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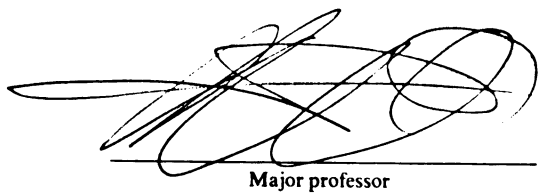

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AFRICAN AMERICANS IN LANSING AND THE NORTHERN CITIES VOWEL SHIFT: LANGUAGE CONTACT AND ACCOMMODATION

By

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ABSTRACT

AFRICAN AMERICANS IN LANSING AND THE NORTHERN CITIES CHAIN SHIFT

By

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This dissertation examines the nature of dialect contact and the role that pronunciation plays in the preservation and evolution of an African American identity. The primary focus involves the acoustic analysis of audio-recorded speech samples to determine the degree of accommodation of a representative sample of African American respondents to step one (/æ/ raising) of the Northern Cities Chain Shift (NCCS). Linguists have asserted that African Americans generally do not participate in the vowel changes that affect the White English vernaculars in the United States. However, most studies have been conducted in large urban areas or Southern rural areas while vowel studies of medium sized communities have been neglected. This study closes this vacuum by examining the vowel systems of African Americans in a mid-sized city in the inland North, one of the purported NCCS dialect areas.

Acoustic analysis was conducted on vowels read in citation form to explore the effect of gender, age, social status, and network relations on the height and duration of /æ/. Results indicate a strong correlation between vowel height and gender and duration and gender. The use of Northern influenced front vowels and Southern influenced

back vowels indicates that social history and social cultural choices have affected pronunciation.

DEDICATION

To my son Ahmad, who was patient through it all.

"ACKNOWLEDGMENT"

I would like to express gratitude to my advisor, Dennis R. Preston, for the support, expertise, and assistance, which he granted to me over the years. Geneva Smitherman, Denise Troutman, and David Dwyer's courses helped me to understand the issue of hegemony as well as some of its linguistic ramifications and I thank you all. I would also like to thank the Department of Linguistics and German, Slavic, Asian, and African Languages. I must also extend appreciation to Michigan State University's Statistical consulting office for help with the statistical models used to calculate correlation of linguistic and social effects.

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Chapter One

1.0 Introduction

This dissertation reports on research on the nature of dialect contact among 31 African American residents of the Inland North. The study examines their accommodation to the pronunciation of the Northern Cities Chain Shift (NCCS), an ongoing vowel rotation taking place in such cities as Buffalo, Detroit, Chicago, and Cleveland. Linguists (e.g., Thomas 1997, 2001, Labov 1994, Wolfram and Schilling-Estes 1998, Henderson 1996) have asserted that African Americans are not participating in this vernacular change; however, most such studies have been skewed, concentrating mainly on male, working class African Americans in segregated portions of larger inner cities. These studies have also tended to present African American Vernacular English (AAVE) as the only representative of African American English (AAE), ignoring the fact that there is considerable linguistic variation among African Americans in terms of region, social class, sex, and age (Stockman and Newkirk 2000). Moreover, studies of the phonology of African Americans in mid-sized cities are rare.

The first chapter of this study includes a general introduction, a brief history of Lansing, an outline of the problem, purposes of the study, an overview of the methodology, the limitations of the study, and the hypotheses. The second chapter surveys the previous

sociolinguistic literature on low front vowel raising, accommodation theory, and linguistic subjugation, including an elaboration of the hierarchical, hegemonic, nature of race in the United States. Chapter Three delineates the methodology for the investigation and describes the procedures used to conduct the acoustic and statistical analyses. Chapter Four presents the results, and Chapter Five summarizes the conclusions and discusses qualitative implications.

1.1 Lansing, Michigan

Lansing, Michigan was founded in 1829 and settled in the late 1830s, largely by White settlers from New York State. The fifth census of the United States indicates that there were thirty-two slaves in Michigan in 1830. However, the sixth census does not indicate whether slavery existed in Lansing, Michigan or even in Ingham County in 1840. In fact only one free Black man between the age of 10-24 was recorded in Ingham County by the 1849 census. The 1870 census reports 77 African Americans residing in incorporated Lansing and also indicates that Michigan African Americans were originally from a variety of states: Michigan, Virginia, Ohio, Kentucky, and Indiana. The African American population grew gradually, and, according to Meyer (1970), prior to World War I, the majority of Lansing's Black population originated from Michigan, nearby Northern states, Canada, Kentucky, and Virginia. After 1915, the majority of African American

in-migration to Lansing came from the Deep South states of South Carolina, Georgia, Alabama, Mississippi, Arkansas, and Tennessee.

Meyer (1970) states that early African Americans were dispersed throughout Lansing neighborhoods until the West Side Black residential area crystallized between 1915-1939, becoming the recognized "Negro area" in west central Lansing. By 1950, the Black area had expanded westward toward West Street and eastward toward Pine Street. There was also a cluster of Blacks living south of Kalamazoo Street on the east side of the city. By 1960 (112) "the major spatial expansion of the Black core area occurred northward from Lenawee to Michigan Avenue and westward to Jenison Street in the north and to the city limits in the south." The Oldsmobile plant and the Grand River formed the boundary for the Black area. Some decentralization of the Black community occurred as a result of the I-496 highway corridor through Lansing in 1961-1969, Oldsmobile expansion in 1961-1970, and the state Capitol project in 1966 (Meyer 1970, Hawkins 1979). Although many Blacks chose to relocate in Black neighborhoods, there was some movement beyond the traditional Black neighborhoods.

In 1990, Blacks formed 19% of the reported population (127,321) for the city of Lansing and 7% of the reported population (50,677) for the city of East Lansing. In the 2000 census, Blacks comprised 21.9% of the reported population (119,128) for the city of Lansing and 7.4% (46,525) for the city of East Lansing. The present–day Lansing African

American community is progressive enough to have two Afro-centric charter schools, a street named after Martin Luther King Junior, and Black leadership at various levels in government and educational institutions.

The linguistic environment in which Lansing African Americans find themselves is, from a traditional dialect point of view, part of the Inland North (e.g., Labov 1996), but this study will concern itself with the accommodation (or lack thereof) of African American speakers to one feature of the so-called Northern Cities Chain Shift, a rather recent development in the urban areas of the Inland North.

1.2 The Problem Statement

Before 1990, the concept of race as used by the United States Census Bureau was based on the extent of "Negro" ancestry. The concept used by the Bureau in the 1990 and 2000 censuses reflects self-identification. The Census Bureau states:

> The concept of race as used by the Census Bureau reflects self-identification; it does not denote any clear-cut scientific definition of biological stock. The data for race represents self-classification by people according to the race with which they most closely identify. Furthermore, it is recognized that the categories of the race item include both racial and national origin or socio-cultural groups (Census of Population 1990:B-11). During interviews

conducted by census enumerators, if the person could not provide a single race response, the race of the mother was used (1990:B-11).

The present era, sometimes referred to as 'post-modern,' has precipitated changes in racial outlook and racial counting as a result of the civil rights movement, affirmative action, and responses to both. We live in a reputedly color-blind society in which African Americans are no longer necessarily confined to delimited areas of cities and equal opportunity is the law. In spite of the legality of movement, which seemingly grants individuals the right to choose their personal lifestyles and make individual decisions with regard to self-identification based on professional, regional, and ideological connections, most cities have Black areas and White areas, and studies by sociologists reveal that "Black and White Americans live in separate worlds and often do not speak the same language" (Feagin and Sikes 1994:320, Benjamin 1991). Black conservatives and progressives agree that institutional racism exists but differ in terms of responses to it. Some, for example, believe that race should be ignored while others believe that racism has to be aggressively opposed.

Lois Benjamin (1991) studied the coping strategies of a group of elite African Americans and reported that even the Black elite tended to socialize primarily with other Blacks in the 1990s. Is it indeed the case that hegemonic separation of identity covers all aspects of life, including language? Blacks and Whites expect certain identity patterns

and are surprised and nonplused when behavior patterns run contrary to "color." One cannot deny that there have been many societal changes in the past thirty years that point to changed conditions for a sizeable portion of the Black population, although the number of incarcerated Black men and continued deprivation deep in inner cities continue to plague society. The question asked here is whether enough has changed to alter the caste like apartheid system which influences how one speaks.

Stereotypes have an unquestionably deep and abiding staying power, and studies of regional standards have yet to fully confront the myth of General American English (Hagiwara 1997, Preston 1993, Niedzielski and Preston 2000) and the question of the homogeneity of the phonological system of AAE. I believe that regional studies of the entire range of AAE will help in exploding or confirming the myth of a homogeneous AAE phonological system.

Whether linguists choose to view linguistic variation from the perspective of communities of practice (Eckert 2000), social network (Milroy 1980), inherent polarity between prestige and stigmatization (Labov 1972, Trudgill 1986, Preston 1993), or linguistic acts of identity (Tabouret-Keller 1985), there is a great deal of hegemonic maneuvering within the United States hierarchical social structure, and there is apparently more reflection among some people who were once not allowed choice in foregrounding particular aspects of regional

identity. The challenge is to ascertain whether changes in racial classification, living space, and the law have affected network relations, merely camouflaged the status quo privilege of institutionalized privileged groups, or indicated that power and privilege are shared in demographics of cities in the United States. Therefore, my research question concerns whether accommodating to the regional standard on the part of African Americans in Lansing is among the things that have changed. Is it possible that African Americans in Lansing are seeking a more local identity by accommodating to the NCCS?

Irvine and Gal (2000:37) remark that "it has become a commonplace in sociolinguistics that linguistic forms including whole languages can index social groups." This has certainly been the case with African American Vernacular English (AAVE) formerly known as Black English Vernacular (BEV), used by Labov (1972:xiii) to refer to "the relatively uniform dialect spoken by the majority of Black youth in most parts of the United States today, especially in the inner city areas of New York, Boston, Detroit, Philadelphia, Washington, Cleveland, Chicago, St. Louis, San Francisco, Los Angeles, and other urban centers. It is also used in rural areas and in the casual intimate speech of many adults." Labov goes on to say that the term "Black English" is not suitable for this dialect since the phrase implies a dichotomy between Standard English on the one hand and Black English on the

other. He says that "Black English" might be best used for the whole range of language forms used by Black people in the United States: a very large range indeed, extending from the Creole grammar of Gullah spoken in the Sea islands of South Carolina to the most formal and accomplished literary style.

I use the term African American English (AAE) in this extended sense to include the entire range of the repertoire of African American ex-slave descendants. This means that a speaker of AAE who may use the syntax of the language of wider communication, but the phonology, lexicon, and prosody of AAE will still be an important part of the range of ex-slave descendants raised by Black people in myriad Black communities in the United States. This means that syntax is not the only basis for inclusion or exclusion from the ranks of Black linguistic authenticity, but pronunciation and vocal quality can be, under the right contexts, as important as syntax as identity markers from my perspective. Lippi-Greene (1997:177) states that "upper-middle-class Blacks may seldom or never use grammatical features of AAVE, but such persons are often heard marking their language in a variety of ways to signal solidarity with the greater African American community. This may mean the use of AAVE intonation, tag questions, and address systems, or more subtly, rhetorical features and discourse strategies." This definition draws on Smitherman's (2000: 251) explanation of African American Verbal Tradition (AVT) and Spears' (2001: 240)

elucidation of Standard African American English (SAAE). Baugh's (1999) discussion of pronunciation as a salient social marker that realtors use to direct the flow of housing in cities proves that fine phonetic differences are indeed social markers, which can include and exclude people from in and out-groups. In spite of the security that the language that Black Americans speak provides them, what Irvine and Gal (2000) term 'erasure' has rendered AAE speakers as "others," non-participators in the dialects of wider communication in the regions where African Americans live. "Erasure is the process in which ideology, in simplifying the sociolinguistics field, renders some persons or activities invisible. Facts that are inconsistent with ideological schema either go unnoticed or get explained away. So, for example a social group or language may be imagined as homogeneous, its internal variation disregarded" (Irvine and Gal 2000:38). This is surely the case with regard to statements that African Americans are not participating in the vernacular changes affecting the White vernaculars in the same region. It has become expedient to accept certain aspects of AAE as more authentic than some others. Morgan (1998, 1994) provides a detailed discussion from the perspective of members of the Black language community concerning the issue of authenticity versus slavishness in the use of AAVE. In the end, the speech community itself dictates its forms based on its social history.

In the past, African Americans living in the South sounded a great deal like their Southern White neighbors, although there were differences between them. Therefore, it is certainly conceivable in modern (or post-modern) times that Black residents of medium-sized cities such as Lansing and small cities such as East Lansing may adapt some of the features of their neighbors, and that this adaptation may have its own internal variation.

Irvine and Gal (2000:37) also add, "linguistic features that index social groups or activities appear to be iconic representations of them, as if a linguistic feature somehow depicted or displayed a social group's inherent nature or essence." Spears (2001:242) and Baugh (1999) note that the language of Black people is stigmatized because Black people are stigmatized in American society. Lippi-Greene (1997:178) contends that African Americans' language is "tangible and irrefutable evidence that there is a distinct, healthy, functioning African American culture which is not white and which does not want to be white." In spite of the health of the Black community and its institutions, decentralized Black communities may be more heterogeneous than in previous centuries as African Americans navigate a hierarchical system that is apparently no longer Black versus White, but also includes dimensions of shades of brown and yellow which promise possible alliances or restructuring, and this decentralization challenges assumptions of authenticity. Does movement away from self-contained, geographically located Black

communities into self maintained Black alliances encourage adaptation to the phonology of the regional standard? Do African Americans maintain a Black linguistic identity when they no longer reside in the geographical space designated as African American?

These concerns are related to the specific problem in this research: whether African American in-migrants to the inland North from the South after World War II or their descendants, differing from the majority population in terms of ethnicity and original dialect, have adapted to the vernacular of the region (NCCS). This study focuses on step one of the NCCS — low front vowel raising.

1.3 Purpose of the Study

The purpose of the study is to describe the degree of low front vowel raising or its absence among 31 African Americans residents of the Greater Lansing area. The description will include an analysis of the status of /æ/ raising as it pertains to social and linguistic factors. The study will also explore possible qualitative explanations for variation within the sample studied here. The most immediate purpose of the study is to seek to ascertain whether African Americans in this section of the Midwest have adapted to the emerging vernacular pattern of the area (e.g. the NCCS). The present study takes a 31-member sample and measures the height and duration of /æ/ (the low front vowel) based on acoustic analysis. Vowel height and duration patterns are correlated to social status, age, gender, and network and to place,

and manner of articulation to see if there is an effect for any of these social and linguistic factors.

1.4 Boundaries of the Study

The study will be limited to low front vowel raising because it has been posited as the first step of the NCCS (Labov 1994; 1996, Eckert 2000) for the majority of the White population involved in the shift. LPC analysis was chosen over impressionistic analysis, and the investigator has analyzed the respondents' vowels within the context of the other vowels in the system. An acoustic analysis also makes it possible to compare vowel charts of different respondents within a study and between studies. The motivation for investigating duration lies in the fact that accommodation to one feature does not preclude the presence of other acoustic characteristics, which might differentiate AAE speech from the wider vernacular. Other acoustic characteristics, which might cause differences in vowel quality, (e.g., direction and extent of diphthongization) are left for future study. Duration was chosen because most African Americans are from the South, and longer duration is a well-known feature of Southern vowel pronunciation (e.g. Thomas 2001).

The respondents were all born or raised in the Greater Lansing area. They were obtained through a variety of means, but, essentially, I followed Milroy's (1980) friend of a friend methodology. An African American professor at Michigan State University introduced me to

some of her fellow church-members. An African American colleague introduced me to a Black barber who in turn introduced me to people who introduced me to other individuals who introduced me to family members. Additionally, I was able to contact respondents at several houses of worship. However, final selection of the persons actually studied was based on the quality of the spectrograms that the tapes and mini-discs produced.

Linguistic differentiation and engagement with the regional standard are complex phenomena, which are tied to an individual's social history (Labov 1980), linguistic ideology, social network (Milroy 1980), and reaction to the hegemonic forces which are arrayed against him or her (Morgan 1998). It is not possible to uncover all the factors, which cause an individual to choose one particular pattern over another pattern that he or she has been exposed to at home, in school and in the wider society. A sociolinguistic interview by its very nature can only provide a snapshot of a particular moment in time when a respondent reacted to the stimulus (i.e. interviewer and tape recorder) in a particular manner to produce the data which drive a study such as this one.

1.5 Hypotheses

The major hypothesis of this study is that African Americans in the Greater Lansing area have engaged in institutions in the wider community and had sufficient networking opportunities in the broader community to accommodate to the early stages of NCCS (i.e. low front vowel raising); therefore, their accommodation will mirror that of majority speakers in terms of social and linguistic influences. It is also posited that individuals with open personal networks will accommodate more than individuals with dense closed personal networks (Milroy 1980:20). On the other hand, it is also hypothesized that African Americans will retain some Southern vowel features such as greater duration, which will serve to differentiate African American speech from Northern White speech, and respondents who show local (i.e., neighborhood and ethnic) loyalty will accommodate less than individuals who do not (Preston and Ito 1998).

The remaining chapters characterize the collection of low-front vowel data from these respondents and the acoustic and statistical analyses which seek to establish these predicted patterns of behavior.

Chapter Two

Background to the Study

2.0 Introduction

Chapter two includes a review of the literature regarding African American accommodation to the NCCS, issues concerning accommodation theory, dialect contact, language ideology, and the filtering effect of race and culture on pronunciation.

2.1 AAE Vowel Systems

Although there is a certain amount of avid fascination (Morgan 1998, Van Keulen *et al.* 1997) associated with Black language, on the part of Whites at least, European Americans and African Americans appear to regard the different linguistic levels of AAE somewhat differently. Whites are critical of the phonology, grammar, lexicon, and rhetorical practices of AAE, while most African American criticism is directed toward grammar (Niedzielski and Preston 1999). For example, if such elements such as subject-verb agreement are intact, speech is generally considered standard in the Black community. Well-known celebrities such as Oprah Winfrey appear to base Standard English on just such features as subject-verb agreement (Lippi-Green 1997). Phonology, and what Smitherman (2000:251-67) terms African American Verbal Tradition (AVT), which involves African American prosody and ways of speaking, are not areas that African American

speakers criticize in the same manner that European Americans criticize the entire range of AAE features and practices.

On the other hand, if an individual sounds Black, based on any phonetic or grammatical cue, that may be sufficient cause for stigmatization on the part of some European Americans (e.g., Baugh 1999). In spite of that, the continued use of AAE phonology and rhetorical style in the public forum by prominent African Americans such as Clarence Thomas, Jesse Jackson, the late Malcolm X, the late Martin Luther King Jr., Oprah Winfrey, Cornel West, Spike Lee, and other African Americans of stature proves that African Americans view at least AAE phonology and ways of talking differently from European Americans. In fact, the deliberate public use of Black phonology has implications for language ideology, suggesting that Black phonology is a characteristic of Black identity that is not easily (or perhaps willingly) abandoned.

Ash and Myhill (1986) have demonstrated that African Americans who move in White circles show a major shift in their grammar in the direction of White norms and a lesser shift in phonology and lexicon. However, Whites who move in Black circles show a greater shift in the Black direction in terms of phonology and a lesser shift in terms of syntax. Wolfram *et al.* (1997) focused on the speech of a single member of the only African American family on the isolated island community of Ocracoke off the outer banks of North

Carolina and demonstrated that this solitary speaker showed greater alignment to AAE in terms of phonology and lexicon and lesser alignment in terms of syntax and morphology. These studies serve to reinforce the salience of pronunciation as an identity marker among Black people.

Thomas (2001:161) and Bailey and Thomas (1998:92) note that little work has been done on the vowel systems of African American English (AAE) speakers, making it a seriously neglected area of research. The few exceptions include reports on glide shortening in /aɪ/ (so that "time" sounds like "Tom") and /ɔɪ/ (so that "soy" sounds like "saw"), the merger of /ɛ/ and /ɪ/ before nasals (so that "pin" and "pen" are both pronounced "pin"), and the reversal of tense and lax front vowels (so that, for example, the vowel of "it" sounds like "eat" and that of "bet" sounds like "bait"). But, as I will show later, these features are general in much of Southern American English and not at all exclusively African American. In fact, and more important to this study, too few studies have investigated the linguistic and social factors influencing vowel choice or changing vowel patterns in urban Black Northern communities to be able to truly say that African Americans are not participating in Northern vowel changes. In addition, research concerning vowel usage by other than working class AAE speakers has received slight attention.

I review here the few studies of Southern African American vowel systems. Juanita Williamson's (1968) description of the speech of 24 African Americans in Memphis, Tennessee covers sixteen vowels. Words were transcribed phonetically based on an impressionistic analysis. Since the focus of my study is on the first step of the NCCS, I will examine only her characterization of /ɑ/ and /æ/. She said that the phoneme /ɑ/ of *pot, rock, college* occurs most frequently as a low-central vowel, which frequently has a short upglide [ɑ^{ɑ}^] and an even more diphthongal allophone before voiced consonants. She found that in disyllabic words (e.g., *college*, *cottage (cheese)*, *vomit*), /ɑ/ usually occurs as a monophthong, although it is sometimes lengthened [ɑ˙]. She found that /æ/ always occurred as a diphthong [æ^{ɛ} , æ^{ɪ}] before /k, g/ as in *sack, bag*. The distribution of these diphthongs appears to be sensitive to social factors as well. [æ^{ɛ}] is used more often by well-educated, highly cultured people, while the other respondents use [æ^{ɪ}]. /æ/ may also occur as this upgliding diphthong before /s, ʃ, tʃ, and n/ (e.g., *ask*, *ashes*, *catch*, *dance*). /æ/ usually occurs as a monophthong in polysyllabics (e.g., *casket, January, pasture*). /æ/ before intervocalic /r/ (e.g., *marry, carried, parents*) is usually a monophthong, although sometimes lengthened. A diphthong [æ^{ɪ} , æ^{ə}] also occurs sporadically

in these words. In short, Williamson has said that /æ/ is sometimes diphthongal in some environments and for some social groups.

Bailey and Thomas (1998), Thomas and Bailey (1998), and Thomas (2001) have also examined Southern African American English and have assembled a database of mechanical recordings from African Americans whose dates of birth range from 1844 to 1984, including Caribbean speakers and ex-slave recordings. Unfortunately, their sample does not include areas of the South where most Lansing speakers' parents might have resided, and only one of Thomas' (2001) respondents comes from a Northern state. Most of their speakers come from Texas and North Carolina with few from other Southern states. Nonetheless, their work shows vowels analyzed acoustically and plotted on F1, F2 axes as in the present study, a technique which allows researchers to compare formants and vowel system configurations for different individuals and groups of speakers. They concluded that by the end of the nineteenth century some of the distinctive features of the African American vowel system were as follows:

1) Fully backed (or "nonfronted") /u/(cooed), /ʊ/ (foot) and /o/ (boat)

2) non-fronted onset of /aʊ/ (house)

3) shortening of the offglide of /aɪ/ (ride) before voiced consonants

4) raising of /æ/.

Thomas (1997) also notes that /æ/ is usually raised to /ɛ/ and that /ɛ/ and /ɪ/ correspondingly tend to be shifted upward and fronted as well. The merger of /ɑ/ and /ɔ/ (the vowels of *cot* and *caught*) is rare among African Americans.

If in fact the raising of /æ/ is a characteristic of Southern African American speech, it will do us little good to see if that feature has been adopted by African Americans in the Lansing (or other NCCS areas) since they already have it in their parent system. A comparison of the Thomas and Bailey (1998), Bailey and Thomas (1998), and Thomas (2001) vowel plots with NCCS plots, however, clearly shows that the /æ/ raising pattern of the NCCS (see section 2.4) is distinct from Thomas' Texas, North Carolina, and other Southern vowel patterns. Although /æ/ fronts in both patterns, /ɛ/ and /ɪ/ back and lower in the NCCS, but not in the SS. It also appears that /æ/ is fronted and not raised in most of Thomas's plots. As will be clear later the configurations are quite different. Most importantly, I will show from vowel plots of older African American speakers from those areas of the South which were the primary inputs to the Lansing population are not characterized by the /æ/ raising other investigators have suggested. This position will be outlined in detail below.

The following two tables adapted from Bailey and Thomas (1998) point to differences and similarities between Southern White English (SWE) and AAE vowel systems.

Table 2.0: Similarities between the vowel systems of Southern AAE and SWE

Feature	AAE	SWE	Emergence
Merger of /ɛ/ and /ɪ/ before nasals	+	+	1875-1940
Glide shortened /aɪ/ before voiced obstruents	+	+	1875-1940
Merger of tense and lax vowels before /l/	+	+	1900-1940
Merger of /ɔ/ and /o/ before /r/	+	+	1900-1940

Adapted from Bailey and Thomas (1998:105)

Table 2.0 indicates that AAE and SWE share a series of conditioned vowel mergers such as /ɛ/ and /ɪ/ before nasals (*pen* and *pin*), tense and lax front vowels before /l/ (*fill/feel*), and /ɔ/ and /o/ before /r/ (*horse/hoarse*). The differences are explored in table 2.1.

Table 2.1: Differences between the Southern AAE vowel system and SWE vowel system

Feature	AAE	SWE	Emergence
Non-front onsets of /aʊ/	+	-	Before 1860
"Back" back vowels	+	-	Before 1860
Onset of /e/ as low as /æ/	-	+	After 1900
Glide shortened /ai/ before voiceless consonants	-	+	After 1900
Merger of /ɔ/ and /ɑ/	-	+	After 1900
Onset of /o/ lowered and fronted	-	+	After 1900

Adapted from Bailey and Thomas (1998:105)

Some of the SWE features, which are posited as different from AAE (Table 2.1), are parts of what has come to be known as the Southern Shift (SS). In the SS, the lax front vowels /ɪ/ and /ɛ/ are moving upward and taking on the gliding quality of tense vowels. For example, /ɛ/ takes on a glide and becomes more like [ɛɪ]. The front tense vowels, /i/ and /e/ move back and downward, retaining their diphthongal quality so that /i/ sounds like [eɪ] and /e/ sounds like [aɪ]. The back vowels, /u/, /ʊ/ and /o/ are moving forward, and the onset of /ɑɪ/, which is monophthongized in some environments, is also moving forward (Wolfram and Schilling-Estes 1998, Labov, Yaeger and Steiner 1972, Feagin 1986, Fridland1999).

2.2 The Northern Cities Chain Shift

The raising of /æ/ is considered the first step in a series of vowel changes characteristic of the Northern cities of Detroit, Buffalo, Chicago, Cleveland, Milwaukee, and Rochester. Lansing, Michigan is also participating in these changes (Labov 1996). Although the raising of the nucleus of /æ/ in words such as *bad*, *ask* and *dance* in New York City was studied in Labov (1966), the NCCS was first explicitly identified by Fasold (1969) in an unpublished paper which investigated the raising of /æh/, the fronting of /ɑ/, and the fronting of /ɔ/ among 24 speakers from the Detroit survey of Shuy, Wolfram and Riley (1966, cited in Labov 1994:178). Callary (1975) found that the height of /æ/

is directly correlated with the size of the community; the larger the community, the more raising exists. Labov (1994) has described the NCCS as a chain shift based on a concept concerning causal movement of the phones of particular phonemes first explicated by Martinet (1952). A shift occurs when phonetic properties of a phoneme change, causing the phoneme or its allophones to enter the vowel space (i.e., F1, F2 position) of another phoneme, thereby, leaving "vacant" vowel space which may then be entered by another nearby phoneme. Wolfram and Schilling-Estes (1998:138) summarize the NCCS succinctly, if not in order. "For example, a vowel like the /ɔ/ in *coffee* is moving forward toward the /ɑ/ of *father*. The low vowel in a word like *pop* or *lock,* in turn moves toward the /æ/ of *bat*, which in turn, moves upward toward the vowel [ɛ] of *bet*. At the same time, another rotation moves the short vowel [ɪ] of *bit* toward the [ɛ] of *bet*. The [ɛ], in turn, moves backward toward the [ʌ] vowel of *but*, which is then pushed backward." Although Wolfram and Schilling-Estes begin their description with /ɔ/. Labov (1994) and Gordon (1997: 24) order the movement as follows:

Changes nearing completion:

1. /æ/ (*bad*) is fronted (tensed) and raised to /ɛ/, *bed*, or even [ɪ] (*bid*). It is sometimes accompanied by an inglide, [ɛ^{ə}] or [ɪ^{ə}]. /æ/ raising is characterized as the oldest change.

Midrange changes:

2. /ɑ/ (*pot*) is sometimes fronted as far as [æ]

3. /ɔ/ (*bought*) is lowered, fronted and unrounded to approach [ɑ]

New and vigorous changes:

4. /ɪ/ is sometimes lowered to the position of [ɛ].

5. /ɛ/ is backed to [ʌ]

6. /ʌ/ is backed and often rounded, resulting in variants near [ɔ].

These vernacular changes are occurring in the European American speech community, and if Speech Accommodation Theory (SAT) or Communication Accommodation Theory (CAT) extends to members of other ethnic groups, African Americans residing among European Americans in Lansing may have adapted some of the vowel changes, which are part of the emerging speech patterns of residents of the urban Inland North dialect area.

2.3 Accommodation Theory

In this section, I will briefly discuss accommodation theory and support the discussion with a number of empirical sociolinguistics studies involving speech accommodation.

African American pronunciation is sometimes studied in a vacuum, meticulously comparing subordinated and segregated African Americans to assimilated European American descendants of even recent immigrants, who both desire and are permitted and expected to

assimilate, and never realize that accommodation for one group could be construed as subordination for another. No doubt aspects of subordination involve accommodation, just as speech differentiation sometimes involves stigmatization. For example, regional and ethnic speech differentiation exists among the Jewish, Italian, and Irish speech communities in Boston (LaFerriere 1979); however, these differences have not always led to social stigmatization. It is also the case that the regional differences of Appalachian speakers are sometimes cause for ridicule (Evans 2001). Nonetheless, differences in pronunciation among African Americans are associated with institutionalized discrimination due to the fact that race is such a central part of social categorization and social identity in the United States, and race cuts across ethnicity. An ethnicity may be dropped or trivialized after two or three generations in America, but unless a Black individual is able and chooses to pass for White, his or her race is his or her ethnicity. In short, accommodation does not make an individual White.

In any case, accommodation connotes adjustment that has not been forced; subordination explicitly involves force, whether overt or covert, denigration, and enforced change by the dominant group, whether from schoolteachers or other elements of the society (e.g., employers, see Lippi-Green 1997). The forceful nature of subordination is evidenced in the treatment that Black children and other subordinated minority groups receive in schools in the United States, including the

high percentage of Black children in special education classes throughout the school systems in the nation. (Lippi-Greene 1997: Chapter 6, Van Keulen *et al.* 1997:138).

2.4 Speech Accommodation Theory

Accommodation theory, first known as Speech Accommodation Theory (SAT) and subsequently expanded to Communication Accommodation Theory (CAT), deals with the issue of accommodation from the perspective of social psychology (Giles 1973, Giles *et al.*, 1991). Giles (1973) first used the terms *convergence* and *divergence* to define a speaker's accent orientation towards an interlocutor. Giles defined accent accommodation or change in these two directions. Convergence occurs when a speaker, desiring to gain the social approval of the receiver, reduces pronunciation differences and attempts to adapt his or her accent to that of the receiver. However, if the speaker chooses to disassociate himself or herself from the interlocutor, he or she may diverge linguistically by emphasizing pronunciation differences. This concept was later expanded to deal with accommodation in terms of speech rates, pause phenomena, utterance length, smiling, gaze and so on (Giles *et al.* 1991:7). The terms convergence and divergence also gained prominence in linguistic circles when Labov and Harris (1986) and Bailey and Maynor (1987) announced that Black vernaculars were diverging from White vernaculars. Black linguists in particular asked for clarification of this

position, and *American Speech* (1987) printed a panel discussion held at a national linguistics meeting concerning it. The issue of convergence and divergence has ramifications for the United States as a nation and for African Americans as a "nation within a nation." Although African Americans are criticized for not accommodating enough to the language of wider communication, there are other social groups that do not readily accommodate albeit for slightly different reasons. An overview of a few sociolinguistics studies related to accommodation in pronunciation will illustrate this.

2.5 Sociolinguistic Studies of Accommodation in Pronunciation

Trudgill (1986:1-11) dealt with the way in which dialect contact can lead to dialect change in speech communities. He looked at contact between speakers of British English in the United States and US English speakers and also suggested that it might be useful to study the way in which British pop musicians imitated aspects of American English pronunciation in order to determine salient aspects of American pronunciation. Trudgill found that pop singers pronounced /aɪ/ monophthongally, used rhotic /r/, and pronounced words like *body* and *top* with an unrounded [ɑ] rather than the British [ɒ]. /ʔ/, which is the pronunciation of intervocalic /t/ (*better*) that most working class British speakers use, was avoided and the American [ɾ~d], a voiced alveolar flap, was used. For this study, the most interesting aspect of pop singers' imitation of American English was the way they dealt with /æ/.

Pop singers disregarded their dialect areas and pronounced American [æ] as [æ] even when their dialect dictated [a:] pronunciation.

Trudgill compared the imitation of British rock stars with the accommodation of British expatriates residing in the United States. His data was based on notes made on the segmental phonology of native speakers of British English, informal observations at conferences and lectures, and his own speech during a year's stay in the United States. He found that British expatriates did not acquire the monophthongal pronunciation of /aɪ/ because this feature is an imitation of Black or Southern singers, not a general feature of American pronunciation.

On the other hand, Trudgill found that, although /r/ is salient for British speakers, it was not easily accommodated to because of a phonotactic constraint in British English which permits /r/ to occur only before vowels. Trudgill also did not find the substitution of /ɑ/ for /ɒ/. He says that adoption of this change would have led to the loss of contrast between pairs such as: *hot ~ heart, pot ~ part* and *cod ~ card,* etc. in his British dialect. He also felt that the relationship between British English /ɒ/ and US English /ɑ/ is not entirely direct. Some words which in British English have /ɒ/ have /ɔ/ in US English (e.g., *lost*, *long*, *off*). Other words which have /ɒ/ in British English have /ʌ/ in US English (e.g., of, what, was). However, the use of /æ/, as in *dance*, *last*, etc., is a change the British English speakers made early, if

they were going to accommodate to US English at all. British English has /æ/ in, e.g., *ant*, *romance*, so it is straightforward to substitute /dæns/ for /da:ns/. Nevertheless, not all British speakers accommodate to the US /æ/. For example, Trudgill remarks that it is too salient for him, and I take that to suggest that it is such a strong marker of identity that he felt compelled to resist it. In short, in spite of similarities in race and class, Trudgill was unable to or unwilling to add US /æ/ to his repertoire.

The realization of intervocalic /t/ as [d] is also accommodated to early on by British speakers in North America. Neither the ethnicity nor language of British speakers residing in the United States is subject to stigmatization; therefore, the decision to accommodate may be made to facilitate understanding, but not for any latent prestige issues.

There have been studies dealing directly with accommodation to the vernacular form of AAE by people of color from other ethnic and language groups, such as that of Puerto Rican accommodation to features of Black English in New York City (Wolfram, 1973). First generation Puerto Ricans accommodated to features of AAE based on their extent of social contact with Blacks and the color of their skin, which reflected the way the majority population treated dark Puerto Ricans. In a similar manner, African French-speaking immigrants to Ontario and refugee continental Africans identify linguistically with Black Americans due to institutionalized hegemonic practices of the

dominant social group in Canada (Ibrahim 1999). These youths actively seek to acquire Black English as a second language (BESL).

2.6 The Philadelphia short (a) pattern

2.6.1 Tense and lax vowels

One of the primary concerns of this dissertation is African American accommodation to step one of the NCCS, which involves low front vowel raising /æ/ raising), therefore, it is worthwhile to see how a variety of social groups have accommodated to the pronunciation of /æ/ in their region. Labov, Yaeger and Steiner (1972:41) describe the use of [+tense] "as a classificatory feature in the abstract phonological rule which selects certain short or lax vowels and differentiates them from others by a variety of phonetic features." Lax vowels /ɪ, ɛ, æ, ʌ, ʊ/ (Ladefoged 1993:86) occur in stressed closed or CVC syllable final position in Standard English. Tense vowels may occur in both closed and open syllables. Stevens (1998:294-6) describes the vowels that are intermediate between peripheral and the central schwa vowel as lax. He says "these intermediate configurations are achieved by positions of the tongue body and lips that are less extreme." The most extreme positions are tense. Labov (1994: 175) differentiates tense vowels on the basis of their being located closer to the periphery of the two or three formant vowel space and by their relatively greater length and amplitude. Ladefoged (1993:86) points out that lax vowels are paired with tense vowels in tense lax pairs respectively: [i,ɪ] as in *beat, bit*;

[eɪ, ɛ] as in *bait, bet;* and [u, ʊ] as in *boot, foot.* He characterizes lax vowels as shorter, lower, and slightly more centralized than the corresponding tense vowels. Ladefoged (86) also says that there are no vowels similar in quality to [æ] and [ʌ] in most forms of (Standard) American English. However, the NCCS involves the tensing and raising of [æ], and Labov, Yaeger and Steiner (1972:41) have defined [+tense] in their studies as vowels, which appear regularly with extreme formant positions (relative to neighboring vowels). Although Ladefoged (1996:) and Labov (1994) have referred to /æ/ as a short or traditionally lax vowel, Strange *et al.* (1983:698) categorize /æ/ acoustically as an intrinsically long vowel and group /æ/ with /e, ɑ, o/ in terms of length as opposed to /ɪ, ɛ, ʌ, ʊ /, which have been characterized as the intrinsically short vowels.

In New York City and Philadelphia, studies of /æ/-raising show that only tense or long /æ/ is raised; in the NCCS area, however, /æ/ appears to be ubiquitously tense. Nevertheless, since studies in New York and Philadelphia touch on accommodation, I will review some of them.

2.6.2 King of Prussia

Avilla Payne's (1980) research offers a unique perspective on second dialect acquisition by showing that certain complex phonological patterns can be learned only from parents who are native to a particular area. In spite of the fact that some children who had moved to King of Prussia, Pennsylvania, a suburb of Philadelphia, had accommodated to most of Philadelphia's phonological system, they did not acquire the short (a) pattern (i.e., /æ/) if both their parents were not native to the area (Payne 1980). Payne's research was framed in response to whether a child will learn to speak like peers or retain the system learned from parents. The bare outline of the Philadelphia rule is as follows: /æ/ is tensed before front nasals, voiceless fricatives, and voiced stops when these are followed by an inflectional boundary or another consonant. Children from another dialect area have to learn that /æ/ is lax before /ʃ /and /d/ except in the case of the "affective" adjectives *mad*, *glad*, *bad*, which have to be learned as lexical exceptions. For example, when children from the NCCS area moved into King of Prussia, they had to learn to block application of the tensing rule for part of a class /ʃ, d/ and three lexical items because, as noted above, the NCCS rule tenses /æ/ in all linguistic environments without lexical conditioning. Payne discovered that children who moved to King of Prussia at an early age and lived between 5-8 years there had more success than children who moved in at a later age.

Although all of the children in the study acquired the Philadelphia pattern to some extent, unless a child's parents were locally born and raised, the possibility of acquiring the Philadelphia /æ/ was extremely slight. To some extent the age result coincides with what researchers know about foreign language acquisition, "the later in life subjects begin learning English, the more strongly accented their sentences will be judged to be by native English speakers (Flege 1995:23)." Werker (1995) and Kuhl (1995) suggest that infants' phonetic perception may be tuned to properties of the native language as early as six months. Since children learn pronunciation from primary care-givers and focus on the point vowels, the three extreme vowels corresponding to [u], most back — tongue/ lips rounded; [i], most front — tongue/ jaw closed/ lips spread; and [ɑ] most pharyngeal/ jaw open (Pickett 1999: 43), the role of the primary care-giver should be particularly significant.

2.6.3 African Americans in Philadelphia

Henderson (1996) also examined the Philadelphia /æ/ pattern; moreover, her study concentrated on 30 educated African Americans adults who were well integrated into the Philadelphia White community. Her respondents grew up and lived in predominately White neighborhoods, attended White schools, had White friends and socialized and worked with Whites; however, only six out of 30 respondents had acquired the Philadelphia /æ/ pattern exactly. Ten

suburban respondents, generally men in the over- 40 category, showed a great deal of similarity to the Philadelphia pattern; otherwise, the rest of the sample had not acquired the pattern. The rest of the sample tended to tense in the environments that were normally lax for most Philadelphia White speakers and lax in the environments that were normally tense. There was also more laxing than expected for the *mad*, *bad*, *glad* adjectives because these words are categorically tense in the White Philadelphia dialect. Three of the six who acquired the Philadelphia pattern had grown up in the same suburb and attended the same schools. Five of the six used to reside in the same suburb. Three of the six were related, and one of the six, a well-educated attorney, grew up in a nearby suburb and was the only Black in her graduating class of one hundred and sixty-five students. Labov and Harris have the following to say about the White vernacular sound changes in major cities.

> Research on the social origins of these sound changes in the local White community indicate that the most advanced patterns are to be found among the people with the highest prestige; draftsmen, bank tellers, school teachers, politicians, block captains and local influentials (1980). A comparison of sound changes in many cities leads us to the conclusion that they serve as symbolic claims to local right and privileges. (1986:18).

Perhaps living in the suburbs for more than one generation also imbues African Americans with an unconscious sense of belonging to that particular community, and this sense is evidenced in their speech. Although Henderson (1996) documented the social and psychological isolation that her respondents experienced in those suburbs, six acquired the complex Philadelphia pattern for reasons that Henderson did not adequately explore. Labov and Harris (1986: 21) argue strongly that social history, the kinds of social experiences that people have had in dealing with members of other groups, and the way that they have used language in their life, are actually more reliable predictors than social network.

2.7 First Dialect Acquisition in Detroit

Toni Deser's study (1991) also tackled the question of the relative weight of parental and peer influence on native dialect acquisition. She chose to examine /æ/, /aɪ/, and duration among six Black Detroit families taken from the Shuy, Wolfram, and Riley's larger Detroit Dialect study. Raised /æ/ is, of course, the first vowel involved in the NCCS, while /aɪ/ monophthongization and duration are Southern dialect markers. In order to categorize the six families that she studied into Northern, Southern or mixed dialect families, three speech-language pathologists with phonetic training evaluated Deser's speaker sample. According to Deser, the Northern dialect families generally showed a raised pattern in which /æ/ is at the same level as /ɛ/. Although the Southern dialect families did not differ appreciably from the Northern families, /æ/ raising was observed when young females from the two dialect groups were compared on their /æ/ mean scores for a reading task. Deser's results indicate that a small degree of measurable /æ/ raising was produced by the Northern dialect girls. The Southern speaking children used smaller vocal track configurations to produce their /æ/ and /ɛ/ than the Northern dialect children. The three Northern dialect families showed a pattern in which the youngest family members produced the most Northern-like /æ/ targets, and

children with one Southern dialect speaking parent tended to produce more Southern-like vowels than children with no Southern parent.

Deser concluded that monophthongal or diphthongal /ɑɪ/ was a reliable differentiator of Northern and Southern dialect speakers. Moreover, older siblings tend toward a more monophthongal /ɑɪ/ than younger siblings. Adolescent girls tend to produce more monophthongal variants than the rest of the sample. Deser also considered duration a robust predictor of dialect affiliation. Vocalic duration was greater on average for Southern dialect speakers, and, although differences were small, they were consistent across the voiced/voiceless consonant environment and across speaking styles (123). Deser argues that although age was a factor (preadolescent versus adolescent), children continue to be affected by their parent's dialect. Therefore, Deser's study seems to support the notion that the input of the caregiver is important in native dialect acquisition.

2.8 Related Studies

In a pilot study, Jones (1996) examined the NCCS participation of adolescents in two mixed-race families (White mothers/ Black fathers), specifically focusing on /æ/ fronting and raising. An assumption of the study was that first generation mixed children might have more networking opportunities within the White community than other African Americans and might show greater alignment to the NCCS — the local White vernacular. The results indicated that the girl

with the greater network in the White community raised /æ/ higher than /ɛ/ and the other two mixed race children who resided in the Black community raised only to the level of /ɛ/. However, all of the mixed race children showed Southern dialect influence among the back vowels.

Although Edwards (1992) did not examine similar vowels in his Eastside Detroit study, results of the Black English and White vernacular comparison indicate that older informants (40+) are more prone to choose BE variants than informants under forty.

Finally, Denning's (1989) study of final /i/ in East Palo Alto emphasizes that all the facts with regard to convergence or divergence are not in yet, and that there are no last words on this issue. His study indicates that younger Black speakers in East Palo Alto are pronouncing the following vowels according to the local White vernacular. /i/ is pronounced with greater height and frontness, /ɔ/ is pronounced more like a monophthong rather than the upgliding diphthong of older Blacks, and there is neutralization of the differences between /ɔ/ and /ɑ/ as in *hawk/hock*. Denning's work is significant in that it verifies accommodation to aspects of surrounding White community speech.

2.9 Race

Evelyn Higginbotham (1992) presents an argument that race is the metalanguage through which one must discuss the social constructs of class and gender in the United States. Although the White founding fathers eschewed the idea of a governmental monarchy and titled aristocracy, America has always been troubled by the subordination of people according to color, class, and caste. Race has been defined scientifically and socially by a number of theorists and social scientists. Zack (1998:74) states that according to biological anthropologists, the racial unit is not an individual but a population that has more of some physical trait than other populations. Although physical anthropologists unite in their insistence that race is only a social construct, and biologists agree that human variability between the populations of Africa, Asia and Europe is no greater than variability within those populations (Appiah 1998:28, Smedley 2001), hair texture, bone, and color still define race in America. Or as Zack, who pushes for a mixed-race social category, (1998:75) says, "Race is what cultures take it to be," but in America a drop of Black African ancestry used to make a person Black. In spite of this fact there are individuals who have chosen to evade this classification culturally (e.g., Tiger Woods), and opt for a mixed race category. Cornel West (2001: 39) has defined Blackness in America as a political and ethical construct. He says:

> First, blackness has no meaning outside of a system of race-conscious people and practices. After centuries of racist degradation, exploitation, and oppression in America, being black means being minimally subject to white supremacist abuse and being part of a rich culture and community that has struggled against such abuse. All people with black skin and African phenotype are subject to potential white supremacist abuse. Hence, all black Americans have some interest in resisting racism —even if their interest is confined solely to themselves as individuals rather than to larger black communities.

Defining race as a mere social construct does not lessen its effects, although the term has bearing on another social construct — ethnicity — which is often confused with race or used as a synonym for race.

Race must be considered separately from ethnicity because ethnicity can be optional or symbolic, perhaps adopted for certain holidays by White Americans, but never a slot on an employment or loan application, nor would an individual's choice of spouse, housing, social group or success in the world likely be affected by his ethnicity alone excepting dark-skinned Hispanics and to a certain extent Jews, although in that case religion is a complicating factor (Waters1998: 403). Polish Americans, Italian Americans, Swedish Americans, and Appalachians are all subsumed under one superordinate ethnicity — White. Perhaps one could argue in a similar fashion for Blacks if the Somalis, Sudanese, West Indians, and Nigerians decide to pass on their ethnic culture beyond the first generation; however, the thrust of the argument remains the same — the Black-White divide is a racial divide and has been an integral part of American culture as Higginbotham (1992:253) aptly characterized it, "arbitrarily contrived to produce and

maintain relations of power and subordination" — Black subordination. The other extreme of subordination is resistance — both conscious and unconscious. This resistance is captured in another meaning of ethnicity as defined by Van Keulen *et al.* (1997), who describe ethnicity as cultural traits that are heightened by Black people to define their ethnicity as African Americans. Black hairstyles, dress, food, religion, and language are ways in which difference is heightened by Blacks in America to celebrate and take pride in the culture that Black people have made.

Historical examples of Black women who were denied the right of womanhood and ladyship, and examples of Black U.S. senators who were denied manhood outside their offices in Washington D.C. (Higginbotham1992) are numerous in historical documents and continue to color class and gender experiences in the United States. It has been sufficiently shown and continues to be documented that race, whether biological or socially conceived, functions to make a Black person's experience stereotypically and compellingly different from that of a White person even in the 21st century.

Martin Robinson Delany was the first to coin the term "nation within a nation" to describe Black America (Higginbotham1992),which implies opposition and resistance as opposed to integration and accommodation. For example, African Americans in the South under Jim Crow were well aware of the way Southern Whites wanted them to

behave. Sometimes the decision to use something other than the language of wider communication was actually accommodation to the White perception of what the resisting party's place should be. Morgan (1998: 254) writes that Southern Blacks were penalized for educated speech and were constrained to speak the way that Southern Whites thought that they should speak. In other words, an African American speaking Standard English could have affronted the sensibilities of a Southern White causing the White to perceive the Black speaker as engaging in a form of resistance to linguistic codes imposed by Southern segregationists in the post plantation society. This Black would be punished for acting (talking) "uppity" in opposition to the Southern White linguistic code. Under different circumstances, speaking vernacular AAE or other than the "Standard" approved language could also be perceived as resistance to teachers, elders, and societal expectations in the North. Kohl and Hinton (1972:119-120) narrate a story in which a teacher was assaulted for insisting on calling students by their legal names and refusing to call them by their assumed nicknames of Akmir, Arkbar, and Rabu. Although European Americans might give up the ethnic names which might differentiate them from majority society, these African American youth moved in a different direction and assumed names which were "intentionally bizarre" in the context of the majority society (1972:120) to differentiate themselves from it. This act was openly resistant to a

society which they deemed illegal (120). This intentional cultural differentiation still exists today among hip-hop generation and youth culture, which relates Black culture to Black ideology as artists assume names like Boo-Yaa, Kurupt, Wu-Tang Clan and Sister Souljah to name a few.

Linguistic resistance may also take a form characterized as "inversion" in which Blacks appear to submit to White forms but do not (Holt 1972:154). Baugh (2000:8) presents an illustrative example of this when he narrates a boyhood incident in which he verbally insulted a Hispanic student, and the teacher overheard it.

Teacher: John: Stop it.

JB: Hey man! He's hitting me. I ain't doing nothing.

Teacher: You're making fun of him.

JB: Yeah, but he's hitting me, I'm just talking.

Teacher: But you are making fun of the way he talks, so stop it.

JB: (shucking and jiving in my best rendition of exaggerated Standard English) I'm very sorry, I didn't realize I was doing anything wrong.

Teacher: Now, John, why don't you speak that way all of the time and improve yourself?

Baugh (2000:8) states that his teacher failed to realize what his Black peers sensed immediately; namely, his "overt attempt to mock the teacher and Standard English with one blow." It is extremely difficult

to characterize the relationship between African American identity and language because context is so pertinent to the issue of language choice.

In fact, during different periods, Blacks have made various aspects of difference salient, such as the natural hairstyle, reclaimed as an emblem of beauty and political resistance during the 1960s, and Black language, made salient by hip hop artists in present day popular culture. All of these identity markers are engagements in a hegemonic ritual, which flaunts difference in acknowledgement that difference is the symbolic battleground for the oppression of Blacks in America. If difference is flaunted enough maybe it will be recognized and accepted on its own terms. Cornel West (2001:6) characterized White America's perspective on the Black "problem" in the following manner:

> Hence, for liberals, black people are to be "included" and "integrated" into "our" society and culture, while for conservatives they are to be "well behaved" and "worthy of acceptance" by "our" way of life. Both fail to see that the presence and predicaments of black people are neither addition to nor deflections from American life, but rather constitutive elements of that life.

One assumes that West means that Black Americans are as American as White Americans, and that this nationality is theirs to no small degree. Blacks are not visitors or new immigrants, but part of the land of their birth, and the land of sometimes unmitigated toil on the part of their ancestors. African Americans' identity irrespective of personal ideology is a product of a contact

situation and their personal response to social history. The flaws are in the society: "rooted in historical inequities and longstanding cultural stereotypes" (West 2001:6). Nonetheless, nationality, culture, and language continue to be viewed through the prism of race, although aspects of Black American culture are essential to American culture. Blacks are "other"; the other which happens to be part of American culture. Yet one questions the attitude of the individual people who make up the group about race, language and culture. Surely their outlook is not monolithic. Just as "Black leaders" do not share a uniform ideology, it is not realistic to assume that Black people share an unequivocally fixed worldview once one moves beyond the issues of past wrongs, subjugation endured, and continuation of hierarchical social structures. Does the use of language reflect actual social beliefs? Does race still matter in a city such as Lansing, Michigan?

2.10 Chapter Summary

Chapter Two focuses on the African American vowel systems from the perspective of the paucity of acoustic analysis studies generating vowel plots of total vowel systems. The issues of language accommodation and perhaps language subordination have been touched upon. In spite of the equivocal nature of the research on the subject, the caretaker's role in dialect transmission has been shown to be a viable one based on the results of a number of accommodation studies. Acoustic phoneticians and linguists view "earlier as better" with regard to language or dialect acquisition. The studies regarding African American accommodation to the NCCS in other cities confirm that statements concerning lack of accommodation by AAE speakers to NCCS are not comprehensive ones. Finally, race may be the metalanguage or filter through which to examine language, culture and ethnicity, and that filter will be used in the interpretation of the results of this study.

Chapter Three

METHODOLOGY

3.0 Introduction

The methodology for this study is based on the sociolinguistic truism that variation in the language of a given speech community is not random but ordered (Weinrich, Labov, and Herzog 1968) and correlated to the social variables of age, sex, social class, and ethnicity, among others. The study also explores the way in which the density or multiplexity of a social network may influence a group's projections of its social identities (Milroy 1980, 1992). Consideration was also given to communication accommodation theory (CAT) which "proposes that speech convergence reflects, in the unmarked case, a speaker's or group's need (often unconscious) for social integration or identification with another" (Giles *et al.*, 1991: 18). Therefore, short-term accommodation can signal individual solidarity with a conversational partner or, in the long-term, realignment of a group's entire code, possibly reflecting realignment of underlying beliefs, attitudes and social structure (2). Nonetheless, subjugated groups, women, youths, and ethnic minorities often openly resist linguistic domination by the majority culture without divesting themselves of the ability to code-switch and accommodate to the wider society's public face if need be (see Gal 1995, Abu Lughud 1989). However, this accommodation is often only instrumental and does not imply a realignment of group

loyalty or personal identity. In this study I have presented the idea that phonology is the level which speakers who are involved in acquiring wider community norms hold on to as expressions of group identity. Hudson (1996) suggests that "pronunciation reflects the permanent social group with which the speaker identifies." Most African Americans presently residing in the Inland North differ from European Americans in terms of original dialect, length of time in the area, and of course racial ethnicity. Needless to say, these differences may have affected African American's accommodation to the vernacular of the dominant culture.

This chapter will describe the methodology used to explore African American speakers' accommodation to the NCCS in Lansing, Michigan. I will discuss data collection procedures and analysis, selection of respondents, social demographics, and perception tests undertaken to situate Lansing African Americans' involvement or lack thereof in the NCCS, a vowel shift nearly completed for most European American, long-term residents of urban, southeastern Michigan.

3.1 Data Collection Procedures

Sociolinguistic interviews were conducted for thirty-one male and female African American respondents who read a one hundred and six vocabulary word list and a reading passage (in appendix C) structured to represent the vowels which are involved in the NCCS.

Respondents were born or raised in the Greater Lansing area, and ranged in age between 19-74. They were contacted through "the friend of a friend" method and recruited by way of friends from local churches, mosques, and barbershops. Respondents were often asked to recommend other respondents. Pseudonyms are used for all respondents in this study.

The respondents selected for this study were divided into "younger" (under 40) or "older" (over 40) age groups. Using a modified scale based on Warner *et al.* (1960), the respondents were divided into working and middle class groups. Most respondents were interviewed in their homes so that the researcher could assess their standard of living and neighborhood type, and, based partly on these factors, divide them into working or middle class groups (see appendix A for the worksheet). Scores 1-7 were assigned to the respondent's occupation, housing, and neighborhood with the lowest number indicating the highest status, housing, education, and neighborhood. Occupation was multiplied by four, education and housing by three, and neighborhood by two. In this study, respondents who scored 20-50 were called middle class and those who scored 51-70 working class. Respondents outside of those ranks were not considered. High school students and non-working spouses received the same score as the principal working member of the family. Table 3.0 shows the distribution of the respondents according to sex, age, and social status.

Table 3.0 Distribution of Respondents

MIDDLE			
		OLDER	
MEN	WOMEN	MEN	WOMEN
3	6	4	3
WORKING			
YOUNGER		OLDER	
MEN	WOMEN	MEN	WOMEN
2	6	3	4

A respondent's social network was determined by means of a scale developed by Milroy (1980:20). Milroy describes closed, high density social networks as those in which a given person's contacts all know each other or may even be linked to one another in more than one capacity – as a co-employee, a kinsman, or friend. In contrast, an open, low-density network is characterized by associations which are single stranded. This type of individual associates with people in a single capacity only, and a given person's contacts will not know one another. Scores were computed based on the following characteristic:

A: Membership in high-density territorially based network

B: Substantial kinship ties in neighborhood (more than one household in addition to respondent's own)

C: Work at the same place with at least two people from neighborhood

D: Work at same place with at least two people from neighborhood of the same sex as respondent

E: Associates extensively with people from place of work in leisure time activities

Each respondent was assigned a score of one for each of the above descriptions that held true. A respondent with a total score of zero would be one with the loosest or weakest network relations; one with a score of five would be one with the strongest network ties. This score was designated NetS.

The purpose of the other portion of the social network investigation was to determine the degree to which a speaker was embedded in his or her ethnic networks (NetE). In this test, speakers were asked to characterize the percentage of their close acquaintances that were members of the same ethnic group. A score of zero indicated that the speaker had no close association with members of his own ethnic group, and a score of five indicated that a speaker had exclusive

association with individuals from his ethnic classification (see appendix B question 7).

The association between social network and /æ/ raising was correlated to see if statistical significance could be determined. If tight neighborhood network association suggests less correlation with wider community linguistic norms, there should be a negative correlation between the social network score (the higher the score, the denser and more multiplex the respondent's neighborhood network) and the /æ/ raising index score ("1" = not raised, "2" = raised). A high network score should result in a low /æ/ index score.

Finally, respondents were asked questions designed to obtain details about the respondent's childhood, schools, hobbies, and occupation in order to gauge speakers' attitudes toward Lansing and their particular neighborhood. Pseudonyms are used in the following sample questions and responses:

Sample # 1

Interviewer: Do you have substantial kinship ties in your neighborhood? Meaning do you have relatives who live in the same neighborhood that you do?

Jane: Umhum (yes).

Interviewer: Do you work at the same place with at least two people from your neighborhood?

Jane: Yes

Interviewer: And do you work at the same place with at least two people from your neighborhood who are of the same sex as you are?

Jane: Yes.

Interviewer: Do you associate extensively with people from work in leisure time activities?

Jane: No.

Interviewer: Okay. I have one more question to ask you. So in your neighborhood, do most of your friends know other friends? Are most of your friends, friends of friends?

Jane: In my neighborhood or my friends?

Interviewer: Your friends.

Jane: Do most of my friends know my other friends? =

Interviewer: = Know your other friends?

Jane: Yes.

Interviewer: Okay.

Interviewer: Do you think –uh - this is a good place to grow up? Lansing? Do you think that it's a good place to grow up?

Jane: Um. I'd say yes.

Interviewer: Why?

Jane: Uh. It's you know – if you look for ...There's uh. There's a lot of... There's recreational activities and there's a lot of neighborhoods where there's a lot of other children growing up. You can grow up with

other children. It's a (pause) family, lots of families uh, uh. What else can I say?

Each interview was digitally recorded on a Sony MZ-R30 portable mini-disc recorder with a clip on external microphone or a Sony TCM-5000V tape-recorder. Each session took approximately 30 to 60 minutes.

3.2 The Gating Experiment

The interview also included a perceptual experiment of the sort referred to as "Gating Experiments." The one used here is a perception experiment, which involved identification of the major vowels that are shifting in the NCCS. For the particular purposes of my study, it involved the degree to which comprehension of the NCCS is advanced among African American respondents. In such experiments (Labov 1994:194-5), respondents guess the identity of a word, which may be interpreted as an unshifted (e.g. *socks*) or the shifted form (e.g. *sacks*) in the NCCS. In order to determine whether rural, Appalachian, and African American speakers were able to identify the phonemic categories of the vowels involved in the NCCS, my colleagues and I asked students in an introductory class in the Integrative Studies in Arts and Humanities Program at Michigan State University to listen to a word list read by advanced NCCS respondents. Young, southeastern Michigan urban respondents were teased out from the class and used as the control group for the tape. Students wrote down the word that they

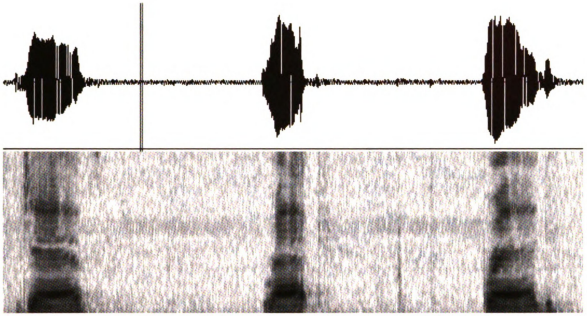
heard. They listened to the Gating tape on a one by one basis and were graded according to how many words they recognized as the containing the correct phoneme. Distractors were not included. All the phonemes on Gating tape are involved in the NCCS. I asked the Lansing respondents to listen to the same recording that the IAH class had listened to and write the words that they thought they heard the speakers read (see appendix F). The Lansing results were compared to the Michigan State University southeastern Michigan students' results and the results of the African American students in the IAH class. There was no statistically significant difference between Lansing AA speakers and the AA speakers in the IAH class, but there was significant difference between the responses of the urban southeastern Michigan White students and the Lansing AA speakers.

3.3 Data Analysis

The vowel tokens used to analyze the respondents' vowel systems came primarily from the word list, with tokens occasionally supplemented from the reading passage or conversation. Vowel measurements were taken at the center or steady state of the vowel nucleus and analyzed by means of Linear Predictive Coding (LPC) on Computer Speech Lab (CSL) model 4300B to obtain the first two formants (F1 and F2). A few sounds were analyzed on Pratt 3.9.5. in order to copy pictures of formants.

F1 and F2 refer to formant frequencies and are related to the length of the vocal tract and the constrictions formed by the pharynx, lips and tongue when speaking (Pickett 1999:35). Ladefoged (1993: 192) compares the vocal tract to a bottle: "Any body of air, such as that in the vocal tract or that in a bottle, will vibrate in a way that depends on its size and shape." The vocal tract acts like a resonator. As air passes through it, the sound of the source is filtered; every configuration of the vocal tract has a set of characteristic resonances or formant frequencies. Each vowel sound has a characteristic formant frequency locations. These formant frequencies show up on sound spectrograms as dark horizontal bars (Figure 3.0).

Figure 3.0: Digitized signal and spectrograms of Rachel's 'jazz,' 'rack' and 'brag'



Rachel's formants for *jazz* are F1/ 712; F 2/ 1783, *rack* F1/ 772; F2/ 1611 and *brag* F1/ 720; F2/ 1896.

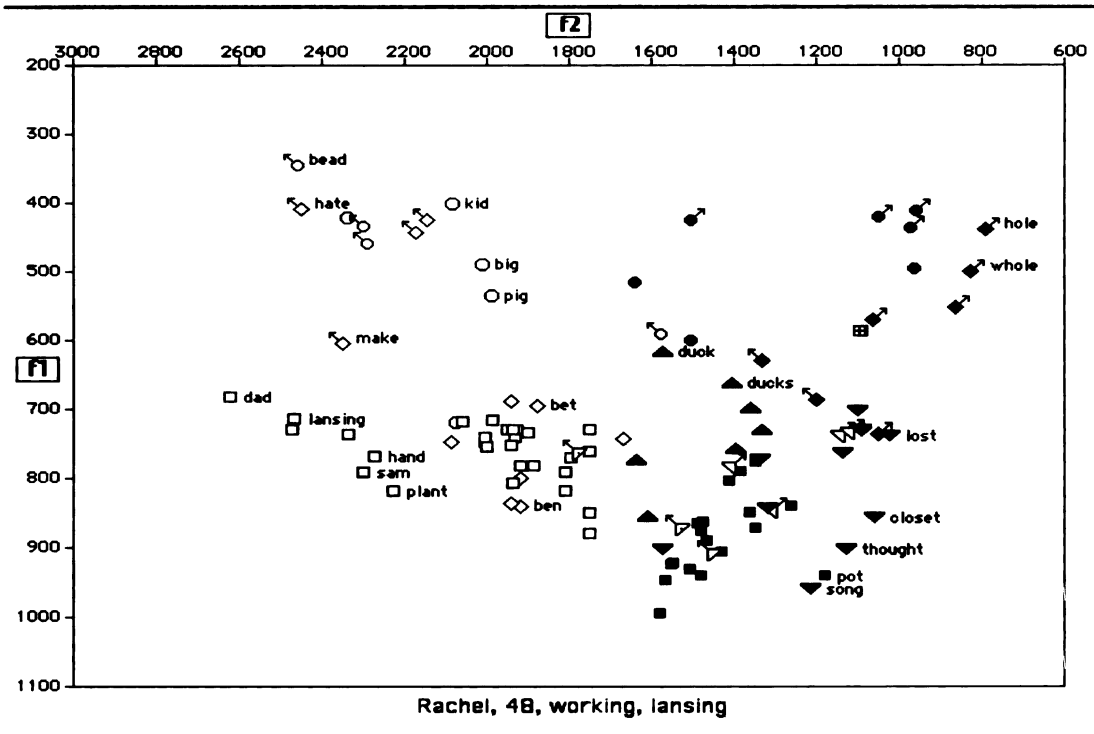


Figure 3.1: Vowel Plot for Rachel

Such F1 and F2 vowel formant readings were entered into a text file and fed into Plotnik, a program developed by William Labov at the University of Pennsylvania, to display, analyze, and compare vowel systems. Figure 3.1 shows the vowel plot for Rachel. The higher the vowel, the lower the F1 value; the fronter the vowel the greater the F2 value. The F1 axis shows formant values along the height dimension, and the F2 axis shows these values along he horizontal dimension. The

Plotnik program was used to plot vowels and calculate mean formant scores. Vowels were then displayed on Excel (Figure 3.2).

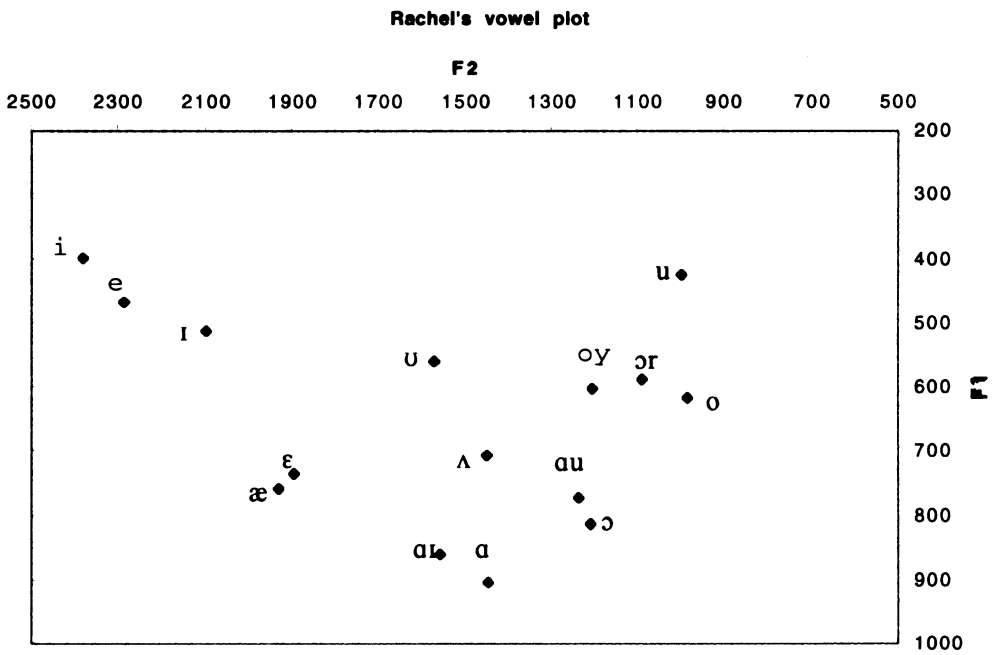


Figure 3.2: Rachel's mean vowel formants

Once respondents' vowels were plotted and coded and means calculated, I was able to compare respondents' vowel charts to four background systems. (1) Peterson and Barney's (1952) classic study of the vowel acoustics of American English exemplified the unshifted or pre-shifted European American system. (2) The unshifted African American system was exemplified by a normalization of the vowel systems of several respondents from Alabama and Mississippi, which I analyzed for this study. The data were taken from recordings made for the Dictionary of Regional English (DARE). (3) The NCCS, an emerging vowel change affecting European American residents of the Inland North, is the model for the shifted Northern system as exemplified by Hillenbrand *et al.* 1995 and Labov (1996) (4) The Southern Shift (SS), a vowel change affecting European American residents of the Southern United States, exemplified the shifted Southern states vowel system Labov (1996).

3.4 Original Dialects

I needed to establish that African Americans would not have been involved in any /æ/ raising or /ɑ/ fronting before moving North. To do this I referred to Thomas's (2001:166) only representation of an African American speaker from the source states for the majority of southeastern Michigan African Americans — a male, Dallas County, Alabama speaker born in 1856 and recorded in 1941. Thomas' plot shows that these two vowels are in no position which could be confused with NCCS influences. Thomas's much younger Columbus, Ohio

speaker (an area not influenced by the NCCS) also shows a very similar positioning of both /æ/ and /ɑ/ (177) to that of the southern DARE respondents that I analyzed for this study. I also conducted acoustic analyses (through LPC analyses of F1 and F2 characteristics of vowels on Computer Speech Lab) of one Mississippi and six Alabama speakers whose voices were recorded during the progress of the fieldwork for the Dictionary of American Regional English (DARE) — speakers born in the late 19th and early 20th Century. Their vowel systems were analyzed to determine what the Lansing parent vowel system might have looked like. I calculated the steady state vowel formants of the six Alabama DARE respondents and one Mississippi respondent. These respondents were between the ages of 24 and 64 when they were recorded from 1966 to 1970.

Researchers have suggested that each vowel has a particular ratio of formant frequencies no matter who produces it. For instance, the F2 of /i/ is about ten times the F1 in both the child's and the adult's pronunciation. In fact, researchers found that the F2 to F1 ratio for /i/ in the 1952 Petersen and Barney study clustered around 8.71 (Pickett 1999). The relationship between F1 and F2 is similar for a particular vowel but differs across vowels. Nevertheless, it is difficult to compare raw measurements for different speakers because vowels heard as the same will have different physical realizations because of the differences in vocal tract length (Peterson and Barney 1952).

Normalization transforms all measurements into a single reference grid so those vowels that sound the same will have the same formant values. Acoustic analysis shows that these speakers' vowels are very different from those involved in the NCCS. The normalized DARE results suggest that the parent system for Lansing AAE speakers resembles figure 3.3. The normalized vowel plot indicates that /æ/ is not raised (although fronted); /æ/ is quite lower than /ɛ/. The onset of /au/ is non-front; in fact, it nearly covers /ɑ/. /ɑ/ and /ɔ/ are distinct; the onset of /e/ is not lowered; /ɑ/ is not fronted; /o/ is back; /u/ and /ʊ/ are not completely back, but they are not as fronted as in the SS. Therefore, any raising of /æ/ or fronting of /ɑ/ among AA respondents in Lansing will have resulted from contact with the emerging NCCS system.

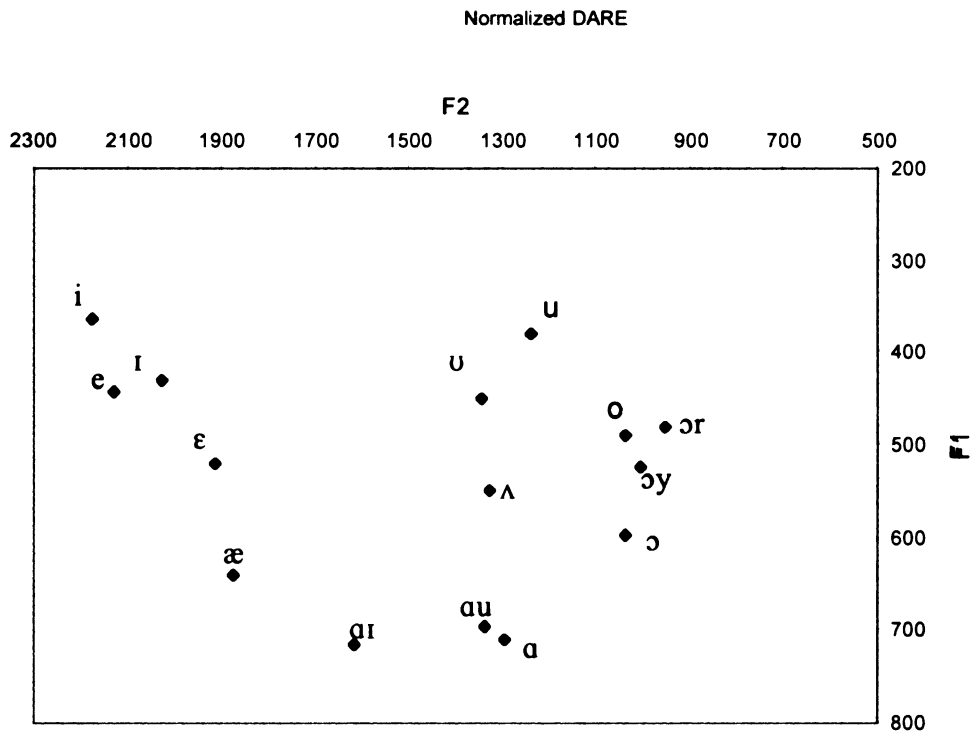


Figure 3.3: Normalized DARE (Jones 2000)

The 1952 Peterson and Barney vowel chart represents the original European American Michigan dialect before the NCCS, and I also used this vowel system to determine the degree of African American accommodation to the NCCS. The relative position of the mean scores of the formants of the vowels of the Lansing respondents were compared to the positions of the same vowels in the Peterson and Barney system which is the 'pre-shifted' system posited to be the Michigan system before the NCCS. Again, acoustic measurements were conducted to determine the position of these respondents' vowels. Index scores were assigned to the vowel positions of each speaker as a result of these analyses.

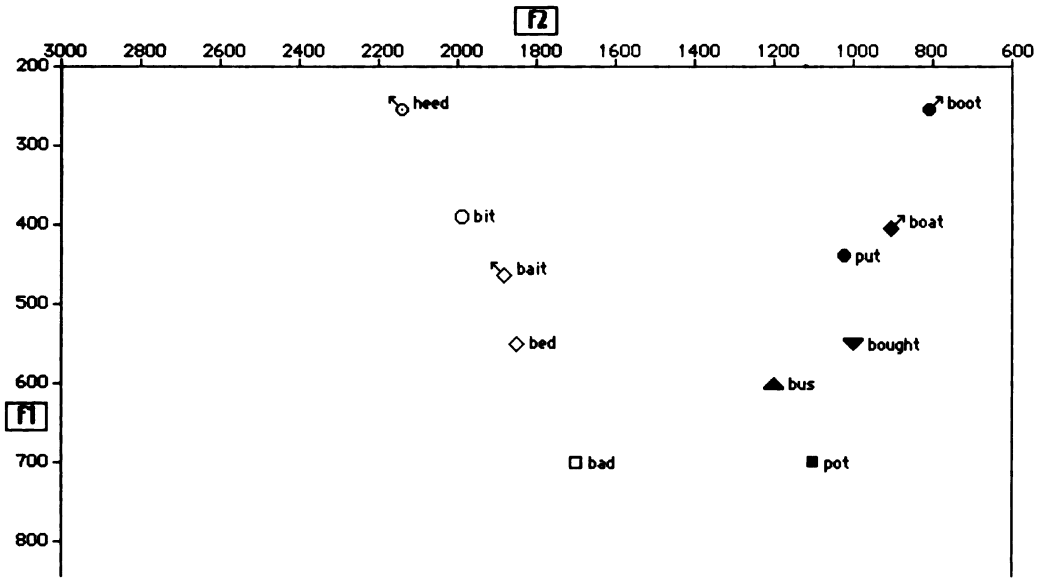


Figure 3.4: Adapted from Peterson and Barney 1952; /e/ and /o/ adapted from Stevens 1998 (men)

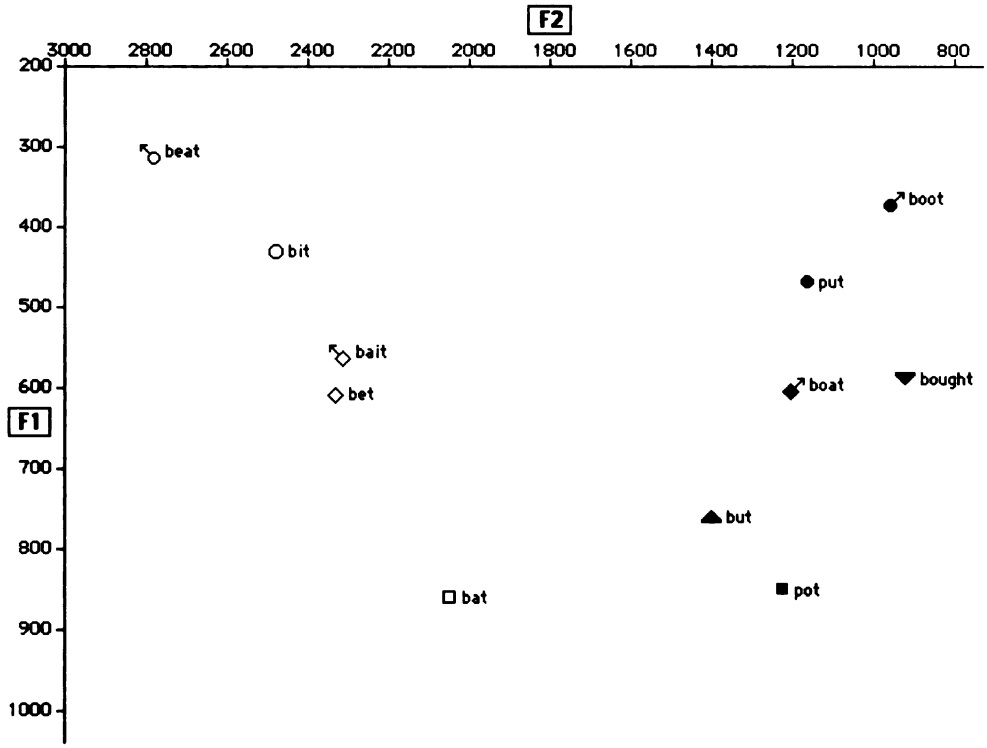


Figure 3.5 Adapted from Peterson and Barney 1952; /e/ and /o/ from Stevens 1998 (women)

For example, in the Peterson and Barney system, /æ/ (bat) is significantly lower than /ɛ/ (bet), and not as fronted as /ɛ/; the DARE results (figure 3.0) indicate that Blacks who moved into Lansing from the South had a fronted but not raised /æ/; therefore, raising to the level of /ɛ/ is considered accommodation to NCCS because it is indicative of movement that was not present in the original dialects. The following tables show index scores assigned to /æ/ and /ɑ/. Since only fronting was calculated for /ɑ/ only F2 scores were indexed.

Table 3.1

F2 INDEX "FRONTING"	**1** /æ/ is significantly back of /ɛ/
	2 /æ/ is not significantly different from /ɛ/
	3 /æ/ is significantly front of /ɛ/ but closer to /ɛ/ than /i/
	4 /æ/ is significantly front of /ɛ/ but closer to /i/
	5 /æ/ is not significantly different from /i/

Table 3.2

F1 INDEX "RAISING"	**1** /æ/ is significantly lower than /ɛ/
	2 /æ/ is not significantly different from /ɛ/
	3 /æ/ is significantly higher than /ɛ/
	4 /æ/ is significantly higher than /ɛ/ but closer to /ɪ/
	5 /æ/ is not significantly different from /ɪ/

Table 3.3

F2 INDEX "FRONTING"	0 /ɑ/ is significantly back of /ʌ/
	1 /ɑ/ is not significantly different from /ʌ/
	2 / ɑ/ is significantly front of /ʌ/ but closer to /ʌ/ than /ɛ/
	3 /ɑ/ is significantly front of /ʌ/ but closer to /ɛ/ than /ʌ/
	4 / ɑ/ is not significantly different from /ɛ/

Each respondent's vowel system was judged based on the relative positions of the vowels in the system with regard to other vowels in same system, and evaluated based on the type of index score that the vowel received. Fourteen phonemes (see appendix C) of the American

English vowel system were analyzed for each respondent's system and compared to Peterson & Barney, normalized DARE, NCCS, or SS patterns, although only /æ/ raising and fronting and /ɑ/ fronting are focused on for this study. Respondents' /æ/ vowels were considered raised and their /ɑ/ vowels fronted based on acoustic measurements with appropriate t-tests which determined the position of the vowels in question. T-tests conducted between mean vowels easily identify whether a particular vowel has invaded the phonemic space of another vowel. If t-tests reveal that /æ/ is significantly lower than /ɛ/ (significance at .05), /æ/ receives an index score of "1." If /æ/ is not significantly lower than /ɛ/ based on t-test results, /æ/ receives a score of "2."

3.5 The NCCS

Advanced NCCS speakers do more than simply shift /æ/ to the level of /ɛ/ or /ɪ/; advanced NCCS vowels systems also include the falling of /ɛ/, /ɪ/, and the fronting of /ɑ/. Labov (1994:196) discusses the attraction of /ɛ/ and /ɑ/ to the hole resulting from the tensing and raising of /æ/. In advanced stages of NCCS /ɛ/ may also shift back toward /ʌ/. Therefore, the positions of /æ/, /ɛ/, and /ɑ/ relative to each other and to other sounds in an individual's vowel system indicate whether a person is an advanced NCCS speaker or not. Using the system

of index scores to compare Lansing AA speakers to vowel systems such as that of Brenda Einhorn's, an advanced NCCS speaker, (Labov, 2000) figure 3.6 and 3.7 and figures 3.8 and 3.9 (Hillenbrand *et al.* 1995) help to situate Lansing AA speakers' accommodation to the NCCS. The SS figure 2.1 of chapter two was also referenced to determine if there were SS influences in the Lansing AA vowel system.

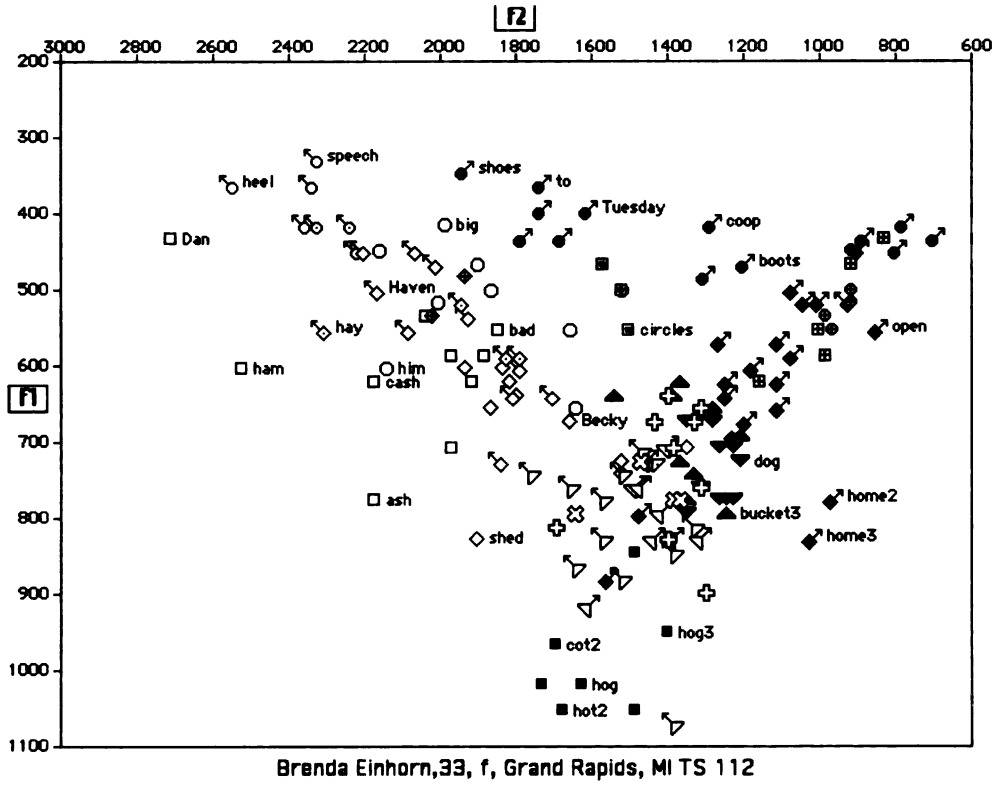


Figure 3.6 Vowel tokens for an advanced NCCS speaker (Labov 2000)

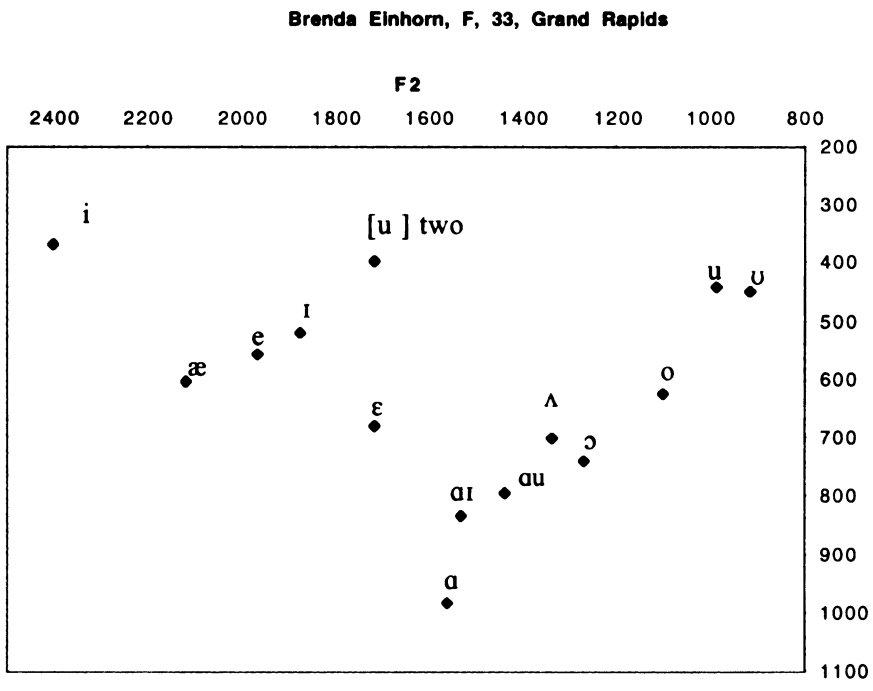


Figure 3.7: Mean vowel plot for an advanced NCCS speaker: adapted from Labov's (2000) Plotnik 5

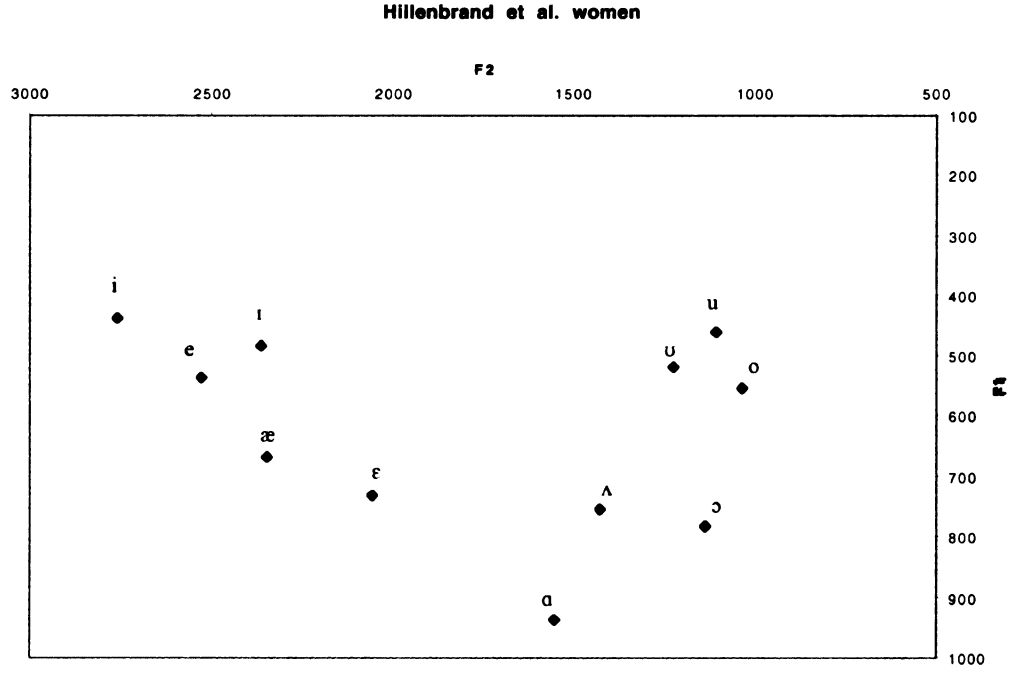


Figure 3.8 Average formants for Michigan women; adapted from Hillenbrand *et al.* 1995

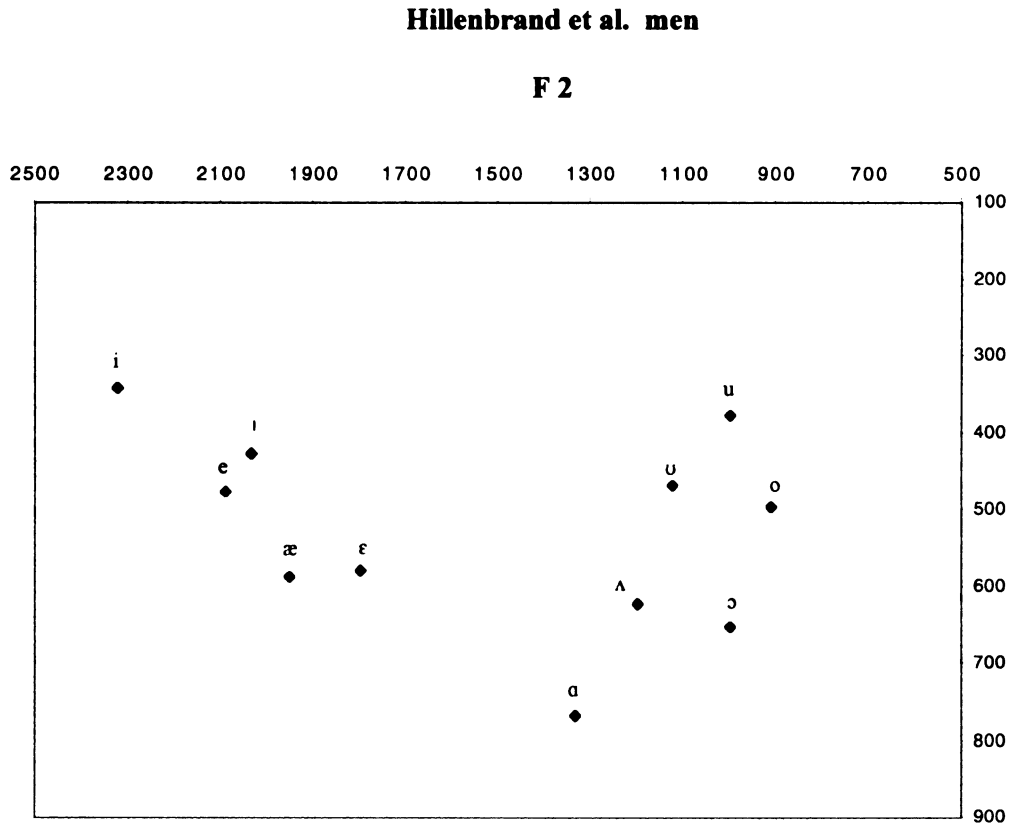


Figure 3.9 Average formants for Michigan men; adapted from Hillenbrand *et al.* 1995

A separate study of Michigan women and men (Hillenbrand *et al.* 1995) reinforces Labov's characterization of the NCCS. /æ/ is at the height of /ɛ/ for men and higher for women. /ɛ/ backing is also characteristic of the men and women in the Hillenbrand *et al.* study. It is important to notice that /æ/ is lower in the pre-NCCS as characterized by Peterson

and Barney (1952) and for the normalized DARE respondents (Jones 2000).

3.6 Duration

Southerners have been characterized as pronouncing vowels longer than Northerners (Deser 1991). Even though African Americans may accommodate to the NCCS and raise /æ/, there may be other acoustic features which also differentiate their low front vowel phonetically from the raised low front vowel of the Inland North. The duration of the vowel beginning with the first pitch period was measured for 31 /æ/ token times thirty respondents. Calculations were run on SAS using a proc mixed procedure, which is a repeated measure procedure. The maximum algorithm was used to estimate the unknown covariance parameters for gender, age, class, following manner of articulation, and following place of articulation. Preceding place of articulation was not measured in relation to duration.

3.7 Summary

The methods used for this study have been explained. Section 3.2 dealt with data collection procedures, demographic information and aspects of the sociolinguistic interview. Section 3.2.1 discussed a perceptual test known as the Gating Experiment. Section 3.4 presented data analysis procedures and 3.4.1 centered around background vowel systems, which may have contributed to AA Lansing pronunciation, and the index scores used to ascertain accommodation to NCCS. Methods

used to analyze the effects of social and linguistic factors on raising and duration were explained. The results of the study will be covered in Chapter four.

Chapter Four

Results

4.0 Introduction

Chapter four examines the extent of accommodation to step one (/æ/ fronting and raising) of the NCCS by thirty-one African Americans indigenous to the Greater Lansing area. The relationship of linguistic and social factors to the raising of /æ/ and the mean duration for the pronunciation of the /æ/ will also be discussed in terms of what is characteristic for the respondents in this sample.

4.1 Raising and Fronting

All of the African Americans who participated in this study and the African Americans who were sampled from DARE had a fronted /æ/, which happens to be characteristic of the SS (Labov 1994: 215; Evans 2001); therefore, raising (F1) and not fronting (F2) is the primary predicator of accommodation to the NCCS among Black respondents in the Greater Lansing area. Results for raising (F1) and not fronting (F2) will be the focus of this section.

The results of acoustic analysis conducted on each respondent's vowels were studied relative to adjacent vowels. T-tests were run to determine if there was a significant difference between the steady state F1 of /æ/ and /ɛ/, /æ/ and /ɪ/ and /æ/ and /i/ to determine the degree of

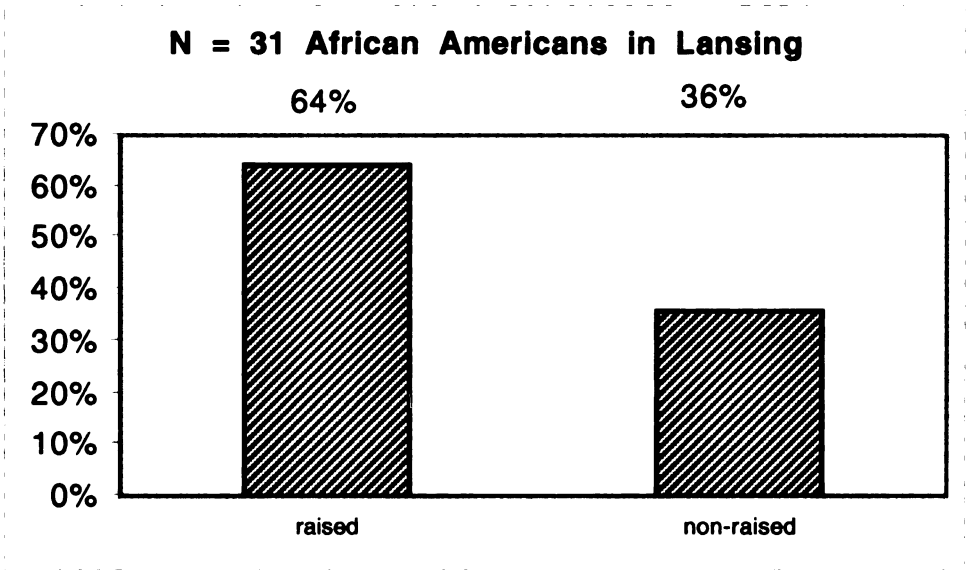


Figure 4.0 Percent of Respondent with F1 /æ/ 2 index score

/æ/ raising. An index score was then assigned (see Chapter three). Twenty of the thirty-one respondents had a F1 /æ/ 2 index score. Although the investigator interviewed more than forty respondents, thirty-one of the best quality tapes were chosen for acoustic analysis. The respondents are listed in table 4.0. The coding, OO, refers to very old. Two of the respondents were much older than those categorized as older.

Twenty of the respondents raised /æ/ to the level of /ɛ/, which is the regional norm for the European American community (Labov 1996, Hillenbrand *et al.* 1995: 3103, Hagiwara 1997:657). The respondents who obtained an index score of two are in table 4.1 with corresponding status, age, network relations, and perception (Gating) data.

Table 4.0 Respondents

	Pseudonym	SAS	SAS	Sex	Age	Age	Relationship
1.	Bertie	W	61	F	42	O	Paul's wife
2.	Rhonda	W	56	F	38	Y	Paul's sister
3.	Nubia	W	53	F	27	Y	Rachel's daughter
4.	Rachel	W	53	F	48	O	Nubia's mother
5.	Norma	W	53	F	42	O	Rachel's sister
6.	Lorna	W	57	F	28	Y	Olive's daughter
7.	May	W	52	F	19	Y	Dave's girlfriend
8.	Alana	W	56	F	28	Y	
9.	Veronica	W	51	F	43	O	
10.	Nancy	W	56	F	27	Y	
11.	Winston	W	52	M	74	OO	Gregory's brother & Kendra's uncle
12.	Alton	W	53	M	54	O	
13.	Chuck	W	56	M	28	Y	
14.	Qasim	W	53	M	62	O	Ibrahim's cousin
15.	Paul	W		M	41	O	Bertie's husband & Rhonda's brother
16.	Rana	M	26	F	50	O	Ibrahim's wife & Jane's stepmother
17.	Debbie	M	28	F	24	Y	Ann's niece
18.	Mandy	M	44	F	39	Y	
19.	Cassy	M	45	F	21	Y	Ibrahim's niece & Jane's cousin
20.	Ann	M	46	F	42	O	Debbie's aunt
21.	Jane	M	26	F	25	Y	Ibrahim's daughter
22.	Olive	M	48	F	48	O	Lorna's mother

Table 4.0 (cont'd).

23.	Dolly	M	42	F	39	Y	
24.	Mali	M	29	F	28	Y	Gregory's daughter
25.	Henry	M	41	M	56	O	
26.	Thomas	M	32	M	27	Y	
27.	Crawford	M	49	M	45	O	
28.	Gregory	M	27	M	66	O	Mali's father & Winston's brother
29.	Ibrahim	M	26	M	52	O	Jane's father
30.	Curtis	M	29	M	28	Y	
31.	Dave	M	43	M	21	Y	May's boyfriend

Table 4.1 Respondents with an F1 index score of /æ/ "2"

	pseudonym	SAS	Sex	Age	NetE	NetS	Gating	F1 /æ/
1.	Bertie	W	F	O	4	3	13	2
2	Rachel	W	F	O	4	2	15	2
3.	Norma	W	F	O	3	1	13	2
4.	Veronica	W	F	O	2	2	15	2
5.	Nubia	W	F	Y	4	1	13	2
6.	Alana	W	F	Y	4	0		2
7.	Nancy	W	F	Y	4	5	14	2
8.	Alton	W	M	O	4	3	10	2
9.	Paul	W	M	O	3	2	14	2
10.	Rana	M	F	O	3	2	16	2
11.	Ann	M	F	O	2	1	14	2
12.	Olive	M	F	O	4	4	14	2
13.	Debbie	M	F	Y	2	1	10	2
14.	Cassy	M	F	Y	3	1	14	2
15.	Jane	M	F	Y	4	4	16	2
16.	Mali	M	F	Y	3	4	12	2
17.	Dolly	M	F	Y	3	0	14	2
18.	Henry	M	M	O	4	3	13	2
19.	Crawford	M	M	O	4	3	14	2
20.	Thomas	M	M	Y	3	3	13	2

The other eleven respondents have F1 index at /æ/ 1 (/æ/ lower than /ɛ/) or a non-raised score.

4.2 Social Factors

In order to study the effect of social factors on raising, a variety of statistical tests were run. Chi-square (a non-parametric test) results for gender, age, and status reveal that status and age are not significant although gender is (chi-square = 4.465, DF = 1, P-Value =0.035).

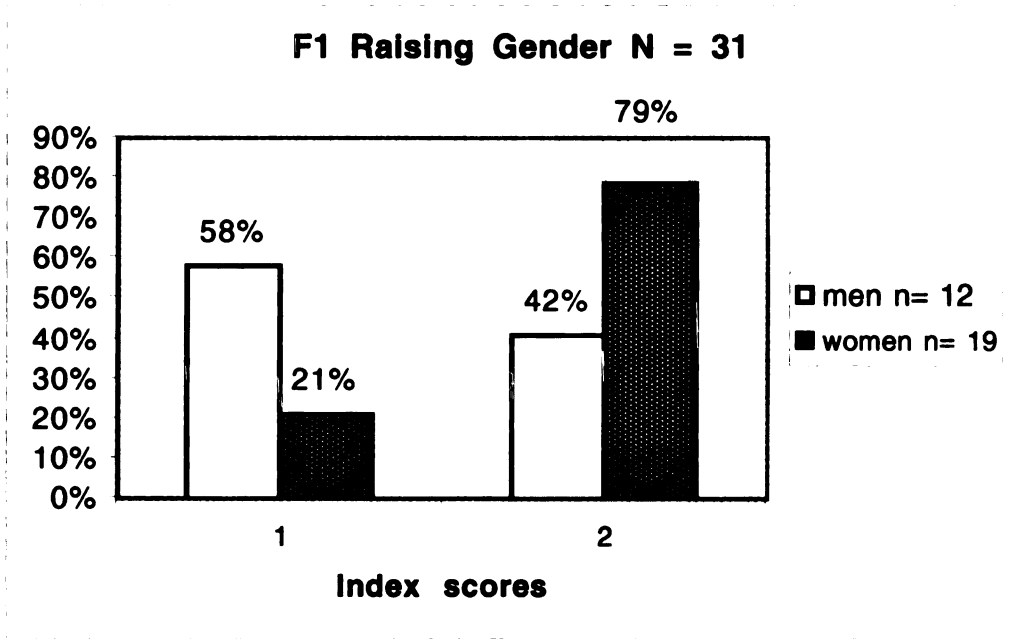


Figure 4.1 Gender

Table 4.2 Raisers according to gender

Gender	**N = 31**	**/æ/ 2 index scores**	**Percent**
Men	n = 12	n = 5	42%
Women	n = 19	n = 15	79%

Table 4.3 Non-raisers according to gender

Gender	**N = 31**	**/æ/ 1 index scores**	**Percent**
Men	n = 12	n = 7	58%
Women	n = 19	n = 4	21%

With regard to gender, 42% of the men in this sample were at /æ/ 2, whereas 79% women in the sample had a raised index score. Only 21% of the women were at /æ/ 1 in contrast to 58% of the men. The phenomenon of gender consistently influencing speech beyond the differences in vocal tract size has received elaboration in a number of studies. Sachs *et al.* (1973) and Goldstein (1980) suggest that the gender differences that are seen in acoustic output are the result of more than mere physiological differences in the length of the vocal track, but may also reflect the effect of social expectations. Sachs *et al.* (1973) examined the formants of pre-adolescent boys and girls of similar weight, height and vocal track length and found that the sex of the children was still perceivable by judges. The researchers concluded

that social factors extenuate the admittedly physical differences due to vocal tract length. Their study suggests that linguistic sexual dimorphism begins in early childhood when children are socialized to fulfill expectations for gender roles. They also found that pre-adolescent boys tended to pronounce their vowels with lower pitch than girls, although there were two girls in the sample who were consistently identified as boys because their pitch and formant patterns matched those of boys. Goldstein (1980) examined the effects of anatomy on the production of vowels by men, women, and children and also concluded that anatomy is not the only factor that affects male female differences, but that women tend to pronounce vowels in a way that utilizes more vowel space than men use. Goldstein indicates that women's vowels are more peripheral than those of men (230). She ascribes this to a tendency for women to speak more clearly, although she also notes that this is perhaps especially characteristic of western culture (234).

Sociolinguists have also examined and held gender accountable for many of the linguistic differences between men and women. In Evans' (2001) work on Appalachian speakers in Michigan and Ito's (1999) work among rural Michigan speakers, a higher percentage of women received index scores of 2 than men. Labov (1994:156) stated that "in most of the vowel shifts that we will look at, women are considerably more advanced than men." Herndobler (1993: 139) described women as standard culture bearers and suggested that /æ/

raising among the working class White women in her sample had been taken as "citified and sophisticated in the psyches of urban women." One must also emphasize that within the field of Black women's language (BWL), Houston Stanback (1985) has consistently focused on the view that Black women's speech is not the same as Black men's speech or White women's speech. However, Eckert (1989:247) put forward the notion that there is no "constant relationship between gender and variables and that gender based variation appears within as well as between groups." The results of the Lansing AAE sample also contribute to the literature of differentiation between the speech of men and women.

4.3 Age and Class

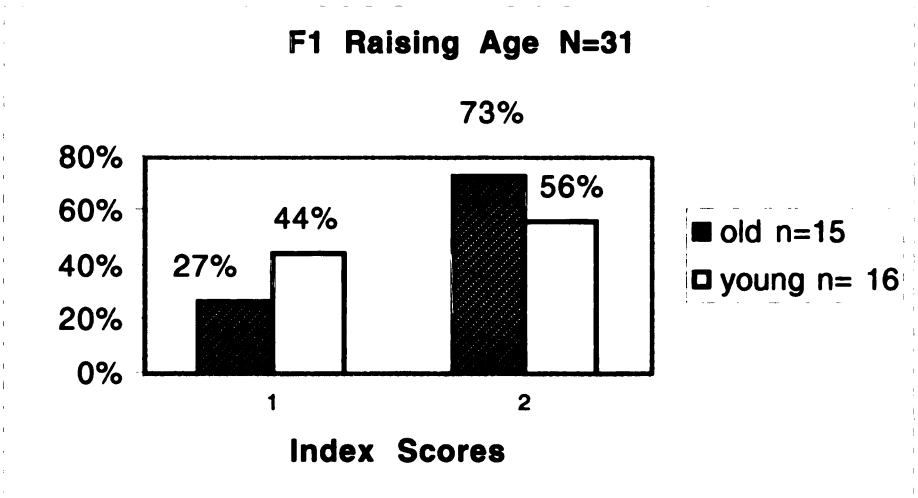


Figure 4.2 Age

Neither status nor age were statistically significant in this sample; however, a greater number of older rather than younger respondents raised /æ/ to an index score of 2 (Figure 4.1), and more middle-class than working class had an index score of 2 (Figure 4.2).

Table 4.4 Raisers according to age

Age	**Total N = 31**	**/æ/ 2 index scores**	**Percent**
Young	n = 16	n = 9	56%
Older	n = 15	n = 11	73%

Table 4.5 Non-raisers according to age

Age	**Total N = 31**	**/æ/ 1 index score**	**Percent**
Younger	n = 16	n = 7	44%
Older	n = 15	n = 4	27%

When the intersection of gender, age, and class are considered, middle-class women lead in /æ/ raising with older speakers slightly in ascendancy over younger. This phenomenon lends itself to an instrumental interpretation. These women are employed in a work force, which is predominately white. The fact that older women raise, is an indication that accommodation to NCCS is a reality in the community although this reality must be positioned against the fact that a sizable number of speakers do not raise /æ/. Which means there is

the element of choice, albeit unconscious. Wolfram (1969) noted that African American women, older speakers, and middle-class speakers are more sensitive to socially diagnostic features than men and youth (117-8). This sensitivity may transfer to the vernacular of the region, as exemplified in the phonological system of the Inland North. This is the system, which most overtly states that a speaker belongs to this region.

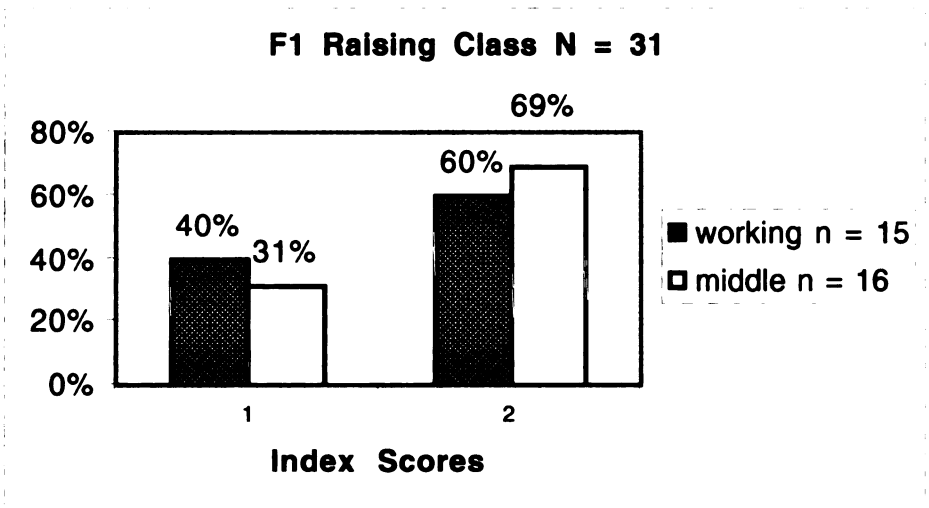


Figure 4.3 Class

Sixty percent (n = 15) of the working class respondents received an index score of 2 (a raised score), while forty percent received an index score of 1 (not raised). Although not significantly different, sixty-nine percent of middle-class speakers (n = 16) received an index score of 2, and only thirty-one percent received an index score of 1 or not raised.

Table 4.6 Raisers according to class

Class	**Total N = 31**	**/æ/ 2 index scores**	**Percent**
Working	n = 15	n = 9	60%
Middle	n = 16	n = 11	69%

Table 4.7 Non-raisers accrding to class

Class	**Total N = 31**	**/æ/ 1 index scores**	**Percent**
Working	n = 15	n = 6	40%
Middle	n = 16	n = 5	31%

There is a tendency for middle-class speakers to acquire features of the wider community before working class speakers. For example, Wolfram (1969:60) found less consonant cluster deletion among middle-class speakers.

4.3.1 Network Relations

Network Ethnicity (NetE), which is a measure of the proportion of close friends and associates from a respondent's same ethnic group, also had no significant effect on raising. Pearson product moment correlation measures were run for NetE and NetS, and no association was found between either NetE or NetS and raising in this sample. NetS, which is an evaluation of the density of a person's social network

based on the amount of relatives and colleagues in the neighborhood, and the type of social relations the person has with co-workers. In order to obtain a perfect (5) NetE score, respondents had to self-report that 100% of their close friends and associates were African Americans. The scale was constructed as follows:

Table 4.8 Ethnic Network

Percentage of Friends and associates from same ethnicity	Score
100% African American	5
75% - 99%	4
50% - 74%	3
25% -49%	2
1% - 24%	1
0%	0

NetE scores for the 31 respondents were distributed in the following manner:

Table 4.9 Distribution of NetE Scores

NetE Scores	**Responses (N = 31)**
0	
1	
2	XXXX (n = 4)
3	XXXXXXXXX (n = 9)
4	XXXXXXXXXXXXXXXXX (n = 17)
5	X (n = 1)

55% of the respondents identified their close friends and associates as members of the same race. The four respondents obtaining a score of 2 are female. Three received a raised index score, but this number is not large enough to provide statistical significance and merely suggests that these individual are ideologically open to ethnic others.

NetS, which measured the density of a respondent's social network, received a wider distribution in this sample, which indicates a more open social network. In order to obtain a perfect NetS score, a respondent needed to have the following characteristics:

1. Membership in a high-density territorially based network
2. Substantial kinship ties in neighborhood
3. Work at the same place with at least two people from neighborhood
4. Associates extensively with people from work in leisure time activities

The respondents' responses were distributed in the following manner:

Table 4.10 Distribution of Net S Scores

NETS Scores	**Distribution of total scores N = 31**
0	XXX (n = 3)
1	XXXXXXXX (n = 8)
2	XXXXXXX (= 7)
3	XXXXXX (n = 6)
4	XXXXX (n = 5)
5	XX (n = 2)

The NetS scores are unlike the NetE scores, which were skewed to the high end of the scale because the majority of the population reported that their close friends were ethnic sames. If one considers the networks of 58% (n = 18) of the African Americans in category 0 - 2 as open and categorize those obtaining scores of 3 - 5 as possessors of dense networks, then it is obvious that the majority of African Americans in this sample have open social networks. It is also the case that the openness of the network does not necessarily extend to incorporating other ethnicities into it. It appears to be the case that the networks can be open, but populated principally or even uniquely by other African Americans.

Similarly, the Gating score, which tested a respondent's ability to perceive the NCCS, did not seem to be correlated to raising, although a previous study indicated that there were significant perceptual differences between African Americans in Lansing and young, White, urban, southern Michigan speakers (Preston 2000, Jones 2001).

4.4 Adjacent Segments

Twenty out of thirty-one (65%) in this sample received raised index scores, and one-way ANOVAs were run for each of the twenty respondents with a raised index score to examine the effects of the /æ/ mean scores for the various linguistic subgroups. Following manner of articulation, preceding place of articulation, and following place of articulation were examined. Eleven of the twenty (55 %) raisers exhibited significant differences among the means for following manner of articulation. One out of twenty showed that the subgroup /æ/ means for preceding place of articulation were not equal, and none of the twenty raised respondents showed differences among the /æ/ means for following place of articulation. The dependent or response variables for the ANOVA runs were the F1 formant scores for /æ/. The independent variables were following manner of articulation, preceding place of articulation and following place of articulation respectively. The coding system from Plotnik was adapted into a model, which was used to run one-way ANOVAs on SAS statistical program. The Tukey-Kramer method for multiple comparisons was also incorporated in the

statistical model to help the investigator study the differences among the subgroups.

4.4.1 Following Manner of Articulation

The coding system in Plotnik combines manner with voicing, so the following coding system was used to run one-way ANOVAs.

Table 4.11 Coding for ANOVA

Code	Segment	Token
11	Voiceless Stop (VLS)	apple, nap, zap, pat, mattress, rack black
12	Voiced Stop (VDS)	tab, cabin, dad, Saginaw, brag, rag
31	Voiceless Fricative (VLF)	laugh, bath, ask, past, cash, mash
32	Voiced Fricatives (VDF)	have, has, jazz
4	Nasals	gamble, Sam, Lansing, thank, gang, banker, plant

The Tukey-Kramer method was used to make multiple comparisons among mean scores for individual speakers after running the one-way ANOVAs. Eleven out of twenty respondents show an /æ/ mean score raising effect. Nasals showed the greatest effect for all eleven respondents. The ranking for following manner of articulation is as follows: Nasals>Voiced Stops>Voiced Fricatives>Voiceless Fricatives >Voiceless Stops. For 91% (n= 10) of the respondents, nasals are most

different from voiceless stops. For 9% (n = 1) of the respondents, nasals are most different from voiceless fricatives. This occurs in the vowel system of Alton, a working class older respondent, whose ranking order is N>VDF> VLS> VDS> VLF. Nasals always received the most raised formant mean scores among those eleven individuals who showed a raising effect for following manner of articulation (see appendix F). Thomas will be used as an exemplar. The following vowel plot shows the /æ/ distribution for Thomas. /æ/ is represented by the clear squares on the vowel plot.

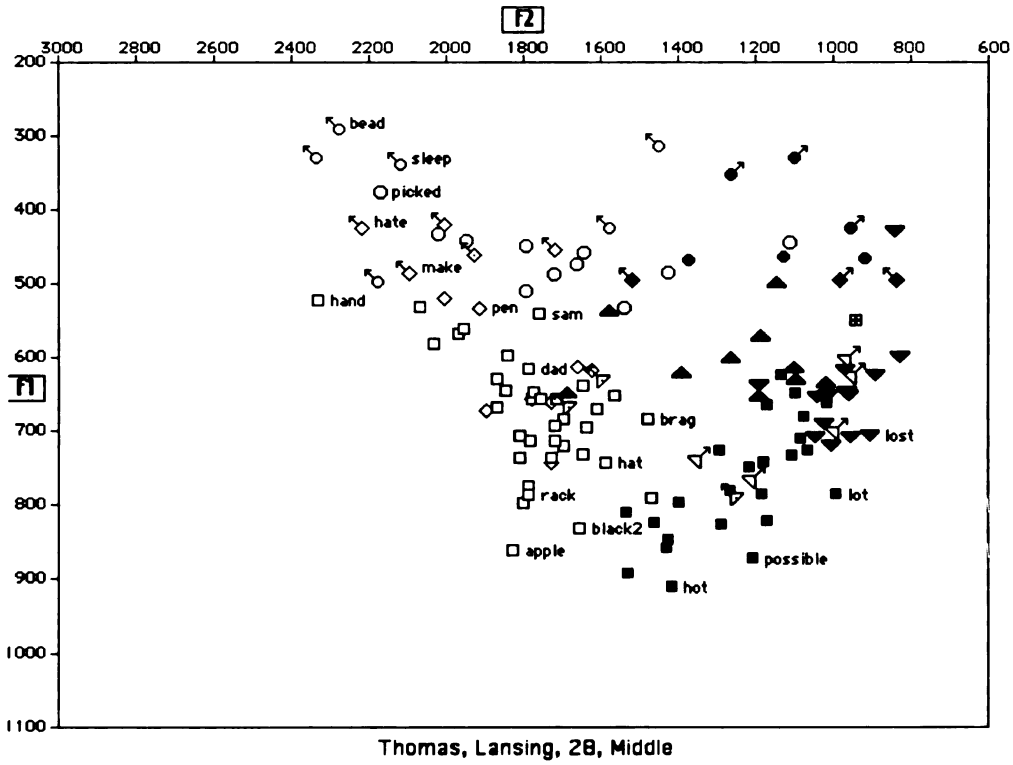


Figure 4.4 /æ/ distribution for Thomas

Thomas's /æ/ distribution is typical for the sample. Subgroup mean scores are ranked for Thomas as follows: N > VDS > VDF > VLF > VLS. Thomas's ANOVA results are as follows:

Table 4.12 Thomas's ANOVA Results

Source	DF	SS	MS	F Value	P
Manner	4	149318.2902	37329.5725	18.68	0.0001

Table 4.13 Mean scores for Thomas' following manner of articulation

Following segment	Mean scores
Nasals	577
VDS	676
VDF	681
VLF	705
VLS	773

Thomas's nasals were different from all other subgroups. Voiceless stops were different from nasals and voiced stops. Thomas's nasals (*hand*, *thank*, *banker*, *gamble*, *Lansing*, and *Sam*) were higher than the mean formant score for /ɛ/. Thomas' lowest formant scores for following manner of articulation were *apple*, *black*, *pat*, and *rack* (ANOVAs for the remaining respondents are in appendix F).

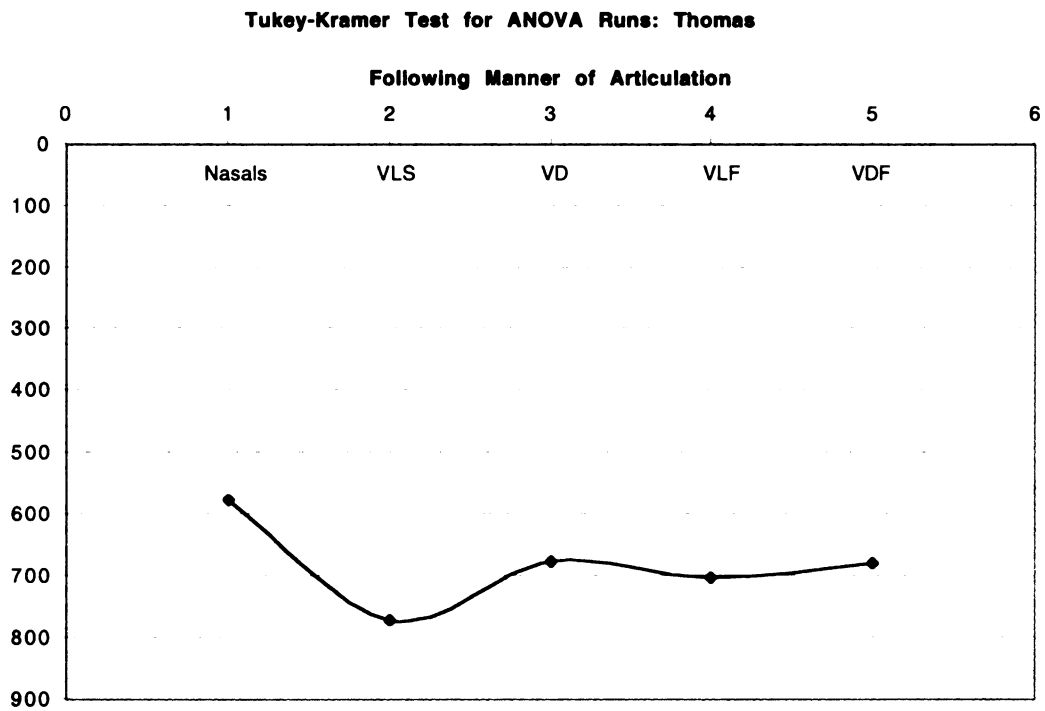


Figure 4.5 Following manner of articulation for Thomas

Figure 4.4 shows that with regard to following manner of articulation, nasals are different from everything else. Voiceless stops are different from everything if the marginal difference between voiceless stops and voiceless fricatives (P = .07) is acceptable. Voiced stops are different from nasals and voiceless stops, but are the same as voiceless fricatives and voiced fricatives. Voiceless fricatives are the same as voiced stops and voiced fricatives but different from nasals and marginally different from voiceless stops. Voiced fricatives are different from nasals and voiceless stops, but the same as voiced stops and voiceless fricatives.

Nasals promote raising for the eleven respondents who showed an effect for following manner of articulation. Voiceless stops demote for 99% of these individuals (N = 11). There is variation with regard to the other phonetic environments based on the ranking of mean /æ/ scores. Table 4.14 shows rank order for the eleven respondents

Table 4.14 Ranking of mean F1/æ/ formant values

Pseudonym	Ordered environments Promoting				Demoting
Alana	Nasal	VDS	VLF	VDF	VLS
Alton	Nasal	VDF	VLS	VDS	VLF
Bertie	Nasal	VDS	VDF	VLF	VLS
Crawford	Nasal	VDF	VDS	VLF	VLS
Jane	Nasal	VLF	VDS	VDF	VLS
Mali	Nasal	VLF	VDS	VDF	VLS
Nancy	Nasal	VDS	VDF	VLF	VLS
Norma	Nasal	VDS	VLF	VDF	VLS
Olive	Nasal	VDS	VDF	VLF	VLS
Thomas	Nasal	VDS	VDF	VLF	VLS
Veronica	Nasal	VDF	VDS	VLF	VLS

who showed differentiation among mean F1 /æ/ formant values for following manner of articulation. Six out of eleven (55%) rank voiced

stops after nasals as promoters of low front vowel raising. Voiced fricatives rank third, voiceless fricatives fourth, and voiceless stops obviously demote low front vowel raising among African Americans in Lansing. The following ranking comparison is based on majority percentages for the Lansing sample.

A comparison of Lansing African American results with Evans's Appalachian results (2001), Ito's rural mid-Michigan results (1999), and Labov's (1994:100) NCS Detroit results reveal similarities as well as differences.

Table 4.15 Rank order for following manner of articulation

Lansing African Americans	Ypsilanti Appalachian	Rural mid-Michigan	Northern Cities Shift (Detroit)
Nasals (Promote)	Nasals	Nasal	Nasals
Voiced Stops	Voiced Affricates	Voiced Fricative	Voiceless Fricative
Voiced Fricatives	Voiceless Affricates	Voiced Stop	Voiced Stops
Voiceless Fricatives	Voiced Stops	Voiceless Stops	Voiced Fricatives
Voiceless Stops	Voiced Fricatives	Voiceless Fricatives	Voiceless Stops
	Lateral		
	Voiceless Stop		
	Voiceless Fricative		

For all studies, the most advanced /æ/ tokens appear before nasals, whereas, voiceless stops clearly demote raising. Results for fricatives are mixed.

4.4.2 Preceding Place of Articulation

With regard to preceding place of articulation, one-way ANOVAs were also run for the twenty respondents who had obtained an index score of 2. The following coding system was adapted from Plotnik to run one-way ANOVAs for preceding place of articulation.

Table 4.16 Coding: Preceding Place of Articulation

Code	Preceding Place of Articulation	Tokens
1	Labial	Pat, past, pal, badge, bath, banker
2	Apical	tab, dad, Sam, Saginaw, zap, thank
4	Velar	cabin, cash, gamble, gang
5	Nasal	nap, mattress, mash
6	Liquid	laugh, Lansing, rack, rag
7	Obstruent + liquid	black, brag, plant

Those tokens that did not have a preceding segment were eliminated from consideration for this portion of the analysis. /θ/ was grouped with apical in this classification. With the exception of one respondent, there were no significant differences among the means of preceding place of articulation.

Although Ann, a 42 year old middle-class East Lansing resident, did not exhibit any differences among mean subgroups for following

manner of articulation, she is the only respondent in this sample who shows a significant difference among mean scores for preceding place of articulation. The Tukey-Kramer test shows that preceding obstruents + liquids have a significant demoting effect in Ann's system.

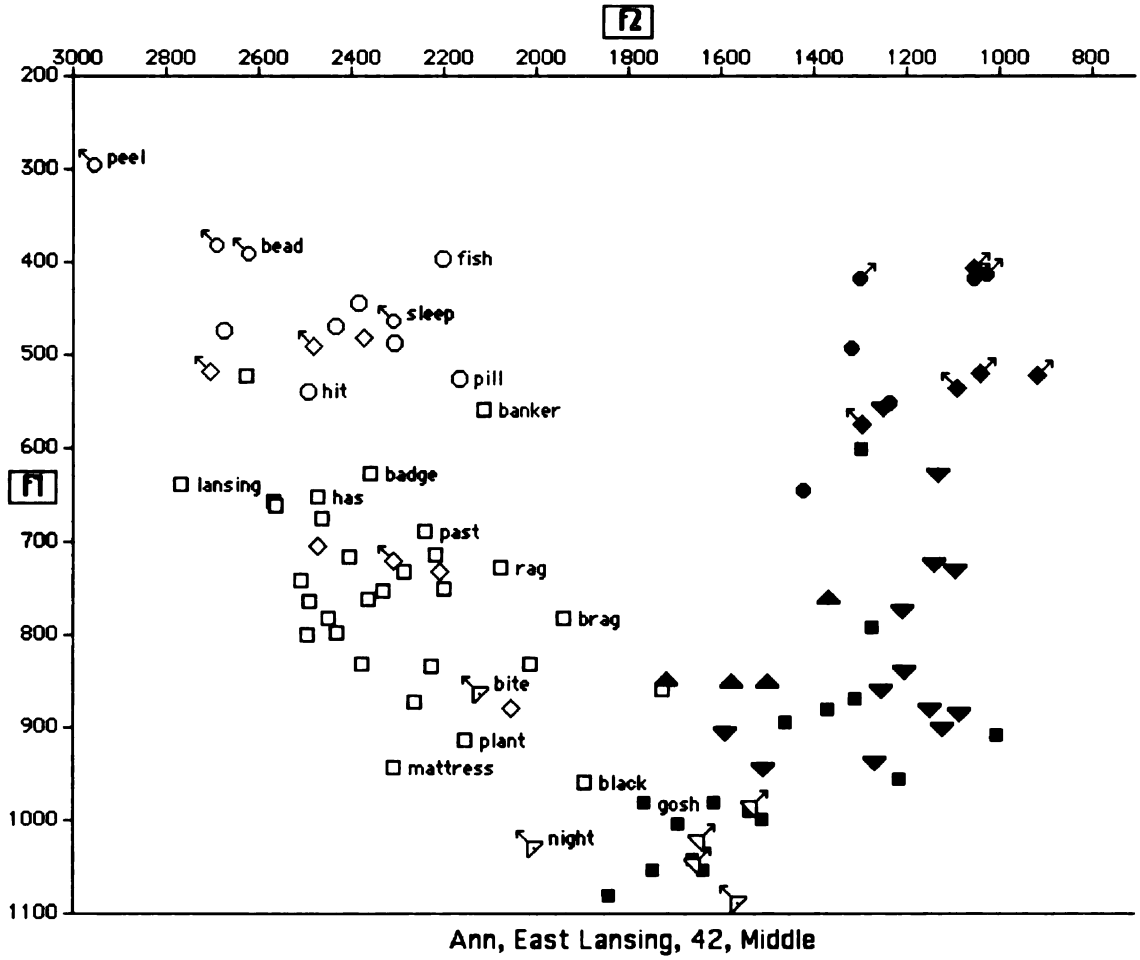


Figure 4.6 /æ / distribution for Ann, East Lansing

Table 4.17 Ann's ANOVA

Source	DF	SS	Mean Square	F Value	P
Preceding	5	117415.0225	23483.0045	2.69	0.0497

4.4.3 Following Place of Articulation

None of the twenty respondents showed significant differences for following place of articulation. Ito (1999:83-4) also reported that following place of articulation had no effect on low front vowels among White rural Michigan speakers. Evans's (2001: 50) results for Appalachian speakers indicate that voiced labials promote low front vowel raising and following velars demote. Labov (1994:100) ranks following place of articulation as follows: palatal > apical > labial > velar and emphasizes that " *black*," which is the token that is (usually) the lowest and farthest back has a voiceless velar stop and a preceding obstruent + liquid.

4.5 Duration

Although Ladefoged (1993) and Labov (1994) have referred to /æ/ as a short or traditionally lax vowel, Strange *et al.* (1983:698) categorize /æ/ acoustically as an intrinsically long vowel and group /æ/ with /e, ɑ, o/ in terms of length as opposed to /ɪ, ɛ, ʌ, ʊ/ which have been characterized as the intrinsically short vowels. The average mean duration of vowels in Hillenbrand's study supports the contention that

/æ/ is an intrinsically long vowel and not an acoustically short vowel. The mean duration of Hillenbrand *et al.* (1995) substantiates the claim that /æ/ is acoustically longer than /ɪ, ɛ, ʌ, ʊ/.

Table 4.18 Duration for Michigan speakers adapted from Hillenbrand *et al.* (1995:3103)

	/i/	/ɪ/	/e/	/ɛ/	/æ/	/ɑ/	/ɔ/	/o/	/ʊ/	/ɯ/	/ʌ/
Men	243	192	267	189	278	267	283	265	192	237	188
Women	306	237	320	254	332	323	353	326	249	303	226

In this case the mean duration for /æ, e, i, ɑ, o, ɔ/ is longer than those vowels characterized by Strange *et al.* (1983) as intrinsically short vowels.

Pronouncing vowels with longer duration has been reported as a feature of Southern speech. Toni Deser (1991:112), in her analysis of Northern and Southern dialect children in Detroit, concluded that vowel duration is an aspect of dialect. In order to examine the effects of adjacent segments on vowel length among AAE speakers, the duration of the vowel nucleus minus consonant onset and offset was measured for thirty-one tokens times thirty-one respondents. The tokens are given in 4.10:

Table 4.19 /æ/ Tokens

1. apple	7. black	13. mattress	19. rack	25. laugh	
2. pat	8. nap	14. cash	20. brag	26. plant	
3. pal	9. tab	15. gang	21. has	27. rag	
4. Saginaw	10. dad	16. zap	22. badge	28. ask	
5. gamble	11. mash	17. bath	23. thank	29. have	
6. Lansing	12. banker	18. jazz	24. cabin	30. past	31. Sam

Calculations were run on SAS using the proc mixed repeated measures procedure. The maximum algorithm was used to estimate the unknown covariance parameters for gender, age, and class, following manner of articulation, and following place of articulation. Preceding place of articulation was not examined in relation to duration.

4.5.1 Social Effects

4.5.2 Gender

Results indicate that there are certain social effects related to duration. Women had a greater mean vowel duration than men ($p = 0.0062$), but these results parallel the results of Hillenbrand *et al.* (1995), who found significantly shorter duration for men than for women and children in their study of respondents from Michigan's Lower Peninsula. The mean duration for /hæVD/ spoken by Hillenbrand's speakers were:

Men 278 ms

Women 332ms

The Lansing AAE speakers mean /æ/ duration as measured for *have*, which most approximates the /hæVD/ utterances spoken by the respondents in Hillenbrand's examination, is as follows:

AAE speakers in Lansing:

Men 327ms

Women 369ms

It may be that Lansing African Americans pronounce /æ/ with greater length than White speakers in Lower Michigan, and that, of course, may reflect their Southern heritage, although, as the next section shows, those speakers who might be expected to have preserved original dialect forms best are not those who have the longest duration.

4.5.3 Age and Class

There was no effect for age except that the two older men in the study pronounced /æ/ significantly shorter than everyone else. Winston (74) and Gregory (66) were coded OO since they were quite a bit older than those in the 40-60 category. They were coded differently from the other respondents to see if the results might be significant. The results show that the duration for OO is shorter than O ($p = 0.0248$). There is no effect between O and Y ($p = 0.9620$); however, duration for the OO respondents is also significantly shorter than Y ($p = 0.0211$). This

comparison may not be very important because there were only two men who were much older than everyone else. Yet, the results are suggestive and bear further study. There was no effect for class in this sample.

4.5.4 The Effects of Adjacent Segments

The effects of following manner of articulation and following place of articulation were examined in relationship to duration. Preceding place of articulation, laterals and affricates were not studied. Manner of articulation was divided into five levels and place of articulation was divided into four. Table 4.11 illustrates the coding system. There were five levels for manner: VLS, VDS, VLF, VDF and N. The repeated measures procedure indicates that VDS and VLF are similar to each other but different from the other levels. The five levels are ranked in terms of greater to lesser duration as follows: VDF > VLF > VDS > N >VLS. /æ/ is pronounced longer when followed by voiced fricatives in this sample. Voiceless fricatives and voiced stops are not significantly different from one another, but are significantly different from nasals, voiceless stops and voiced stops.

Table 4.20 Coding: Place of Articulation

	Place →	Labial/Labio-dental/Interdental	Apical	Palatal	Velar
Manner Code	Place code →	1	2	3	4
1	Voiceless Stops	nap, apple , zap	pat, mattress		rack, black,
2	Voiced Stops	tab, cabin	dad		Saginaw, rag, brag
3	Voiceless Fricatives	bath, laugh	ask, past	cash, mash,	
4	Voiced Fricatives	have	has, jazz		
5	Nasals	gamble, Sam	Lansing, plant, thank		gang, banker

Following place of articulation also seemed to affect vowel duration. The mean duration for /æ/ followed by a palatal is longer than when the vowel is followed by an apical (P = 0.0001), labial (P = 0.0001) or velar (P = 0.0001). Mean duration for /æ/ with a following labial, labio-dental, interdental, and apical have a similar effect. The labial group is also similar to the velar group; however, following

labials and palatals significantly differ from one another in their effect on the vowel; moreover, palatals and velars have a significantly different effect on /æ/ duration. Following place of articulation may be ranked as follows from greater to lesser duration: palatal >apical>labial>velar. The mean length for apical, labial and velar are almost the same.

4.6 Summary

Chapter Four contains an analysis of features of the low front vowel among 31 African Americans. Characteristics of the low front vowel are examined within the context of the social and linguistic factors which may effect /æ/ raising. Gender is considered a significant contributor to vowel differentiation whether the analysis involved raising or duration. Net-work relations did not show an effect for the way the speakers in this sample pronounce the low front vowel. Age and status were not significant but suggested that certain trends were at work which parallel normal sociolinguistic behavior. Following manner of articulation had the greatest effect on raising with nasals clearly promoting and voiceless stops demoting. Chapter Five centers around a discussion of the effect that region has on the pronunciation of the low front vowel among AAE speakers.

Chapter Five
Qualitative Discussion

5.0 Introduction

Chapter five summarizes the results and discusses some qualitative implications. This chapter also deals with sections of the interviews in which respondents expound on their ideology and thoughts about residing in the Greater Lansing area. I initially hypothesized that African Americans in the Greater Lansing area had engaged in institutions in the wider community and had sufficient networking experiences to accommodate to the early stages of NCCS; therefore, it was assumed that accommodation patterns would be similar to those of majority speakers. Indeed, it was posited that young, middle-class women, and individuals with open personal networks would lead in accommodation in the African American community. It was also believed that individuals who show strong neighborhood and ethnic loyalty would not accommodate to the White vernacular of the region.

5.1 Regional Accommodation

I have shown that twenty (64%) of the thirty-one respondents in this sample exemplify the first step of the NCCS pattern that is typical for the Inland North. I have plotted the average formant frequencies of vowels produced by the 45 men and 48 women in the Hillenbrand *et al.* (1995) study of respondents from the southeastern and southwestern

portions of Michigan. The vowel plots, which were represented in figures 3.8 and 3.9, reinforce the research by Labov (1994) and Eckert (1989, 2000) concerning the NCCS. These Michigan vowel plots show that /æ/ is higher than /ɛ/ for women and equal to /ɛ/ for men. A similar pattern of /æ/ at the height of /ɛ/ emerged for 64% of the sample of African Americans in Lansing. Blacks can and do adopt a regional pronunciation, but I will show here that their overall vowel system performance is still characteristically Black.

The African Americans, who raise /æ/ in this sample, tend to accommodate to Northern speech in terms of front vowel pronunciation and retain Southern AA pronunciation for the back vowels. Vowel duration may also be greater for Blacks than for White Michigan speakers, which is also indicative of Southern pronunciation. These acoustic differences and others differentiate Northern AA speech from Northern EA speech.

5.2 Social Factors

There seems to be very little correlation between network and raising. Why is that? The feelings that African Americans project in the interviews conducted for this study are complicated. They believe that Lansing is a healthy, family-oriented city that is not crime ridden like Detroit or other large urban areas. They seem to perceive that Blacks in Lansing, although relatively well off, are stifled culturally and perhaps uninterested in the activities of the larger community. They do not

appear to initiate extensive contact with Whites, based on their self-reported social network scores. Moreover, their ethnic network relations seem to be carefully hemmed in, which could be universal for Blacks in America. Feagin and Sikes (1994) interviewed 209 middle-class African Americans from various parts of the nation concerning their social experience in the United States, and many of these African Americans related that modern racism, subtle or otherwise, is an inescapable part of the fabric of the United States. Avoidance of Whites beyond necessary interaction, although not the only strategy, is one of the strategies that even middle-class Blacks use to deal with White racism or even the possibility of racism. Feagin and Sikes (1994:4) assert that "almost any encounter with Whites, in workplaces, schools, neighborhoods, and public places, can mean a confrontation with racism." They (275) add:

> One way to deal with discrimination is to try to avoid situations where it might occur, even at some personal cost. A physician in a southwestern city responded to a question about dealing with discrimination this way: "It just depends on what the situation is, whether or not it's personal, business; it just kind of depends on what, you know, exactly what it is. I usually don't go places where I'm not wanted, so I'm not the kind of person that trailblazes — where people tell you that they don't want you in a certain situation and you persist. It's kind of a hard question to answer.

Consequently, many African Americans avoid social situations where racism might occur or prepare psychological shields, guards and eternal vigilance to escape physical or psychological racist attacks, which are part of American life.

Lois Benjamin (1991: 278), in her study of 63 men and 37 women, relates that the racial composition of the social contacts of her participants was 62 percent Black, 4 percent White, and 34 percent mixed. African Americans in the Greater Lansing area are not very different from the respondents in the Feagin and Sikes study (1994) or the Benjamin (1991) study when they report that most of their social contacts are African American. Although they admit that they like the safety net that Lansing gives them, this sample does not admit to significant networking in the White community. Their comments concerning the dismemberment of the Black community, which have been echoed by Meyers (1970) and Hawkins (1979), may also have relevance to the lack of effect for network. In the following excerpt, Rachel, a 48-year-old working class respondent, discusses life in Lansing when she was growing up. There is an element of compromise in African Americans' reflections on their relationship with Lansing. There is a feeling that things could have been much worse although they were not perfect. There is wariness in their reflections, which causes me to wonder if this wariness is symptomatic of small cities

such as Lansing. Are African Americans wary of saying too much, or are they complacent, as one of my other respondents contends?

Interviewer: Can you tell me a little bit about Lansing when you were growing up? What was it like?

Rachel: It was a nice place to raise your kids. It was uh. I used to remember the neighbors. It was like more like a family type thing. 'Cause if we did anything, you know, they like told on my mother. It was like we couldn't get away with anything and nowadays when people kinda don't do that like if we fell and hurt our leg or something; the neighbor. If my mom was busy or something, the neighbor would help you so it was a nice place like that. Now me, myself, now growing up I knew there was a lot of racial tension during that time, but at the same time we knew people that wasn't like that. 'Cause like White people. I had White friends when I was growing up that came over our house and play so uh I thought it was a nice place to live. It was quiet. It was low key. It wasn't busy you know compared to Detroit. I couldn't imagine being raised there.

In the previous section, Rachel demonstrates her loyalty to Lansing and her general openness toward society at large. Although she stated in another section of the interview that most of her close

friends and associates are African American, she points out that she had White friends growing up.

Henry, a 56 year old personnel management specialist for the state of Michigan articulates his take on African Americans life in Lansing.

Interviewer: What do you plan on doing when you retire?

Henry: Move to Brazil or Cuba.

Interviewer: Why Brazil or Cuba?

Henry: I love the people; I love the culture and I love the fact that they are still connected to their African roots.

Interviewer: Do your best or closest friends live in your neighborhood?

Henry: Uh. No more.

Interviewer: They used to when you were little?

Henry: We used to be in a very small area here in Lansing, which is probably uh from the Grand River uh Where the Grand River north to St. Joe.

Interviewer: Grand River — do you mean like coming out of East Lansing?

Henry: No. We are talking about in Lansing — in Lansing.

Interviewer: Uhum. The Grand River — the actual river in Lansing.

Henry: Yeah. There's, you know, the bridge that goes over Martin Luther King that used to be on the other side on North River Drive. On

this side on the north side was where Black folks lived at. We lived from there over to St. Joe Street.

Interviewer: Um.

Henry: Sometimes. Let's say St. Joe, maybe Hillsdale.

Interviewer: Right.

Henry: And we went from. Probably from Pine Street on further than — Not even this far down. From about. (I'll try to get this) Probably from Pine Street back to uh past Main Street School. We lived in a very small contained area. 90% of all the Black people in Lansing.

Interviewer: And what changed that?

Henry: I would say that when the time the Military Highway came through. It's called 96. That's the Military Highway. After the riots, the American government realized that it couldn't get a lot of the tanks and what have you. That was a major project for all over the country. They can get from one end of the country from Boston to L.A. It went through every major community — Black community in the United States.

Henry tells the interviewer that the highway came right through the Black community and displaced 80% of the people in Lansing's Black community.

Interviewer: Where did people move? The south side?

Henry: Yeah. As a matter of fact during that time there were no Black people living in East Lansing; no Okemos; no Waverly; no south side of Lansing. Didn't no one live on the south side of Lansing (rising intonation). Didn't live across the bridge. There were a few people across the bridge.

Interviewer: Do you spend time with your co-workers after work?

Henry: Most of my co-workers are White and I don't socialize with them. No.

Henry does not project local loyalty although there is loyalty expressed toward his ethnicity in his comments. Henry's discussion indicates that the character of the Black community has changed over the years. Henry implies that the Black community as a geographical entity may not exist anymore. He is saddened by the break up of the geographical Black community and has decided where to assign blame.

Interviewer: Is this a good place to grow up?

Henry: Uh. It's like a coin with two sides to it. One side is uh good place to grow up because you don't have the uh lot of the uh big city crime and what have you, but uh on the other side — the negative side. It's like culturally deprived for African Americans. It's a very ultra-conservative city, a very racist city. Uh a city where you can make money —live well to a certain extent, but you cannot. It's culturally

deprived. Uh. You have uh. The city is uh. Now you don't have communities no more. Everybody is spread out everywhere; therefore, you don't have that cohesiveness no more — that family (unintelligible). You don't have that. People are very backward, very disenfranchised here because they have done everything to keep us for just being consumers, but not being producers or owning anything. They destroyed all the Black community businesses where they came through with the Military Highway and they never went anywhere. We had Black cab companies — all kinds of stuff here. It's all gone. Uh. Uh. Black folks here are just complacent. You. They just kinda like. They live... And relationships and they see things in their understanding. Uh. They're just living here and uh. I got an Escort and I got a house and I make 60/70 thousand a year so what I got to say anything about anything what's going on. And they do not get involved in any social issues — very few if any social issues here. I could go on, but...

Bertie, who is a 42-year-old cashier, also echoes some of Henry's complaints about the lack of progressiveness of life in Lansing. She subtly indicates that the cultural part of community is sadly lacking in Lansing.

Interviewer: So what is the best and worst thing about living in this area?

Bertie: In this area or in Lansing?

Interviewer: Lansing in general and then you can talk a little bit about your neighborhood.

Bertie: Lansing, in general, like I said, the best would be because it's not so fast paced and it's a good place to raise children uh, but you know there's not a lot of prominent Black people in Lansing that 's doing too much of anything you know. 'Cause it's like they are stifled you know here.

Interviewer: Has it always been like that?

Bertie: Yes! Yes!

African Americans do not say that they dislike the fact that they are socially separated from the Whites around them. Ann, 42 year old middle-class resident of East Lansing, discusses the situation.

Interviewer: Do you spend a lot of time with your co-workers after work?

Ann: No.

Interviewer: You don't?

Ann: (Indicates that she does not.)

Interviewer: Why not?

Ann: I don't know —just don't — separate lives.

Interviewer: What do you do when you have spare time?

Ann: I go to school. Wash.

Interviewer: Wash clothes?

Ann: Uhhuh.

Interviewer: Do you think this is a good place to grow up?

Ann: Yes I do.

Interviewer: Why?

Ann: It's versatile. It's quiet. Uh - safe, mostly safe. Uh access to a lot of different things.

Interviewer: Have you ever wanted to live anywhere else?

Ann: Yes.

Interviewer: Where? Some place quiet?

Ann: Uh no. Like uh. Actually, no. If I wanted to live somewhere else, I would like a place that uh where you'd have a lot of things to do. Museums take your kids to museums - different uh fun things to do. You know you're pretty limited here.

Interviewer: Yeah, Michigan State.

Ann: Uhhum.

Interviewer: It takes up most of the town.

Ann: If they wanted to build something besides a water park, they could, but..

Interviewer: = They have that new mall.

Ann: =It's not that much. There's not really no real culture here except for the Capital building.

Interviewer: So, what's the best and worst thing about living in the area?

Ann: Uh. I would say the best thing is the quietness. Uh the people, uh.

Interviewer: What's good about the people?

Ann: They don't bother you.

Interviewer: Oh. Okay.

Ann: They go about their business. They don't say anything to you. It's safe...and I would say the worst thing is it's really not that much to do. Go to work. You have your few places you can go for activities, but there is nothing exciting really around in this town. It's pretty much. It is kind of like a farm town.

Ann is somewhat neutral about the Lansing area. She accepts social segregation as a fact that does not need to be contended with. She is not closed to ethnic others, but enjoys the tranquility of being left alone. It is difficult to isolate a single monolithic view based on the interviews. What ably comes across is the continued separateness of Black Americans; in spite of, societal changes. Each individual has a slightly different stance with regard to residing in the Lansing area; however, each one is well aware of themselves in relation to the wider

community by virtue of their ethnicity. Ann states that we live separate lives. Henry says that Blacks in Lansing do not participate in any social issues in Lansing. Bertie says that Lansing is not progressive enough, and Blacks do not have a prominent place in its social structure. Yet all acknowledge that this is a good place to grow up and raise children.

5.3 NetE Scores

Rachel reported that 90% of her close friends and associates are African Americans. Based on her interview, it is possible to suppose that a NetE score of 4 may not adequately express Rachel's social network because she said that she had White friends as a child, and it is conceivable that she may have White friends now or perhaps she associates with a wide range of people who are not classified as friends. The respondents who obtained NetE scores of 3 (those who indicated that 50 to 74% of their close friends and associates belong to the same ethnic group) have careers which place them in the culture of wider communication. Rana, for example, works for a major airline; Norma does landscaping for the State of Michigan; Thomas is a music teacher who plays for a White church on Sundays; Chuck works as a cook at the Kellogg Center; Dolly is a secretary for the State of Michigan; Mali works for the Michigan Supreme Court, and Curtis is a Ph.D. candidate at Michigan State University. All of these individuals

have diverse associations in the world of wider communication, yet they state that the majority of their friends are African Americans.

5.4 NetS Score

In terms of the NetS score, which represents the density of a respondent's network, one finds that the respondents with the least amount of open social contact (those who obtained NetS scores of "0") are eclectic with regard to raising. Qasim, a disabled laborer, who obtained an /æ/ raising index score of 1, does not work and has not worked for over twenty years. Dolly, who works for the state, received a raising score of 2 and Alana, who is a child care worker who works from her home, received an /æ/ raising score of 2. These individuals have the least dense networks of all the respondents. What is it they have in common with regard to NetS? One surmises that it must be lack of commitment to the world of wider communication.

The results indicate that racism and the effects of racism on an individual or personal ideology must be taken into consideration in order to understand the nature of social networks in this sample. Jane is a 25 year old middle-class raiser, who obtained a NetE score of 4 (90% of her friends are African Americans) and a NetS score of 4 which is indicative of a dense social network. Yet, she did not espouse dissatisfaction with Lansing during the interview. She considers African American culture part of American culture and believes that Lansing is a good family oriented city.

Interviewer: Do you think uh this is a good place to grow up? Is Lansing? Do you think it's a good place to grow up?

Interviewer: Um. I'd say yes.

Interviewer: Why?

Jane: Uh. It's you know – if you look for ...There's uh. There's a lot of... There's recreational activities and a there's a lot of neighborhoods where there's a lot of other children growing up. You can grow up with other children. It's a (pauses) families, lots of families uh, uh. What else can I say?

Jane is loyal toward her neighborhood and toward the city of Lansing. She does not express dissatisfaction with the city of Lansing or the state of Blacks in the city. In a section of the interview that is not recorded here, she states that African American culture part of American culture.

In spite of the few exceptions, there is a pattern or tenor to most interviews which reveals that social network does not sufficiently explain accommodation patterns among the Blacks in this sample.

A comparison of Mandy, a 39-year-old middle-class woman, and Henry, a 56-year-old middle-class man, exemplifies the complexity encountered when attempting to change social history, network relations and worldview into categorical data. Mandy's father was a

professor at Michigan State University; she attended Red Cedar and East Lansing High School. She self-reports a NetE score of 2 and a Net S score of 2 which means that she admits ethnic others into her open (low NetS score) social network. Mandy asked me not to record her personal narrative, but she confided that she dates White men and admits that she was very insecure about color when she was a child. Nevertheless, she has a raising index of 1. Neither social network nor ideology can explain Mandy's linguistic choices. Mandy's grammar is very standard, but she does not raise. Henry freely uses some nonstandard forms in the interview, follows an Afrocentric lifestyle, but raises. Thus, attention to the pronunciation of the regional vernacular does not necessarily entail attention to the syntax of "Standard English" and the reverse. One could attribute complexity of this sort to the "push pull" discussed by Smitherman (2000) or view this complexity as the way in which individual Blacks voice resistance. Morgan (1994:129) presents the dual nature of AAE as:

1. an expression of African character
2. a symbol of resistance to slavery and oppression
3. an indicator of a slave mentality or consciousness

There are African Americans who consider vernacular AAE, for example, to be a slave dialect spoken by those who still retain a slave mentality (Morgan 1994). Others however consider the vernacular version of AAE the language variety of choice. The features that a

speaker chooses to accommodate to or resist depend on his or her perspective concerning Black authenticity.

Henry, who states that most of his friends are African Americans (NetE 4), travels to Cuba, Brazil and Egypt to support his Afrocentric identity, and has a NetS score of 3. This is an average network score, which places him in the center of the density scale. However, Mandy who has a more open social network and is open to ethnic others has a lower /æ/ score than Henry.

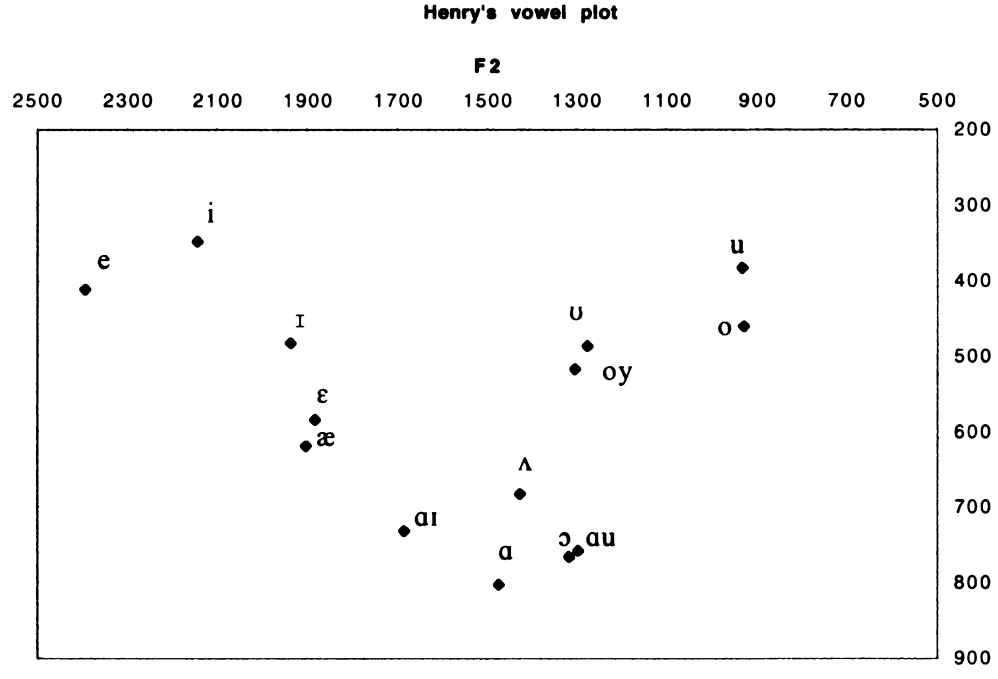


Figure 5.0 Mean formants for Henry, 56, Middle, Lansing

Although Henry raises the low front vowel and Henry's /ɑ/ is also fronter than Mandy's, there are many other vowel features such back back vowels (/o/, /ʊ/ and /u/) which authenticate his African American identity, while the raising of /æ/ may contribute to his regional identity. Mandy has a NetE score of 2, and associates with Whites; however, she does not raise the low front vowel or front /ɑ/ to the same extent that Henry does. Nonetheless, she, like Henry, has the extreme back vowels, /o/, /ʊ/, /u/, and /ɑ/, which have been documented (Bailey and Thomas 1998) as Southern AA vowel features.

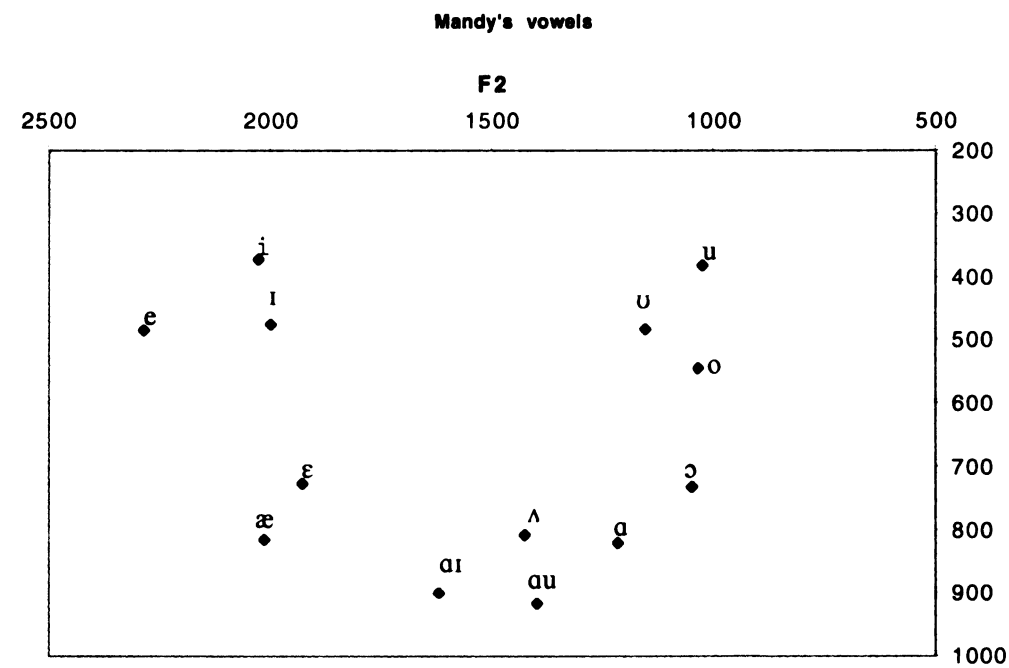


Figure 5.1 Mandy

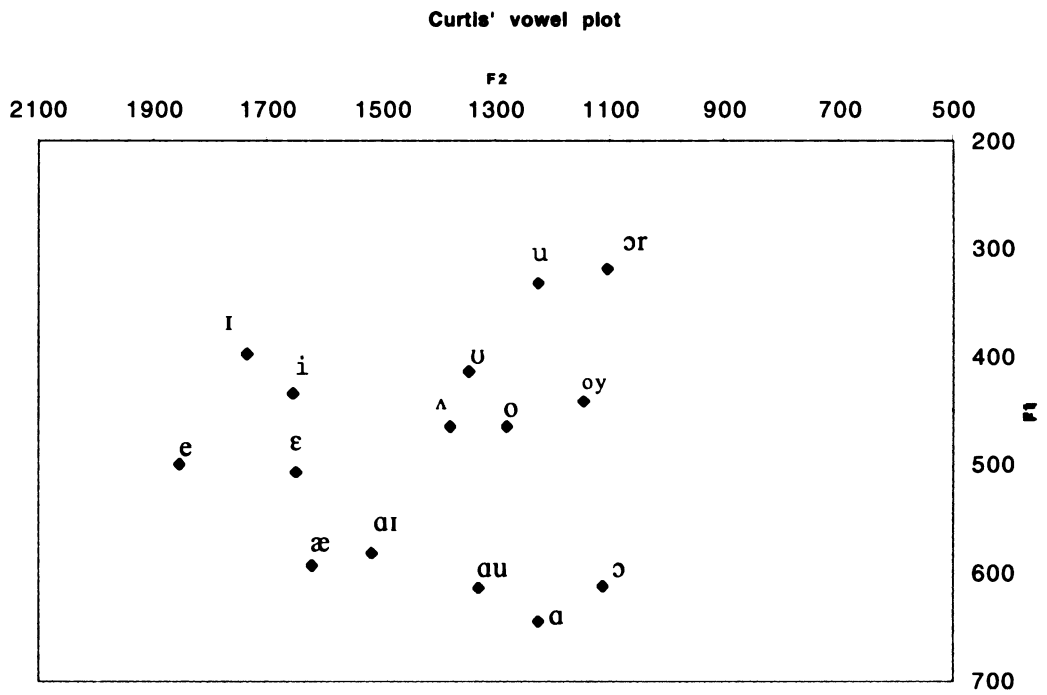


Figure 5.2 Curtis

Henry, Mandy, and the other respondents embody the interaction between variation and ethnicity among African American speakers. However, Mandy who has a more open social network and is open to ethnic others has a lower /æ/ raising score than Henry.

For instance, Curtis's vowel plot exemplifies variation of a different sort. Curtis obtained an F1 /æ/ index of 1,a non-raised score, and his front vowels pattern like Southern Shift vowels. The /i/ and /ɪ/ reversal pattern of the SS is part of his vowel system. His front vowels as well as his back vowel have SS influence due to the fact that his parents are from the South and he visited the South as a youth.

The notion of what it means to be an African American can not be monolithic, but social history presupposes certain influences, which used to include socialization in the "Black community." Black people come in different sizes, shapes and ideologies — even regional ideologies. This notion of authenticity does not imply that the only true "Black " speakers are the vernacular speakers (see Morgan 1994), but views African American language as a subtle language and meaning system that is a product of social history. W.E.B. Dubois, Jesse Jackson, James Baldwin, Tupac Shukur, Malcolm X, Martin Luther King Jr., Shelby Steele, J. California Cooper, Maya Angelo, and Toni Morrison were and are erudite authentic speakers who possess a "Black" voice and language which includes and reaches beyond "core" grammar to capture language and use it as a vehicle to express experience. Yet, these "leaders" and scholars espouse different ideologies and regional voices. There is a supposition in society that Blacks who associate with Whites extensively will use the English of wider communication. Baugh (1999:75) states that his work, which concentrates on Black adults of all social backgrounds, indicates that there is movement both toward the linguistic usage of the mass media and movement away from it. Baugh adds that this point is critical in regard to Labov's (1985) observation that Black and White dialects continue to change independently because many readers who are

unfamiliar with the diversity of Black American culture might falsely assume that this research applies to the majority of Black Americans. However, African Americans who operate on more than one social level in the Black community realize that linguistic variation exists within the Black community. This notion of authenticity colors the Lansing interviews because most individuals locate their experience in "Black" space. Social networks, close friends and ideologies are Black, and their experience is that of Black people living in a world which has historically disrespected them, their experiences and their contributions, and in a community which leaves them alone socially for the most part. Perhaps it is for this reason that most respondents have expressed a certain amount of satisfaction with Lansing as a community even as they deny deep connections with the White Lansing community.

If one considers the fact that AAE back vowels have remained relatively stable in Lansing, the general lack of participation in the SS front vowel movement, and the fact that /æ/ is raised and /ɛ/ is sometimes backed, one clearly realizes that Northern regional alignment on the part of some African Americans, and the retention of a strong African American identity in pronunciation are in interaction. Of course, identity evolves over time as social history changes. Social network theory predicts that individuals with open networks (lower NetS scores) are more likely to be attuned to the language of wider communication (Milroy 1980). Network in the traditional Milroy

(1980) sense has been used to measure accommodation among homogeneous racial groups who spoke a different dialect, but who did not belong to a different race. Milroy (1980), Evans (2001), and Ito (1999) researched homogeneous racial groups. These linguists found a strong correlation between social network and pronunciation. Childs and Mallinson (2003) also observed correlation between strong social cultural ties to the regional community and accommodation in pronunciation and grammar among African Americans in Appalachia. However, strong network ties with ethnic others were not reported in the Lansing sample.

5.5 Initial Hypotheses

Raised and non-raised /æ/ exist in tandem in the Lansing community. In fact, members of the same family differed with regard to the pronunciation of the low front vowel. Ibrahim does not raise, but his daughter, Jane, and his wife, Rana, do. Olive raises, but her daughter, Lorna does not. Paul and his wife, Bertie, raise, but his sister, Rhonda, does not. Although language indexes social groups, internal variation should not be ignored. Wolfram and Schilling-Estes (1998: 162) contend the NCCS functions as a social marker. They state:

> There is clear-cut social stratification of the linguistic variants and participants in the community may even recognize this distribution, but the structure does not evoke the kind of overt commentary and strong value judgements that the social stereotype does.

The fact that middle-class Blacks have moved away from contained neighborhoods set aside for Black people, and are now spread out throughout the city has encouraged adaptation to aspects of the phonology of the regional standard since adaptation does not threaten community identity. In addition to /æ/ raising, there are cases of /ɛ/ backing and lowering. Although /ɛ/ lowering is not directly within the boundary of this study, it provides further evidence of accommodation; nonetheless, other vowels appear to be stable. /o/ is not fronting, and though /u/ and /ʊ/ may not be as back as Bailey and Thomas (1998) portray, they are still back and not fronted as in the White vernaculars. In my opinion accommodation should not be viewed as imitative assimilation but considered the adjustment of certain features to fit into the regional social unit.

There are aspects of the African American phonological system that have yet to be explored. Dorill (1986:151) asserts that African American vowels are monophthongal, whereas, Whites pronounce vowels with an upglide. Vocal quality and intonation patterns differ from the majority's vernacular dialect. African Americans like other Americans are members of many subcultures as defined by occupation, class, region, gender, religion, color, and social experience. All of these subcultures intersect within the broader American economic culture so that accommodation in the linguistic marketplace becomes akin to the air that individuals breathe.

We posit that whatever raising that occurs among African Americans may be due to instrumental accommodation with women leading and men holding on to the covert prestige of masculinity associated with lower low front vowels. There are phonetic and regional reasons for the advancement of /æ/ and social reasons for women's overwhelming participation.

The strongest association exists between gender and raising and gender and duration. This fact of language differentiation has been found in many studies (Ibrahim 1986; Goldstein 1980; Sachs *et al.* 1973; Eckert 1989, 2000; Hillenbrand *et al.* 1995; Labov 2001, Davis 1998) based on physiological as well as social data.

There is support for the hypothesis that African Americans in Lansing have engaged in institutions in the wider community and have had sufficient networking experiences in the broader community to accommodate to the early stages of NCCS based on the percentage of respondents (64%) participating in /æ/ raising as exemplified by /æ/ 2 index scores. It was also assumed that African American accommodation would be similar to the accommodation patterns of majority speakers in terms of both social and linguistic influences. Michigan research of rural speakers (Ito 1999) and Appalachian speakers in Ypsilanti (Evans 2001) indicate that women lead in adaptation to NCCS. Women lead in the Lansing research as well.

In order to understand age and the linguistic marketplace, I refer to Wolfram (1969) who avowed that African American adults are more sensitive to socially diagnostic variables than younger people. Eckert (1997) refers to the linguistic life course and presents evidence that adults have regularly been shown to be more conservative and normative in their use of variables than younger people. Often research into the lives of African Americans does not take into account the weight of double consciousness and two knowledge levels — one learned at an early age and the other acquired in school and through transactions with the broader community. All of the older raisers are employed in some aspect of the public sphere, which might increase their sensitivity to the regional standard or NCCS. More research into language of African American adults involved in the public in various capacities is needed.

The prediction that African Americans in Lansing would not discard all features which have served to differentiate African American speech form Northern White speech bore fruit in the duration results which indicated that African Americans in Lansing may pronounce /æ/ with greater duration than EA speakers. I believe that this Southern dialect feature may have been retained as an ethnic marker, which should be studied in conjunction with the African American prosodic system and not only within the confines of the African American vowel system.

The question of whether local loyalty (e.g., ethnic and neighborhood) would inhibit accommodation did not bear fruit in this sample. First of all neighborhoods have changed and there is more than one location for the Black community today, and a strong or clear correlation between ethnic loyalty and a raised or lowered low front vowel could not be established.

The goal of ascertaining the degree to which African Americans in Lansing had bought into the idea of a regional identity, which in this case is the identity of the Inland North, was implicit in the research. The existence of raised patterns juxtaposed against non-raised patterns would suggest that the raised pattern is a marker of some sort of affiliation. However, I have not identified this affiliation beyond regional affiliation. A more finely grained study might capture the social subcultures that these internal differences mark. It has been established that the raising pattern is presently intrinsic to the identity of the Inland North (Labov 1996, Hillenbrand *et al.* 1995 and Eckert 2000), and could possibly be construed as a marker of Northern identity. I have posited that Blacks also mark Northern identity with features of the Inland North.

In addition to questioning whether vowel height and vowel duration are tied to gender, age, social status, and social network practices, linguistic factors such a place and manner of articulation were considered. Fifty-five percent of the twenty raisers show

significant differences among the means for following manner of articulation. Nasals promote and voiceless stops demote with regard to following manner of articulation. The most predominate ranking in this research is as follows: N>VDS>VLF>VDF>VLS. Ranking of the mean scores is similar to other social groups.

There was no effect for following place of articulation. An effect for preceding place of articulation showed up in the system of one respondent. In this case obstruents plus liquids demoted low front vowel raising. Thus, the general conclusions are that the linguistic factors are universal and function similarly across ethnic groups. Conclusions have been reached concerning some linguistic and social variables. This study was limited to the investigation of low front vowel raising among African Americans because it is considered the oldest change (Eckert 2000). Accommodation was affected by phonetic and social facts (women do more of it than men). Style shifting was not investigated but could be the subject of further research. Research beyond the formants should also prove productive in isolating exactly what it is that people do to accommodate and differentiate.

5.6 Final Comments

Individuals are affected by their caregivers and participation in the local speech community, and then are open to the mitigating influence of education, personal history, local loyalty, and network. The social roles, gender roles, and physiques that people have affect

speech, but the social environment determines what can be selected. Thus, with regard to African Americans in Lansing, the choice of Northern front vowels, the retention of Southern influenced back vowels and the use of duration present an interesting map of the way an African American regional identity has been constructed.

APPENDICES

APPENDIX A: Indices of Social Class

Occupation:	1	Lawyers, doctors, engineers, judges, architects, and managers of large businesses
	2	High school teachers, trained nurses, librarians, small business owners, accountants, large farm owners
	3	Social workers, elementary school teachers, optometrists, and minor officials of business, bank clerks, auto sales, contractors
	4	Small business managers, typists, mail clerks, most store clerks, factory foremen, private repairmen (i.e. plumbers)
	5	Beauticians, carpenters, plumbers (employed by others), barbers, firemen, bartenders, restaurant cooks, tenant farmers
	6	Semi-skilled workers, skilled worker assistants, watchmen, truck drivers, waitpersons (in small restaurants)
	7	Heavy laborers, janitors, newspaper delivery, odd job persons, migrant workers
HOUSING	1	Grand, ostentatious
	2	Very good, attractive, roomy, landscaped
	3	Good, only slightly larger than utilitarian demands, more conventional and less showy than the first two categories

4 Average, private, one and a half to two story, nice lawns, some extra room, small, well cared for lawns

5 Fair, just enough room for needs, well kept up but no extra

6 Poor run-down, often too small for needs, not in shambles or beyond repair

7 Very poor, perhaps not even designed as housing, beyond repair crowded

Neighborhood

1 Very high — the best place to live in this area; known as the area of the "well to do"

2 High — an area with an excellent reputation, low crime, good schools, large houses and yards

3 Above average — not pretentious but a nice, clean, and tidy neighborhood

4 Average, solid working class area; neat, not fancy but a nice place to live

5 Below average, some run-down housing, close to industrial or other undesirable residence areas

6 Low, areas regarded as slums

7 Tenement areas; shacks, lean-tos, "squatters" areas

Education

1	Graduate or professional school	2	College
3	High school	4	Some high school
5	Junior high school	6	Elementary
7	Little or no schooling		

Computation Occupation X 4 + Education X 3 + Housing X 3 + Neighborhood X 2

Ratings:

12-17	Upper
18-22	Upper-Upper Middle
23-24	Upper-Middle-Upper
25-33	Upper Middle
34-37	Upper Middle-Lower-Middle
38-50	Lower Middle
51-53	Lower Middle-Upper Lower
54-62	Upper Lower
63-66	Upper Lower-Lower Lower
67-69	Lower-Lower-Upper-Lower
70-84	Lower Lower

High school students and non-working spouses have the same scores as the principal working member of the family.

APPENDIX B: The Questionnaire

Urban sound change among African Americans

Give consent form.

1. Where were you born? Are you originally from this area?

2. How long have you lived in this area? Have you or your family moved to many places? (If yes) Where? How long did you stay there?

3. What are the names of the schools that you attended?

5. (Workers and professionals) What do you do for a living? Do you like working there?
   What is your title and position?

6. What do you plan to do when you finish school (student)? What do you plan to do when you retire (employee)?

7. Network relations:
   A. Do your best or closest friends live in your neighborhood?

   B. Do you have any relatives who live in your neighborhood?

   C. Do you know people who also work at your workplace from your neighborhood?
      Do you have coworker of the same sex as you who also live in your neighborhood?

D. Do you spend time with your co-workers after work? How often?

8. What do you usually do when you have spare time?

9. Is this a good place to grow up? Why?

10. Are you planning to stay here after graduation?

11. Have you ever wanted to live somewhere else?

12. What is the best and worst thing about living in this area?

13. Give the word list and reading passage.

14. Gating experiment (respondents will listen to a tape and write the words that they hear). Say; "I am going to play a tape for you and I want you to write down what you hear on this sheet of paper."

15. Do you know people who say pin when they mean pen?

16. Do you know people who don't pronounce their rs and say *doh* for door?

17. Read the debriefing script.

18. Do you have any questions that you would like to ask concerning the interview?

APPENDIX C: The linguistic environments used in this research.

/æ/ Step 1 N = 31	**Labial/labiodental/ interdental**	**Apical (alveolar)**	**Palatal**	**Velar**
Voiceless stops	nap, apple, zap	pat, mattress	N/A	rack, black,
Voiced stops	tab, cabin	Dad	badge	saginaw, brag, rag
Voiceless fricatives	bath, laugh	ask, past	cash, mash	N/A
Voiced fricatives	have	has, jazz	N/A	N/A
Nasals	gamble, Sam	Lansing, plant, thank	N/A	gang, banker
Liquids	N/A	pal	N/A	N/A

/ɑ/ Step 2 N = 17	Labial/labio-dental/interdental	apical	palatal	velar
Voiceless Stops	mop, stop	pot	watch	rock, block
Voiced Stops	bob	body	logic	N/A
Voiceless Fricatives	profit	possible	gosh	N/A
Voiced Fricatives	father	N/A	N/A	N/A
Nasals	Tom	John	N/A	N/A
Liguids	N/A	car, doll	N/A	N/A

/ɔ/ step 3 N = 13	Labial/labiodental/interdental	apical	palatal	velar
Voiceless Stops	N/A	caught	N/A	chalk
Voiced Stops	N/A	N/A	N/A	dog, fog
Voiceless Fricatives	awful, moth	lost	N/A	N/A
Voiced Fricatives	N/A	pause, closet	N/A	N/A
Nasals	N/A	gone	N/A	N/A
Liquids	N/A	horse, tall	N/A	N/A

Vowels of the last three steps of the NCS:

Step 4 (/ɛ/): pen. mesh. bet, fed, step, neck, bend (7)

Step 5 (/ʌ/: bun, puff, cup, sub, duck, dust (6)

Step 6 (/ɪ/): tin, hit, kid, tip, pig, fist, fish, pill (8)

8 other vowels:

(/u/): boot, food, pool (3)

(/ʊ/): good, foot, pull (3)

(/o/): hope, hole, road (3)

(/i/): sleep, peel, meat, bead (4)

(/e/): hate, state, make (3)

(/ɑɪ/): bite, night, ride (3)

(/ɑu/): house, loud, mouse (3)

(/ɔɪ/): toy, oil (2)

A BAD DAY FOR DUCKS

Tom and Bob were supposed to meet at Tom's house. They planned to go to a nearby pond and watch the ducks. While waiting for Bob to get there, Tom picked up around the house. He put the electric fan away for the winter and did the dishes.

He wanted a snack before he left, so he peeled an apple and cut it into slices. He bit into one, but it was awful, probably rotten. He spit it out and tried to rinse his mouth out with hot, black coffee. He poured it into a tin cup, but when he put it to his lips, he spilled it on his hand. His hand puffed up and hurt a lot, so he stuck it under the faucet to make it feel better.

He grabbed a dusty hat out of the closet and shook it, but he couldn't get the dirt off. He got a cap instead and put a scarf around his neck and put on his socks and boots. There was a big hole in his sock, and Bob was really late. It was already past 2:00. Nothing was working out.

Just then Bob phoned and said he wanted to talk. He told Tom that the flock of ducks had left the pond. A pack of dogs had chased them off. Tom was sad; he had really wanted to see the ducks, but Bob said that they should go shoot some pool instead. Tom thought that was a good idea and forgot all about the ducks and his burned hand.

APPENDIX D: Debriefing script

The Northern Cities Chain Shift in the Greater Lansing area.

Certain Northern cities in the United States such as Buffalo, Philadelphia, New York, Chicago and Detroit are undergoing a vowel shift or change. /æ/ as in cat and /ɑ/ as in pot are two of the vowels which are part of this shift. This means that these vowels exist in variation with other sounds. That is, the short (a) sound usually found in words such as cat, man and bag is sometimes pronounced as (e) as in bet or even (i) as in bit.

Research indicates that certain minority groups and rural groups are not participating in this vowel shift. You have been asked to read certain words to determine the extent of participation by people living in the Lansing area, and to determine whether social identification is a greater predictor of phonological variation than ethnic identification.

APPENDIX E: F1 and F2 /æ/ scores

Alana, Lansing, 24, Working

F1	F2	word
695	1655	apple
693	1719	apple
728	1822	ask
640	1781	badge
306	2188	banker
667	1844	bath
749	1675	black
703	1811	brag
732	1744	cabin
640	1801	cash
662	1793	dad
691	1742	gamble
683	1801	has
732	1700	have
621	1824	jazz
762	1645	laugh
638	1854	Lansing
653	1682	mattress
858	1891	mash
595	1660	pal
721	1888	pat
725	1874	past
679	1817	plant
749	1792	rack
710	1847	rag
749	1750	Saginaw
369	1865	Sam
684	1711	snack
698	1814	tab
701	1980	zap

Alton, Lansing, 54, Working

F1	F2	word
992	1932	apple
760	1741	ask
819	1867	badge
474	1507	banker
780	2145	bath
871	1859	black
792	2006	brag
787	1836	cabin
888	2176	cash
517	1464	dad
722	1897	gamble
601	2646	gang
898	1924	has
818	2055	have
743	2095	jazz
781	2944	laugh
673	1787	Lansing
859	2191	mattress
646	1507	mash
685	2327	nap
743	1447	pal
860	1873	past
716	2330	plant
689	2072	rack
755	1939	rag
823	2203	Saginaw
664	2036	Sam
655	2645	thank
919	2299	zap

Ann, East Lansing, 42, Middle

F1	F2	word
828	2298	apple
628	2358	badge
798	2431	bad
762	2363	bath
961	1894	black
784	1939	brag
717	2404	cabin
754	2329	cash
663	2563	dad
784	2450	gamble
523	2624	gang
654	2469	has
676	2462	jazz
874	2261	laugh
640	2767	Lansing
945	2305	mattress
833	2374	mash
801	2495	nap
742	2507	pal
764	2487	pat
915	2151	plant
715	2216	rack
728	2073	rag
751	2199	Saginaw
658	2566	tab
836	2227	thank
833	2013	zap

Bertie. Lansing, 42, Working

F1	F2	word
962	2095	apple
960	2273	ask
801	2045	badge
693	2452	banker
908	2261	bath
852	2087	black
785	2117	brag
873	2008	cabin
836	2052	cash
665	1998	dad
883	2139	gamble
687	2290	gang
815	2180	hand
818	2316	has
890	2113	have
775	2258	jazz
831	2304	laugh
790	2449	Lansing
904	2190	mattress
815	2055	mash
838	2178	pal
896	2247	pat
757	2349	plant
854	2015	rack
794	2328	rag
849	2145	Saginaw
822	2296	tab
762	2344	thank
866	2168	zap

Cassy, Lansing, 21, Middle

F1	F2	word
964	1626	apple
812	2074	ask
758	2021	badge
833	1922	bath
589	1998	black
802	1864	brag
503	1896	cabin
757	1953	cash
804	1987	dad
580	1648	gamble
537	2194	gang
416	1961	has
599	1881	have
751	1851	jazz
589	1998	Lansing
404	2097	mash
406	1995	nap
383	1466	pal
842	2013	pat
635	1670	past
561	2239	plant
853	1875	rack
768	1995	rag
635	1670	Sam
784	1932	sad
477	1827	tab
446	2218	thank
745	1889	zap

Chuck, Lansing, 28, Working

F1	F2	word
770	1599	apple
623	1609	ask
630	1630	badge
444	1639	banker
731	1702	bath
723	1378	black
670	1560	brag
714	1693	cabin
469	1725	cash
646	1638	dad
397	1723	gamble
538	1799	gang
579	1662	has
443	1788	have
723	1688	jazz
719	1538	laugh
400	1626	Lansing
700	1675	mattress
658	1702	mash
755	1601	pal
667	1761	pat
648	1554	past
370	1511	plant
609	1596	rack
622	1650	rag
619	1524	Saginaw
407	1848	Sam
656	1636	tab
405	1767	thank
750	1605	zap

Crawford, Lansing, 45, Middle

F1	F2	word
605	1678	ask
517	1482	badge
456	1582	banker
548	1431	bath
624	1443	black
539	1458	brag
608	1619	cabin
519	1680	cash
528	1569	gamble
550	1603	gang
591	1662	has
561	1566	have
517	1637	jazz
601	1555	laugh
489	1614	Lansing
560	1507	mattress
640	1701	nap
570	1470	pal
595	1563	pat
569	1632	past
623	1516	rack
546	1450	rag
571	1432	Saginaw
499	1659	thank
574	1481	zap

Curtis, East Lansing, 28, Middle

F1	F2	word
706	1518	apple
577	1452	ask
623	1589	badge
609	2249	black
538	1539	cash
591	1810	dad
530	1780	gamble
799	1604	have
451	1548	jazz
476	1678	Lansing
662	1546	laugh
654	1490	mattress
661	1631	mash
653	1446	pack
599	1555	pal
621	1618	pat
544	1568	past
693	1863	plant
649	1386	rack
618	1526	rag
562	1523	Saginaw
592	1788	Sam
521	1748	sad
557	1599	tab
394	1635	thank
571	1503	zap

Dave, Lansing, 21. Middle

F1	F2	word
744	1573	apple
683	1739	ask
666	1866	badge
605	1871	banker
733	1723	black
647	1617	brag
683	1621	cabin
619	1801	cash
571	1778	dad
595	1751	gamble
571	1843	gang
633	1713	has
651	1779	have
619	1698	jazz
687	1641	laugh
581	1787	Lansing
681	1781	mattress
652	1765	mash
644	1658	pal
668	1815	pat
656	1765	past
612	1772	plant
662	1603	rack
645	1652	rag
603	1675	Saginaw
584	1914	Sam
646	1730	tab
594	1793	thank
674	1656	zap

Debbie, East Lansing, 24, Middle

F1	F2	word
919	1803	ask
646	1852	badge
743	2174	banker
775	1809	bath
990	1575	black
775	1766	brag
881	1841	cab
560	2283	cabin
732	1895	dad
689	2024	gamble
603	2196	gang
855	1689	have
602	1879	jazz
909	1762	laugh
726	2053	Lansing
815	1865	mattress
657	2033	mash
775	1809	nap
949	1709	pal
913	1850	pat
646	1809	past
456	1698	past2
560	1723	plant
775	1776	rack
775	1680	rag
689	1723	sad
819	1826	Saginaw
884	1947	Sam
603	1809	thank
564	1901	zap

Dolly, Lansing, 39, Middle

F1	F2	word
810	2016	apple
842	2144	bad
815	2561	banker
876	2099	black
716	2203	cap
567	2557	dad
674	2483	grabbed
773	2347	has
730	2113	jazz
820	2337	laugh
812	2429	Lansing
796	2158	map
773	2096	mash
795	2226	nap
795	2249	pat
821	2193	pat2
900	2193	past
895	2418	planned
788	2004	rack
827	2248	Saginaw
933	2179	snack
785	2546	tab
497	2129	thank
775	2342	zap

Gregory, Lansing, 66, Middle

F1	F2	word
646	1543	ask
625	1595	badge
689	1651	banker
693	1559	bath
738	1239	black
560	1430	brag
633	1659	cabin
561	1751	cash
599	1582	dad
548	1616	fan
680	1807	gamble
659	1720	gang
619	1610	grabbed
615	1630	has
703	1553	hat
554	1811	jazz
691	1401	laugh
703	1516	Lansing
737	1554	mattress
672	1600	mash
667	1632	nap
694	1561	pat
628	1451	planned
661	1478	plant
662	1523	rack
618	1540	rag
728	1613	snack
639	1556	tab
656	1586	thank

Henry, Lansing, 56, Middle

F1	F2	word
653	1880	ask
522	1959	badge
664	2090	banker
625	1894	bath
741	1719	black
521	2058	brag
581	1901	cab
634	1896	cabin
539	1947	cash
511	1908	dad
695	2074	has
539	1976	have
524	1942	jazz
653	1955	Lansing
731	1842	mattress
670	1959	mash
622	1944	pal
510	1575	planned
729	1942	plant
679	1845	rack
623	1806	Saginaw
505	2000	Sam
745	1699	zap

Ibrahim, Lansing, 52, Middle

F1	F2	word
728	1630	apple
732	1881	ask
548	1652	bad
517	1804	badge
576	1814	banker
712	1474	black
547	1503	brag
588	1862	cabin
556	1892	cash
525	1825	dad
576	1886	gamble
269	2159	gang
592	2006	has
619	1892	have
438	1787	jazz
626	1755	Lansing
678	1736	laugh
676	1667	mattress
715	1762	mash
703	1714	pal
601	1786	pat
692	1766	planned
668	1815	plant
672	1582	rack
567	1739	rag
666	1509	Saginaw
673	1672	Sam
524	1752	tab
669	1727	thank
636	1606	zap

Jane, Lansing, 25, Middle

F1	F2	word
753	2181	apple
563	2286	ask
649	2272	badge
706	2604	banker
738	2335	bath
825	2138	black
780	2274	cabin
433	2138	cash
611	2346	dad
452	2649	gamble
823	2358	has
767	2199	have
662	2248	jazz
903	2174	laugh
891	2310	mattress
883	2326	nap
808	1812	pal
743	2302	pat
739	2273	past
388	2369	plant
753	2160	rack
709	2282	rag
711	2282	rag2
691	2817	Saginaw
444	2456	Sam
649	2270	tab
918	2172	zap

Lorna, Lansing, 28, Working

F1	F2	word
769	1921	apple
733	2177	ask
803	2218	badge
494	2756	banker
792	2156	bath
808	2157	black
705	1870	brag
783	2179	cabin
834	2190	cash
796	2183	dad
604	2309	gamble
671	2295	gang
753	2308	has
840	2245	have
716	2103	jazz
890	2160	laugh
616	2231	Lansing
777	2107	mattress
799	2135	mash
774	2209	pal
792	2267	pat
848	2089	past
520	2638	plant
847	2074	rack
794	2059	rag
812	2153	sad
605	2097	Saginaw
534	2412	Sam
776	2055	tab
616	2410	thank
830	2019	zap

Mali, Lansing, 28, Middle

F1	F2	word
917	1559	apple
759	1757	ask
693	1841	badge
517	2149	banker
686	2038	bath
857	1588	black
718	1896	brag
744	1604	cabin
748	1958	cash
788	1711	dad
701	1713	gamble
683	2104	gang
746	1977	has
806	1761	have
760	1926	jazz
788	1957	laugh
605	1841	Lansing
740	1837	mattress
678	2153	mash
814	1474	pal
737	1507	pat
736	2093	past
723	2157	plant
784	1737	rack
709	1859	rag
740	1720	Saginaw
660	2208	Sam
780	1778	tab
685	2236	thank
807	1776	zap

Mandy, Lansing, 39, Middle

F1	F2	word
941	1808	apple
907	1985	ask
708	2052	bad
811	2012	badge
796	2148	banker
842	1901	bath
727	1826	brag
830	2080	cabin
778	2097	cap
749	1999	cash
673	2168	dad
774	2256	gang
842	1959	has
814	2016	hat
917	1924	have
794	2110	jazz
867	1871	laugh
871	1928	mattress
865	2110	mash
866	2187	nap
805	1829	pack
702	1879	past
853	2096	past2
747	1896	planned
853	2041	plant
802	2230	rack
825	1946	rag
787	2215	sad
772	1839	Saginaw
854	2064	Sam
833	2194	thank

May, Lansing, 19, Working

F1	F2	word
646	2024	apple
756	2341	ask
616	2163	badge
823	1982	bath
842	1845	black
745	2132	brag
744	1879	cabin
571	2133	cash
670	1584	dad
664	2285	gamble
768	1956	grabbed
720	2105	has
811	1916	hat
721	2231	jazz
859	2101	laugh
553	2258	Lansing
744	1958	mattress
751	1962	mash
780	1852	nap
565	2294	pal
732	2196	pat
734	1626	past
550	2317	plant
923	2100	rack
673	1735	rag
748	1873	sad
764	1994	Saginaw
438	1743	Sam
837	1995	snack
707	1937	tab
964	2131	thank
918	2161	zap

Nancy. Lansing, 27, Working

F1	F2	word
965	1709	apple
934	2058	ask
753	2115	badge
562	2508	banker
854	2098	bath
844	2238	black
764	2030	brag
844	2132	cabin
804	2198	cash
797	2142	dad
793	2136	gang
799	2187	has
860	2123	have
781	2093	jazz
780	2103	laugh
765	2154	mattress
881	2131	mash
800	1958	pal
821	2184	pat
840	2104	past
524	2349	plant
856	1979	rack
740	2047	Saginaw
585	2364	Sam
758	2200	tab
467	2451	thank
849	1917	zap

Norma, Lansing, 42, Working

F1	F2	word
825	1983	ask
794	2089	badge
799	2118	bath
880	1883	black
796	1952	brag
816	2052	cabin
819	2110	cash
766	2129	dad
786	1519	gamble
421	2413	gang
811	2025	has
801	1881	have
840	2118	jazz
744	2134	laugh
766	2533	Lansing
862	2008	mattress
769	1979	mash
851	2051	nap
758	2027	pal
856	2170	pat
815	2015	past
792	1881	rack
749	1993	rag
723	2319	Sam
748	2161	tab
476	2420	thank
843	2114	zap

Nubia, Lansing, 27, Working

F1	F2	word
872	2114	ask
832	2077	badge
909	1803	black
801	1879	brag
860	1800	cash
804	2279	dad
815	2437	gamble
807	2159	has
807	1964	have
737	2020	jazz
862	1820	laugh
841	2487	Lansing
921	1943	mattress
627	2125	mash
939	1621	pal
777	2647	pat
834	2048	past
956	2410	rack
817	2007	rag
771	1975	sad
732	1852	Saginaw
847	2034	Sam
888	2223	tab
429	2461	thank
821	1676	zap

Olive, East Lansing, 48, Middle

F1	F2	word
982	2402	apple
543	1918	ask
638	1739	badge
626	2357	banker
829	2123	bath
884	1663	black
673	1648	brag
765	1825	cabin
896	2104	cash
699	2121	dad
641	1837	gamble
772	2300	gang
671	1927	grabbed
782	1762	jazz
864	1720	laugh
625	1963	Lansing
799	1786	mattress
802	2246	mash
772	1750	nap
794	1981	pack
827	2083	pal
901	2200	pat
592	1743	planned
356	2219	plant
782	1689	rack
723	2043	rag
746	1968	sad
768	1916	Saginaw
415	2597	Sam
798	2156	tab
330	1710	thank
804	1673	zap

Paul, Lansing, 41, Working

F1	F2	word
539	1663	ask
514	1660	badge
314	2312	banker
496	1573	bath
633	1411	cap
497	1685	cash
475	1658	gamble
471	1730	gang
507	1503	has
501	1631	jazz
445	2173	Lansing
520	1563	mattress
307	2274	nap
573	1539	pal
528	1712	pat
502	1452	past
528	1532	pack
563	1530	rack
575	1493	Saginaw
505	1546	snack
467	1794	thank
502	2326	zap

Qasim, Lansing, 53, Working

F1	F2	word
778	1661	apple
635	2017	ask
644	1909	badge
626	2014	banker
632	1897	bath
764	1933	black
704	1828	cabin
538	1991	cash
537	1989	dad
738	1593	gamble
523	2082	gang
550	1979	has
638	1826	have
576	1982	jazz
639	1689	laugh
704	1828	Lansing
789	1812	mattress
656	1840	mash
503	1980	pal
708	1836	pat
701	1914	planned
466	1441	plant
712	1855	rag
755	1567	Saginaw
379	1950	Sam
579	1851	tab
774	1888	thank

Rachel, Lansing, 48, Working

F1	F2	word
881	1749	apple
784	1885	ask
731	2469	banker
735	1899	bath
819	1807	black
730	1924	brag
791	1809	cabin
717	1982	cap
731	1946	cash
682	2619	dad
807	1933	gamble
737	2334	gang
770	2269	hand
754	1937	have
731	1936	jazz
741	2002	laugh
715	2468	Lansing
850	1749	mattress
755	1998	mash
762	1746	pal
741	1930	pat
782	1914	path
819	2224	plant
748	2004	rag
720	2055	sad
772	1795	Saginaw
791	2296	Sam
731	1750	tab

Rana, Lansing, 50, Middle

F1	F2	word
970	1847	ask
566	2090	badge
720	2563	banker
533	2163	bath
880	2069	black
655	2217	brag
604	1863	cabin
603	2218	cash
658	2599	dad
577	2078	gamble
775	1697	gang
798	2048	has
912	1910	have
607	2063	jazz
638	1854	laugh
732	1852	mattress
403	2007	mash
824	1633	nap
978	1576	pal
636	1798	pat
999	1805	past
632	2537	plant
560	1971	rack
815	1636	rag
667	1935	Saginaw
545	2484	Sam
691	2301	tab
534	2606	thank
906	2366	zap

Rhonda, Lansing, 38, Working

F1	F2	word
731	1602	apple
532	1989	ask
535	1999	badge
791	1573	banker
521	1961	bath
719	1724	black
700	1746	brag
655	1890	cabin
477	1996	cash
481	2108	dad
637	1613	gamble
467	2138	gang
529	1948	has
501	2036	have
498	1934	jazz
621	1817	laugh
504	2355	Lansing
603	1740	mattress
594	2044	mash
702	1776	nap
603	1853	pal
518	1988	past
748	1939	pat
483	2201	plant
712	1782	rack
500	1874	rag
667	1797	Saginaw
476	1904	Sam
652	1703	tab
715	1870	zap

Thomas, Lansing, 27, Middle

F1	F2	word
863	1825	apple
737	1806	ask
658	1713	bad
647	1845	badge
583	2029	banker
694	1718	bath
792	1464	black
832	1653	black2
685	1476	brag
722	1692	cabin
658	1753	cash
617	1786	dad
563	1951	gamble
631	1865	gang
653	1562	grabbed
524	2328	hand
669	1867	has
745	1582	hat
715	1714	have
658	1773	jazz
776	1782	laugh
686	1693	mattress
649	1770	mash
798	1799	pat
714	1778	past
639	1641	planned
599	1838	plant
788	1785	rack
671	1608	rag
696	1636	Saginaw
541	1758	Sam
734	1645	snack
709	1807	tab
533	2066	thank
737	1724	zap

Veronica, Lansing, 42, Working

F1	F2	word
837	1904	ask
606	2123	badge
329	2415	banker
752	2061	bath
745	1975	black
661	1998	cash
610	2248	dad
761	2123	gamble
465	2417	gang
638	1648	has
746	1888	have
574	2054	jazz
710	1914	laugh
429	2237	Lansing
941	1980	mattress
744	2033	mash
827	1975	pat
694	2212	past
809	1991	plant
754	2131	rack
659	1956	rag
687	1812	Saginaw
404	2365	Sam
764	2134	tab
350	1888	thank

Winston, Lansing, 74, Working

F1	F2	word
754	1500	apple
605	1838	ask
600	1739	badge
591	1807	banker
653	1703	bath
660	1460	black
635	1852	brag
662	1747	cap
576	1843	cash
500	1927	dad
589	1646	fan
566	1865	gamble
557	1932	gang
510	1567	grabbed
515	1846	hand
646	1751	hat
528	1862	have
645	1623	laugh
621	1705	Lansing
660	1927	mattress
645	1766	mash
656	1708	nap
737	1490	pack
677	1817	pat
576	1728	past
601	1753	past2
589	1619	planned
686	1476	plant
725	1645	rack
699	1532	Saginaw
592	1715	Sam
643	1503	snacks
529	1871	tab
695	1587	thank
649	1684	zap

APPENDIX F
ANOVA Summary

Analysis of Variance (Significant Results)

Dependent Variable: F1

Independent Variables: H$ = Preceding segments

	source	*DF*	*Sum of Squares*	*Mean Squares*	*F Value*	*Pr>F*
Ann	H$	5	117415.0225	23483.0045	2.69	0.0497

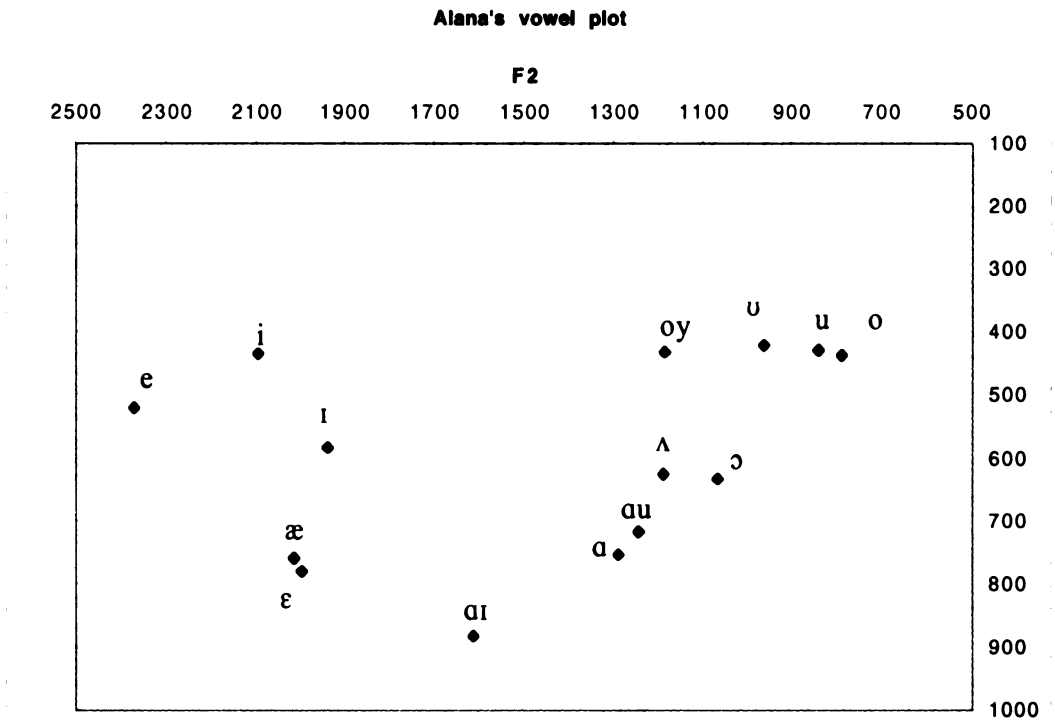
Dependent Variable: F1

Independent Variables: = Following manner of articulation

Name	Source	DF	Sum of Squares	Mean Squares	F Value	Pr>F
Alana	manner	4	168700.9473	42175.2368	4.36	0.0101
Alton	manner	4	297931.2023	74482.8006	6.08	.0002
Bertie	manner	4	66491.91534	16622.97884	4.78	.0063
Crawford	manner	4	26869.25217	6717.31304	5.72	.0038
Jane	manner	4	340441.1099	85110.2775	6.96	.0010
Mali	manner	4	83033.17619	20758.29405	6.82	.0009
Nancy	manner	4	248911.9400	62227.9850	11.51	.0001
Norma	manner	4	126174.6409	31543.6602	4.10	.0166
Olive	manner	4	387749.4167	96937.3542	7.86	.0003
Thomas	manner	4	149318.2902	37329.5725	18.68	.0001
Veronica	manner	4	297102.2714	74275.5679	4.81	.0061

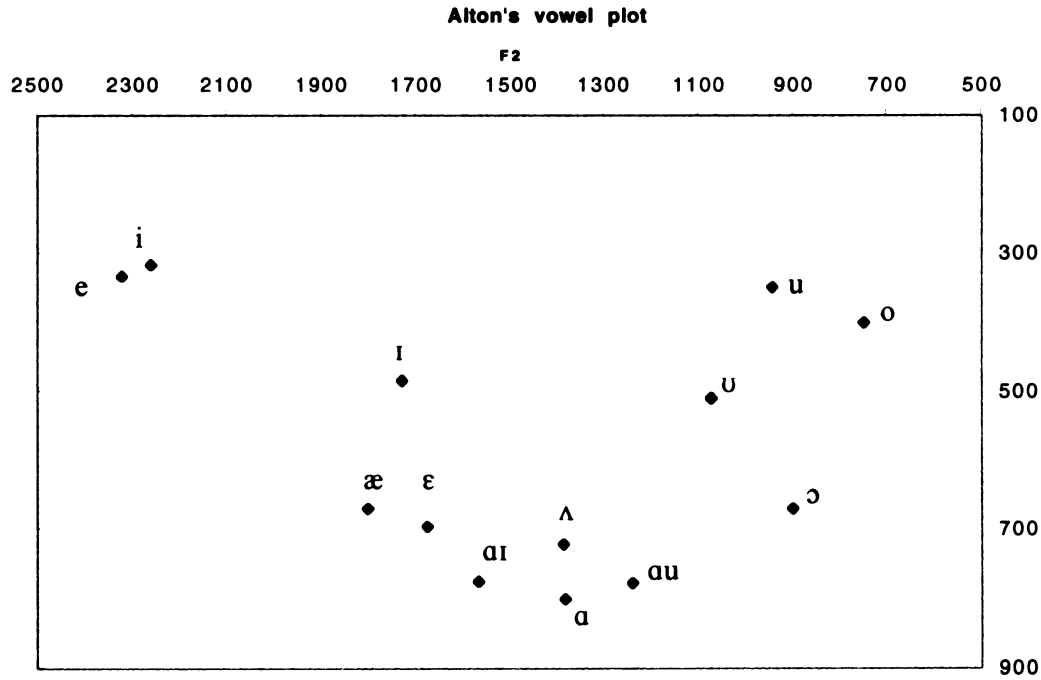
APPENDIX G

INDIVIDUAL VOWEL PLOTS



Name: Alana
Sex: Female
Age: 28
Class: Working

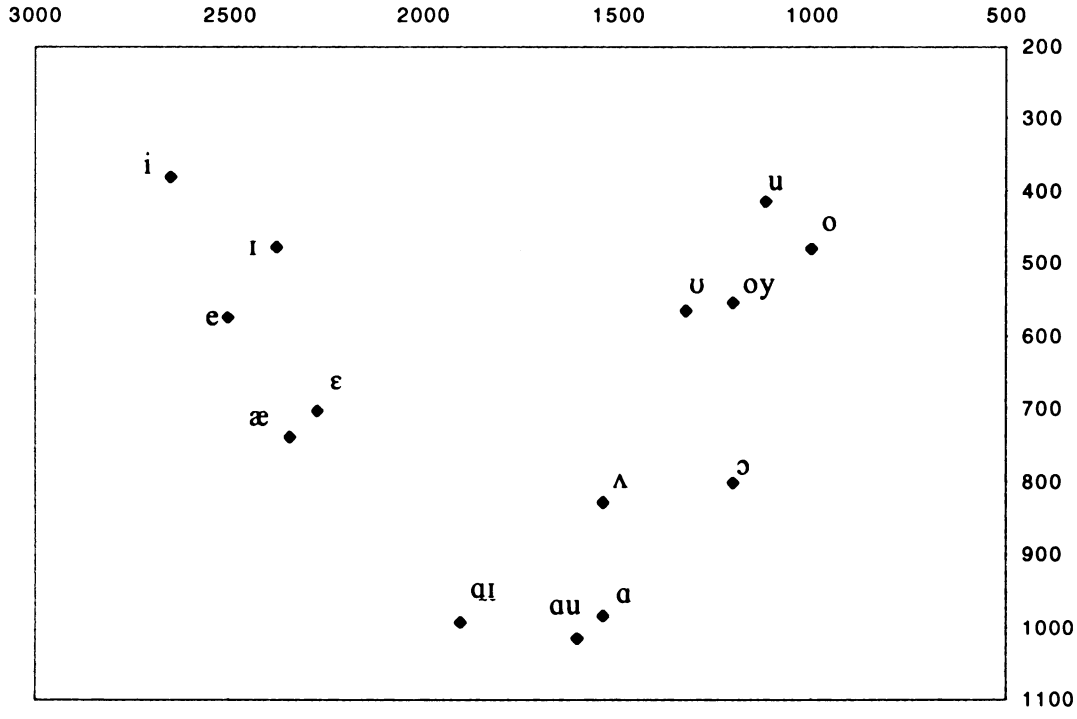
F 1 /æ/ index score: 2
Net E Score: 4
Net S Score: 0
Gating Score: N/A



Name: Alton
Sex: Male
Age: 64
Class: Working

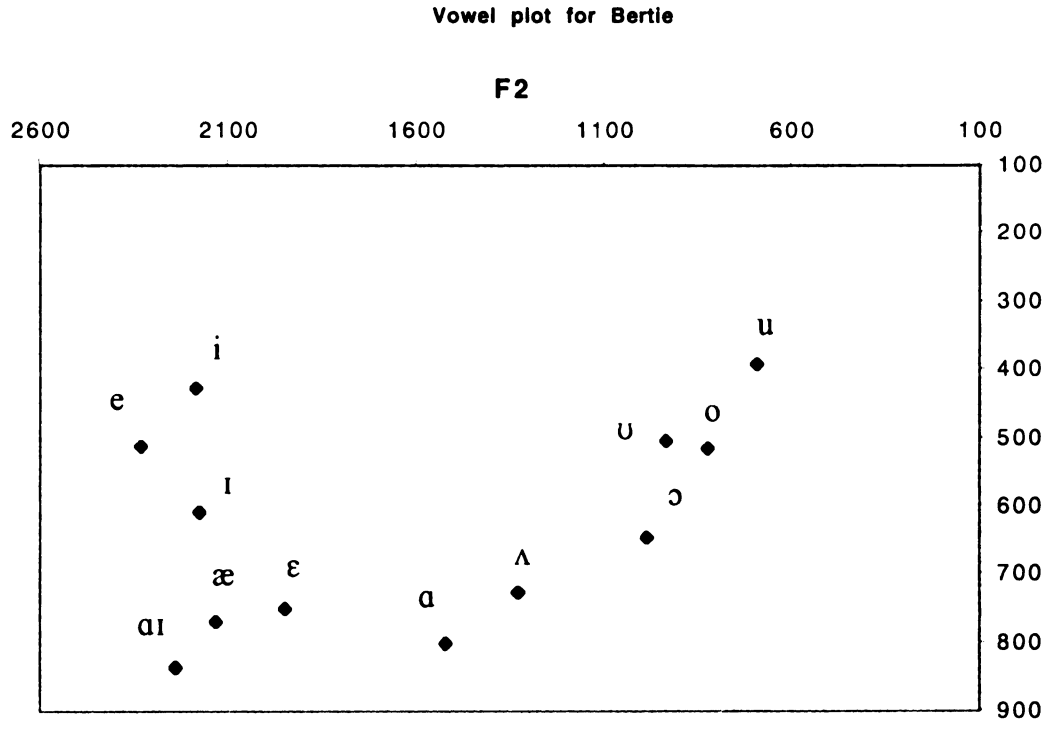
F1 /æ/ index score: 2
Net E score: 4
Net S score: 3
Gating: 10

Ann's Vowel Plot



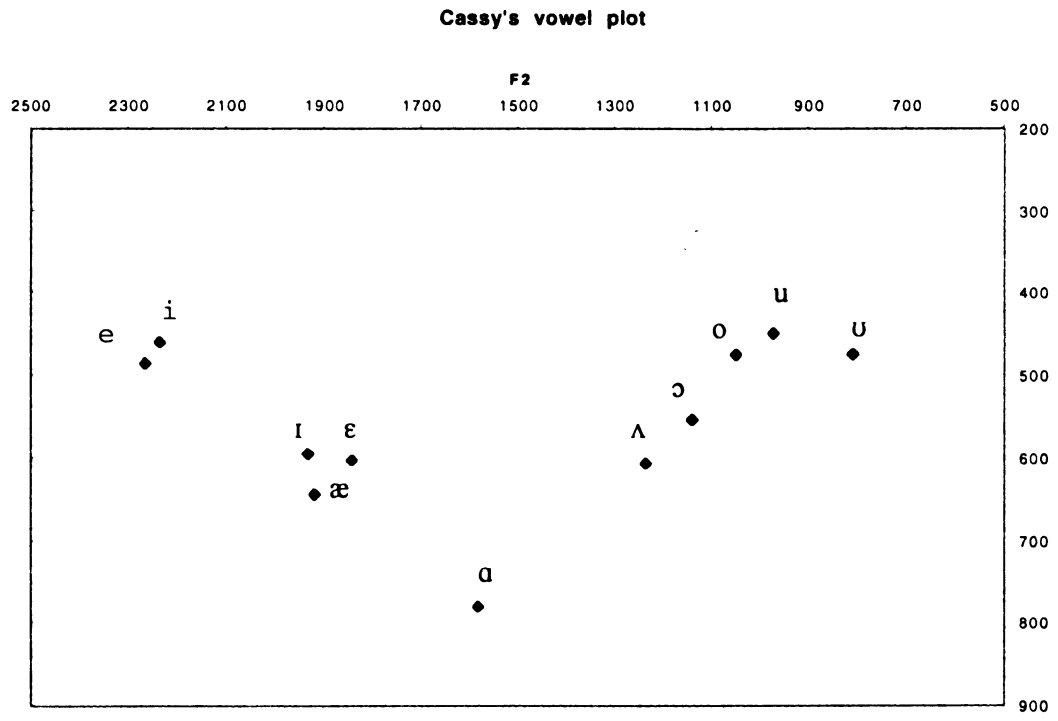
Name: Ann
Sex: Female
Age: 42
Class: Middle

F1 /æ/ index score: 2
Net E score: 2
Net S score: 1
Gating: 1 5



Name: Bertie
Sex: Female
Age: 42
Class: Working

F1 /æ/ score: 2
Net E score: 4
Net S score: 3
Gating: 13

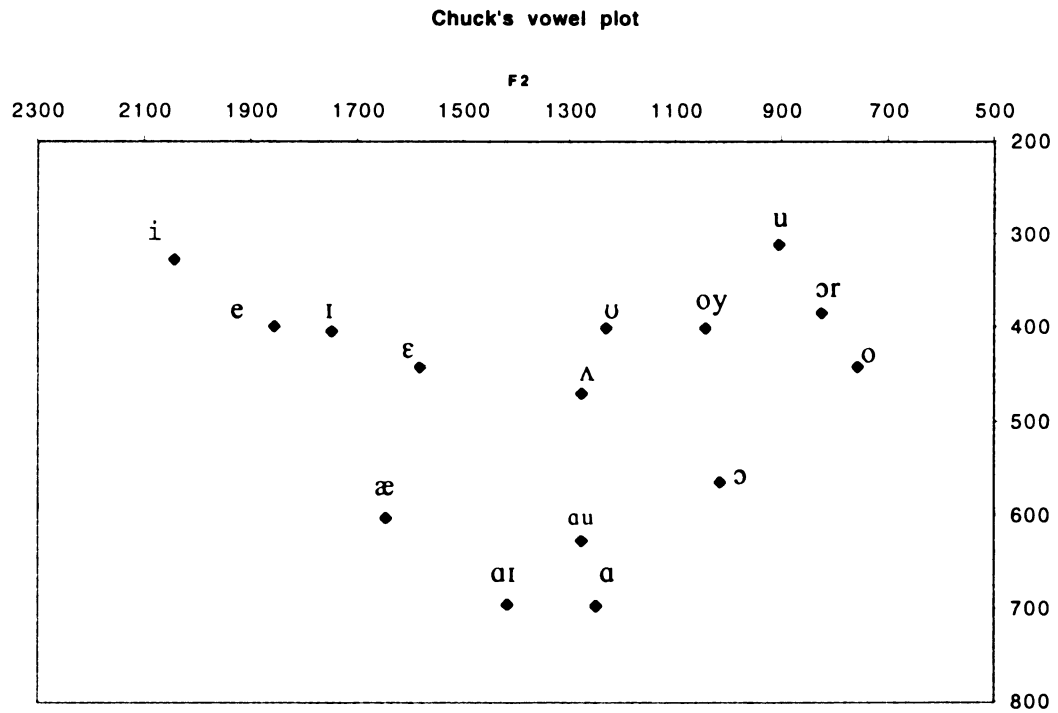


Name: Cassy F1 /æ/ index score: 2

Sex: Female Net E score: 3

Age: 21 Net S score: 1

Class: Middle Gating: 14

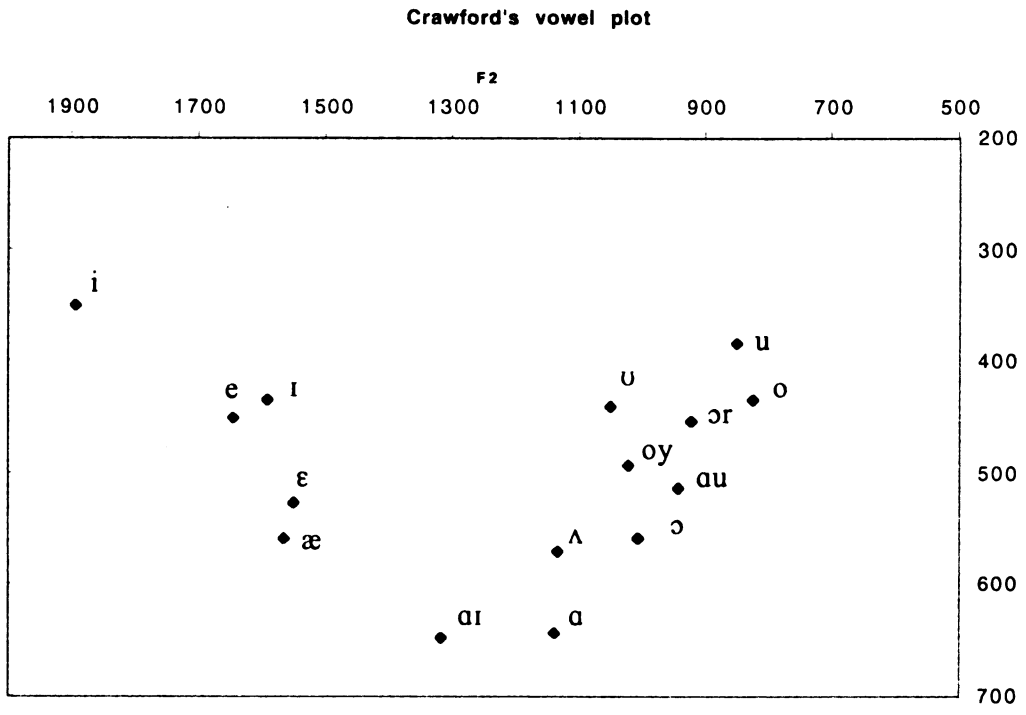


Name: Chuck F1 /æ / index score: 1

Sex: Male Net E score: 3

Age: 28 Net S score: 3

Class: Working Gating: 16

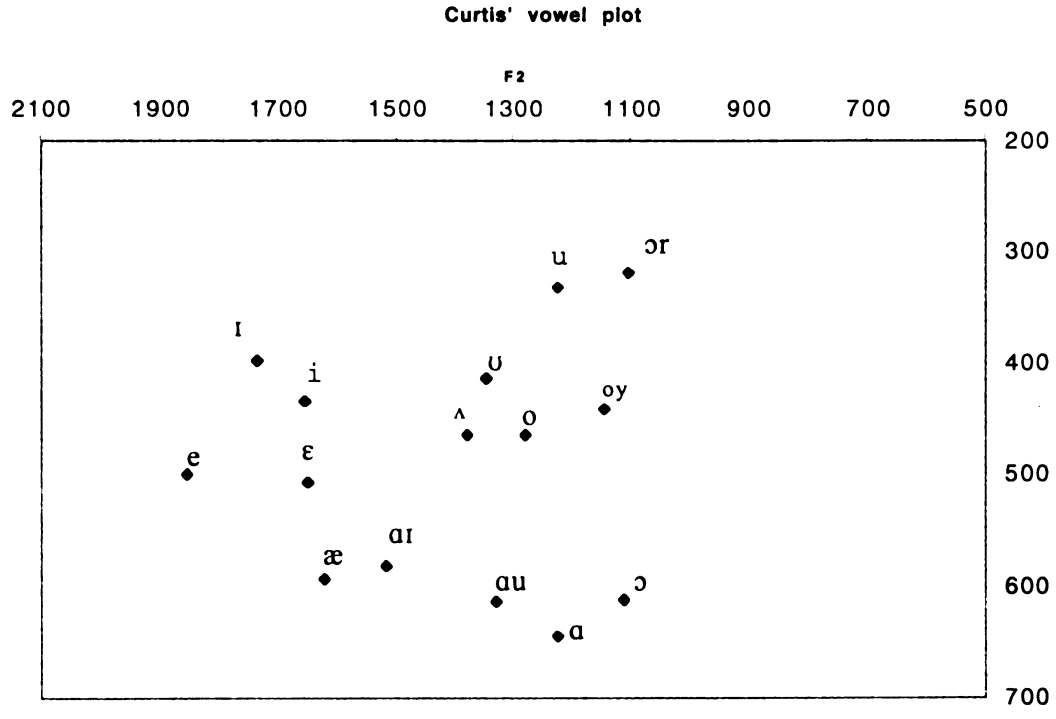


Name: Crawford F1 /æ/ index score: 2

Sex: Male Net E score: 4

Age: 45 Net S score: 3

Class: Middle Gating: 14

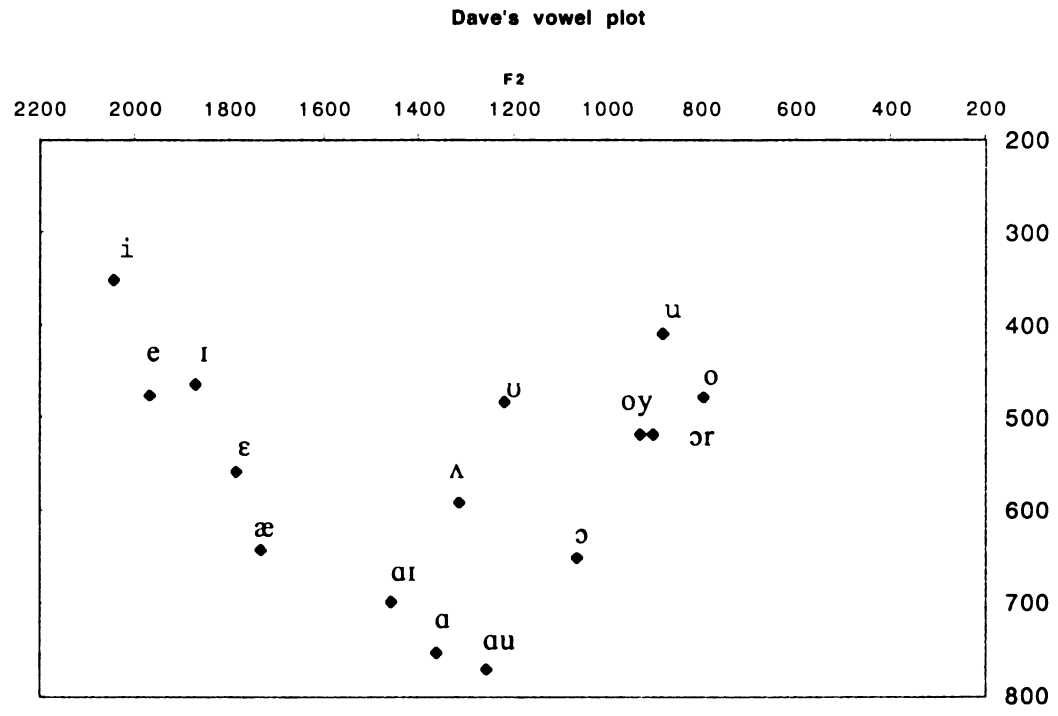


Name: Curtis F1 /æ / index score: 1

Sex: Male Net E score: 3

Age: 28 Net S score: 2

Class: Middle Gating: 12

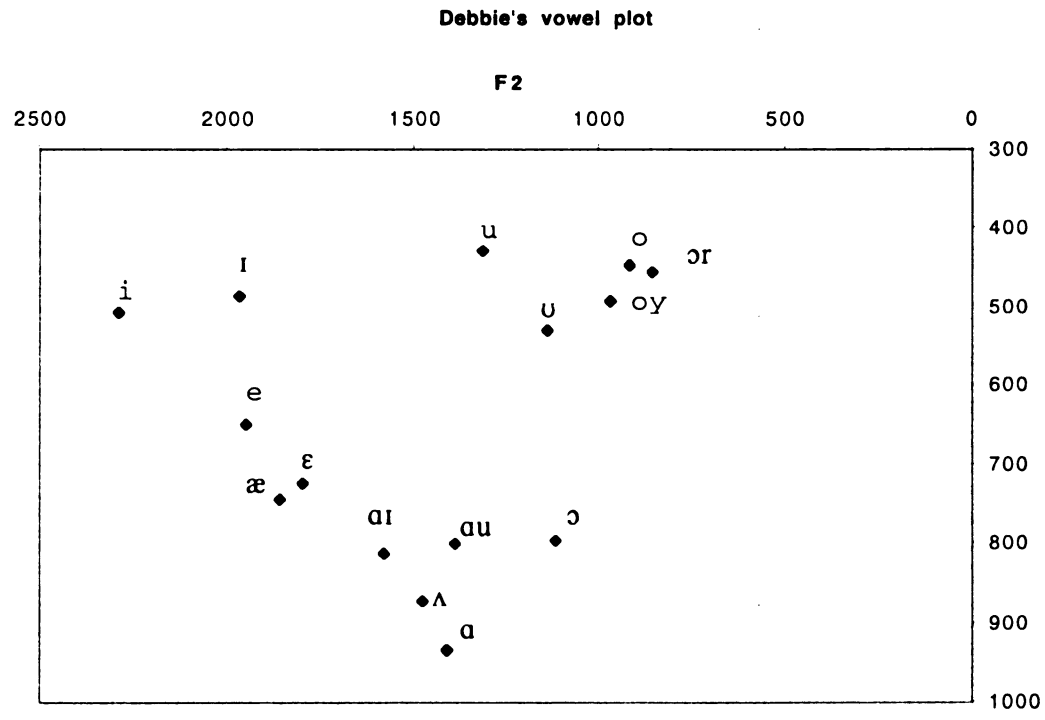


Name: Dave F1 /æ/ index score: 2

Sex: Male Net E score: 4

Age: 21 Net S score: 1

Class: Middle Gating: 17

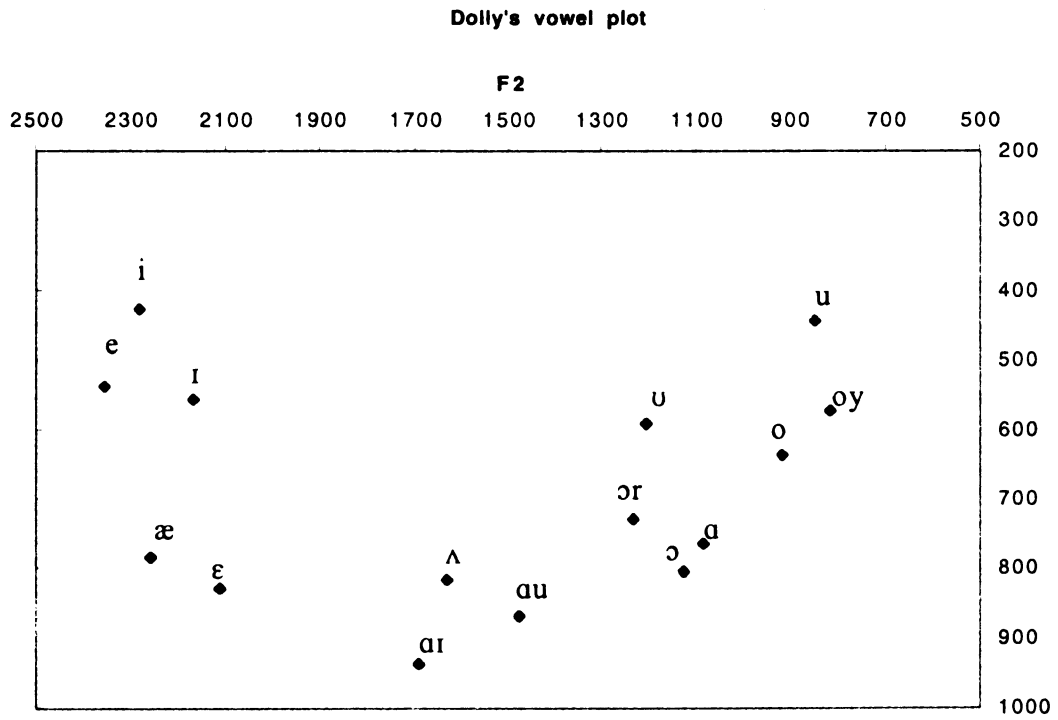


Name: Debbie F /æ/ index score: 2

Sex: Female Net E: 2

Age: 24 Net S: 3

Class: Middle Gating Score: 10

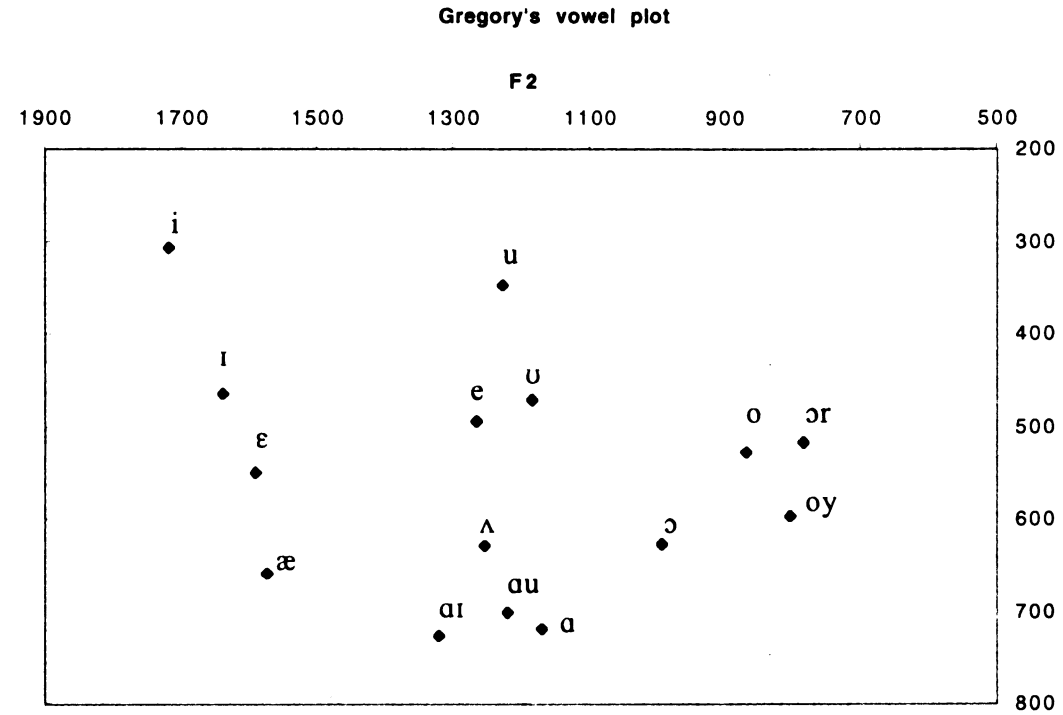


Name: Dolly F 1 /æ/ index score: 2

Sex: Female Net E score: 3

Age: 39 Net S score: 0

Class: Middle Gating: 12

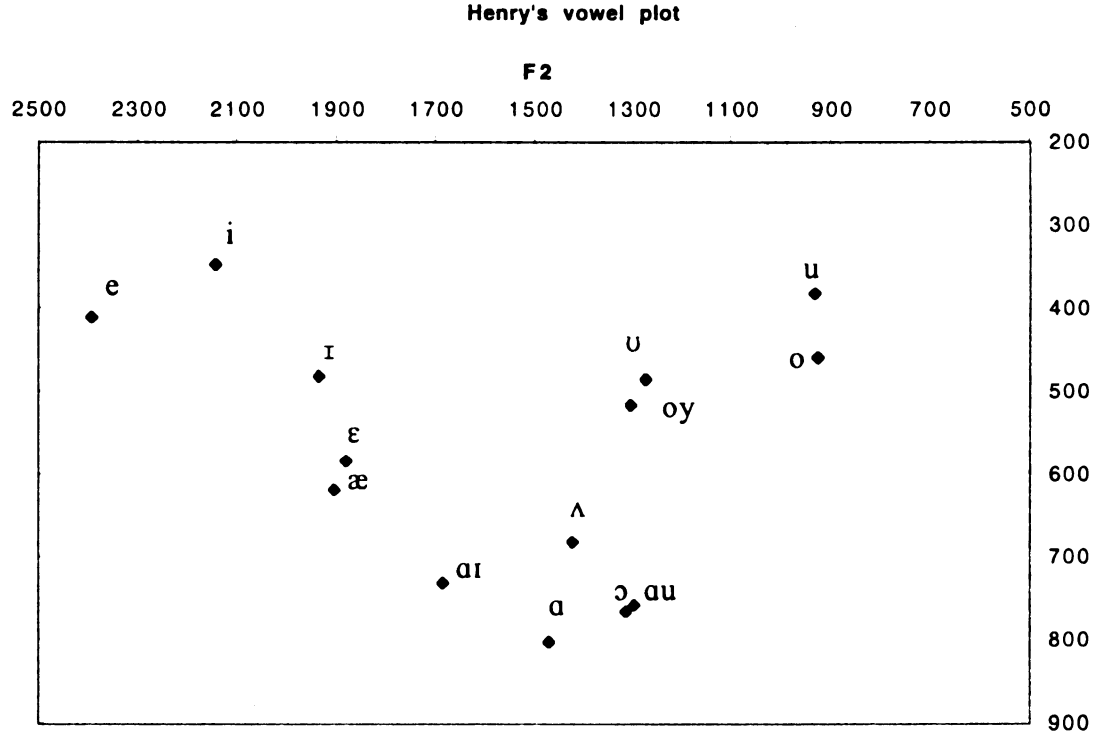


Name: Gregory F1 /æ/ index score: 1

Sex: Male Net E score: 4

Age: 66 Net S score: 1

Class: Middle Gating: 9

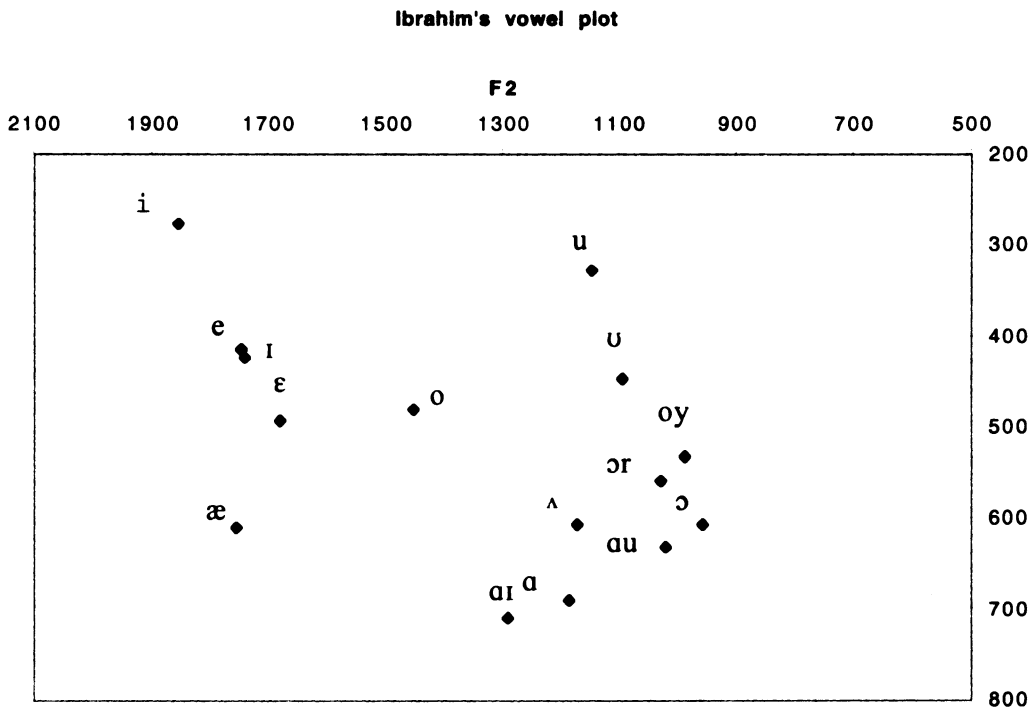


Name: Henry F1 /æ/ index score: 2

Sex: Male Net E score: 4

Age: 56 Net S score: 3

Class: Middle Gating: 13

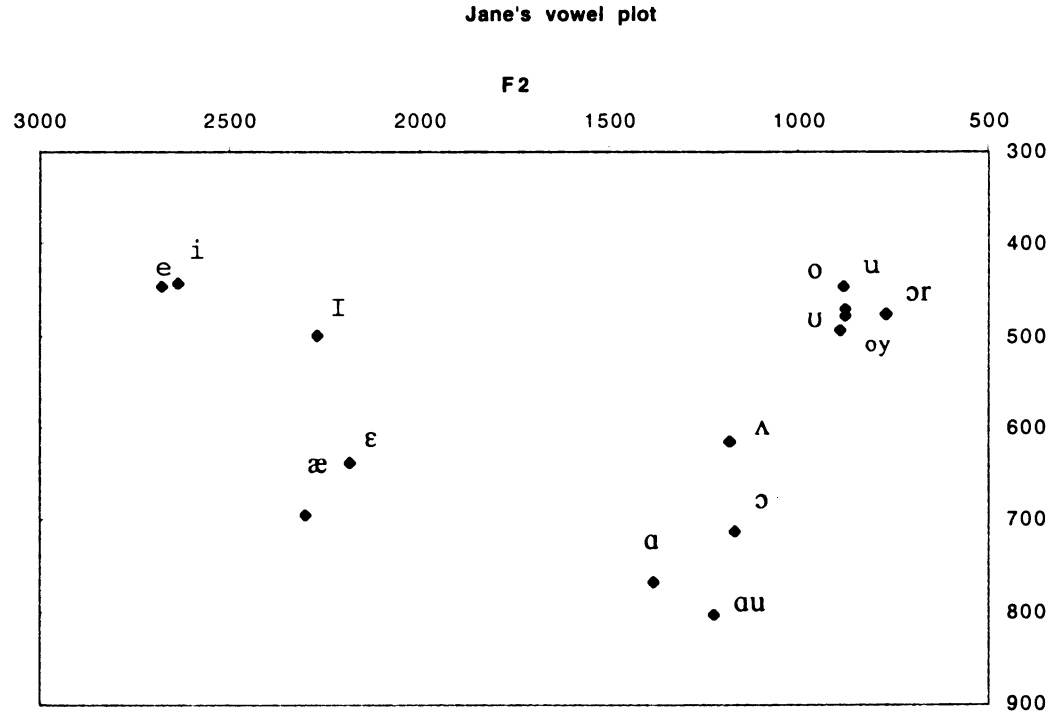


Name: Ibrahim F1 /æ/ index score: 1

Sex: Male Net E score: 4

Age: 52 Net S score: 2

Class: Middle Gating: 14

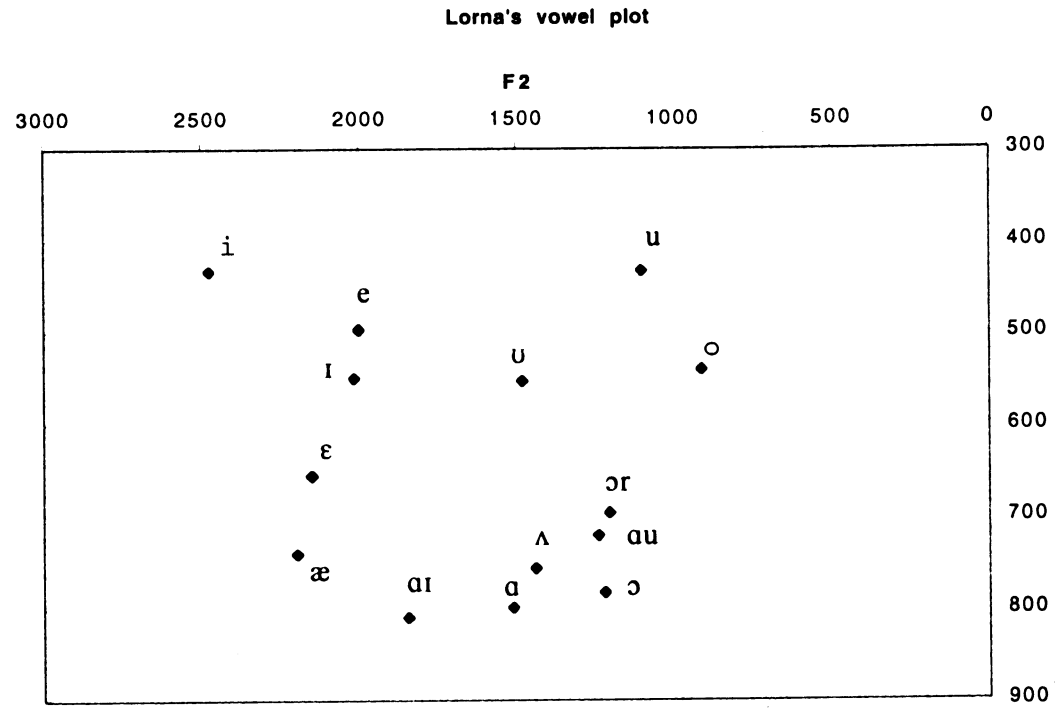


Name: Jane F1 /æ/ index score: 2

Sex: Female Net E score: 4

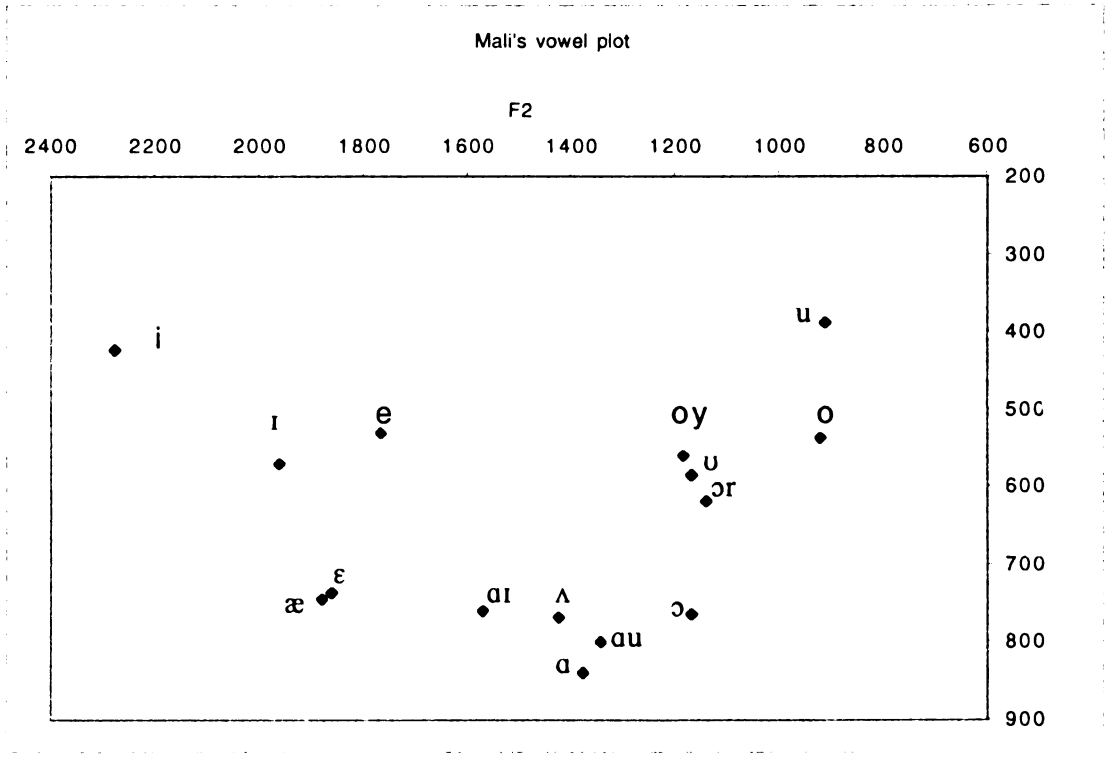
Age: 25 Net S score: 4

Class: Middle Gating: 16



Name: Lorna
Sex: Female
Age: 28
Class: Working

F /æ/ index score: 1
Net E: 4
Net S: 5
Gating: 12



Name: Mali

Sex: Female

Age: 28

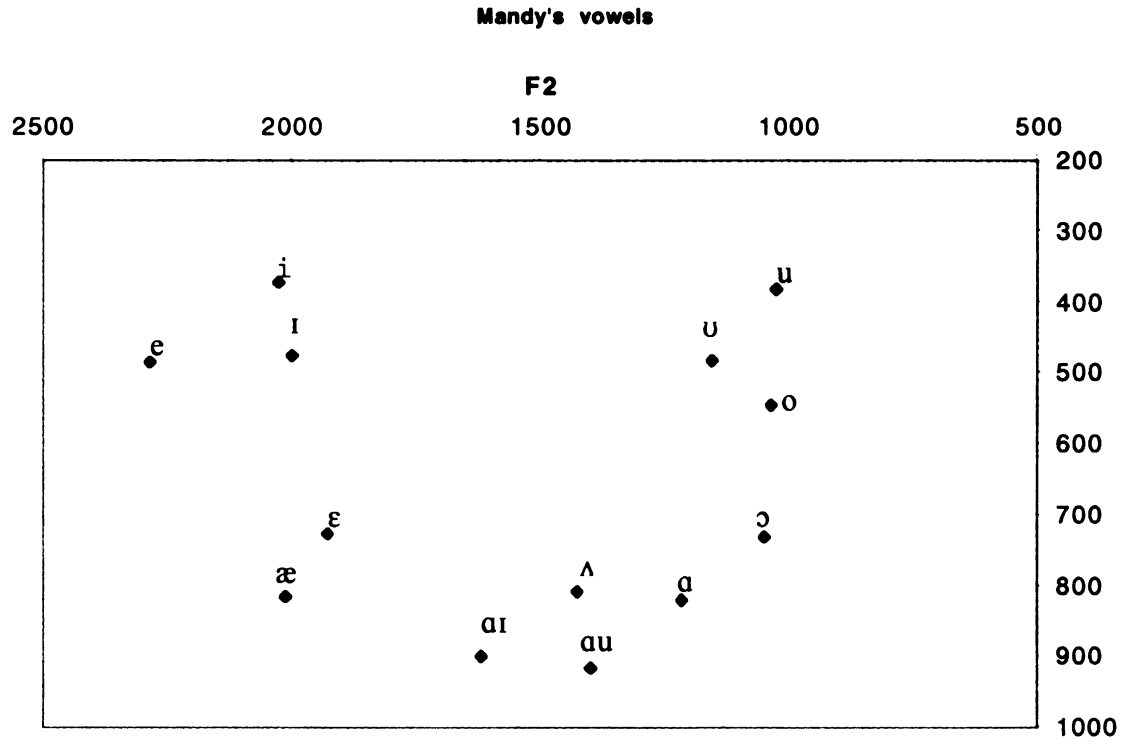
Class: Middle

F1 /æ/ index score: 2

Net E score: 3

Net S score: 4

Gating: 12

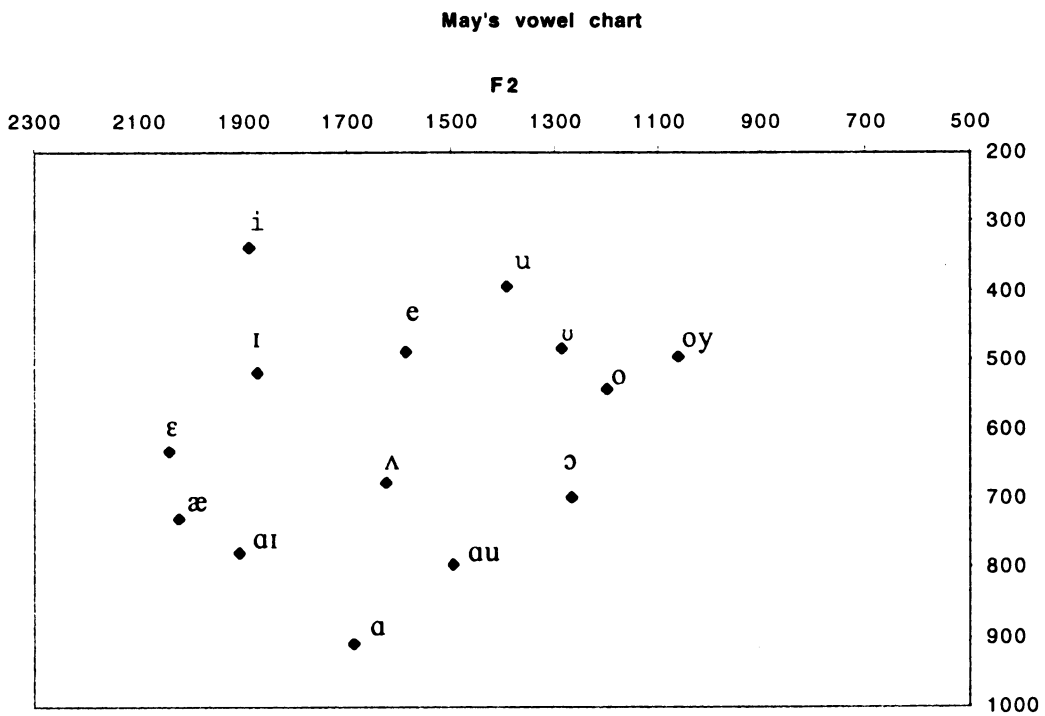


Name: Mandy F1 /æ/ index score: 1

Sex: Female Net E score: 2

Age: 39 Net S score: 2

Class: Middle Gating: 16



Name: May

Sex: Female

Age: 19

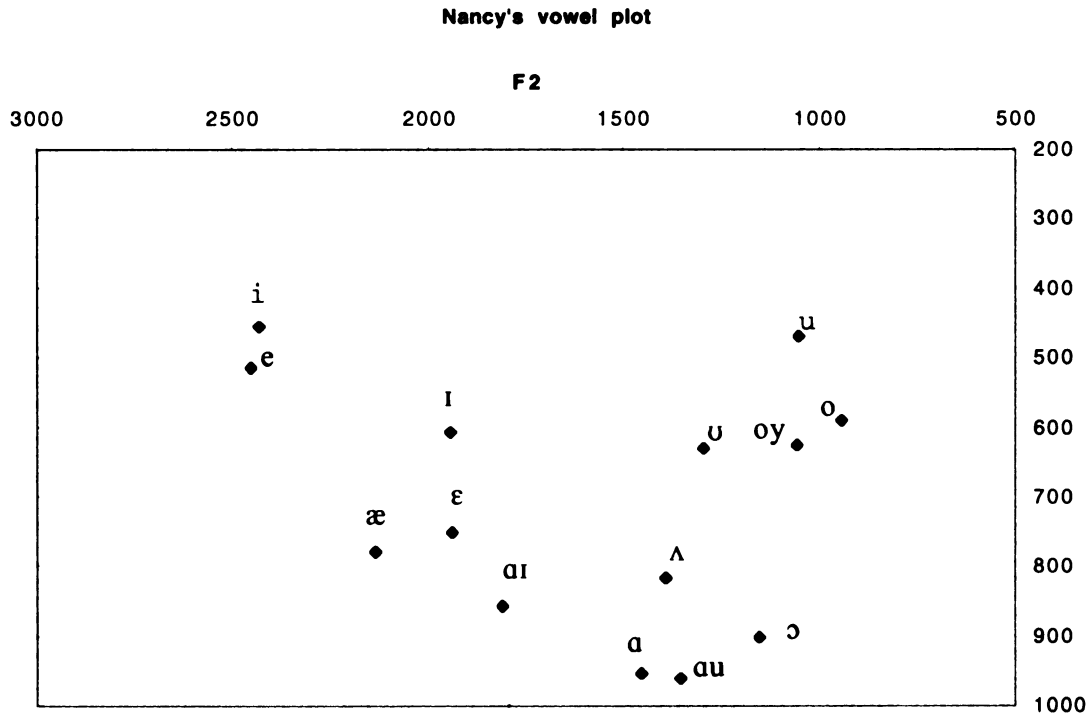
Class: Working

F1 /æ/ index score: 1

Net E score: 4

Net S score: 0

Gating: 15

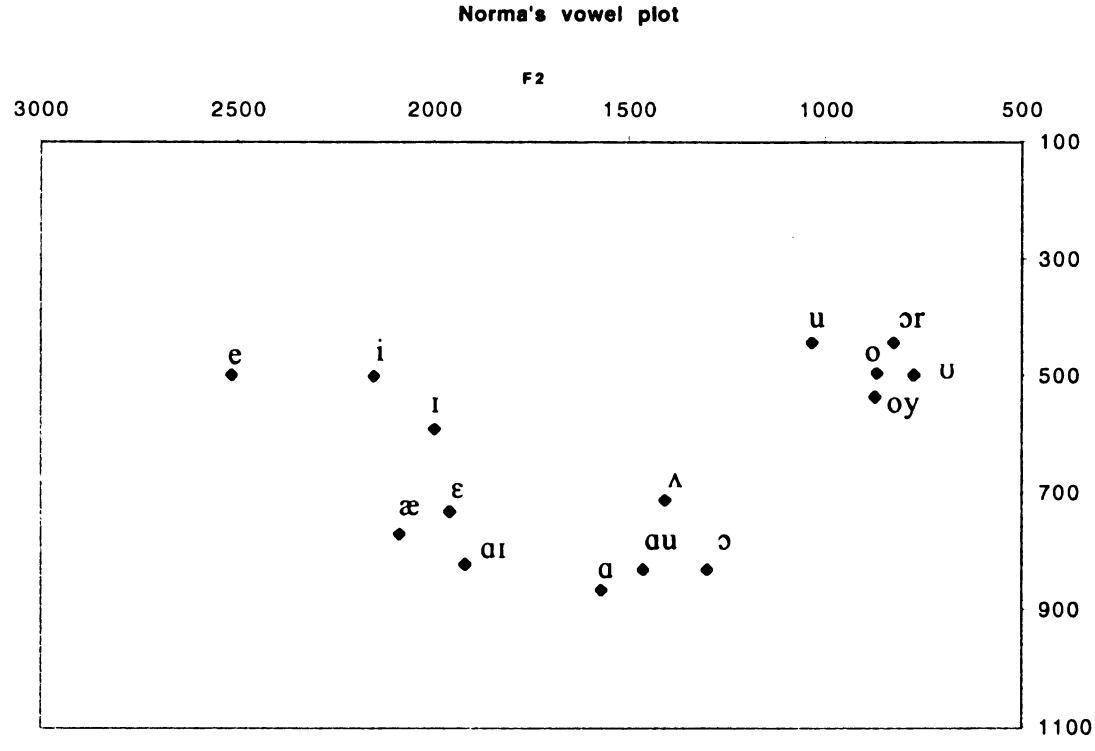


Name: Nancy F1 /æ/ index score: 2

Sex: Female Net E score: 4

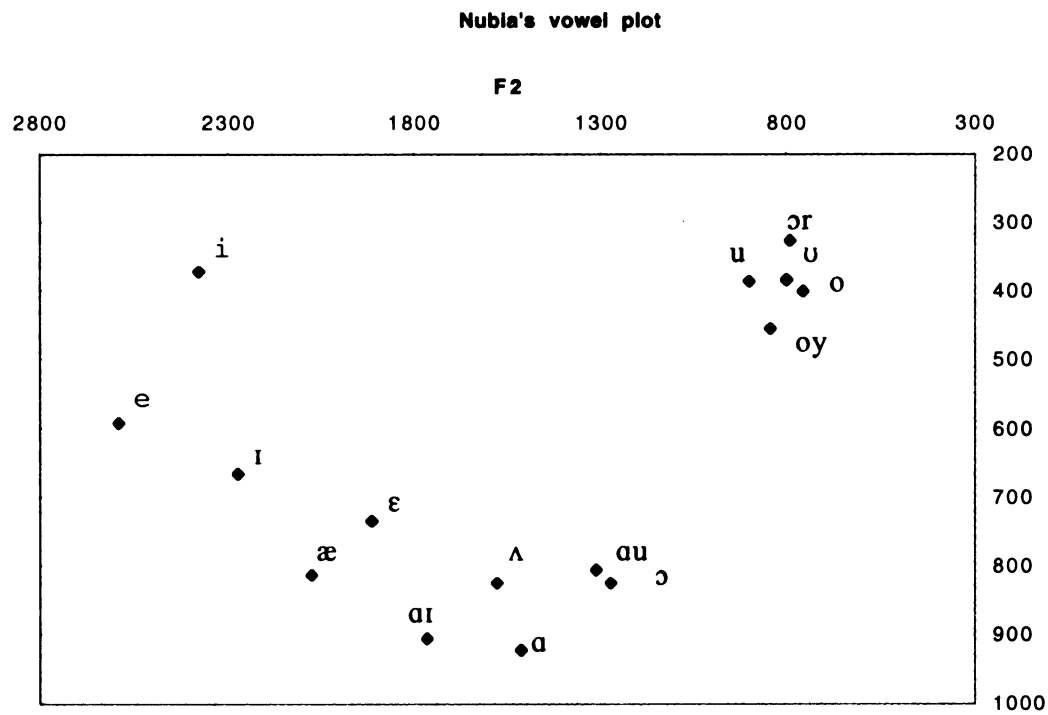
Age: 27 Net S score: 5

Class: Working Gating: 14



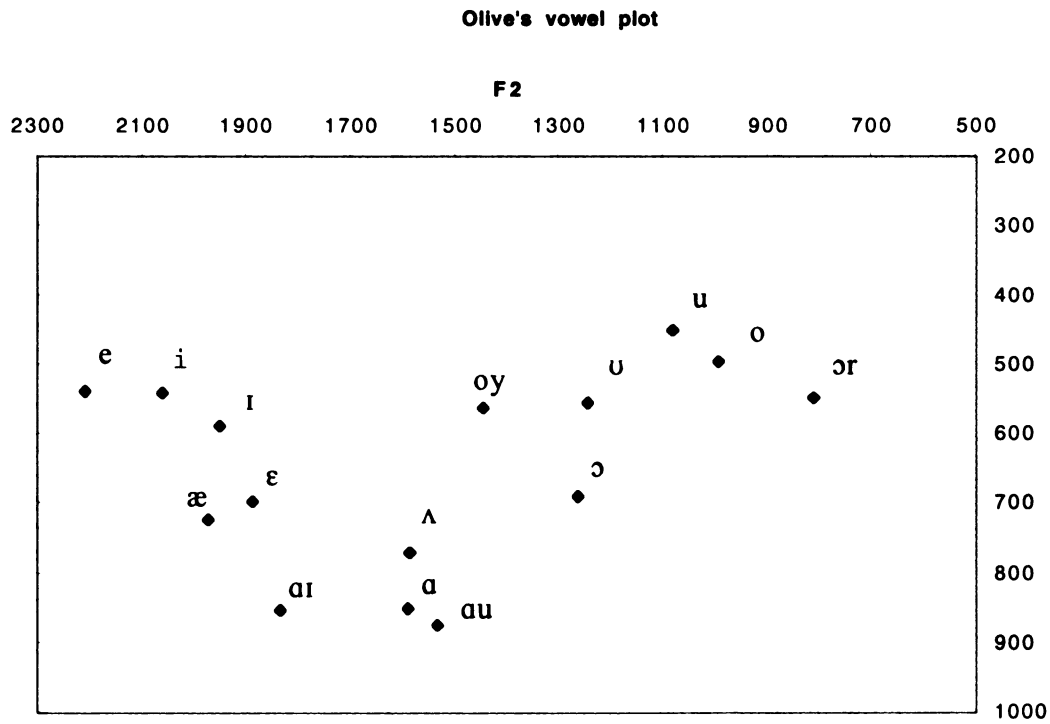
Name: Norma
Sex: Female
Age: 42
Class: Working

F /æ/ index Score: 2
Net E: 3
Net S: 1
Gating: 13



Name: Nubia
Sex: Female
Age: 27
Class: Working

F /æ/ index score: 2
Net E Score: 4
Net S: 1
Gating Score: 13

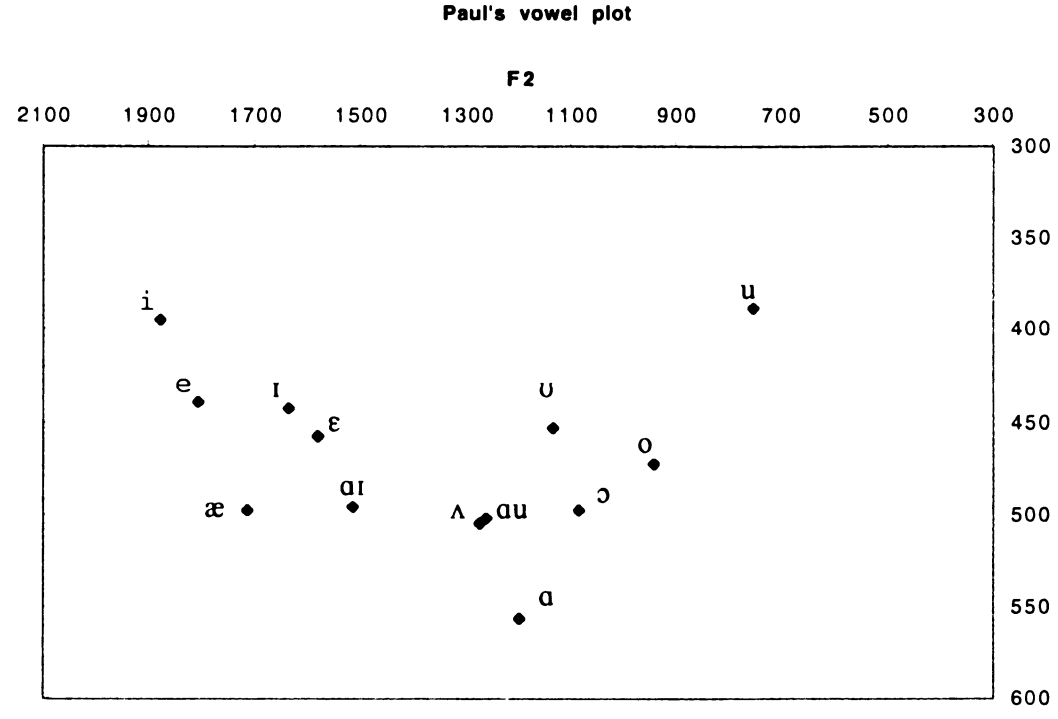


Name: Olive F1 /æ/ index score: 2

Sex: Female Net E score: 4

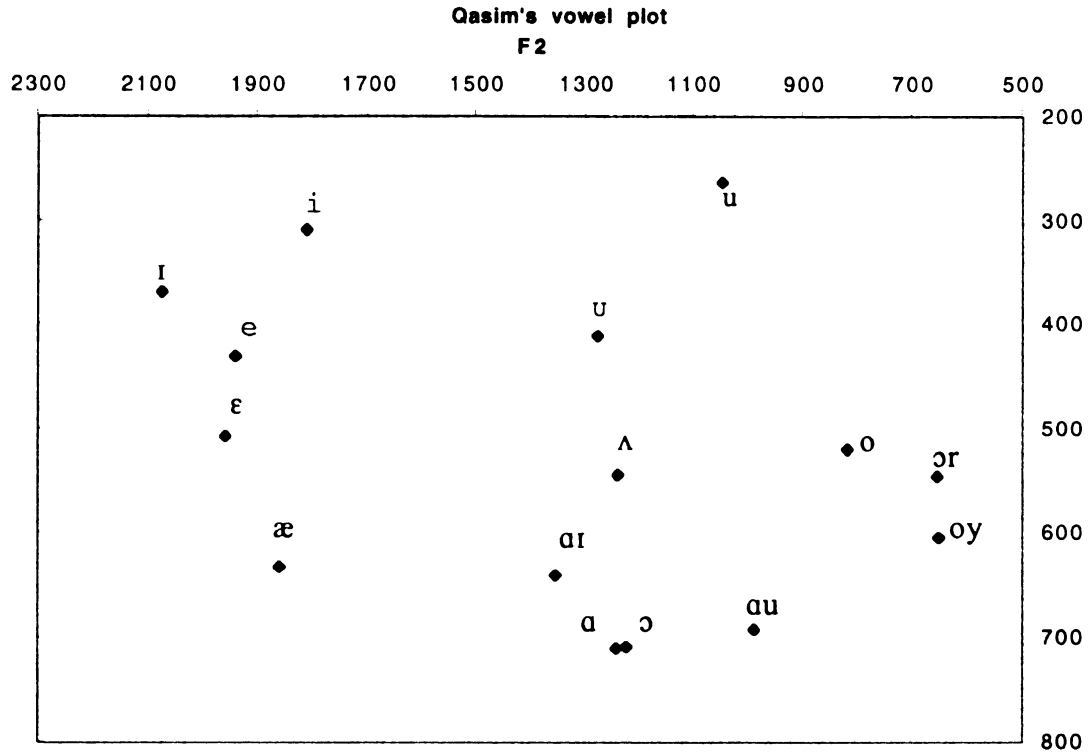
Age: 48 Net s score: 4

Class: Middle Gating: 14



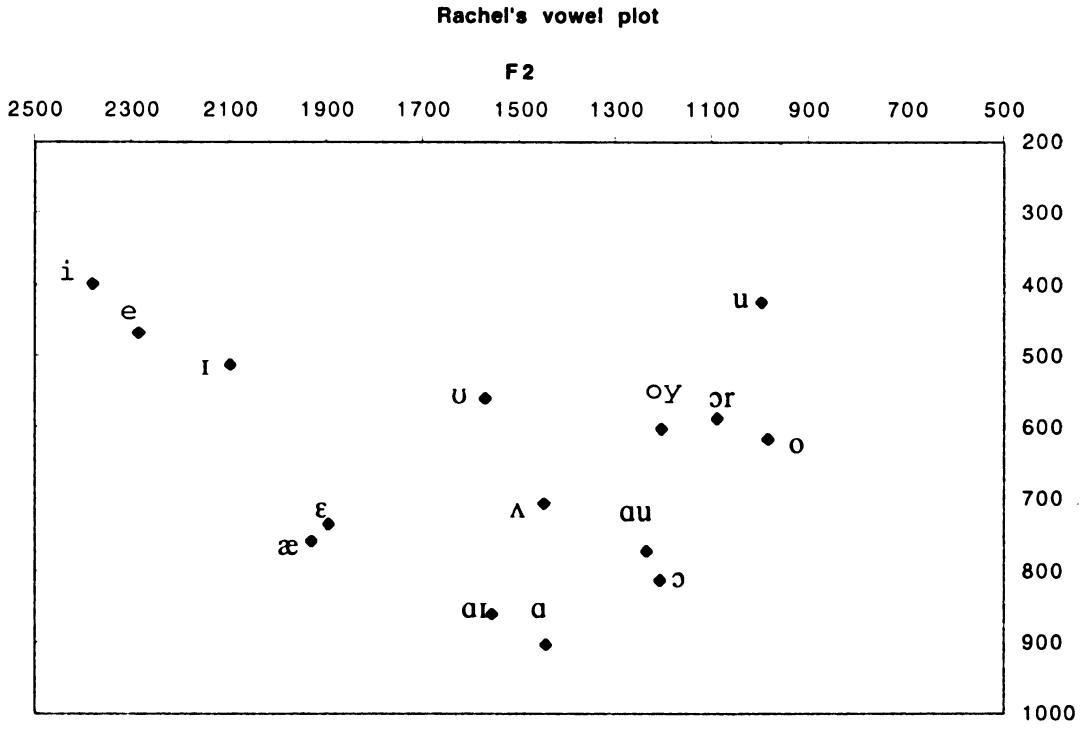
Name: Paul
Sex: Male
Age: 4
Class: Working

F /æ/ index score: 2
Net E score: 3
Net S: 2
Gating score: 14



Name: Qasim
Sex: Male
Age: 53
Class: Working

F1 /æ / index score: 1
Net E Score: 4
Net S Score: 0
Gating: 11

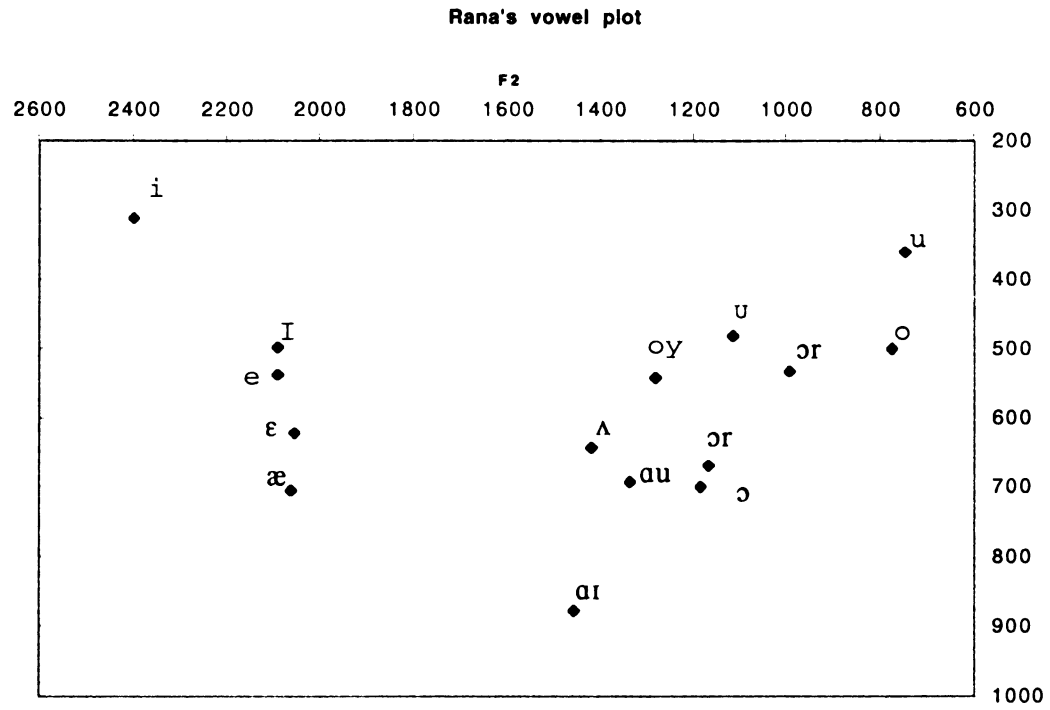


Name: Rachel F /æ/ index score: 2

Sex: Female Net E Score: 4

Age: 48 Net S Score: 2

Class: Working Gating Score: 15

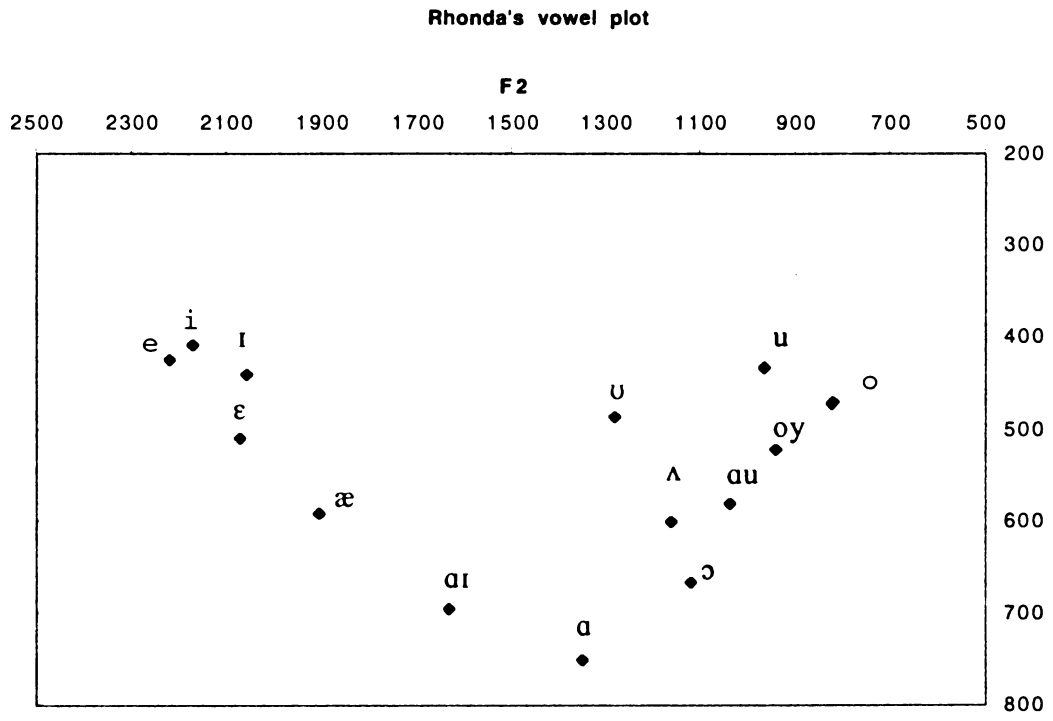


Name: Rana F /æ/ index score: 2

Sex: Female Net E: 3

Age: 50 Net S: 2

Class: Middle Gating score: 16

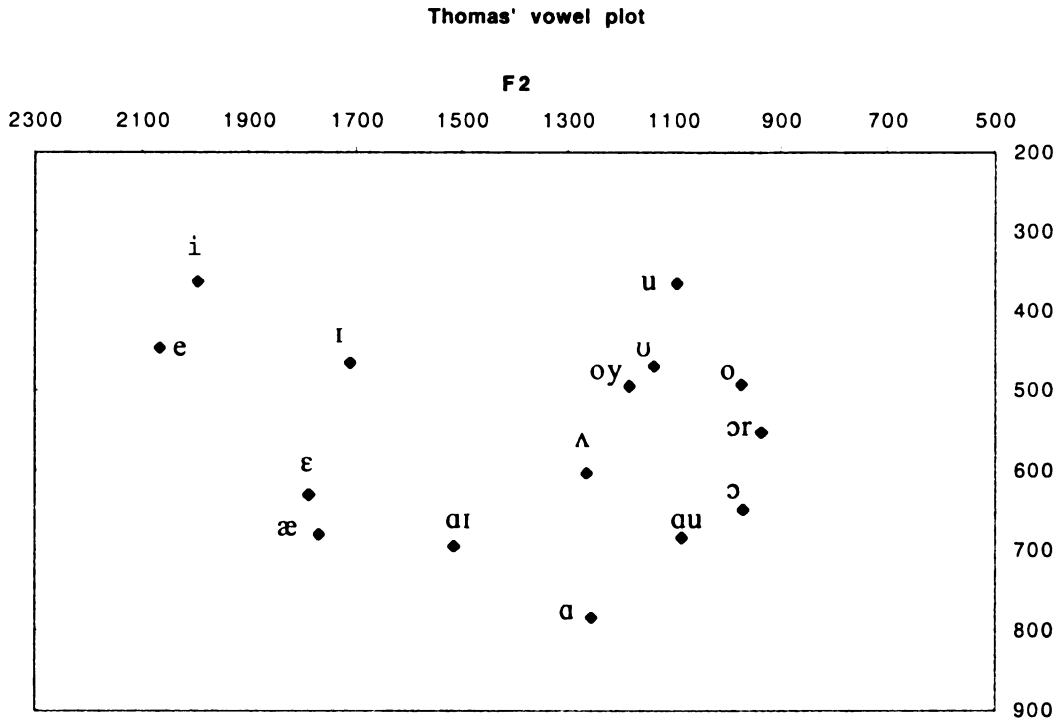


Name: Rhonda F1 /æ/ index score: 1

Sex: Female Net E score: 5

Age: 38 Net S score: 1

Class: Working Gating: 16

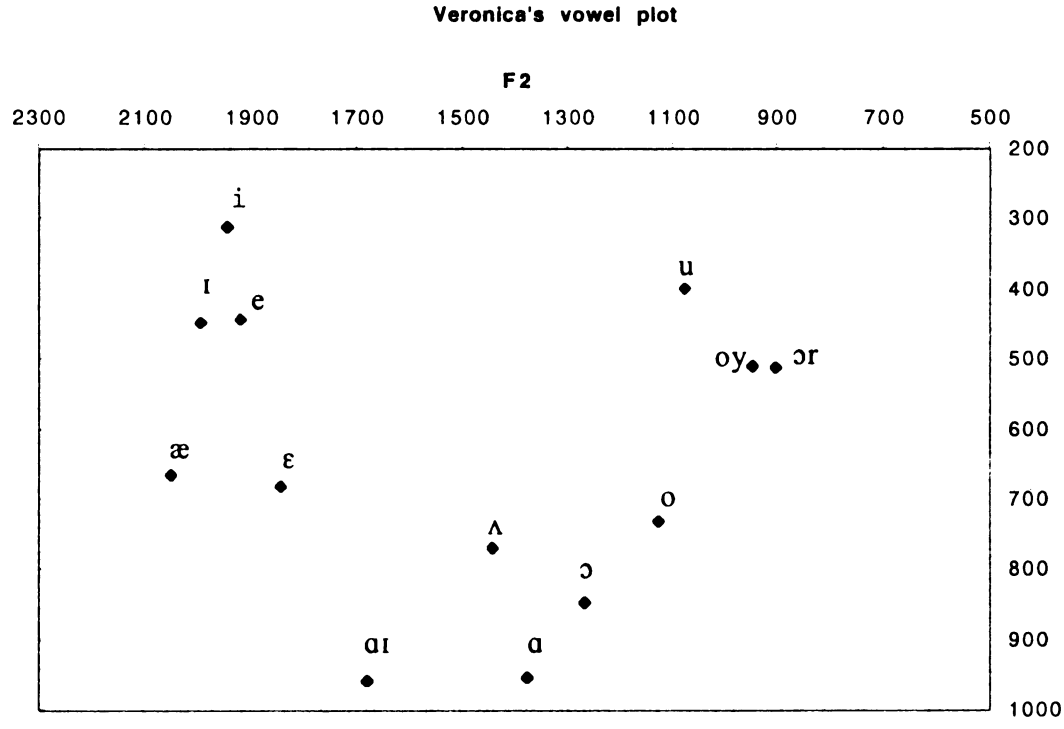


Name: Thomas F1 /æ/ index score: 2

Sex: Male Net E score: 3

Age: 27 Net S score: 3

Class: Middle Gating: 13

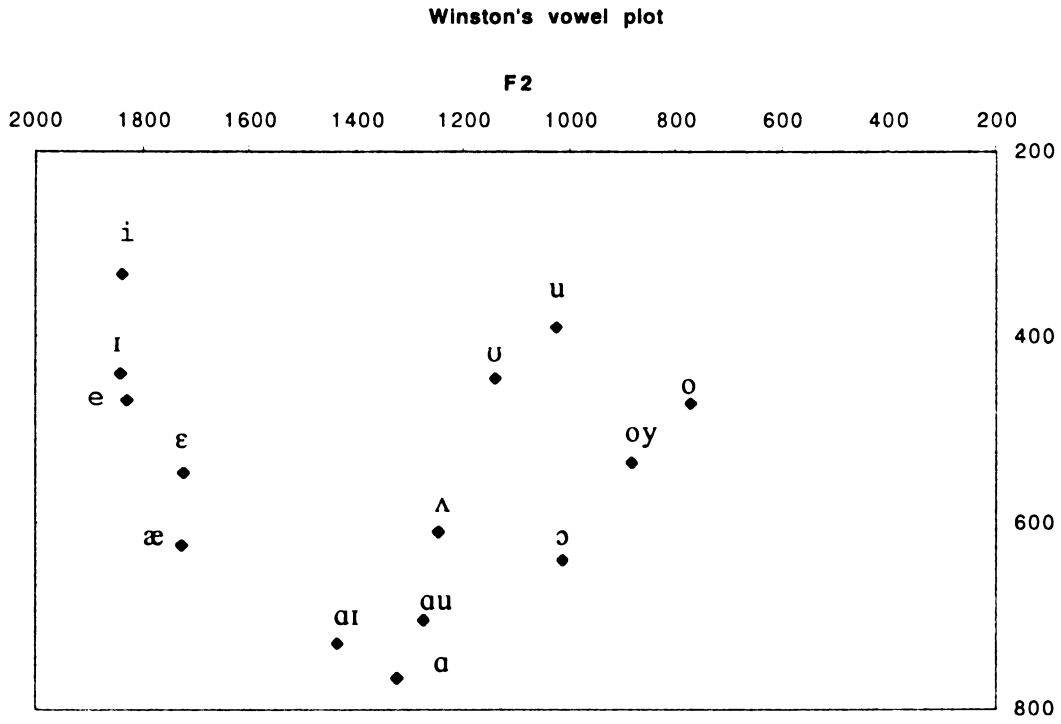


Name: Veronica F1 /æ/ index score: 2

Sex: Female Net E score: 2

Age: 43 Net S score: 2

Class: Working Gating: 15



Name: Winston F1 /æ/ index score: 1

Sex: Male Net E score: 4

Age: 74 Net S score: 4

Class: Working Gating: 12

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