average values for /ʊ/ were quite similar to those of Anderson's African American group a group that she notes as /ʊ/ fronting. The values for the porch sitters were larger than those for both groups included in Anderson's study, an indication that they used more backed than other groups. Thus, by looking at the raw values and the statistical analysis in tandem, one can see that although there were no significant differences in /ʊ/ production between the communities of practice, there is an indication that some of the women produced fronted /ʊ/ variants. Ultimately, the community averages for this variable were not helpful, since every woman followed her own pattern for /ʊ/ that was not correlated with her participation in a particular community of practice.

The finding that individuals that identify as African American are using fronted variants of /u/ and /ʊ/ is of interest. Sociophonetic studies of African American English have stated that African Americans tend to have high-back and mid-back vowels that are further back than those of other mainstream white English varieties (Labov 1994, 2001). Thus, the use of these features by African Americans is of interest for the exploration of African American English language patterns, since the majority of work on African American English has focused on the homogeneity of this variety not the differences within the variety. In sum, the influence of regional dialects on African American speech has been overlooked in the rush to arrive at conclusions about the widespread characteristics of African American speech and as a result has painted African Americans as a linguistically homogeneous group.

Given the influence of Appalachian English on the speech of these African Americans and the tendency for back vowel fronting in nearly all English varieties around the world, the fronting of high back vowels is to be expected among these speakers as a result of dialect contact. However, descriptions of African American English would not predict this pattern for these women: they should be resisting high-back and mid-back vowel fronting. Thus, the findings of this study, like those of Fridland (2001), Thomas (2001), and Anderson (2003) point out that African Americans are using regional vocalic patterns, a finding which questions assumptions about the homogeneity of African American English. Further, the differences in production that were noted for the communities of practice also highlight the continuum of speech that exists within communities, even small isolated communities like Texana, North Carolina. The fact that these two friendship groups produce /u/ and /ʊ/ in ways that are significantly different from each other shows that great diversity can exist in the speech of even a small community and that often the differences in the language practices of subsets within a community are associated with differences in identity.

Similarly, the production of /o/ among the women seemed to reflect their orientation toward the community and their identification within the community. The use of a fronted /o/ variant by the church ladies and a backed /o/ variant by the porch sitters mirrored the findings for /u/. The church ladies used the variant that is associated with the surrounding local or regional production, while the porch sitters used an extremely backed /o/ variant that was more closely aligned with varieties found outside of the regional dialect area. Again, the church ladies adhered to a pattern that aligned more closely with those expected for Southern white speakers (Thomas 2001), in many ways a reflection of their orientation towards the local area and traditionalism rather than with an affiliation with broader African American norms and a desire

for change or difference. Conversely, the porch sitters used patterns that were more reflective of expected African American English norms. The production of an extreme backed /o/ is a further reflection of their identification outside of the local community. Although members of the Texana community, these porch sitters did not orient themselves exclusively within the local community like the church ladies; instead, they chose to create a group identity that while situated within the community was focused on more extra-local norms and ideals, many of which were associated with broader urban and African American culture. Their focus on broader urban norms can be seen in their dress, their choice in television shows, their frequent trips to Atlanta, and even the ways in which they interact with others within the community and those from outside of the community.

Finally, as Figure 8.1 shows, the production of /ai/ among the communities of practice was also a variable in which the two communities of practice showed difference. The porch sitters adhered to the expected patterns for the production of /ai/ among African Americans, while the church ladies used /ai/ in a manner similar to the patterns that have been noted for Southern whites. The differences in production, and their social correlates, were another indication of the linguistic and social differences between the two communities of practice. Perceptual studies (Plitchta and Preston 2004, Torbert 2004) have shown that the glide-weakening of /ai/ is a feature that interlocutors associate with being Southern. The use of glide-weakened /ai/ in both the pre-voiced and pre-voiceless positions by the church ladies is another way that they can be seen as linguistically maintaining a more local identity, whereas the lack of /ai/ glide-weakening in pre-voiceless positions is a way that the porch sitters have avoided placement within the surrounding local Appalachian linguistic framework.

8.5 Concluding Remarks

The results of this study have both local and global implications. On a local level, the results of this study of African American women's language in an Appalachian community revealed considerable subgroup variation. Within this community of 153 people and within these 8 women, there was a broad range of variation highlighting that not all speakers in a community orient themselves toward the same speech norms. The community showed patterning by community of practice for most of the variables examined; however, for some variables like /ʊ/, that are unstable within the community, individuals are still negotiating the linguistic possibilities for production. Ultimately, the results of this analysis show that assumptions of homogeneity as a result of isolation, ethnicity, or region must be tempered and approached with caution, acknowledging the subgroup variation, heterogeneity, and the linguistic possibilities and changes that exist in communities.

Additionally, the results of this study also indicated that these African American women show dialect patterning that is sensitive to both regional (Appalachian English) and ethnic (African American English) norms. Unlike previous sociolinguistic studies that have considered African American English a case apart from other English varieties, this study highlighted that African American speakers have used a regional variety of English for quite some time. Thus, it seems that categorization of speakers solely on the basis of either their ethnicity or region simplifies the linguistic and social identities of speakers and a community, since within each community there is a range of variation.

Certainly, this study highlighted that the social salience of variables cannot be overlooked in sociophonetic studies. As research has shown, some phonetic variables are more salient than others and carry stronger perceptions or stereotypes with them. As this study has shown,

examination of these socially marked phonetic variables is a crucial means for understanding the ways that local speakers may be accommodating or resisting the regional, ethnic, and even social norms that surround them. Investigations of these important phonetic attributes can reveal much about speakers' and groups' identities and social positioning within a community. Likewise, variables, like /ʊ/, that are undergoing change and that are of variable status in a community should be monitored for possible changes in progress. Situations like those of /ʊ/ in this study, allow sociolinguistic researchers to observe, record, and analyze the s-curve of linguistic change from a much earlier position and as a result make much more informed and detailed conclusions about the progression of sound change.

This study has shown that the expected phonetic constraints on vowel production are not absolutes since the only phonetic constraints found in this study were related to the production of /ai/ for the porch sitters. It seems that although change is predicted to progress through phonetic environments, the effects of phonetic context may disappear after a change has been in progress for a long period of time in a dialect. Further, the lack of phonetic constraints on the production of the other vowels in the study brings about questions of whether phonetic constraints were ever at work in the production of the vowels. Ultimately, assumptions about the phonetic constraints on vowel fronting cannot be applied equally to every dialect situation.

The results of this study have more global implications when considered in the framework of the goals of most sociolinguistic studies. The results have shown that although all speakers within a community can identify as African American and Appalachian, their linguistic and social realizations of this identity can be quite distinct. In sum, speakers' position themselves within groups and align themselves linguistically along multiple social axes. Within the Texana community, linguistic variation by community of practice is shown to exist on the

phonetic level in addition to linguistic variation by community of practice on the morphosyntactic level (Childs and Mallinson 2004, Mallinson and Childs, in press). In order to explain the heterogeneous and variable linguistic development that can occur in the vocalic patterns of individuals within a particular speech community such as Texana, attention must focus on the local context and modes of group participation to account for the social embeddedness of particular language varieties.

Analysis of linguistic data must consider how speakers may project, reinforce, and form group and individual identity through shared social and linguistic practices. For the church ladies this meant reinforcing local social and linguistic practices, while for the porch sitters this meant reinforcing extra-local linguistic and social norms. Thus, for these women, identity was not an issue of African American or white identity, since all of the women identify with both. Rather, for these women, the choices that they made socially and perhaps even linguistically (especially with lexical items) were about alignment with local or extra-local norms and urban/rural identity. This study furthers our understanding of the ways that speakers negotiate the social and linguistic correlates of local or non-local identity, factors that speakers notice and account for in their day -to- day interactions. As this analysis revealed, the community of practice framework provides a strong basis for investigating the mutual construction of individual linguistic and social identity as well as the construction of community identity.

This dissertation has shown the continuum of linguistic and social variation that exists within a community and it has explored and discovered the links between the linguistic and social behavior of community friendship groups. Further, this study has shown the lack of homogeneity within a dialect group even in an isolated local community. Moreover, this study has shown that linguistic models, such as the Southern Vowel Shift, do not always describe the

patterns found in community language studies. Thus, we must be careful to take models such as the Southern Shift as simply models that aid in the discussion of vowel patterns; rather than as absolutes that must be applied to all situations that fit the predicted demographic group.

Given the findings of this study, it is hoped that further research will explore the ways that African American speakers in other communities negotiate regional and ethnic dialect features. Examination of situations similar to the one in this study would further understanding of the ways that speakers construct identity locally and how they use their local identities to reinforce their beliefs about their identity in a global context. In addition, it is hoped that the results of this study will encourage the use of community of practice theory to aid in the understanding of the local and global meaning of subtle phonetic variation.

References

Anderson, Bridget. 2003. An Acoustic Study of Southeastern Michigan Appalachian and African American Southern Vowel Systems. Ph.D.Dissertation. University of Michigan: Ann Arbor, MI.

Anderson, Bridget, Lesley Milroy, and Jennifer Nguyen. 2002. "The Fronting of /u/ and /ʊ/ among Detroit African Americans: Evidence from Real and Apparent Time." Paper Presented at New Ways of Analyzing Variation 31, Stanford, CA.

Anderson, Bridget. 1999. "Source-Langauge Transfer and Vowel Accommodation in the Patterning of Cherokee English /ai/ and /oi/." *American Speech* 74(4):339-368.

Anderson, Bridget. 1998. An Acoustic Study of Phonological Transfer and Vowel Accommodation Among the Snowbird Cherokee. Master's Thesis. North Carolina State University, Raleigh: NC.

Anderson, Bridget and Lesley Milroy. 1999. "Southern Sound Changes and the Detroit AAVE Vowel System." Paper presented at New Ways of Analyzing Variation 28, Toronto, ON.

Bailey, Charles-James N. 1968. "Segmental Length in Southern States English: An Instrumental Phonetic Representation of a Dialect in South Carolina." PEGS Paper No.20. Washingto DC: Center for Applied Linguistics.

Bailey, Guy. 2001. "The Relationship Between AAVE and White Vernaculars in the American South: Some Phonological Evidence." *Sociocultural and Historical Contexts of African American Vernacular English*. Sonja Lanehart, ed. Amsterdam : John Benjamins, 53-92.

Bailey, Guy and Erik Thomas. 1998. "Some aspects of African-American Vernacular English Phonology." *African American English*. Salikoko Mufwene, John Rickford, Guy Bailey, and John Baugh, eds. London: Routledge Press, 85-109.

Bailey ,Guy, Tom Wikle, Jan Tillery, and Lori Sand. 1996. "The Consequences of catastrophic Events: An Example from the American Southwest." *Variation: Data, Theory, and Analysis*. James Arnold, et al. eds. Stanford, CA; Center for the Study of Language and Information, 435-451.

Beddor, Patrice, James Harnesberger and Stephanie Lindemann. 2002. "Language Specific Patterns of Vowel - to - Vowel Coarticulation: Acoustic Structures and Their Perceptual Correlates." *Journal of Phonetics* 30: 591-627.

Bernstein, Cynthia and E. Gregory. 1993. "Measuring Social Causes of Phonological Variables." *American Speech* 68: 227-240.

Borowsky, Tony and Scott Kiesling. 2001. "The 'Jewel Highway' to /uw/ fronting in Australia?" Paper presented at New Ways of Analyzing Variation 30, North Carolina State University. Raleigh, NC, October 2001.

Brice-Heath, Shirley. 1983. *Ways with Words*. Cambridge: Cambridge University Press.

Bucholtz, Mary. 1999. "'Why be normal?': Language and identity practices in a community of nerd girls." *Language in Society* 28: 203-223.

Burkette, Alison. 2001. An Examination of Language Variation in A Small Blue Ridge Community. PhD. Dissertation. Athens, Ga. University of Georgia.

Chambers, Jack, Peter Trudgill, and Natalie Schilling-Estes, eds. 2003. *Handbook of Language Variation and Change*. Oxford: Blackwell.

Childs, Becky, and Christine Mallinson. 2004. African American English in Appalachia: Dialect Accommodation and Substrate Influence. *English World-Wide* 25:1, 27-50.

Coates, Jennifer. 1998. "Gossip Revisited: Language in All-Female Groups." In Jennifer Coates and Deborah Cameron, eds. *Women in their Speech Communities*. Malden, MA: Blackwell, 94-121.

Coates, Jennifer. 1997. "Women's Friendships, Women's Talk." Ruth Wodak, ed. *Gender and Discourse*. London: Sage, 276-262.

Conn, Jeff. 2002. "It's not all Rain and Coffee: An Investigation into the Western Dialect of Portland, OR. Paper Presented at ADS session of South Atlantic Modern Language Association 2002, Baltimore, MD, November 2002.

Cukor-Avila, Patricia. 1995. The Evolution of AAVE in a Rural Texas Community: An Ethnolinguistic Study. Ph.D. Dissertation. University of Michigan: Ann Arbor.

Disner, Sandra. 1980. "Evaluation of Vowel Normalization Procedure." *Journal of Acoustical Society of America* 67(1): 253-261.

Di Paolo, Marianna and Alice Faber. 1990. "Phonation Differences and the Phonetic Content of the Tense-Lax Contrast in Utah English." *Language Variation and Change* 2: 155-204.

Drake, Richard .2001. *A History of Appalachia*. Lexington, KY: University of Kentucky Press.

Dubois, Sylvie and Barbara Horvath. 1999. "When the Music Changes, You Change Too: Gender and Language Change in Cajun English." *Language Variation and Change* 11: 287-314.

Eckert, Penelope. 2000. *Linguistic Variation as Social Practice*. Malden, MA: Blackwell.

Eckert, Penelope. 1996. "Vowels and Nail Polish: The Emergence of Linguistic Style in the Pre-Adolescent Heterosexual Marketplace." *Gender and Belief Systems.* Berkley: Berkley Women and Language Group.

Eckert, Penelope. 1989. *Jocks and Burnouts: Social Identity in the Highschool*. New York: Teachers College Press.

Eckert, Penelope and Sally McConnell-Ginet. 2003. *Language and Gender*. New York: Cambridge University Press.

Eckert, Penelope and Sally McConell-Ginet. 1998. "Communities of Practice: Where Language, Gender, and Power All Live." Jennifer Coates, ed. *Language and Gender: A Reader.* Malden, MA: Blackwell, 484-494.

Eckert, Penelope, and Sally McConnell-Ginet. 1995. "Constructing Meaning, Constructing Selves." Mary Bucholtz and Kira Hall, eds. *Gender Articulated: Language and Socially Constructed Self*. New York: Routledge, 469-507.

Feagin, Crawford. 2003. "Entering the Community: Fieldwork." *The Handbook of Language Variation and Change*. Jack Chambers, Peter Trudgill, and Natalie Schilling-Estes eds. Oxford: Blackwell, 27-47.

Feagin, Crawford. 1986. "More Evidence for Major Vowel Change in the South. *Diversity and Diachrony*." *Amsterdam Studies in the Theory and History of Linguistic Science*, series 4. *Current Issues in Linguistic Theory* 53. Amsterdam: John Benjamins.

Feagin, Crawford. 1979. *Variation and Change in Alabama English: A Sociolinguistic Study of the White Community*. Washington, DC: Georgetown UP.

Foster, Michele. 1992. "Are You With Me?: Power, Solidarity, and Community in the Discourse of African American Women." *Locating power: Women and Language Group, Berkeley*. Kira Hall, Mary Bucholtz, and Birch Moonwoman eds. Berkeley Women and Language Group, University of California, Linguistics Department, 329-350

Fought, Carmen. 2003. *Chicano English in Context.* New York: Palgrave/ Macmillan Publishers.

Fought, Carmen. 1999. "A Majority Sound Change in a Minority Community: /u/-Fronting in Chicano English." *Journal of Sociolinguistics*, 3(1): 5-23.

Fridland, Valerie. 2003. "Patterns of Fronting in the Boot, Book, and Boat Classes." Paper presented at the SECOL Conference. Washington D.C.

Fridland, Valerie. 2003. "Network Strength and the Realization of the Southern Vowel-Shift among African Americans in Memphis, Tennessee." *American Speech* 78:3-30.

Fridland, Valerie. 2001. "The Social Dimension of the Southern Vowels Shift: Gender, Age and Class. *Journal of Sociolinguistics* 5: 233-54.

Fridland, Valerie. 1999. "The Southern Shift in Memphis, Tennessee." *Language Variation and Change* 11: 267-285.

Habbick, T. 1991. "Burnouts versus Rednecks: Effects of Group Membership on the Phonemic System." *New Ways of Analyzing Sound Change*. Penelope Eckert, ed. San Diego: Academic Press: 185-212.

Hall, Joseph Sargent. 1942. The phonetics of Great Smoky Mountain Speech. Ph.D. dissertation. Columbia University: New York.

Hall-Lew, Lauren. 2004. "One Shift . Two Groups: When Fronting alone is Not Enough." *University of Philadelphia Working Papers in Linguistics* 10.2.

Hillenbrand, James, Michael Clark, and Terrance Neary. 2001. "Effects of Consonant Environment on Vowel Formant Patterns." *Journal of Acoustical Society of America* 109(2): 748-763.

Hillenbrand, James, Laura Getty, Michael Clark, and Kimberlee Wheeler. 1995. "Acoustic Characteristics of American English Vowels." *Journal of Acoustical Society of America* 97(5): 3099-3111.

Holmes, Janet, and Miriam Meyerhoff. 1999. "The Community of Practice: Theories and Methodologies in Language and Gender Research." *Language in Society* 28: 173-183.

Inscoe, John. 2001. *Appalachians and Race: The Mountain South from Slavery to Segregation*. Lexington : University Press of Kentucky.

Johnson, Keith. 2003. *Acoustic and Auditory Phonetic*. Oxford: Blackwell Publishers.

Johnson, Keith. 1990. "Contrast and Normalization in Vowel Perception." *Journal of Phonetics* 18: 229-254.

Jones, Jamila. 2003. African American Accommodation in the NCCS in Lansing, Michigan. Ph.D. Dissertation. Michigan State University: East Lansing, Michigan.

Kretzschmar, William, Virginia McDavid, Ellen Johnson and T. Lerud. 1993. *Handbook of the Linguistics Atlas of the Middle and South Atlantic States*. Chicago, Il: University of Chicago Press.

Kretzschmar, William, Sonja Lanehart, Betsey Barry, Iyabo Osiapem, and Mi Ran Kim. 2004. "Atlanta in Black and White: A New Random Sample of Urban Speech". A paper presented at NWAV 33. Ann Arbor, MI.

Labov, William. 2001. *Principles of Linguistic Change*: *Social Factors*. Oxford: Blackwell.

Labov, William. 1998. Coexistent Systems in African - American Vernacular English. *African American English: Structure, History, and Use*. Salikoko Mufwene, John Rickford, Guy Bailey, and John Baugh eds. London: Routledge, 110-153.

Labov, William. 1994. *Principles of Linguistic Change*: *Internal Factors*. Oxford: Blackwell.

Labov, William. 1991. The Three Dialects of English. *New Ways of Analyzing Sound Change*. Penelope Eckert, ed. New York: Academic Press, 1-44.

Labov, William. 1972. *Language in the Inner City: Studies in the Black English Vernacular*. Philadelphia: University of Pennsylvania Press.

Labov, William 1966. *The Social Stratification of English in New York City*. Washington, DC: Center for Applied Linguistics.

Labov, William, Paul Cohen, Clarence Robins, and John Lewis. 1968. *A Study of the Non-Standard English of Negro and Puerto Rican Speakers in New York City*. United States Office of Education Final Report, Research Project 3288.

Lanehart, Sonja. 2002. *Sista Speak: Black Women Kinfolk Talk about Language and Literacy.* Austin: University of Texas Press.

Lindblom, Bjorn. 1963. "Spectrographic Study of Vowel Reduction." *Journal of the Acoustical Society of America* 35, 1773-1781.

Linguistic Atlas of the Middle Atlantic States. (http://hyde.park.uga.edu/lamsas/).

Luthin, Herbert. 1987. "The Story of California /ow/: The Coming-of-age of English in California." In *Variation in Language*: *NWAV-XV*. K. M. Denning et al. eds. Palo Alto: Stanford Department of Linguistics, 312-324.

Mallinson, Christine. 2002. The Regional Accommodation of African American English: Evidence from a Bi-ethnic Mountain Enclave Community. Mater's Thesis. North Carolina State University: Raleigh.

Mallinson, Christine and Becky Childs. In press. "Communities of Practice in Sociolinguistic Description: African American Women's Language in Appalachia." *Penn Working Papers in Linguistics* 10.2.

Mallinson, Christine and Becky Childs. 2004. "African American Women's Language in the Smoky Mountains of Appalachia." Paper presented at the LAVIS conference. Tuscaloosa, AL.

Mallinson, Christine and Walt Wolfram. 2002. Dialect accommodation in a bi-ethnic mountain enclave community: More evidence on the development of African American Vernacular English. *Language in Society* 31: 743-775.

McDavid, Raven. 1943. Review of J.S. Hall The Phonetics of Great Smoky Mountain Speech. *Language* 19: 184-195.

Mendoza-Denton, Norma. 1996 "Muy Macha": Gender and Ideology in Gang Girls' Discourse about Makeup. Ethnos:*Journal of Anthropology* 6: 91-92.

Meyerhoff, Miriam. 2003. "Communities of Practice." *The Handbook of Language Variation and Change*. Jack Chambers, Peter Trudgill, and Natalie Schilling-Estes eds. Oxford: Blackwell, 526-548.

Milroy, Lesley. 1987. *Language and Social Networks 2nd ed*. Oxford: Blackwell.

Milroy, Lesley, and Matthew Gordon. 2003. *Sociolinguistics*: *Method and Interpretation*. Oxford: Blackwell.

Montgomery, Michael. 1991. "The Roots of Appalachian English: Scotch-Irish or British Southern?" *Journal of the Appalachian Studies Association* 3: 177-191.

Montgomery, Michael. 1989. "Exploring the Roots of Appalachian English." *English World-Wide* 10: 227-78.

Montgomery, Michael and Joseph S. Hall. 2004. *Dictionary of Smoky Mountain English*. Knoxville: University of Tennessee Press

Morgan, Marcileana. 2003. "Signifying Laughter and the Subtleties of Loud-Talking: Memory and Meaning in African American Women's Discourse", *Ethnolinguistic Chicago: Language and Literacy In Chicago's Neighborhoods,* Marcia Farr, ed., Mahwah, New Jersey, Lawrence Erlbaum, 51–76.

Moriello, Rebecca and Walt Wolfram. 2003. "New Dialect Formation in the Rural South: Emerging Hispanic English Varieties in the Mid-Atlantic." *Penn Working Papers in Linguistics* 9.2.

Neary, Terrance. 1978. *Phonetic Feature Systems for Vowels*. Bloomington; IU Linguistics Club.

Nichols, Patricia. 1983. Linguistic options and choices for black women in the rural South. *Language , Gender, and Society.* Barrie Thorne, Cheris Kramarae and Nancy Henley, eds. Newberry House Pub, Inc, 54-60.

North Carolina Census Records. March 18, 2005. (http://census.osbm.state.nc.us/lookup/).

Nguyen, Jennifer. 2005. The Changing Social and Linguistic Orientation of the African American Middle Class. PhD Dissertation. University of Michigan: Ann Arbor, Michigan.

Peterson, G. and H. Barney. 1952. "Control Methods Used in the Study of Vowels." *Journal of the Acoustical Society of America* 24: 175-184.

Plichta, Bartek and Dennis Preston. 2004. "The /ay/s have it.". Theme Issue on Subjective Processes in Language Variation and Change, Acta Linguistica Hafniensia. T. Kristiansen, N.Coupland and P. Garrett eds

Poplack, Shana, and Sally Tagliamonte. 2001. *African American English in the Diaspora*. Oxford: Blackwell.

PRAAT. (http://www.fon.hum.uva.nl/praat/).

Rickford, John. 1999. *African American Vernacular English: Features, Evolution, Educational Implications.* Oxford: Blackwell.

Schilling-Estes, Natalie. 1996. The Linguistic and Sociolinguistic Status of /ay/ in Outer Banks English. PhD Dissertation. University of North Carolina Chapel Hill: Chapel Hill, NC.

Singler, John 1998. "The Homogeneity of the Substrate as a Factor in Pidgin/Creole Genesis." *Language* 64: 27-51.

Stockwell, Richard and Danka Minkova. 1997. "On Shifts and Drifts." *Studies in Anglica Posnaniensia* 31: 82-103.

Thomas, Erik. 2001. *An Acoustic Analysis of Vowel Variation in New World English*. PADS 85. Durham: Duke University Press.

Thomas, Erik, and Guy Bailey. 1998. "Parallels Between Vowel Subsystems of African American Vernacular English and Caribbean Anglophone Creoles." *Journal of Pidgin and Creole Languages* 13: 267-296.

Tillery, Jan and Guy Bailey. 2003. " Urbanization and the Evolution of Southern American English." *English in the Southern United States*. Stephen Nagel and Sara Sanders eds. Cambridge: Cambridge University Press. 159-172.

Torbert, Benjamin. 2004. Southern Vowels and the Social Construction of Salience. PhD Dissertation. Duke University: Durham, NC.

Trudgill, Peter. 2001. *Sociolinguistic Variation and Change*. Edinburgh: Edinburgh University Press.

Wegner, Etienne .1998. *Communities of Practice*. Cambridge: Cambridge University Press.

Wetzell, Brett. 2000. Rhythm, Dialects, and the Southern Drawl. MA thesis. North Carolina State University: Raleigh, NC.

Williams, Cratis. 1992. *Southern Mountain Speech*. Berea, NC: Berea College Speech.

Wolfram, W. 1969. *A Sociolinguistic Description of Detroit Negro Speech*. Washington, D.C.: Center for Applied Linguistics.

Wolfram, Walt, Phillip Carter, and Rebecca Moriello. 2004. "Emerging Hispanic English: New Dialect Formation in the American South." *Journal of Sociolinguistics* 8: 339-358.

Wolfram, Walt, and Erik R. Thomas. 2002. *The Development of African American English*. Oxford: Blackwell.

Wolfram, Walt, Erik R. Thomas, and ElaineW. Green. 2000. "The Regional Context of Earlier African-American Speech: Reconstructing the Development of African-American Vernacular English." *Language in Society* 29: 315-55.

Wolfram, Walt and Natalie Schilling-Estes. 1998. *American English*. Malden, MA: Blackwell.

Wolfram, Walt and Donna Christian. 1976. *Appalachian Speech*. Arlington, Virginia: Center for Applied Linguistics.