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AN EXAMINATION OF THE ADAPTATION TO THE NORTHERN CITIES CHAIN SHIFT BY LEBANESE IMMIGRANTS IN DEARBORN, MICHIGAN

By

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ABSTRACT

AN EXAMINATION OF THE ADAPTATION TO THE NORTHERN CITIES CHAIN SHIFT BY LEBANESE IMMIGRANTS IN DEARBORN, MICHIGAN

By

Jon Bakos

While the subject of dialect acquisition has been studied in the past, it has generally remained within the domain of L1 speakers moving to a different L1 dialect region, such as discussion in Labov (1963), Ito (1999), and Evans (2001). Although work such as Gordon (2000) and Friesner and Dinkin (2006) have touched on questions of L2 speakers acquiring regional native accents, much research remains to be done. This thesis contributes to that discussion by examining a community of Lebanese immigrants in Dearborn, Michigan. Factors such as cultural identity, age, and time within Michigan will be considered in whether the Dearborn Lebanese are holding to their own dialect, or acquiring that of the surrounding area.

The dialect acquisition in question is that of the Northern Cities Chain Shift (NCS), the dominant accent of nearby White urban/suburban communities. This dialect has surrounded the Dearborn Lebanese since their first arrival up to the modern day, and I will explore the effects of this immersion on the English of the Lebanese speech community. Analysis of the acoustics of subjects' speech, their understanding of NCS sounds, and demographic data of the community will paint a picture of their current dialect and the effects of NCS upon it.

Dedicated to my friends and family for all their love and support,
Especially to my Dad and Jill for being such persistent naggers,
And my mother for her editorial wisdom.

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Arab Community Center for Economic & Social Services

Henry Ford Community College

The Arab American National Museum

The Islamic Center of America

The University of Michigan - Dearborn

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1.0 Introduction

This project was part of a larger study whose intent was to determine how immigrant populations in Michigan have been acquiring the state's dominant accent, the Northern Cities Chain Shift (NCS). Although studies such as Payne (1980) and Ito (1999) have examined dialect changes when moving from one region of the United States to another, little work has been done on changes made to dialect as one moves into an entirely different country. While we have an understanding of how cultural assimilation occurs, with full homogeny typical after the third generation (called 'straight-line assimilation' in Warner and Strole (1945)), the process of linguistic change as one is immersed in an L2 is not well understood. The aim of our group therefore was to study multiple speech communities of immigrants within the state of Michigan and to see how they were reacting to the native dialects around them, NCS in particular.

Interviewers were sent to Benton Harbor, Lansing, Hamtramck, the Upper Peninsula, and Dearborn to speak with subjects of Mexican, Polish, Finnish, and Lebanese descent. All of these groups have been in the state long enough to have established communities, to have raised children in the United States, and to have been surrounded by NCS English for many years. These researchers have examined whether Gender, Age, Socio-Economic Status (SES), or Generation have had an effect on the adaption or rejection of Michigan's accents. All groups were studied with the same methods and tools, which will be discussed later in greater detail. Interviewers worked to collect samples of recorded speech in different scenarios, from casual conversation to precise wordlist readings. The recorded sounds were than analyzed acoustically so as to

plot the speaker's vowel system and compare it with major dominant systems such as those of Peterson and Barney (1952)'s General American English, the Northern Cities Shift, or the speaker's native L1.

In Chapter 2, I will summarize some of the prior research done on the topics of dialect change and acquisition, such as Labov's 1963 study of Martha's Vineyard islanders. Work examining the Northern Cities Shift and its spread through Michigan and the Inland North will be discussed. I will look at how the accent travels, where it would be expected to go, as well as influences that could speed or slow its movement. Finally, this chapter will question how readily English L2 speakers would be able to acquire a Michigan regionalism, and if so, how we might recognize such a change.

Chapter 3 will describe the modern circumstances of Dearborn and its speech communities, as well as the city's history. Many relevant events have culminated in one of the largest Arab communities in the world outside of the Middle East. An understanding of how this group came to be will prove essential to this research.

In Chapter 4, I will briefly discuss the methods used in gathering and analyzing the data used for this paper, the interviews for which were conducted in 2005 and 2006.

Chapter 5 will serve to compare the many vowel systems that could be exerting influence over the Dearborn Lebanese. Whereas Chapter 2 will treat NCS largely as a single entity of study, Chapter 5 will speak on its specific acoustic features, contrasting these with the vowels of the General American English of Peterson and Barney (1952)

and with Arabic. This will allow the stage to be set for the presentation of research results from interviews with the Dearborn Lebanese.

Chapter 6 will show us those results, presenting first the amalgamated findings of the entire Dearborn Lebanese vowel system. Our view through the chapter will progressively narrow, turning our attention to smaller demographic sections of the community, and finally to some of its individual members. We will see how strong of a foothold NCS has made for itself in Dearborn, and who will be most likely to lead the next advances.

Chapter 7 will conclude, offering a summation of the data thus far and suggesting a path for further inquiry.

2.0 Prior Research and Background

2.1 Studying Dialect Change and NCS

In this section I will discuss the goals of this research, as well as prior relevant work. I'll give a short history of the study of dialect change and use this to establish some reasonable expectations of my own results.

One of the most important early studies of dialect change and acquisition is Labov's study Martha's Vineyard (Labov 1963), where we were shown an island community with two competing linguistic forces; the native islanders and tourists from the mainland. The island was not large and was experiencing the plight of many small towns, in which the younger residents were leaving to make their fortunes elsewhere. Labov found that those who expressed plans to leave the island were generally more eager to adapt speech norms from the mainland, whereas the die-hard fishermen who intended to stay were holding firm to their native accents.

The dialect change in question for my own work is the Northern Cities Chain Shift (NCS), an accent that has taken hold in many areas of the Inland North, concentrating most strongly in major cities such as Detroit, Buffalo, Cleveland, and Chicago. (Labov, Ash, and Boberg 2006). Although urban centers show the greatest influence by the accent (Labov 1994:178), it is prolific through most of the region and even infiltrating into more rural areas, as I will soon describe. The accent itself is a rearrangement of the region's vowel system that is spurred by the raising and tensing of /ae/, catalyzing a 'chain' of change that prompts sounds to move in to fill empty space, creating a new

void and further movement. In Chapter 5 I will explain more of the phonological and acoustic innards of NCS, as well as comparing it to competing vowel systems in its environment.

For now, we will simply speak of NCS as the dominant dialect among urban and suburban Michiganders of European-American descent. NCS has been present and studied in the Inland North since at least the seventies in work such as Callary (1975), and was a factor in Penelope Eckert's study of 'Jocks and 'Burnouts' Eckert (1988), as well as in more recent work such as Ito (1999), Evans (2001) and Gordon (2001). One theory of its dispersion suggests a 'Wave' model (Chambers and Trudgill 1980, Trudgill 1983), in which the largest cities serve as distribution centers for the shift into the surrounding countryside. Thus, the Northern Cities such as Detroit, Buffalo, Cleveland, and so forth would be the first to absorb the accent, and then 'pull in' other nearby cities, the largest of them first. The accent would move based on which cities were largest and closest; small towns might be skipped, even if they were nearby.

The studies done in Michigan have by and large shown the NCS spreading through the state in Wave model fashion. Michigan's major southeastern cities such as Detroit, Ann Arbor, and Flint are included as NCS in the *Phonological Atlas of North America* (Labov, Ash, and Boberg 2006), as well as more distant population centers such as Kalamazoo and Midland. Studies have shown that the NCS has dispersed through the state, being most advanced in larger cities like Grand Rapids - Knack (1991), or Ypsilanti -

Evans (2001), while being present only in infant stages in rural areas (Preston and Ito 1998, Ito 1999).

Although these works show us the Wave model's effects taking place in Michigan, other work such as Gordon (1997) suggests that such progress is not inexorable. Gordon recorded subjects in Chelsea, a small town near southeastern Ann Arbor, and Paw Paw, a small town near Kalamazoo, on the west side of the state.

City	Population
Ann Arbor	114,024
Chelsea	4398
Kalamazoo	77145
Paw Paw	3363

Table 2.1 – Populations of cities in Gordon (1997)

Because Chelsea is much closer to Detroit and to the population-dense Southeast portion of Michigan, he expected that the NCS would be stronger in Chelsea (All towns involved are predominantly White). Instead, he found the opposite, with stronger NCS traces in Paw Paw. He attributed this to 'local loyalty,' an active desire on the part of Chelsea residents to hold on to their identities and accent, a phenomenon similar to Labov's fishermen. Preston and Ito (1998) had similar findings in rural Michigan; the stronger the affinity for one's small town and the more distaste for city life, the fewer signs of NCS were evident.

Because NCS is considered a 'Change from Below' (Labov 1994:98-99), it is almost never a conscious affectation, or even recognized by its speakers. As such, objection to it would not be direct like "not wanting to sound 'Southern,'" but would instead be a rejection of the people associated with it (City Folk). Speakers would thus

be making efforts to keep their speech the same as it's always been, and as long as they were doing so (consciously or not), any NCS inroads would be slow and minimal. However, if there were not antagonism toward NCS speakers in a community, it could infiltrate significantly without any awareness on the part of new speakers. Studies like Evans et al (2001) have found exactly that with Southern immigrants to Lansing, Michigan. These new arrivals rapidly assimilated to the dominant speech paradigm due to having an agreeable opinion of the Lansing natives. (p 63)

Although most of these studies have been primarily concerned with European-American natives of Michigan (or E-A Southerners in Evans), some work has looked at the acquisition of regional dialects by English L2 speakers. It might be worth questioning if L2 speakers are even capable of recognizing and adapting regional dialects. In a study modeled on Payne (1980)'s study of out-of-town E-A arrivals' acquisition of Philadelphia's short-a, Lee (2000) found that L2 speakers did not produce the local pattern.

However, Friesner and Dinkin (2006) examined the speech of Russian immigrants and found that some of the most assimilated subjects were indeed acquiring the short-a pattern. They suggest that Lee's conclusion was too abrupt, arguing that the short-a is a very complex dialect feature; so much so that not all native Philadelphians produce is perfectly. Friesner and Dinkin's findings were similar to those of Payne(1980); the younger the subject was when immigrating to Philadelphia, the better they reproduced the short-a pattern and the more 'local' they were judged to be by Philadelphian

listeners. (Friesner and Dinkin (2006) p 11) Of key interest in their work is the finding that the Russian subjects were able to produce Philadelphia's features while keeping many L1 features intact, enough to still sound 'Russian.' (Friesner and Dinkin (2006) p 13)

2.2 What Can We Expect? – NCS Infiltration

Based on the above discussion, Dearborn should be a prime candidate for early arrival of NCS via the gravity wave model. Being adjacent to Detroit, an NCS epicenter, combined with its population of 97,000 as of 2000, Dearborn is essentially next door to ground zero for NCS arrival. Being 87% white and surrounded by largely white suburbs such as Taylor Allen Park, and Lincoln Park, Dearborn should be filled with advanced NCS speakers, meaning that immigrants to the city would receive the accent in immediate and heavy doses.

If the Dearborn Lebanese were adopting the shift, we would expect to see the signs in the following manner, according to Labov:

1. *Most advanced changes are found among younger speakers: adolescents, young adults.*
2. *Most advanced speakers belong to the 'interior groups', centrally located in class/status hierarchy. (LMC, UWC; skilled workers, clerks, teachers, merchants, local activists)*
3. *They are speakers with highest local prestige: upwardly-mobile individuals, e.g. from ethnic groups who entered the community recently (3-4 generations ago).*
4. *Women are generally more advanced than men in new and vigorous changes.*

Labov (1994 p78, 300)

We would expect such adaptation to follow in the manner described by Labov, Preston, Ito, and others; initial pieces of the chain being integrated into speech at the start, with advanced stages falling into place later. The community's advancement through the

chain shift would serve as a benchmark of how fast the change has swept through, and for what the next changes will be. Further, Friesner and Dinkin suggest we might see a hybrid structure of a system based on Arabic and Northern Cities. As we'll see in the discussion of vowel systems, this would be easy to do; Arabic vowels and those affected by NCS overlap only minimally.

All the elements appear to be in place for NCS, with the only question being the strength of local loyalty. Because the Arab community in Dearborn is large and has been established for some time, immigrants are not necessarily surrounded by native Michiganders. As mentioned, we would not expect the Dearborn Lebanese to be aware of NCS explicitly, but they may reject it in a bid to maintain the speech patterns of their community. This could retard advancement of NCS, and it would be particularly telling if we saw the younger more recent generations of Dearborn Lebanese not adopting the shift.

2.3 What Can We Expect? – L1/L2 Interaction

A final question before moving to discuss the Dearborn speech community would be that of how NCS and Arabic would mix together, based on prior research done with L1 and L2 interactions. In Eckman (2004), he presents a set of precepts based on the Speech Learning Model (SLM) presented in Flege & Schmidt (1995) and expanded upon by other scholars. I will not present them all here, (especially as Flege himself debates some of their veracity) but some of these postulates and hypotheses can help illustrate strategies that may be used in adapting to a new L2 (all are quoted from Eckman (2004) pp 8-9)

P1: The mechanisms and processes used in learning the L1 sound system, including category formation, remain intact over the life span and can be applied to L2 learning

Although studies such as Yeni-Komshian et al (2000) suggest that the L1 system will not remain completely untouched by L2, there is little doubt that L1 precepts will still be instrumental in the creation of L2, offering an initial skeleton upon which L2 can be built. Understanding the vowel system of Arabic will help us better see its influence upon the English of the Dearborn Lebanese.

P4: Bilinguals strive to maintain contrast between L1 and L2 phonetic categories, which exist in a common phonological space

Although English learners will make attempts to keep L1 and L2 distinct from each other, their phonological space will be shared. Arabic will affect English, English will affect Arabic.

H2: A new phonetic category can be established for an L2 sound that differs phonetically from the closest L1 sound if bilinguals discern at least some of the phonetic differences between the L1 and the L2 sounds

L2 learners are not barred from creating new phonetic categories for sounds. Although it is possible such learners may not recognize the full collection of contrasts that native speakers would perceive, L2 speakers can expand their phonetic repertoire beyond that of their L1. Thus, while the Dearborn Lebanese might be inclined to build their English vowel system around Arabic, salient divergences from Arabic could exist within their English phonetics.

H3: The greater the perceived phonetic dissimilarity between an L2 sound and the closest L1 sound, the more likely it is that phonetic differences between the sounds will be discerned

H4: The likelihood of phonetic differences between L1 and L2 sounds, and between L2 sounds that are noncontrastive in the L1, being discerned decreases as AOL (age of learning) increases.

From this we would expect that the English sounds *least* like Arabic would be recognized as distinct by Arabs learning English, and those sounds would be most likely to receive a new phonetic category as described in H2. Flege and Hammond (1982) suggest that L2 learners can become more able to detect differences as their experience with L2 improves, but this does not imply native competency. We may expect the arriving Dearborn Lebanese to make new phonetic categories for notably non-Arabic sounds, while conflating similar-to-Arabic sounds with their L1. Those with more time spent in Michigan may have a more refined system, developing awareness of finer contrasts. H4 argues that youth would also create greater sensitivity, such that the most defined English would be found in subjects who arrived in Michigan at a young age and remained there for a lengthy period.

H5: Category formation for an L2 sound may be blocked by the mechanism of equivalence classification. When this happens, a single phonetic category will be used to process perceptually linked L1 and L2 sounds (diaphones) Eventually the diaphones will resemble one another in production.

A complement to H3, H5 states that if the perceived difference between an L1 and L2 sound is insufficiently large, they may be merged in production. Crowded clusters of vowels could demonstrate H5 in action if the differing features between them are not picked up upon by the Dearborn Lebanese. Flege and Hammond (1982) and H4 suggest that young arrivals with many years in Michigan have fewer vulnerabilities to H5, and are more likely to have an English vowel system with clean constrasts.

To conclude this section on SLM, it would predict that the first arrivals to Michigan would not have a sophisticated awareness of English vowels. L2 sounds judged similar to Arabic might be merged with L1 counterparts, and vowel contrasts might be cloudy. Since the first immigrants came to find work, they were likely not children and thus not maximally able to accommodate English phonetics. Older subjects would have less time to improve their sensitivity to English, whereas those subjects who were youngest on arrival and had lived in Michigan the longest could be expected to be most discerning. Of course, we would expect second generation subjects to have an even more nuanced accent, having had their entire lives with English as an L1. Worth noting also is that because the Dearborn Lebanese community has existed for decades, it may have developed its own Arab-English hybrid accent as its standard. As such, new immigrants may *not* be required to adjust to NCS or Peterson and Barney, but rather to a dialect that has already made accommodations to an Arabic system. First generation arrivals In recent years may have a substantially easier effort ahead of them in adapting to English. They may display greater sophistication with English contrasts than their predecessors, and this may be evident so with fewer years spent in the country.

To expand upon our expectations, however, we must take a detailed look at the speech community itself. Its composition and history are far more complicated than what is shown on paper, and are thus vital to this discussion.

3.0 Speech Community and History of Dearborn

"I just don't believe in integration. When that happens, along comes socializing with the whites, intermarriage and then mongrelization."
-Orville Hubbard, Mayor of Dearborn from 1942-1978 (from Good (1989))

It is with these words in mind that one must consider the beginnings of the Arab community in Dearborn, Michigan. The sprouting of this community came during the 1960's, in the middle of Mayor Hubbard's tenure and his 'Keep Dearborn Clean' campaign, which many understood to mean "Keep Dearborn White." (Good 1989) At the time, the automotive industry was booming, and with Ford Motor Company headquartered in the city, Dearborn was a magnet for workers. The Ford River Rouge plant employed 120,000 workers in its prime, and served as the attractor for what would become the densest Arab community in the world outside of the Middle East.

Figure 3.1 – Map of Michigan – Dearborn Marked with Arrow
(Taken from Yahoo Travel)

On paper, Modern-day Dearborn remains in keeping with Hubbard's vision: The racial makeup of the city as of the 2000 census was 86.86% White, 1.28% African American, 0.26% Native American, 1.47% Asian, 0.01% Pacific Islander, 0.73% from other races, and 9.38% from two or more races. Hispanic or Latino of any race contributed the remaining 3.00% of the population. However, it must be noted that most Arabs in the city were counted as White. Given that the Arab population is roughly 30,000 of the city's total 97,775 (again as of the 2000 Census), we can assume that Hubbard would be astonished at the city's current composition.

The city is divided geographically by race. Caucasians favor the western side of town and more upscale Dearborn Heights. The further east of Telegraph Road (24 on the map below) one goes, the more Arab businesses and signs she will see. Major fixtures such as the Islamic Center of America (the largest mosque in the United States) and the Arab American History Museum are on the northern side of the city between Ford Road and Michigan Avenue. The Arab community is working strongly to make itself at home, with a great deal of new construction and upgrades taking place in recent years. The more affluent northern areas are predominantly Lebanese, with poorer Yemeni and Iraqi residents living south of Michigan avenue. One subject commented that the original Lebanese immigrants of the 1960's were kept to southern Dearborn, later moving northward and making room for the next wave to arrive.

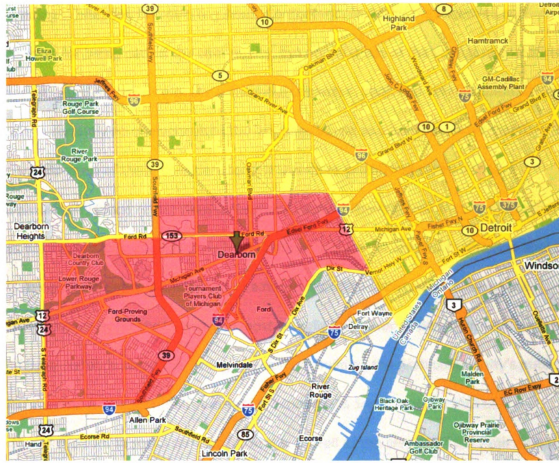


Figure 3.2 – Map of Dearborn and surrounding cities
(Taken from Google Maps)

Of key interest here is the Arab population being logged as White for the census; the definition of being 'Arab' is very much an active question within the community today. The newly-opened Arab American History Museum has a large map of the Arab World hanging from the ceiling, with notable absences of Israel and Iran; Dearborn residents make it quite clear that Iranis are Persians, not Arabs. Arabness is a complicated question both in terms of race and heritage; many Lebanese in particular share closer physical features to the Mediterranean than the Middle East, including lighter skin and curly hair. Some subjects I spoke with noted that they could hide being Arab if they chose and 'pass' as White; one man said he had two accents, one for

sounding White, one for sounding Arab. Competency in Arabic may seem a good provision for being part of the community, but not all those of the younger generation speak it. Further, because of the substantial Lebanese, Iraqi, and Yemeni communities, there is certainly no one version of the language to use as a benchmark for membership.

Because of these considerations, it was more prudent to select a speech community by blood rather than social membership. The Arab community in Dearborn has not existed long enough to be homogenous, and for the reasons mentioned above, asserting membership within it can be a murky question. However, the Lebanese contingent are by far the largest and most established sector of Dearborn's Arab world, and have certainly taken the strongest efforts in building the Arab community's public identity. The Arab Community Center for Economic & Social Services (ACCESS) is a major participant in social services for Arabs, as well as the creator of the Arab American History Museum, and the directors of both are predominantly Lebanese. The Islamic Center of America, the largest mosque in the United States, is also largely Lebanese.

Thus, for this study I drew from subjects of Lebanese descent, either from Lebanon themselves or of direct ancestry. There was no requirement for speaking Arabic, only that they spoke fluent English, were literate, and had lived in Michigan for several years. Although I originally sought residents of ten years or longer, difficulty in finding willing and/or eligible subjects prompted more flexibility on this criterion.

Because we know that the Northern Cities Shift has been gestating in Michigan for some time and due to Hubbard's influence, we can safely presume that the original

Arab immigrants from the 60's have been exposed to the NCS for the entirety of their tenure in Dearborn. At the time of their arrival, Dearborn was an affluent Northern City, right next door to thriving Detroit and a short train ride from Chicago, Cleveland, and Toledo, all dens of NCS (Labov, Ash, and Boberg 2006). Long-term residents describe Dearborn as a desirable place to live at the time; many factory workers lived in neighboring Taylor and Allen Park, with the white collar executives living in Dearborn to have close access to Henry Ford himself. Any emerging NCS in Dearborn would be the speech of the wealthy and successful; although NCS is generally hard to perceive by its own speakers, we can assume at this time period that it would never be looked down upon.

Although there were Arabs in Dearborn as early as the 60's, the community was not yet a cohesive and distinct entity. A walk down Michigan Avenue today passes by shop after shop with signs in Arabic, with Halal meats, with Shawarma and Tabuleh on restaurant menus, but these are more recent developments predicated by two concurrent events that allowed for a full-fledged Arab community to exist: Detroit's race riots of the 1960's and 70's, and Lebanon's Civil War from 1975 to 1989.

Detroit's racial tensions exploded on July 23, 1967 into the 12th Street Riot, a five-day storm of torched buildings and police brutality that served to rapidly accelerate the already existing 'White Flight' from Detroit. Whites had already been trickling out of the city, but this served as a final straw to make the trickle a torrent, and Whites quickly fled to the outlying suburbs. Dearborn, being directly next door, also suffered from

being too close to the fires, making it also appear unsafe. As people poured out, the city was ripe for for a new population to take their place.

The civil war occurring in Lebanon served as the catalyst to create that new population. The war began in 1975 and quickly became a threat to the civilian population with events such as Black Saturday and the Karantina Massacre leading to the deaths of hundreds of innocents. As the war continued and Beirut was reduced to ruins, many Lebanese people began fleeing the country. Many fled to Algeria or Venezuela, but many others headed to Michigan. The lone family member who was in Dearborn before the war became the way out for many people. A number of the subjects I spoke with had come to the United States during this time, and had picked Michigan because of existing family. The Lebanese Civil War served as the final element to make Dearborn into a full-fledged Arab community; the void left by departing Dearborn Whites was large enough to accommodate a major influx, and the space was quickly filled, making a very literal Northern Cities Shift.

Even keeping the study to only Lebanese residents still makes control over variables difficult; subjects assured me that though a small country, Lebanon is host to a swarm of dialects and regionalisms, making a speaker from the mountains have a markedly different manner of speech than someone from Beirut. Further, villages often have isolated contact with the cities, ensuring that their dialects will be entrenched with little mixing. There were things that could be controlled for, however. Lebanon is split religiously and politically between Maronite Christians and Shi'a Muslims. The Maronite

church is a branch of Catholicism largely unique to Lebanon, and has a great deal of influence within the country. In recent years, Maronites have been emigrating from Lebanon, allowing the Shi'a to gain in strength. The divide remains in place in Michigan; Muslims live in Dearborn, Maronites largely in Detroit. Although there is some cross-over and intermingling (Zoe, a Dearborn resident, is Catholic and works at a Catholic church), the two communities generally have little to do with each other, which at least makes this aspect of culture fairly homogenous. As all but two of my subjects lived or worked in Dearborn, they were thus participating members of the Muslim speech community there.

It could be argued that Dearborn, being next to Detroit, would have strong tendency to adapt AAVE, but this is unlikely, predominantly due to Hubbard. During his time as mayor, Blacks were aggressively kept out (at one point only 20 lived in the whole city (Good 1989)), and before White Flight, there was not a Black community in Detroit like today. Being that NCS has been established for some time, it's had much longer to insinuate itself into the population. Furthermore, since the Dearborn and Detroit Lebanese don't interrelate much, even if the Detroiters are picking up AAVE, it would not be able to make significant inroads in Dearborn. And finally, from speaking to my subjects and others, the Arab community is quite tight-knit, with many people remaining in Dearborn their whole lives. Social networks within the community are deeply entangled, but subjects often had few friends in the United States that did not live in Dearborn. Unlike the Mexicans of (Roeder 2006), Dearborn Arabs are not

nomadic or engaging with other communities. The effects of AAVE or indeed any other accent they did not have direct contact with would be muted.

Ready to Talk Acoustics

Having spoken of sociolinguistic inquiry into dialect change and then of the Dearborn Lebanese community itself, I will now turn to a more phonological and acoustic discussion of the NCS, the native Michigan systems it may compete with, and an examination of the Arabic vowel system that was brought from Lebanon. From that point, we may move on to questions of acquisition, loyalty, and the linguistic future of Dearborn.

4.0 Methodology

For this project I interviewed 28 people with the requirements that they be of Lebanese descent, speak fluent English, and had lived in Michigan for several years. All but one of them lived or worked in Dearborn and were participating in its community. The one subject living outside the city was a priest in Detroit, but his position meant that he was interacting with the Lebanese of Dearborn as well as Detroit. Most subjects were recruited from my visits to the Arab Community Center for Economic & Social Services (ACCESS), the Arab American History Museum, and the Islamic Center, and many of them were employees at these institutions. Others I recruited via flyers posted at colleges and universities in town, or by visiting local businesses. The interviews were conducted between the Spring of 2005 and Fall of 2006, either in the subject's work or home setting, or else at a public library.

All interviews were conducted entirely in English and recorded in analog on a Marantz PMD 222 with an AT831b Audio-technica uni-directional clip-on microphone. The recordings were then digitized to 16-bit, 10,000 Hz digital format using the acoustic software Praat. First and second formant measurements of steady state vowels were taken through Praat, using the sociophonetic software program Akustyk. Only one measurement was taken for diphthongs, just after the perceptual end of the transition from the preceding consonant. The data used to calculate the overall averages for groups of individuals were normalized using a Nearey normalization algorithm (without F3).

The interview generally lasted a half-hour, although talkative respondents sometimes made it last as long as two hours. The interview began with conversational question-and-answer before concluding with their reading aloud a 109-word wordlist, a short reading passage, and finally a test of aural comprehension of sound clips exhibiting the NCS. The discussion in this thesis will be centered on the wordlists, with some later discussion of the comprehension results. Although there might appear to be reason for concern for not using conversational tokens, studies such as Ash (1999) and Ito (1999) tell us that due to NCS' 'change from below' nature and low level of perception by its speakers, NCS would be present in any manner of speech a subject produced.

Subjects' socio-economic status was rated by a score based on the Warner Index of Social Characteristics (1960), considering occupation, housing, neighborhood, and level of education. A lower score indicates higher status, and for this study, a score of 20-50 was judged as Upper Middle Class (SES Group 1), and 50-70 as Lower Middle Class (SES Group 2). Those in the former group consisted mostly of directors and high level administrators, the latter group were more often clerks, secretaries, or temporary workers.

Subjects were also given a network score based on their responses to questions about their social life, based on Milroy (1980). Respondents were asked if they lived in Arab neighborhoods, worked with Arabs, or had immediate family that lived nearby in a

separate household. Positive answers raised one's score, with a high score indicating a strong connection to the Arab community both in one's social and professional life.

5.0 Acoustic Comparisons of Dominant Vowel Systems

In order to have a firm grasp on the vowel system of the Lebanese immigrants, we must first examine the system(s) in place at the time of their arrival. Possible candidates for influence on the Dearborn Lebanese system would include:

1) *the American Standard English of Peterson and Barney, thought to be the dominant accent in Michigan prior to NCS involvement (Ito 1999)*

2) *the Northern Cities Chain Shift of the White population of Dearborn, Detroit, and its surrounding suburbs*

3) *AAVE, the dominant speech of the African American community in adjacent Detroit*

4) *the vowel system of the Arabic that was brought from Lebanon, which for many subjects is their L1.*

First, this chapter will present a comparison of Peterson and Barney's English to the NCS; the shapes of the two systems are of the biggest interest. Next, an introduction to work done by Newman to describe the vowel system of Arabic, at the same time bringing in work by Munro showing the English vowel system of Arabic L1 speakers in Washington DC. Finally, the data of the Dearborn Lebanese subjects will be juxtaposed with the previously discussed vowel systems. Although the Dearborn data are normalized, they are not normalized with the other data sets that will be presented. Bear in mind that the bulk of my work here is more concerned with the layout and clusters of vowels on a map, rather than the specific numbers. There will also not be an examination of the consonant environments of these sounds; while such data exist, they are beyond the scope of this thesis.

5.1 General American English - Peterson and Barney

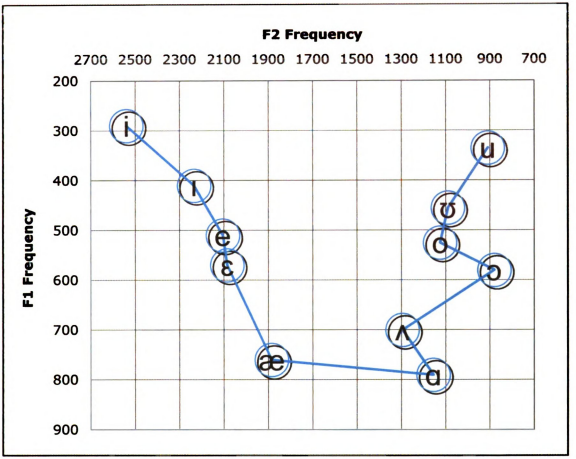


Figure 5.1 – General American English – Adapted from Peterson and Barney (1952)

As one of the first studies to capture the acoustics of American English, the various 'shifts' that are described in literature are often supposing the above map as the base that has been deviated from. In it, we see a bowl-shaped system with eleven distinct sounds. /i/, /ae/, /ɑ/ and /u/ form the corners of the bowl, all four quite distinct from any neighbors, although /ɑ/ does have some company from /ʌ/. For the most part, few vowels are close enough to be conflated, and so a typical speaker of this system would be unlikely to confuse sounds with one another, except for possibly /e/ and /ɛ/. /ae/ here is the most back and low of the front vowels and is far from both /ɛ/

and /ɑ/. /ɔ/ is also distinct in this system, at little risk of being conflated with any other sounds. The system is devoid of central vowels. Note that the tense vowels and their lax counterparts maintain strong contrast except in a few cases.

5.2 Northern Cities Chain Shift

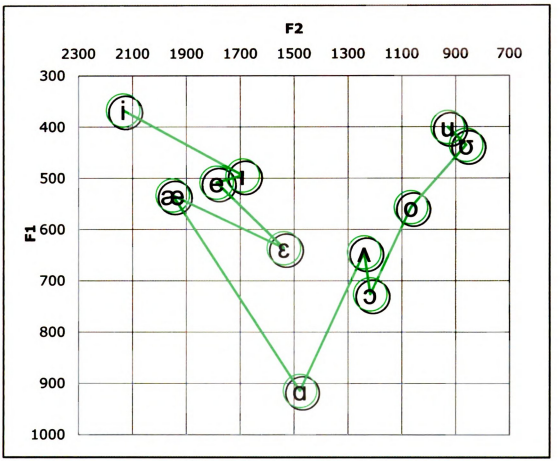


Figure 5.2 – Northern Cities Shift (Adapted from unpublished samples taken by Preston)

Here in a recent map of the Northern Cities Shift, we see significant change from Peterson and Barney. The vowels above are from samples of young European-American women living in southeastern Michigan, and thus represent a very modern example of NCS. The system here is triangular, with many vowels clustered together. Notice that /ɑ/ has both fronted and lowered, and the /ae/ that made the bottom-left corner of the

bowl has drastically raised. This raising has forced /ɛ/ out of its position so it is now backed and lowered. It has become a central vowel by default, with nowhere else to move if it is to be kept distinct. (if it had remained with /e/ after /ae/'s raising, there would be a four-vowel cluster that contained three lax sounds) /ʌ/ and /ɔ/ have conflated, but note that /ɑ/ is quite distinct from both of them. No NCS speaker will confuse 'cot' and 'caught.' In this triangle, /i/, /ɑ/, and /u/ remain as the outermost points. The triangle contains a mid-vowel cluster on either side, which is a layout that we will see again later.

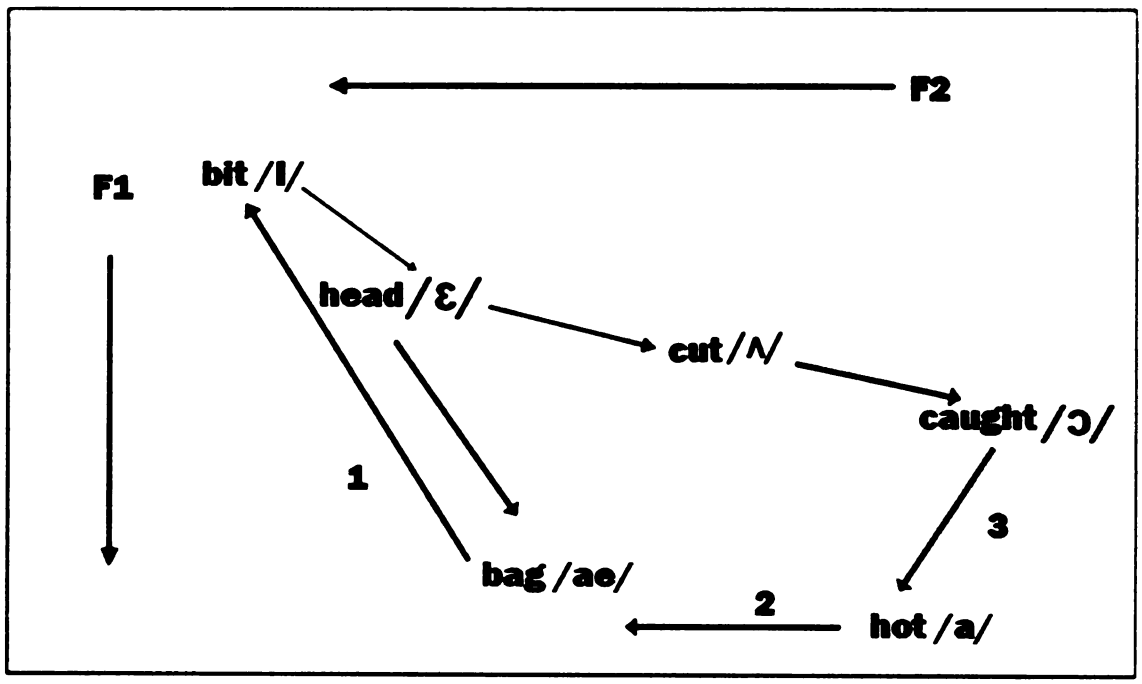


Figure 5.3 – Ordered progress of NCS

In the figure above, we can see that the NCS does not happen at once, but rather follows an order of operations. The initial step in the process is the raising of /ae/, which prompts the retreat of /ɛ/, /I/, and /ʌ/. The vacancy left by /ae/'s movement begins the second step, a drawing forward of /ɑ/. This again creates a vacancy in the

begins the second step, a drawing forward of /ɑ/. This again creates a vacancy in the low back position. Since /ɔ/ has become crowded by the backing of /ʌ/, it begins lowering into the open space below, the final observed link in the Chain Shift. Note that the highest vowels are left untouched by the rearrangement, and /o/ is unaffected.

With the steps in the process being quite linear, it is thus possible to describe how far 'advanced' a subject is in the accent. Speakers just beginning to pick it up would show raising of /ae/, turning words like /kaet/ into something closer to /kɛt/. The beginnings of /ɑ/ fronting are another common early indicator. More entrenched NCS speakers will start showing the lowering /ɛ/, pronouncing /bɛd/ more similarly to /bʌd/. Those far along in the shift would have moved /ɔ/ downward, turning /kɔt/ into a rhyme with /kɑt/. Of course, at this point, the /ɑ/ in NCS /kɑt/ will be so far fronted that a speaker would have no confusion.

Therefore, when looking at the Dearborn Lebanese vowel system, we can use the above criteria to determine how far the population has advanced into the shift. Further, by looking at the progression of accent change in other groups (Labov 1963, Ito 1999) we can guess at who the first adopters of change would be. NCS is most commonly adopted by women first, with young women being the demographic that leads the charge (Labov 1994:156). Men tend to be roughly a generation behind in shifting, and so we'd expect a progression from least to most shifted of:

Old Men -> Young Men -> Old Women -> Young women

In Labov's Martha's Vineyard study and others, he proposes the reason for this order to be related to one's state in life and the frequency of contact speakers have with each other. In many working-class communities, men work with a small group of other men, while women are conducting a family's business, going to schools, doctors, and shops, speaking with a large number of people and being part of a well-connected network. As both sexes age after retirement, they become more isolated and have less need or interest in taking on a modern affect. Dearborn's gender roles are complicated; while strict interpretations of Islam might bar women from professional positions, most Arab enterprises where I performed interviews had several women in roles such as Program Directors, Curators, and other high status occupations. There does not appear to be reason to assume that men and women would serve in different professional capacities within the city.

Although Detroit is directly adjacent to Dearborn and has a large black population, Dearborn itself has a miniscule black population; the efforts of Hubbard far outlived him. AAVE would have very little foothold in Dearborn, especially as the Muslim Lebanese of Dearborn interact minimally with Detroit's Maronite Lebanese. (At least, this is as was reported by my subjects and my own field experience. When asked demographics questions about their friends, workplace, and neighborhood networks, virtually all subjects reported Arabs and Whites as their primary contacts. As such, I will not be factoring in any discussion of AAVE in the pages to follow; the speech community has essentially walled it out.)

With these demographic thoughts in mind, we can begin to look to the Dearborn Lebanese. If they are like other Western cultures (*not* a given), we know who will show the first signs of shifting. Based on the previous behavior of NCS, we know which vowels should be targeted first, and how the infiltrating shift would progress. We could see exactly where the accent was making gains and estimate its trajectory. The problem in all this, of course, is that the NCS is a shift from a specific vowel system, that of Peterson and Barney. The Dearborn Lebanese brought with them an entirely different vowel system, from an entirely different language; a language we must study now in order to continue.

5.3 Arabic

It is difficult to locate acoustic studies of any Arabic, let alone the many Lebanese varieties. Despite its small size, Lebanon is filled with many speech communities, often isolated from each other. A village that's just a few miles from Beirut may have little contact with the city, and infrequent contact can create plenty of variation. Researchers like Haddad (1984) have found that even a tiny Arab community will have a multitude of dialects, making it even more difficult to find a uniform subject pool. A few respondents told me that Dearborn Lebanese generally come from southern Lebanon, closer to Beirut, which creates a small amount of homogeny. Further adding to the difficulty of classifying the dialect immigrants bring into Dearborn, most Lebanese have had exposure to English and French while in school, as well as Hebrew courtesy of neighboring Israel. When questioned about which varieties of Arabic were easiest to

understand, subjects predictably rated countries close to Lebanon as easier (Syria, Iraq, Egypt), while more distant varieties (Yemeni, most African) were deemed difficult. It could be supposed that if one could not find acoustics on Lebanese Arabic, that the dialects deemed comprehensible to Lebanese might serve as better proxies for their own speech.

Fortunately, there have been a few studies that will serve well enough to give a picture of the vowel system of Lebanese Arabic, enough at least to describe its tendencies and desired contrasts.

5.3.1 Qu'ran Arabic – Newman (2002)

Newman (2002) performed an acoustic study of readers of the Qu'ran. Qu'ranic or Classical Arabic is very formal and ritualized, aiming for minimal variation throughout the Arab world. Newman measured the acoustics of different readers, including Lebanese subjects. His results cover six of Lebanese Arabic's phonemes, and serve to paint us an initial portrait of a vowel system whose shape will become more and more familiar as this paper continues. The graph below represents the acoustic results of his Lebanese readers:

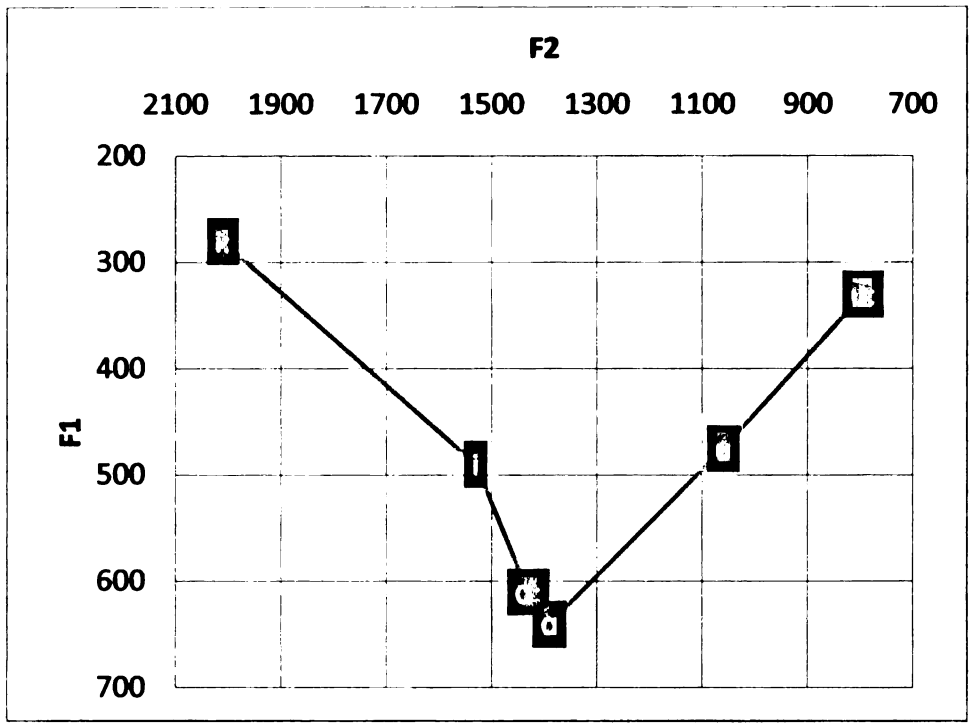


Figure 5.4 – Acoustics of Qu'ran Arabic from Newman (2002)

This plot of Classical Arabic shows a five vowel system, although other work suggests a front and back version of /ɑ/, rather than the merger seen here. In either case, we can see that the system aims for maximal contrast. There are three long vowels and three short, and their locations on the plot are to be remembered as we look at later plots. If we were to interpret the long/short distinction as an isomorph of the tense/lax distinction (reasonable, given Holes (1990) which asserts that short vowels in Arabic are often realized as lax), we would note a strong difference with English systems like Peterson and Barney. Arabic sees this contrast as a marked one, making sure that the short/lax vowels are significantly lower and more toward center. Both Peterson and Barney and NCS have fewer qualms about neighboring tense/lax pairs, and are quite content with phonemes like /u/ and /ʊ/ being in close company.

5.3.2 Spoken Arabic - Al-Ani (1970) and Mitchell (1993)

Although the Arabic of the Qu'ran is a helpful illustration a liturgical language that varies little by region, it is not illustrative of speech anywhere outside a mosque. We can turn to other sources, however, to learn more. Salman Al-Ani's *Arabic Phonology* is one of few works on the subject of Arabic acoustics. His subjects were predominantly Iraqi, whose speech should be similar enough to the Lebanese to be worthy of discussion. Al-Ani described the same six vowels as Newman and arrived at the same general shape for the system, but with a different distribution of sounds. Figures 5.5 below and 5.6 on the next page show us his results:

Relative Durations of Vowels in Isolation

Vowel	*Duration*	F_1	F_2	F_3
i	300	290	2200	2700
ii	600	285	2200	2700
u	300	290	800	2150
uu	600	285	775	2050
a	300	600	1500	2100
aa	600	675	1200	2150

Figure 5.5 – Acoustic values of isolated vowels from Iraqi speakers (Al-Ani 1970, p 23)

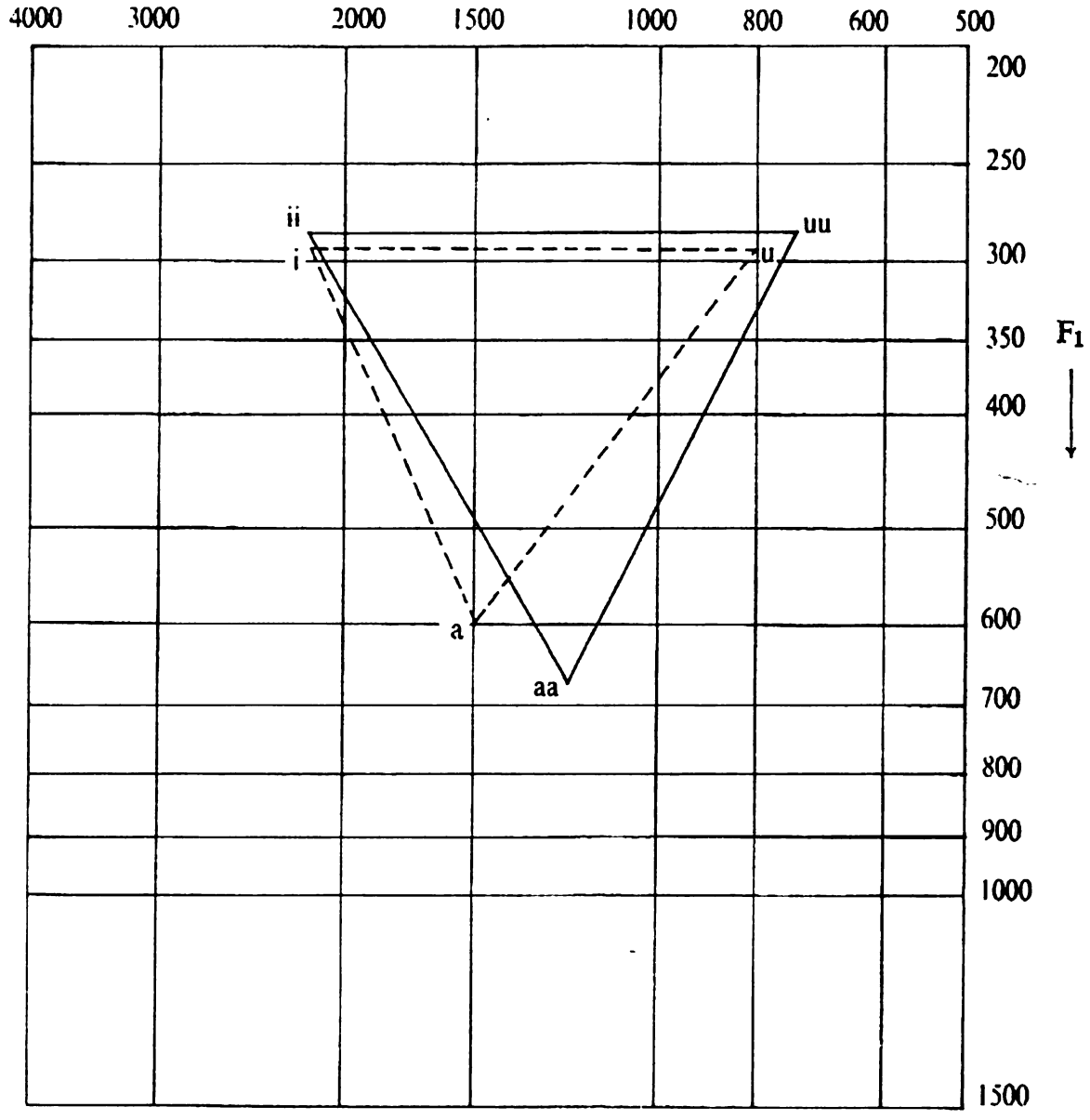


DIAGRAM I

Short and Long Vowels in Isolation

← F_2

Figure 5.6 – Combined Long and Short Vowels in Isolation Chart (Al-Ani 1970 p 25)

Al-Ani's chart shows little difference between the high long and short vowels, contrasting with Newman. The low vowels, however, show greater contrast, suggesting a contrast of fronting between /a/ and /aa/. Al-Ani treats the long-short difference as phonemic, with each of the six sounds having allophones that occur in limited environments. Notice that all of the short (and likely lax) sounds are in positions closer to those of their lax counterparts in English. All of the vowels in Al-Ani were elicited in isolation, hence the much longer durations than would be used in words. (Obrecht (1968) recorded vowels inside words to be at least half this duration) Al-Ani noted that subjects generally inserted a glottal stop before the vowel, likely due to Arabic's dislike of initial vowels.

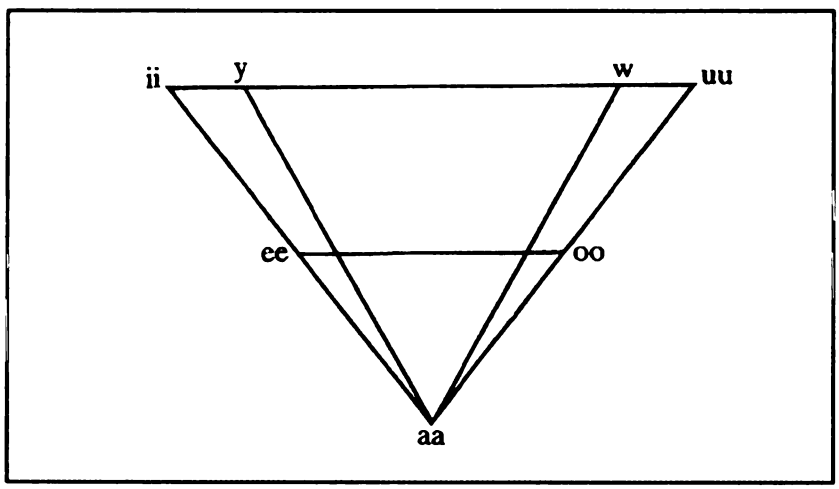


Figure 5.7 – Vowel Chart from Mitchell (1993) p 139

Mitchell (1993) talks briefly about the organization of the Egyptian Arabic vowel system, although he offers no acoustic data. Figure 5.7 depicts his representation of the long vowels in the system, of which he sees five. Although Mitchell speaks on short vowels in Arabic, he presents no explanation of where they might be on a vowel chart. His arrangement is very similar to Newman's, with the mid-vowels much lower than

those in high position. As the next chapter will show, this arrangement for the system is evocative of the Dearborn Lebanese. Mitchell labels the mid-back vowel as long /o/, whereas Al-Ani and Newman treat it as lax /u/. As we will see, the Dearborn Lebanese conflate these two sounds in English, making it unsurprising that the Arabic mid-back vowel could receive either label.

5.3.3 Lebanese Arabic – Obrecht (1968)

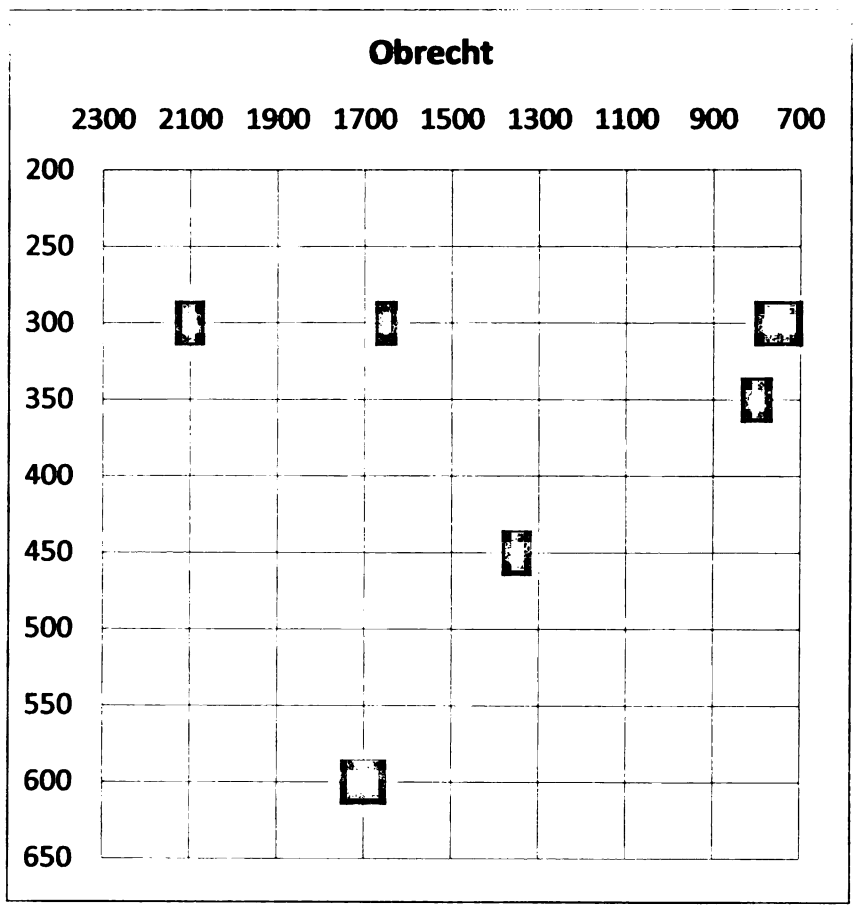


Figure 5.8 –Vowel Chart based on values from Obrecht (1968) p 28

Obrecht (1968) is one of the few discussions of the acoustics of Lebanese Arabic. In this case there is only a single subject involved, a man named Youssif Barakat from the village of Kfarsghab, near Tripoli in the north (p 28). While most of the Dearborn

Lebanese are from southern Lebanon, Obrecht at least offers one of the few examples of a subject from the same nation. His chart is a little strange, with /ii/ and /i/ having the same F1 value, and /aa/ and /a/ being quite far from each other. The long vowels maintain the maximally contrastive triangle pattern that we've seen in the previous pages, and the short vowels may be a miniature version of this. Although Obrecht's data is not to be weighed heavily due to its single subject, it does at least show another example of a six-vowel system for Arabic.

Finally, *Spoken Lebanese* (Feghali 1998) alleges an eight vowel system for Lebanese Arabic that includes the above-mentioned six as well as:

e *short vowel as in: neck, cell, bed.*
ee *prolonged vowel as in: man, bear.*

Feghali (1998), p ix

Feghali offers no acoustic values, and it may be that these sounds are allophones of the core six. Note that the /ee/ here was also present in Mitchell (1993).

Based on the above studies, we can be reasonably confident than anyone arriving into Michigan from Lebanon would have at least a six vowel system containing tense and lax versions of /i/, /u/, and /a/. The level of contrast between long and short is not clear, ranging from the stark differences of Newman to the minimal separation in Al-Ani. Regardless of whether Lebanese is considered to have five, six, or even eight distinct vowel phonemes, there are still far more sounds in an English system than in Arabic, and any Lebanese immigrant immersed into Michigan will need to reconcile these additions. Following the SLM hypotheses, we might predict an immigrant's

system to use the Arabic triangle as a skeleton for further additions. For a preliminary look at how this might happen, let us look at Munro 1993:

5.3.4 Recent Immigrants - Munro (1993)

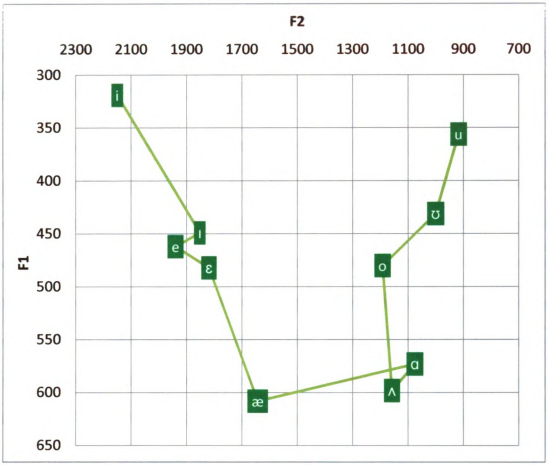


Figure 5.9 – Vowel chart of subjects from Munro (1993)

Munro interviewed English-speaking Arabs primarily attending the University of Birmingham Alabama, having them pronounce /bvt/ and /bvd/ clusters of English vowels, comparing their results with Native English speakers. The graph above shows the results of his Arab subjects, who were primarily Jordanian and Kuwaiti (given that these countries are near to Lebanon and that the 'Gulf Arabic' they are a part of is

described as having the same eight vowels of Lebanese dialects, these figures are close enough to compare).

Munro's plot shows us a system with six vowel clusters, in a very similar arrangement to Newman. Newly introduced /ʌ/ has been merged with /ɑ/ and above, /o/ and /ʊ/ keep their distance from both /u/ and /ɑ/ Munro had no data for /ɔ/). /ae/ is in an identical position to Obrecht's /aa/ in Figure 5.8.

Note that these data show little resemblance to the NCS and a much stronger similarity to Peterson and Barney; /æ/ Is low, /ɑ/ is low and back, /ɛ/ is not being forced down into the central area. We would not expect NCS in Alabama, and these speakers do not exhibit a pattern that would be confused with it. From the studies presented in this chapter, it would not appear that a Lebanese speaker would be entering Dearborn with a style of Arabic that already mirrored NCS. Although the triangle shapes are very similar, Arabic offers no raised /ae/ equivalent, nor a centralized /ɛ/, and its fronted /ɑ/ is nowhere near as low as NCS. Arabic almost certainly lacks /ɔ/, making one more stop on the NCS chain that would not be already in place.

We now know how to recognize if the Dearborn Lebanese vowel system is patterned off of Arabic; we would expect six main areas for vowels to gather, and the system to be shaped either as a triangle or as a bowl with a narrow bottom. Munro shows us which vowels would be likely to be clustered together, and all of the data in this chapter show that any signs of NCS would not be accidental; there are no false positives for it within Arabic.

6.0 Research Results

Here I will present findings from the interviews of the Lebanese population of Dearborn. First, Table 6.1 below shows the composition of the research sample:

Pseudonym	Sex	Age	Age Group	Gen. in MI	Milroy Network	Age to MI	From Lebanon	SES
Zoe	F	66	3	2	3		No	1
Bill	M	55	3	1	4	39	Yes	2
Cathy	F	21	1	1	2	9	Yes	2
Rose	F	23	1	1	2	21	Yes	2
Sally	F	20	2	2	4		No	1
Steve	M	45	2	1	1	27	Yes	1
Lucy	F	43	2	2	1		No	1
Elly	F	46	2	1	5	17	Yes	1
Liz	F	31	2	1	4	19	Yes	2
Wanda	F	41	2	1	4	29	Yes	1
Susie	F	32	2	2	1		No	1
Calvin	M	60	3	2	2		No	1
Molly	F	35	2	1	1	25	Yes	1
Oliver	M	30	2	2	1		No	1
Kara	F	37	2	2	5		No	2
Ray	M	29	2	1	2	11	No (Liberia)	2
Brenna	F		2	1	5		Yes	2
Gabriel	M	25	1	1	1	19	Yes	1
Ann	F	26	1	2	2	10	No (Senegal)	1
Paige	F		2	2	4		No	2
Janis	F	56	3	1	5	39	No (Senegal)	2
Maura	F	39	2	1	3	19	Yes	2
Marcy	F	24	1	2	3		No	1

Table 6.1 – Full subject list

1) Age Groups: 1 = < 30 2 = 30-50 3 = >50
2) SES: 1 = Upper Middle Class 2 = Lower Middle Class
3) Milroy Network is from 1-5, 5 being most involved in local Arab affairs

6.1 Dearborn Lebanese - Complete

The Dearborn Lebanese system holds some strong similarities to Munro, although it has had more time to be established. Whereas Munro's subjects were L1 Arabic speakers, my subjects were mixed; some were born and raised in Lebanon, others had spent their entire lives in Dearborn. All but one spoke Arabic fluently and most were literate in it as well. As mentioned earlier, the system has had time to evolve and stabilize, and as we'll see when examining sub-sets of the demographic groups, the Dearborn Lebanese accent shows extremely little variation, whether among age, gender, or SES.

Dearborn Lebanese

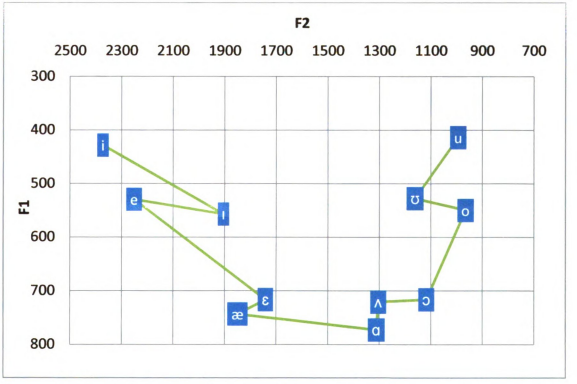


Figure 6.1 – Dearborn Lebanese vowel chart

Worth noticing in this graph are the familiar six gathering points for vowels that we've seen from Classical Arabic and Munro. The front vowels hold a configuration almost exactly like Classical Arabic, with a high, distinct /i/, an /I/ that's noticeably back and central, and a low front vowel cluster. The back vowels are also similar to Newman and Munro, with three distinct vowel clusters at low, mid, and high positions. /u/ is kept isolated, with /o/ and /ɒ/ close together (In some subjects, as we'll see later, there is overlap of the two sounds; one woman said 'good' rhyming with 'goad.'

Qu'ran Arabic (Dashed) and Dearborn Lebanese (Solid)

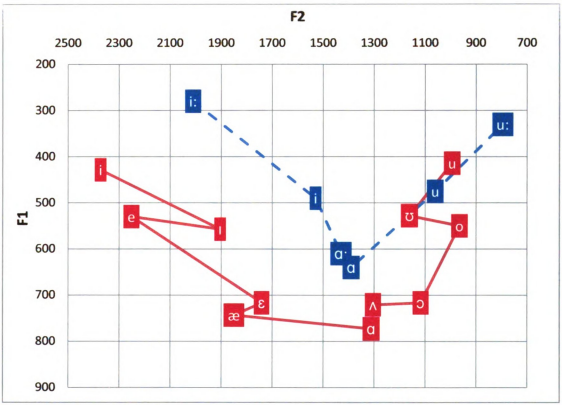


Figure 6.2 – Vowel chart of Qu'ran Arabic and Dearborn Lebanese

In comparing the Dearborn Lebanese with the Classical Arabic system, we see great similarities in the front vowels; sharply isolated /i/, backed and centralized /I/, a

front low cluster. Note /e/'s forward placement in Dearborn, as it will be relevant in future discussion. In Dearborn's vowels, we see the tense/lax distinction of Arabic appearing; /ae/ and /ɛ/ are grouped together as lax vowels, /o/ and /ʊ/ are in the Arabic lax position for back vowels, solidly mid. Both systems are void of central vowels, with Dearborn pulling the English /ʌ/ down to the back low cluster.

Dearborn Lebanese (Solid) and Munro (Dashed)

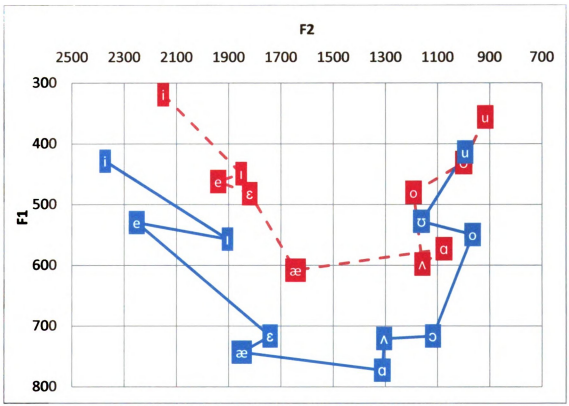


Figure 6.3 – Vowel Chart of Dearborn Lebanese and Munro (1993)

When examining Munro and the Dearborn Lebanese, we can see that the systems have a very similar shape, with a few key differences in vowel placement. Both systems keep the six primary vowel clusters, although I believe Munro's shows us a younger picture, perhaps what the Dearborn system looked like in its infancy. We will see that Munro resembles the speech of some of Dearborn's older Arabs, whereas

younger generations have made revisions to the system that deal with some discrepancies. Munro's Arabs have two problems that the Dearborn Arabs have reconciled; placement of tense /e/ among lax /ɪ/ and /ɛ/, and a less exact back mid cluster of /o/ and /ʊ/. For the Dearborn Arabs, /e/ has been brought forward and raised toward /i/, bringing tense and tense together. When looking at the data for age in Dearborn, we will see /e/ making a direct push forward, fronting further with each generation. We will see a consolidation of vowel clusters in the mid and low back that show the Dearborn accent settling in. Much like its speakers, we shall see that it is solidly rooted in Arabic norms, with little influence from Michigan, even in the more recent generations.

Arabic Meets the Northern Cities

If we deem Newman and Munro to be representative of the system the Dearborn Lebanese brought with them, the Northern Cities Shift represents the system they arrived into. Early immigrants to Dearborn would have been immersed in NCS, and until the Lebanese Civil War the Arab population was small. One subject, a former police officer, described working during the 1970's in a 1,500 member force that contained less than a dozen Arabs. Thus, older Arabs in Dearborn may have spent twenty years without major Arab contact, with virtually everyone in their neighborhoods and workplaces speaking NCS. That in mind, we look at the two together.

Dearborn Lebanese (Solid) and NCS (Dashed)

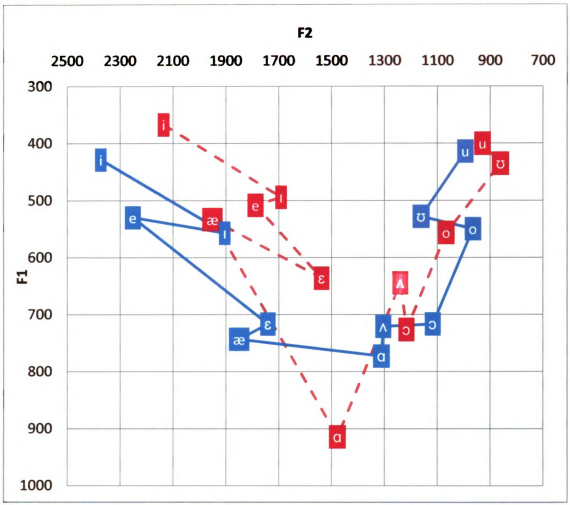


Figure 6.4 – Vowel chart of Dearborn Lebanese and NCS

Despite the great prevalence of NCS, it exhibits little influence on the Dearborn Lebanese. Although the NCS vowel arrangement had effects that will soon be discussed, its hallmark features are absent. /ae/ has not been raised, /ɑ/ has not been fronted (or lowered), /ɛ/ has not been made central. As we will see, there is not a single demographic that does any of these things, even young women, often considered the bellwethers of NCS's arrival. While it was mentioned that no NCS speaker would conflate /ɑ/ and /ɔ/, Dearborn Lebanese can and do.

Where NCS has had the most influence is in the initial placement of the new English vowels into the speakers' existing Arabic. In creating their English vowel system, the arriving Lebanese quite likely have had no exposure to Peterson and Barney, and so essentially took the Arabic six-vowel-cluster arrangement as their base, with the NCS vowels to place into the most agreeable six slots.

The primary problem for arriving Arabs would be crowding in the mid-front cluster for the NCS vowels. There are simply too many vowels there, and speakers with little exposure to English may not be able to hear a difference between them. There is also difficulty because tense and lax vowels are mixing in this position, made even more unusual by NCS /ae/ being a blurry hybrid of tense and lax. The situation is intolerable, and so even recent arrivals like Munro's subjects make some hasty re-workings. First, in a similar fashion to NCS evicting /ɛ/ as /ae/ raises, the Arabs must force out sounds from the mid front. The lower front cluster of Arabic is left bare in NCS, making a perfect location for stragglers to be sent. Although in NCS, /ɑ/ is fronting and aiming for that slot, Arabs have /ɑ/ in their own language, and know exactly where it belongs; in the back. They simply ignore the NCS fronting influence and drag it back to its home, leaving the low front cluster free of interlopers.

With that area empty, the unwanted vowels can be sent to it, and these prove to be /ae/ and /ɛ/. The centralized /ɛ/ in NCS is disagreeable to Arabs (but very near that front low cluster, and so it /ɛ/ is brought into familiar territory. (Bear in mind that at this point /e/ has not yet moved, which means if /ɛ/ were raised, it would be a lax sound

moving into tense territory. The fact that /e/ fronts in later generations shows a sense of solving the worst problems before moving onto clean-up; the first order of business is to get clashing sounds away from /e/ and then later to move it to a better place) The Arabs are savvy and see that /ae/ can be both tense and lax, meaning that keeping it raised is a failure either way; if /e/ and /I/ remain together, /ae/ effectively clashes with both of them, meaning moving either one of those two would still leave trouble. Instead, /ae/ is declared lax and shoved downward into the vacant low front area. /ɛ/ can't remain central because Arabic has no central vowels, it can't raise because of /e/'s influence, and it can't back because the other clusters are full, so it lowers to dwell with /ae/. The two lax sounds agree with each other and for most speakers essentially merge.

Note that in all of these proceedings, sounds that exist in Arabic do not move. In the crowded mid-front cluster, moving /I/ would be a feasible solution; if /ae/ were treated as tense, it would thus be in an agreeable location with /e/. However, the Arabic positions of the vowels are observed absolutely; if the sound exists somewhere else it's brought to the Arabic location, and if another sound is in that location, it will be forced out to make room. A similar situation happens with /u/ and /ʊ/; whereas NCS merges the two in the high position (and many languages like Spanish would do the same), Arabic refuses, dropping /ʊ/ into the mid position with /o/ and treating them both as lax. /u/'s high back position is sacrosanct among all subjects. Any shuffling or rearrangement is made to set English sounds in accordance with Arabic norms, and never the opposite.

6.2 Dearborn Lebanese – Demographic Groups

In this section, I shall examine some of the traditional sociolinguistic demographics within the Dearborn Lebanese community. Although it is common in literature for different slices of the community to have varying accents, we will see that the vowels of Dearborn Lebanese are quite regular. I will compare gender, age, generation, and SES, and then in the next chapter take a look at samples of individual respondents.

6.2.1 Age

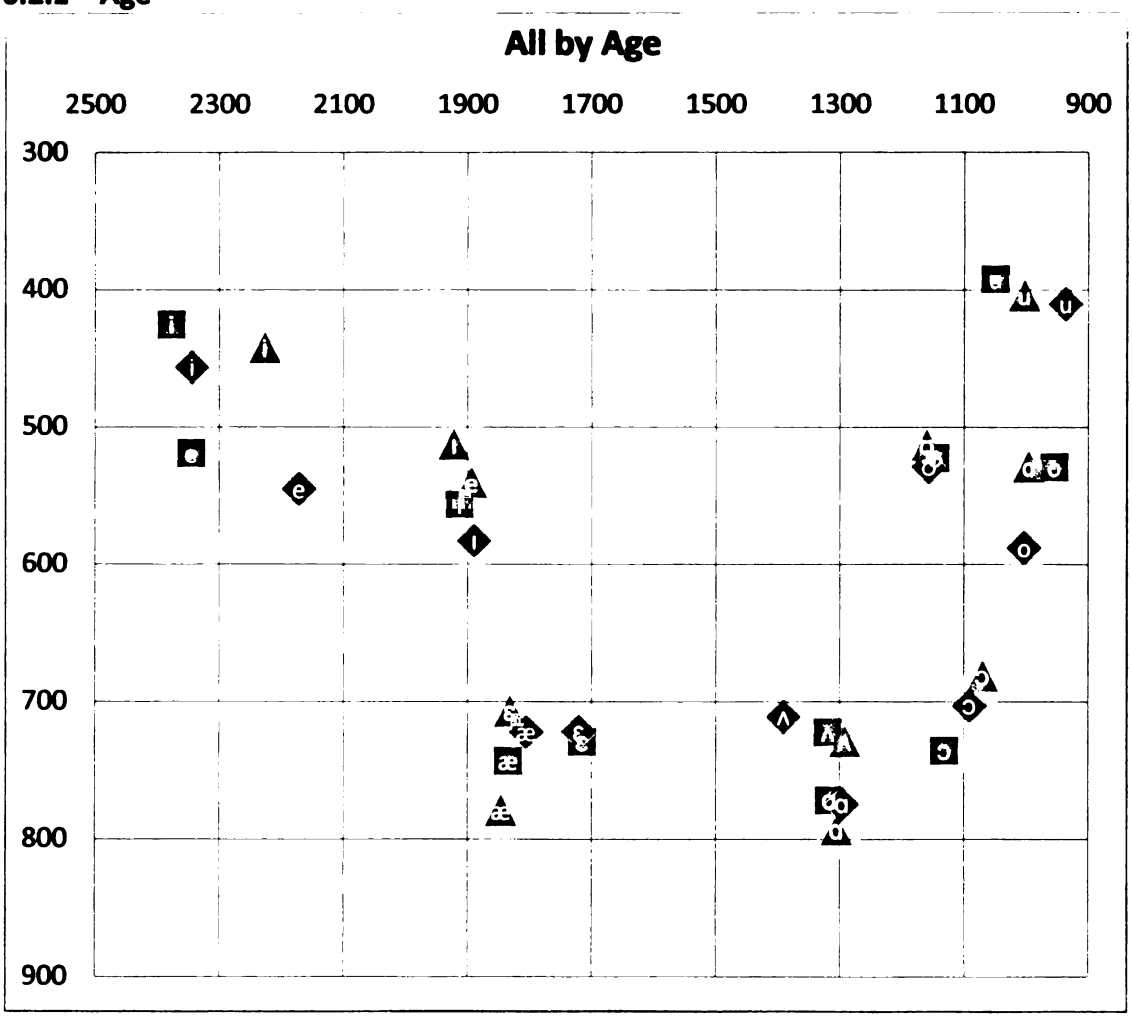


Figure 6.5 – Dearborn Lebanese by Age
Square = < 30 Diamond = 30-50 Triangle = > 50

In this graph, we can see that the vowels are fairly uniform when distributed by age. As mentioned before, most of the sounds brought in from Arabic show very little movement, particularly in cases of /ʊ/ and /ɑ/. The progression to younger generations shows a consolidation of the vowel system, particularly in the back low cluster, with the three vowels there being reined more tightly together. Notice in a few cases that the 30-50 group took strides away from the 50+ generation, only to have those under 30 backtrack. (/o/, /I/, and /ae/ are good examples of this) Note also that the one consistent change over time is fronting of /e/; plots of individuals are very consistent in this as well. I believe this represents the final step in freeing up the over-crowded cluster of vowels left by NCS. Those under 30 have a vowel system that fits very well with the Arabic desire to keep tense and lax vowels apart. /e/ has moved far enough forward (and begun raising) so that it is the neighbor of tense /i/, while lax /I/ is left alone in the traditional Arab position. /ae/ and /ɛ/ reside comfortably lax in low front cluster, and the back clusters become more uniform.

No age group as a whole shows a leaning toward NCS; no one is raising /ae/, /ɑ/ doesn't front (or even move in the slightest), and /ɛ/ is never made central. (I believe it is forced low so early in assimilating English that there would never be a reason for it to be in the mid-central NCS position) The NCS tendency to conflate /u/ and /ʊ/ is never toyed with; /ʊ/ never moves, and /u/ is not moving in its direction.

6.2.2 Gender

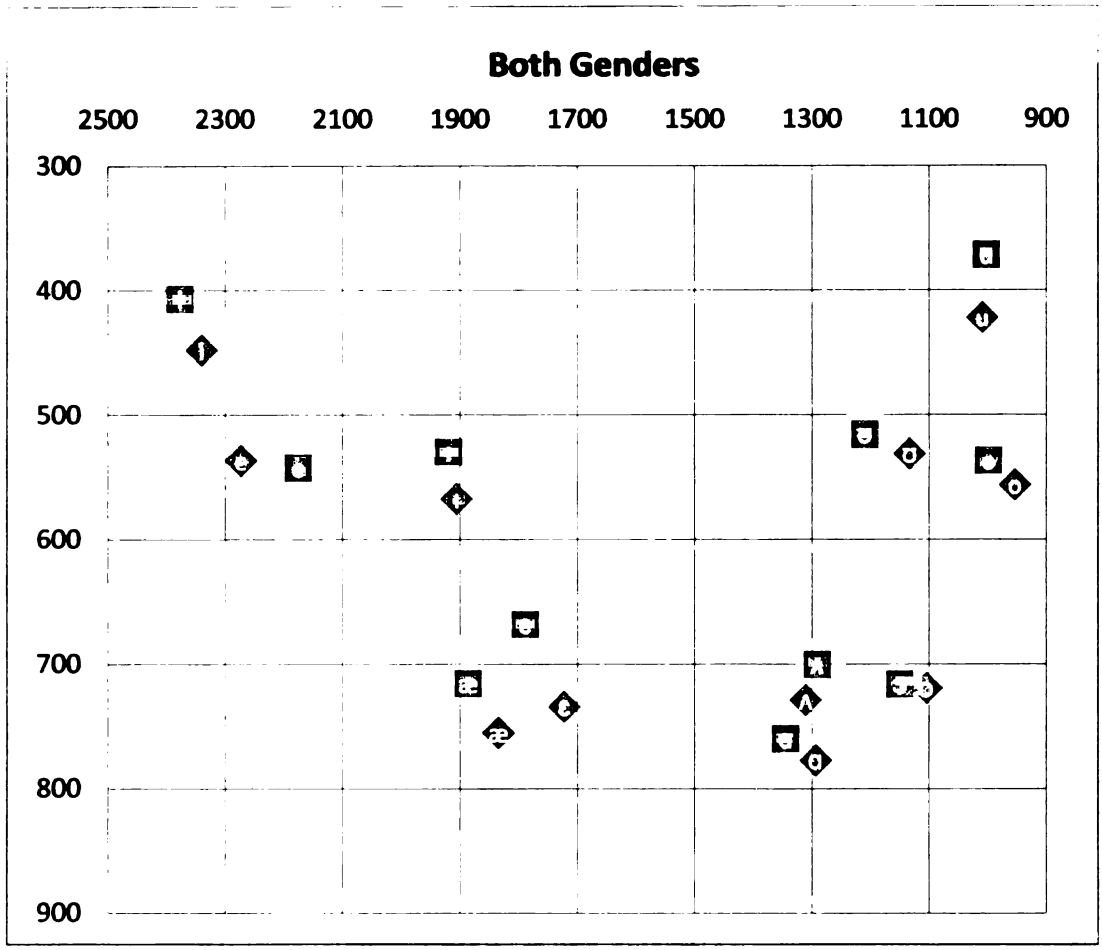


Figure 6.6 – Dearborn Lebanese by Gender
Men = Square Women = Diamond

Again we see little difference between the two groups. In the rear, men's vowels are slightly fronted, in the front, they're slightly more back, with the exception of /ae/ and /ɛ/. Women are more advanced in fronting /e/. If they are the bearers of accent change for Dearborn, it would appear their efforts are to make the system more like Arabic than any other. All of the men's sounds are raised slightly, except for /e/. Then men seem more content with the vowel clusters being close together, while women push for maximal contrast. Men could be argued to be showing slight tendency toward NCS with their placement of /ae/ and /ɛ/, but they're certainly not rushing toward it.

6.2.3 Generation

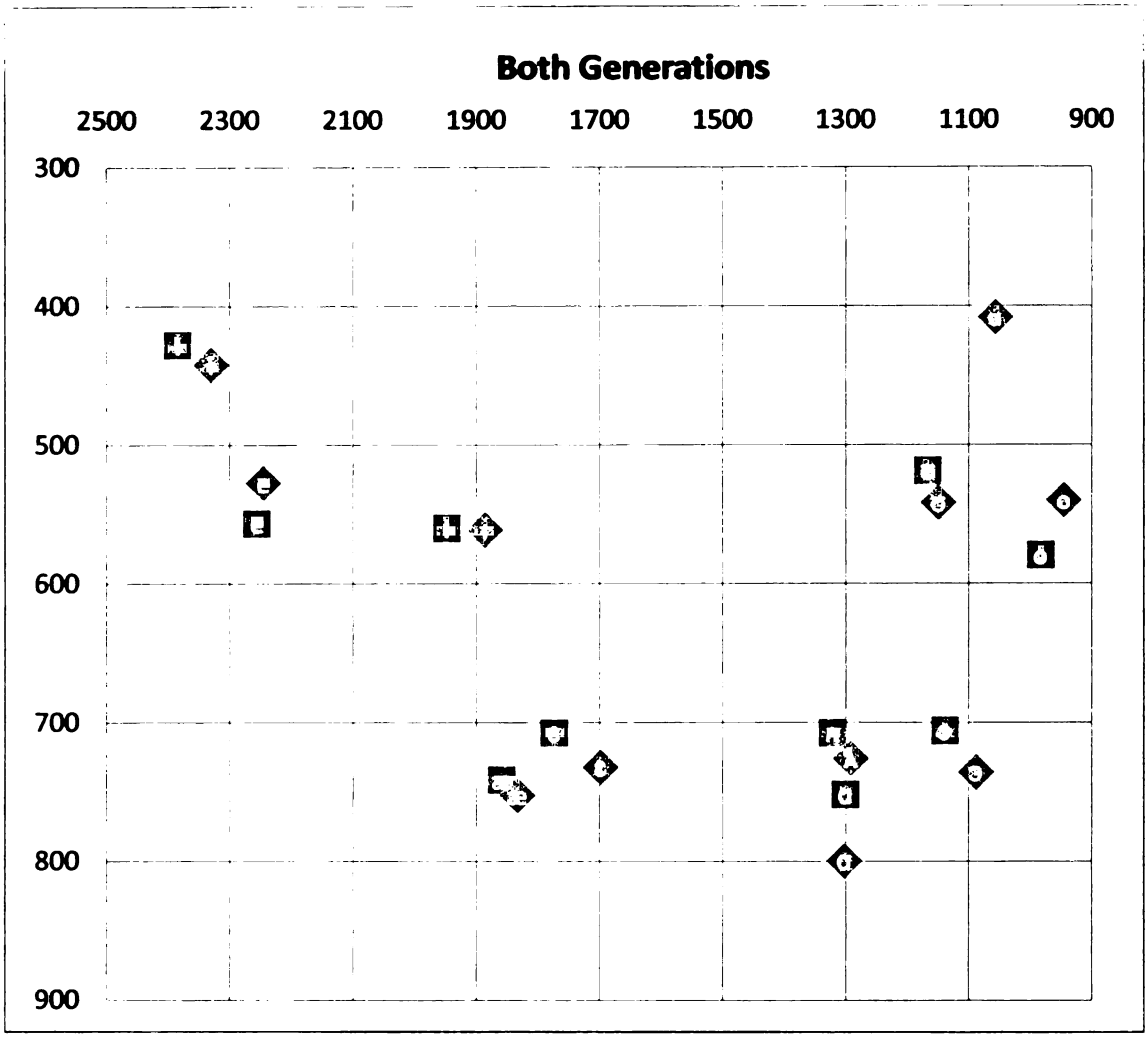


Figure 6.7 – Dearborn Lebanese by generation
Square = Born outside USA Diamond = Born within USA

Simply looking at whether the subject is an immigrant or the child of immigrants shows very little. At virtually every turn, the systems are a tight match for each other. All Generation 2 sounds are slightly backed, but the configuration and arrangement along Arabic lines are identical. No NCS trademarks are present, and one's immigration status appears to have no effect on fronting of /e/.

6.2.4 Socio-Economic Status

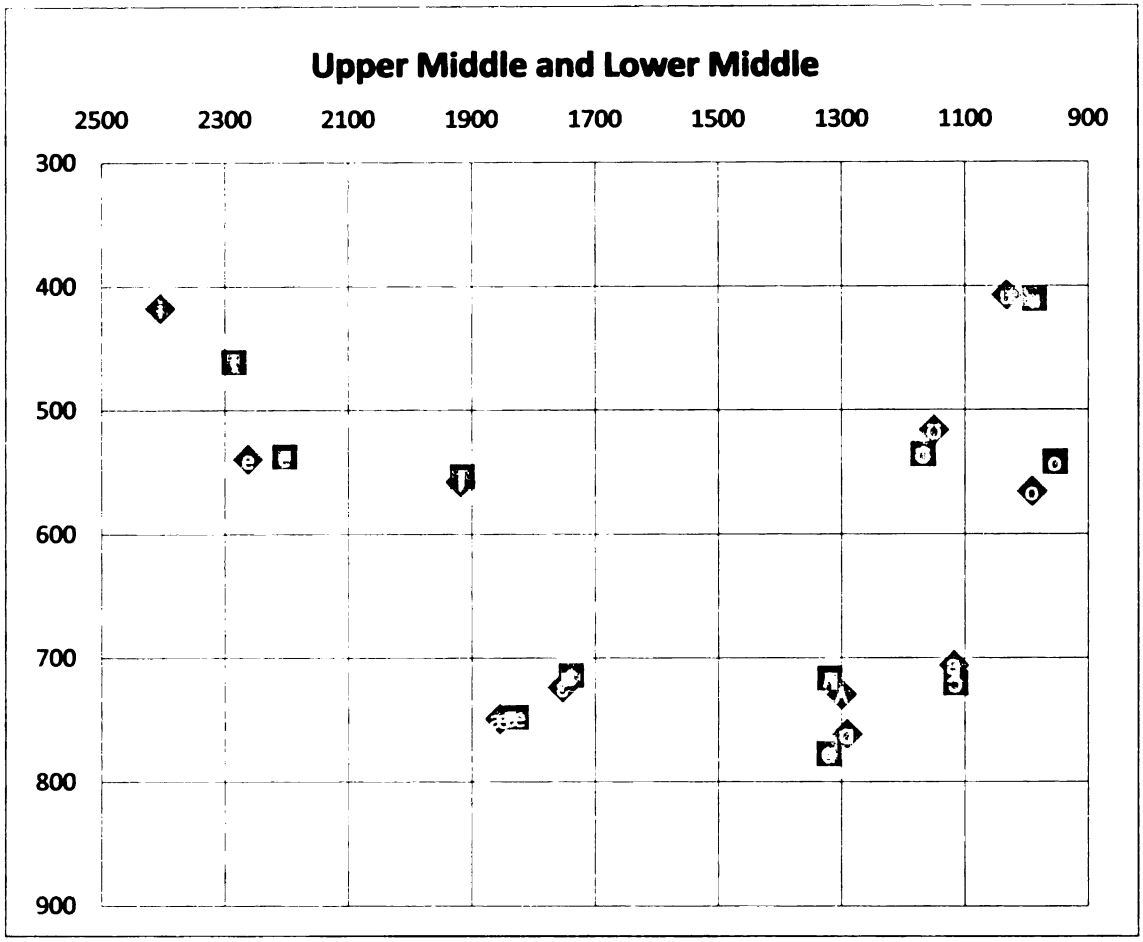


Figure 6.8 – Dearborn Lebanese by SES
Square = Upper Middle Class Diamond = Lower Middle

As mentioned earlier, the subjects were divided into two socio-economic groups: Upper Middle and Lower Middle Class. The former were mostly directors or counselors for the community center, mosque, or Arab History Museum. The latter were usually secretaries, clerks, or other staff at such institutions. Upper Middle class subjects were more likely to not live in Dearborn, often dwelling in cities like Livonia or in West Dearborn, both predominantly White areas. Upper Middle class subjects also reported fewer Arab friends and their neighborhoods had virtually no Arabs. Regardless, they still spent ample time in Dearborn daily and in workplaces that were almost entirely Arab.

Regardless of network and neighborhood differences, the vowel system of the two groups again shows little variation.

6.2.5 Minimal Variation

Although I have included more graphs of different demographic groups within Dearborn in the Appendix, the simple fact is that most of the plots show very minimal differences. I believe this is because the Dearborn system is quite stable, with very little influence being exerted upon it from outside the community. Because the Arab community is both established and insular, it is easily possible to have a social network that does not include NCS speakers. Dearborn residents can wake up in their Arab neighborhood home, be at their job with Arab co-workers, eat at a Lebanese restaurant for lunch, pick up Halal meat for dinner, and spend the evening with their families and Arab friends. Even American media does not seem to have a strong foothold; the waiting area at ACCESS showed Arabic-language Al Jazeera on the television, and ringtones on cell phones were often of Arab music. When discussing the Comprehension data later, we will see that the accent has infiltrated somewhat in terms of subjects' ability to understand it, but has not been incorporated into their speech in any noticeable fashion.

As far as describing the speech that the Dearborn Lebanese *do* practice, Rather than showing a collection of graphs and simply repeating 'No change here' after each one, I will instead talk about one of the few examples of change in the system, that of the fronting of /e/. As I explained earlier, I believe this to be a sort of second-round

clean-up in incorporating English vowels into an Arabic structure. Munro showed us the initial assimilation made by recent Arab arrivals, which is enough to deal with the most flagrant of incompatibilities. The oldest members of the Dearborn community would have created a vowel system similar to Munro, taking the first initial steps. Younger members of the next generation would then move on to refine the system (using the refined perception suggested by SLM), moving /e/ away from lax neighbors and toward tense /i/, a more agreeable location. This change might also be predicted by Dispersion Theory (Lindblom 1986, Fletcher et al 2002) as a means of providing contrast by sending /e/ to the periphery. Table 6.2 below compares the /e/ F2 of the Dearborn Lebanese with results from Hillenbrand et al (1995), a study that presents a similar system to Peterson and Barney:

Demographic	F2
Dearborn Men 50+	1762
Dearborn Women 50+	1812
Hillenbrand (1995) Men	2089
Hillenbrand (1995) Women	2530

Table 6.2 – Comparisons of F2 in /e/

The progression of /e/'s fronting is linear and direct, becoming more pronounced with each younger age group. We see this play out in the graphs below:

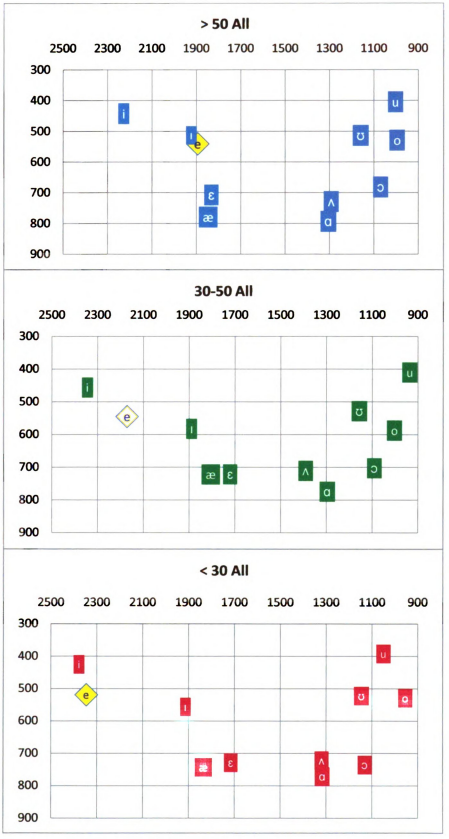


Figure 6.9 – Dearborn Lebanese by separate ages

Although a single-factor ANOVA reveals that Age and Gender are significant factors in the fronting of /e/ ($p < .01$), the most telling factor is their interaction together.

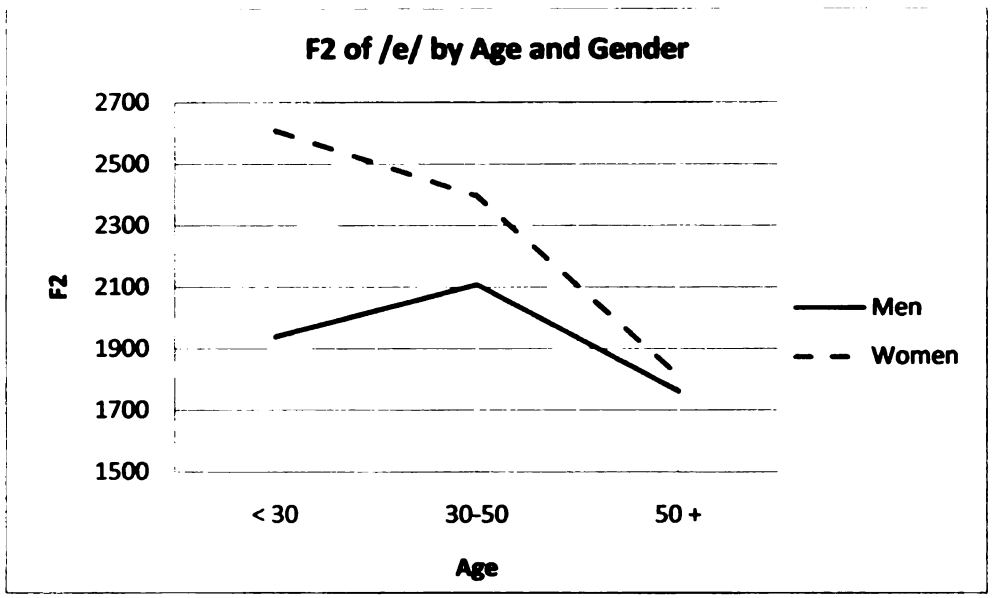


Figure 6.10 – F2 of /e/ by Age and Gender

Figure 6.10 shows the combined interactions of these two demographics is notable, and a two-factor ANOVA shows the relationship to be significant ($p = .03$). In both genders, we see an overall trend of fronting as age decreases. As expected by Labov and man socio-linguistic studies to date, women are furthest ahead, with young women at the outer frontiers of the change. The regression to a more backed sound for young men is a bit of a surprise, but since that demographic contained only a single subject, assessing its representativeness is difficult.

Generation and SES were not found to be statistically significant in the fronting of /e/, nor did they interact with any other variable.

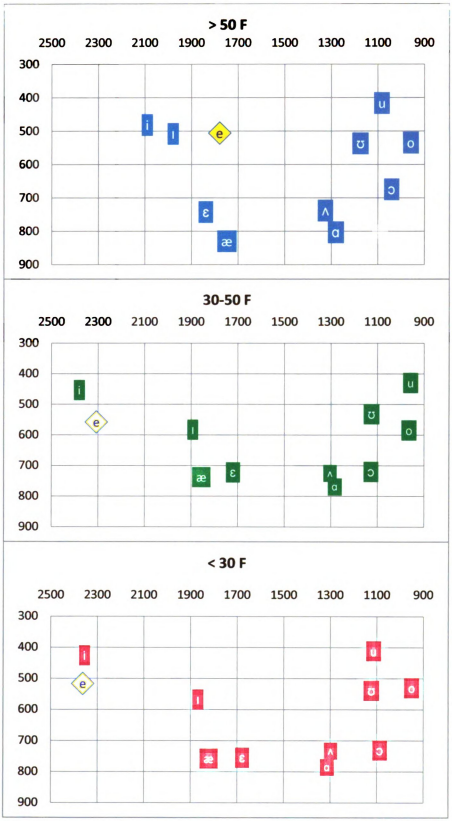


Figure 6.11 – Dearborn Lebanese women by age

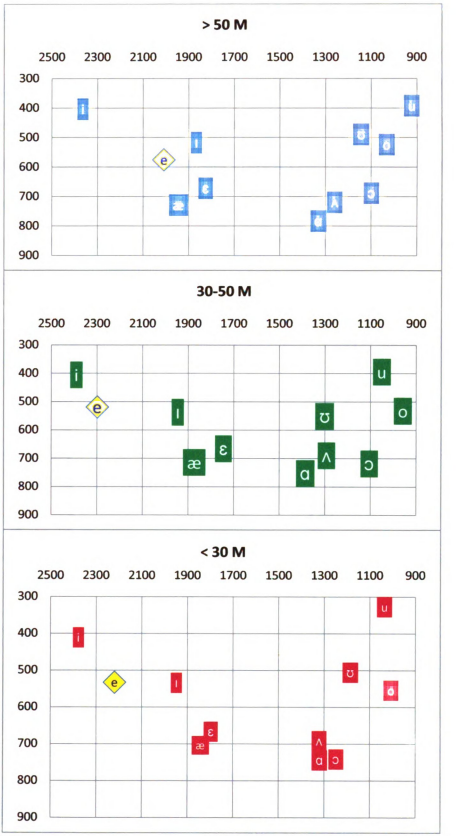


Figure 6.12 – Dearborn Lebanese men by age

6.3 Dearborn Lebanese - Individual Results

6.3.1 Women

This section will speak on the vowel systems of representative subjects from the sample population. We will see that even with diverse backgrounds, the subjects by and large fit closely with the dominant Dearborn accent. All plots shown here were made using the Akustyk add-on for Praat. First we'll look at four women, alike in all demographic categories save for age, and then examine some of the male subjects.

Zoe – Subject 01
Age – 66 Sex - F
Generation – 2nd SES – Upper Middle Class

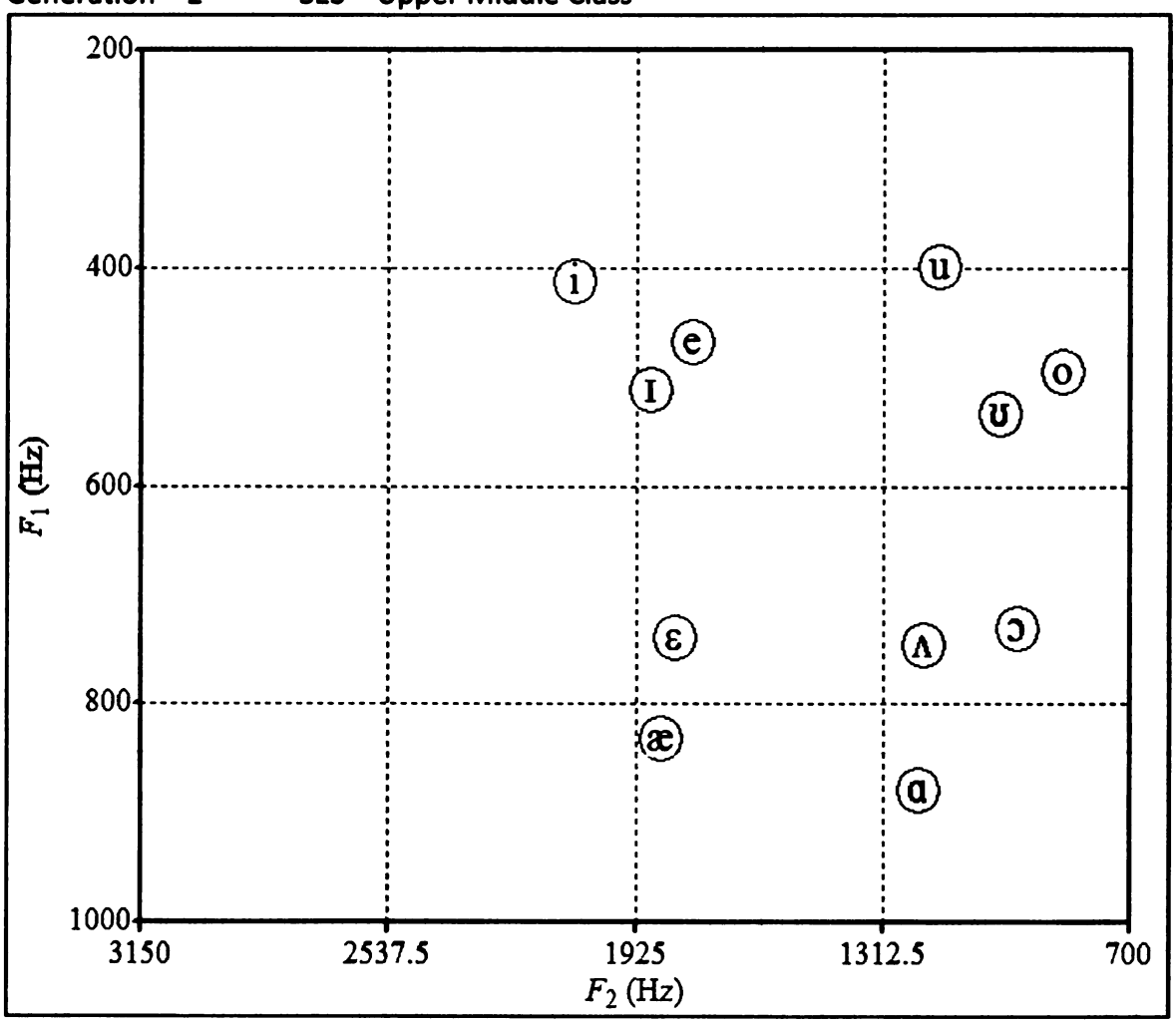


Figure 6.13 – Zoe vowel chart

Zoe is a retired public school teacher, and was 66 at the time of the study. She now works as an education coordinator at a Catholic church. She has a Master's Degree in Education. She lives in a wealthier, mostly-White section of Dearborn. She was brought to the United States as an infant and speaks English natively, having spent most of her life in Ohio. She speaks fluent Arabic but cannot read it, and was exposed to both languages growing up. She has visited Lebanon but has never lived there for any length of time. She commented that natives in Lebanon recognized an 'American' accent in her Arabic. As we can see from her vowel plot, Arabic has also influenced her English.

Despite a lifetime of being exposed to American English, her vowels cluster in the fashion that is the norm for the Dearborn Lebanese, and she does not show NCS signs such as raising of /ae/ or fronting of /ɑ/. Her /ɛ/ is slightly raised, but shows no sign of the centralizing that is the NCS trademark. Her other vowel clusters match those of the Dearborn accent, but note that the low-back cluster is not as tightly conflated as those we'll see in the younger subjects. Zoe's /e/ is backed and very near to /I/, although her /i/ is not far away. I believe the more scattered nature of her plot shows us an earlier version of the Dearborn accent, learned at a time when solid phonetic adaptations to English were not yet in place.

Her comprehension score was above average, correctly labeling 15 of 20 words, beating the overall average of 12.4. This should not surprise, as she is both Second Generation and Upper Middle Class, the two demographics who performed best on the test. Although older women tended to not score as well, because Zoe is a working

professional with many non-Arab contacts both at work and in her network, she has regular NCS exposure and can understand it well.

Susie – Subject 16
Age -32 Sex - F
Generation – 2nd SES – Upper Middle

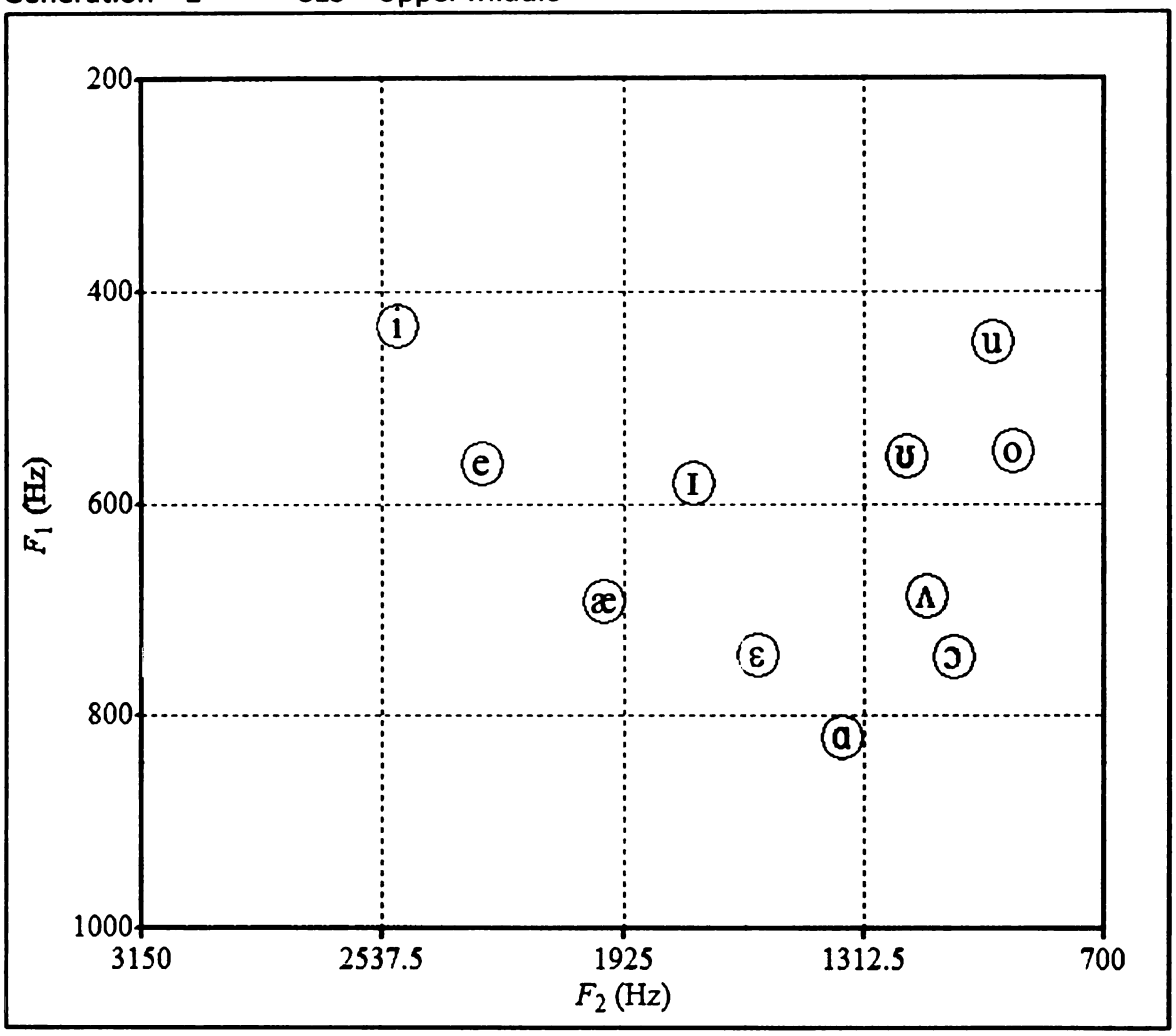


Figure 6.14 – Susie vowel chart

Susie is demographically very similar to Zoe, except in age. She was also brought to the United States as an infant, and also has a Master's degree, in Social Work. She works as a child therapist at ACCESS, the Arab Community Center in Dearborn, and as such has higher Arab network scores than Zoe. However, she also lives in a mostly non-

Arab neighborhood in wealthier West Dearborn. She speaks fluent English and Arabic and is literate in both.

Of the 23 subjects, Susie shows the strongest traces of NCS, even though her system is still recognizably Arab. Her network score is very low (1), which might serve to make her vulnerable to the shift. Her /ae/ has raised, although not fully into advanced NCS territory. Her /ɑ/ has similarly fronted slightly, and /ɛ/ has moved into a somewhat central position. Given the other subjects' speech, however, I suspect that /ɛ/ is relocating from a low-front position rather than the mid-front of Peterson and Barney. While its position here in a Michigander might suggest extreme advancement in the shift, I think here it is instead the sign of a beginning.

Susie's back vowels are arranged in an Arab fashion, with /ʊ/ parallel to /o/ rather than /u/. The cluster of /ɔ/ and /ʌ/ would be expected in both the Dearborn Lebanese system and NCS. Her /e/ is fronting, in the middle range between /I/ and /i/ that is predicted by her age group. /i/ remains distinct, and does not lower to meet /e/ as has been seen in some subjects.

She earned a score of 13/20 on the comprehension test, average for her SES (13.4), age (12.8), and generation (13.3). She did slightly better than all women (12.3), which is to be expected, as she is otherwise a member of the demographic groups who scored best. She is a working professional between 30-50, and while her working environment is almost exclusively Arab, her neighborhood and social networks expose her to NCS.

An Altered Chain

If Susie is indeed one of the few Dearborn Lebanese to be adapting NCS, we must consider then that her starting point for picking up the chain would be different than that of the Peterson and Barney dialect that existed when Michiganders began to shift. If we assume that the dialect she's had the most of exposure to is Dearborn's (reasonable given her entire life has been spent in the Dearborn area; college was at nearby Wayne State in Detroit), then we might expect that the beginnings of NCS would be occurring on a system that looks more like that below, rather than Peterson and Barney:

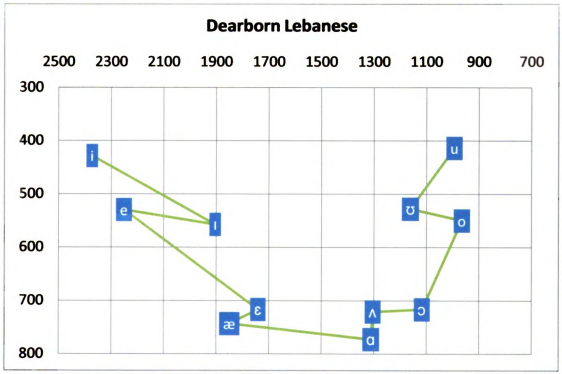


Figure 6.15 – Dearborn Lebanese vowel system

If that is the case, we see a very different environment for the front vowels. Rather than the closer grouping of /e/, /ɪ/ and /ɛ/ of Peterson and Barney, the Dearborn system begins with large contrast between all three. Further, /ae/ and /ɛ/ are drawn

together in the low front area. This means that to arrive at an NCS-like pattern, Susie might take a different course.

As mentioned above, centralization of /ɛ/ is generally an advanced step in NCS; /ae/'s raising into the crowded mid-front cluster drives /ɛ/ back into centralized territory, but this is a late change that occurs only after /ɑ/ has fronted. Susie's /ɛ/ is centralizing while her /ɑ/ is only slightly fronted. However, the different arrangement of her starting vowel system means that she must pursue NCS with a different order. Because the Dearborn Lebanese have *both* /ae/ and /ɛ/ in the low front, merely raising /ae/ does not create the needed vacancy for /ɑ/ to front. Further, /ɑ/, a tense vowel, would be moving forward to meet lax /ɛ/, which the Dearborn system would not be amenable to. Susie instead takes an alternate route, as seen on the next page:

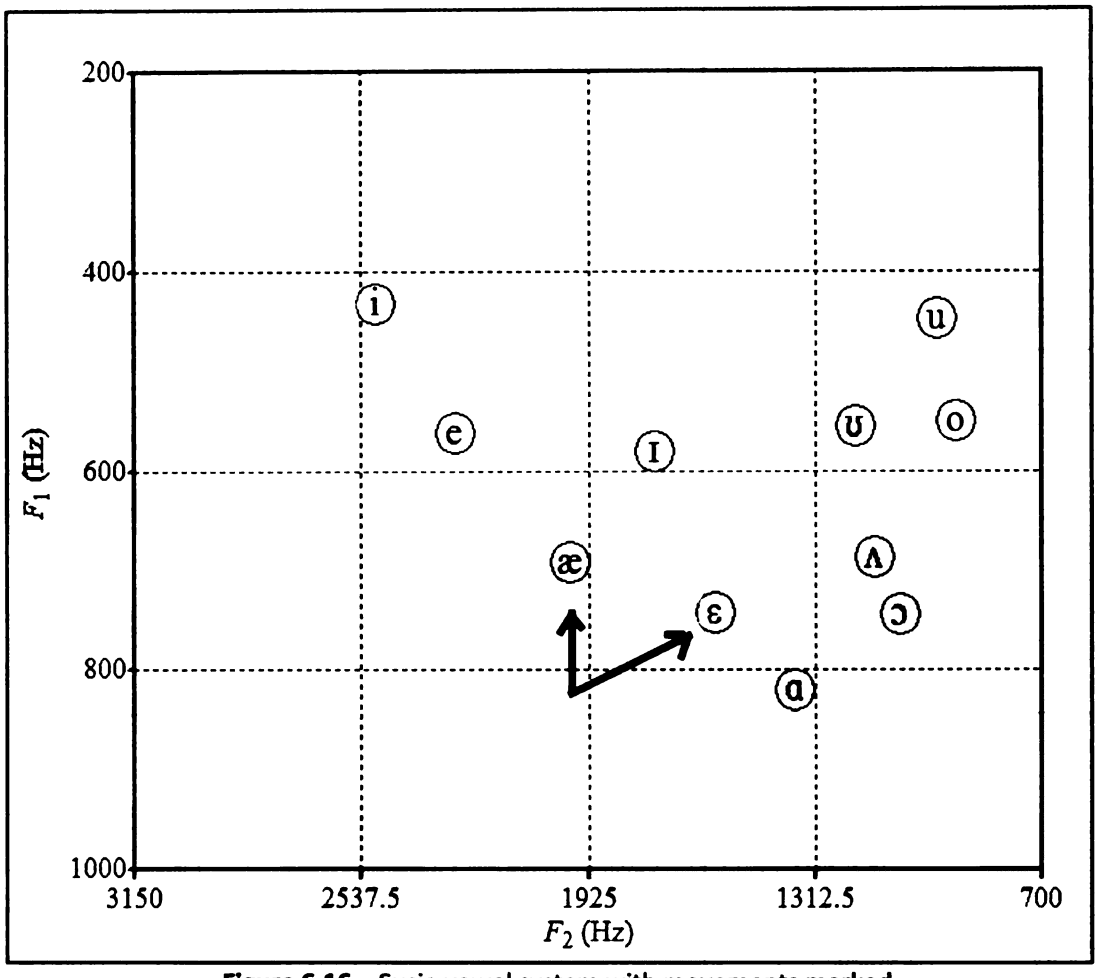


Figure 6.16 – Susie vowel system with movements marked

/ae/ is raised while /ɛ/ is centralized, clearing the low-front for /ɑ/ to move forward. Her /ɑ/ is just beginning its journey; we can see that it has broken away from the low-back group somewhat (and is not conflated with /ʌ/), but it is as yet not outside its normal territory. It might be more accurate to say that /ʌ/ has backed, leaving /ɑ/ in a comparatively more fronted position.

Note that at this point, she is not fronting her /ae/, which would serve to make it more tense. Instead, it remains lax as it moves toward lax /ɪ/, which would again placate the Arabic-based Dearborn system. Her backed /ɪ/ makes room for /ae/'s

advancement, and because the Dearborn Lebanese have already lowered /ɔ/ and conflated it with /ʌ/, the final stages of NCS are accomplished before it even begins. If she is indeed adapting her speech to NCS norms, she will finish with the same result despite taking a different path from a different starting location. That path can branch alternately because its purpose is simply to join up with the modern-day NCS, rather than follow its historical progress.

Marcy – Subject 28
Age -24 Sex – F Generation – 2nd SES – Upper Middle

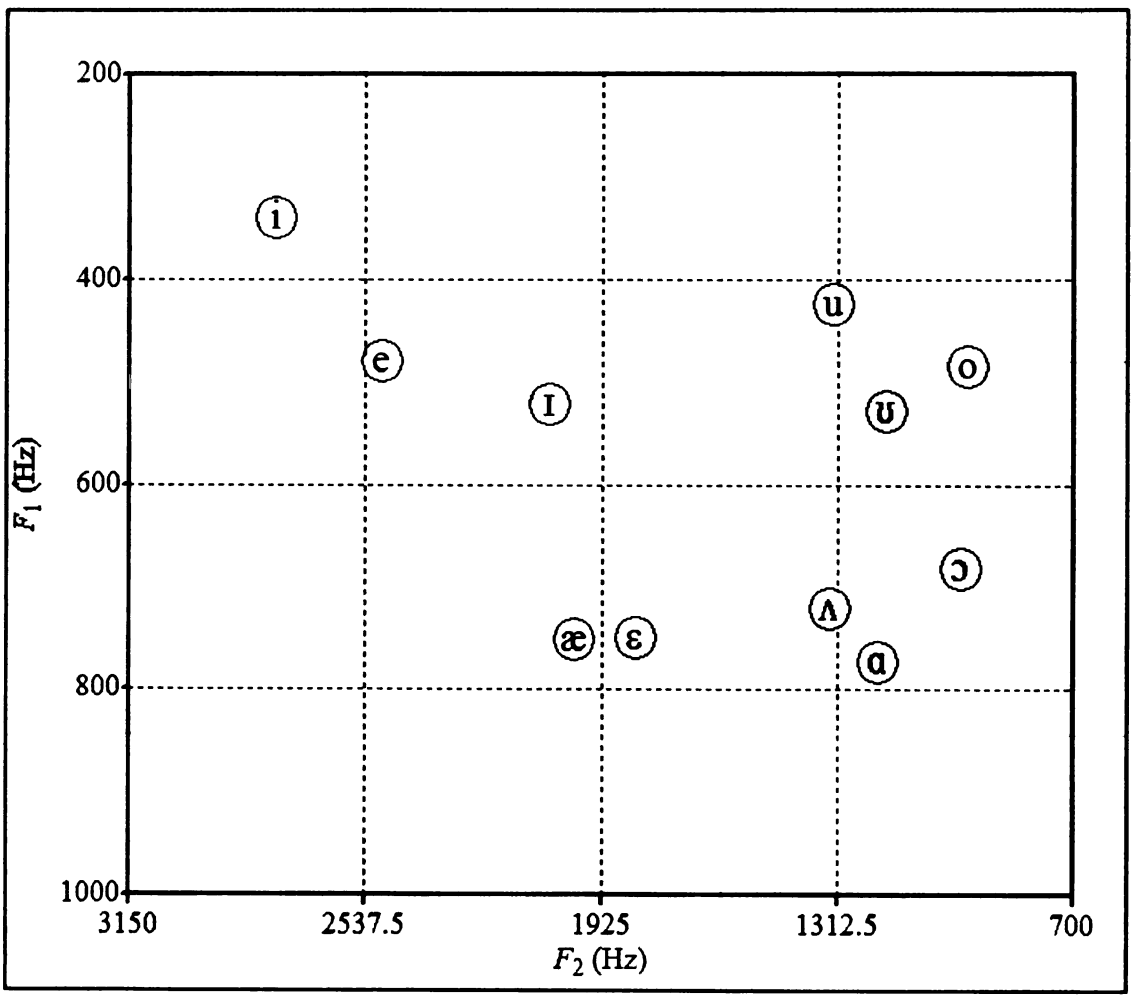


Figure 6.17 – Marcy vowel chart

Like the other women we've seen, Marcy was brought to the United States at a very young age and is an educated professional. She earned her Bachelor's degree at Wayne State University in Detroit, and also works in Detroit as Communications Director for the ACLU. She speaks fluent English and is 'good' with Arabic but not perfectly fluent (her literacy level is unknown). She lives in an Arab neighborhood in Dearborn with family, but her workplace is mostly White.

She exhibits an advanced version of the Dearborn accent: the back vowels are in their expected places (except for an unusually fronted /u/), and the front clusters are solidly distinctive. /ae/ and /ɛ/ are close neighbors and show no signs of raising or centralizing. /ɑ/ remains backed and near to /ʌ/ and /ɔ/. Marcy's /e/ is even more fronted than Susie's; distinct from both /i/ and /I/. The troublesome NCS grouping of tense and lax sounds by /I/ has been totally resolved which I believe has been the central order of business for young people as far as dialect is concerned.

On the comprehension test, she scored 13/20; like Susie, average for SES and Generation, and slightly ahead of other women and members of the <30 age group (12.0). Again, her work environment and generation make it unsurprising that she would achieve such results.

Sally – Subject 09
Age – 20 Sex - F
Generation – 2nd SES – Upper Middle

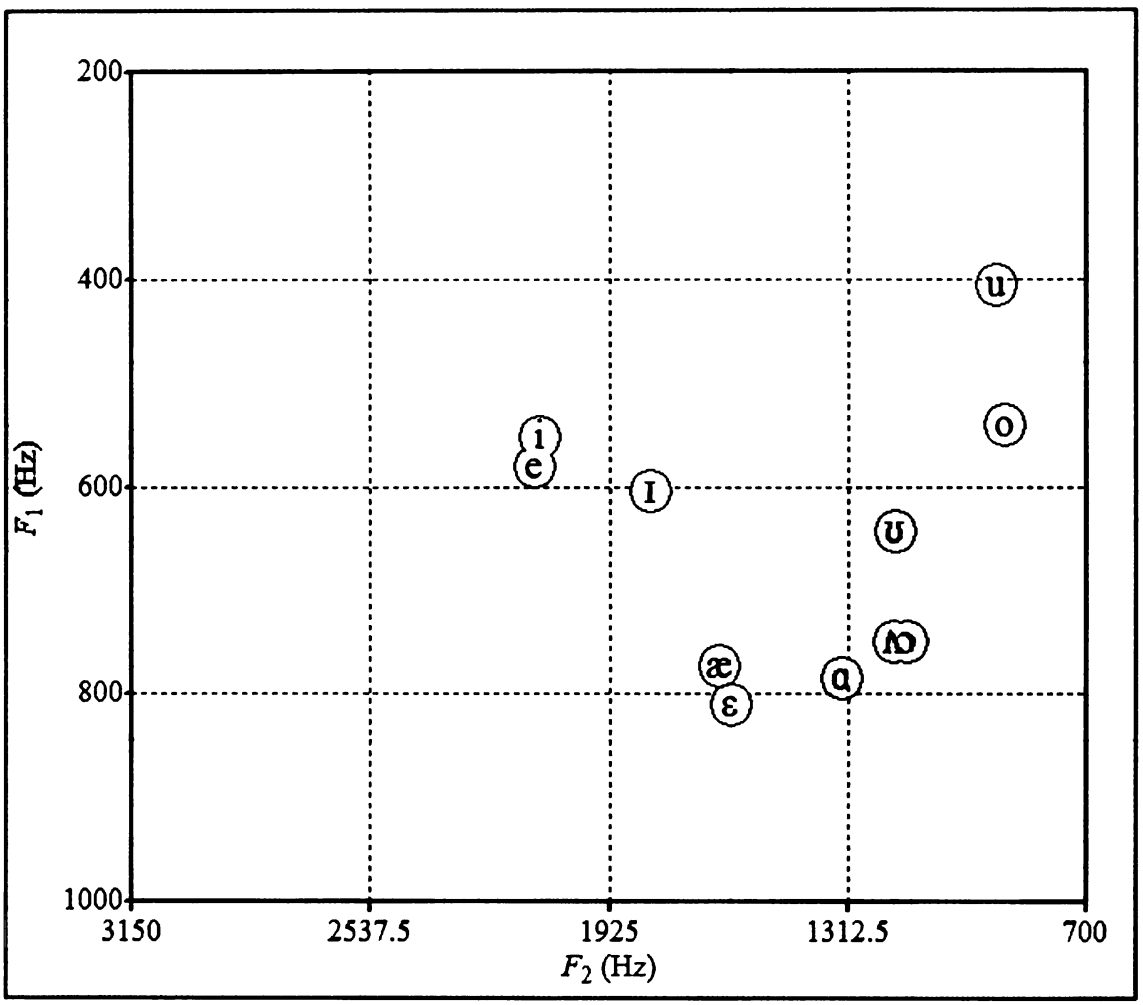


Figure 6.18 – Sally vowel chart

Sally, the final 2nd Generation Upper Middle Class female, is included for comparison. She was born in Dearborn and lived there all her life except for a few early childhood years in Texas. She is currently in school at the University of Michigan Dearborn, studying biology, and plans to apply for grad school. She speaks and reads English and Arabic fluently and has a high Arab network score, living in an Arab neighborhood with family, and having many Arab friends at school.

Like Marcy, her system is quite advanced, solving the problems of tense/lax neighbors, although in a slightly different way. She has fronted /e/, but has also brought /i/ down to meet it, keeping the tense sounds together and acceptably far from /ɪ/. Her mid and low vowels almost appear to be coalescing into a single place, with even /ʊ/ lowering to join them. /ae/ and /ɛ/ are tightly joined and are backed near to her low-back cluster. Her vowel space in general appears to be quite small.

On the comprehension test, she earned 14/20, slightly above average for all of her demographics. As with the others, her generation and SES are the likely explanations for this. Although UM Dearborn has a large Arab population, it is by no means homogenous. She would be exposed to non-Arab NCS speakers daily at school, both in classes and social activities.

6.3.2 Men

Due to the smaller sample of usable men in the study, it is not as easy to control for similar demographics. However, we can see a similar pattern in their individual results as we did above with the women.

Bill – Subject 06
Age – 55 Sex - M
Generation –1st, 16 years in Michigan
SES – Lower Middle Class

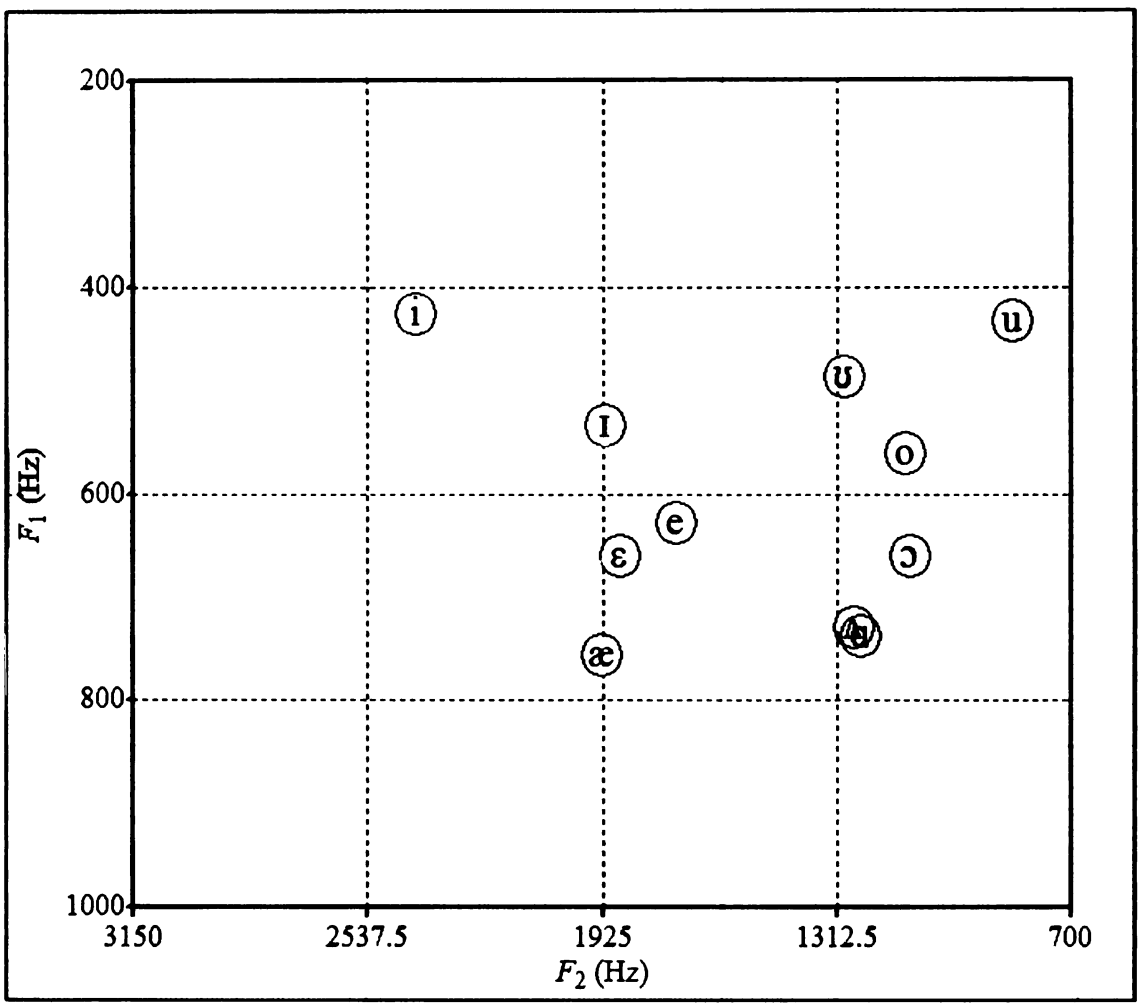


Figure 6.19 – Bill vowel chart

Bill is a priest at a Maronite Catholic church in Detroit. Although in a position of authority, he lives modestly in a poor, industrial neighborhood, and so was considered

Lower Middle Class. He came to Michigan from Lebanon in 1989, and is fluent in Arabic, French, and Syriac, the liturgical language at Maronite masses. He speaks English well but is not as comfortable with it as he is his other tongue.

Bill's network scores are quite high, almost exclusively associating with Arabs. Although he has contact with Dearborn due to the kinship ties of his congregation, the Detroit and Dearborn Lebanese are not extremely tight-knit. As mentioned earlier, those who settled in Detroit are largely Christian, those in Dearborn are predominantly Muslim. This combined with his age are reasons why his speech does not match up precisely with that of the general Dearborn populace.

He is certainly not showing signs of NCS; no /ae/ or /ɑ/ trademarks are visible, and the general signs of Arabic influence are present, but not as a textbook example of maximizing contrast. /e/ is backed and unusually low; perhaps an effort is being made to centralize it or merge it with the raised /ɛ/. /o/ and /ʊ/ are near to each other, /u/ is kept strongly distinct from other neighbors, as is /i/, an Arab characteristic. Bill's vowels exhibit the Arab six-point bowl shape that was uncertain of what to do with new additions from English.

Bill scored 10/20 on the comprehension test, below average for all demographics. (Average for Men – 13.0, 50+ Age – 13, 1st Gen – 11.8, Lower Middle – 11.3) His low exposure to NCS, age at arrival to Michigan (39), and incomplete fluency in English would predict that he would be slow to adapt to or recognize the shift.

Steve – Subject 10
Age - 45
Sex - M
Generation – 1st, 18 yrs in MI
SES – Upper Middle

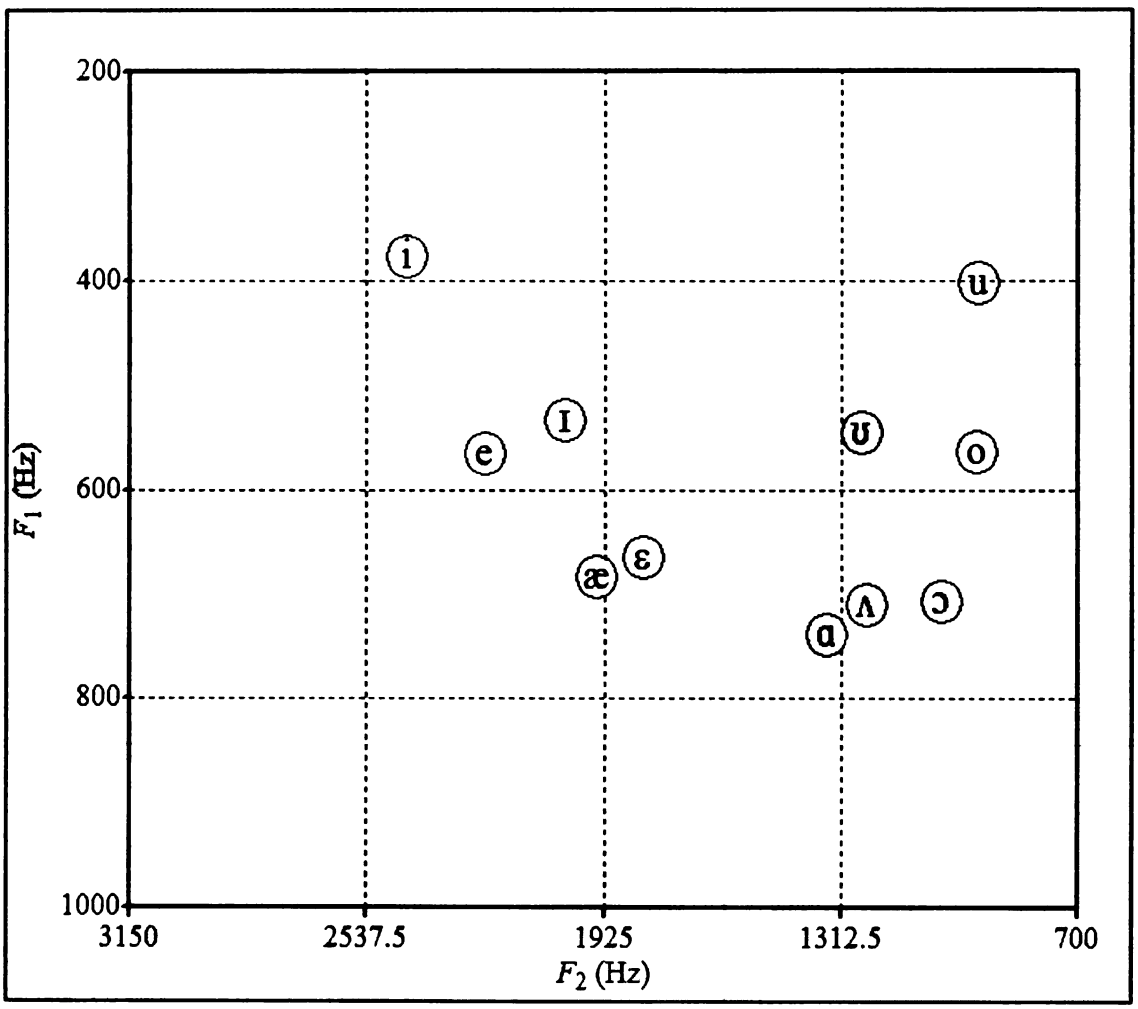


Figure 6.20 – Steve vowel chart

Steve is also First Generation, coming to Michigan when he was 27 years old. He is a counselor at ACCESS and has a Doctorate in Social Work; all of his post-secondary school was completed in the United States. He speaks fluent English and Arabic, and although he has no family in Dearborn, his workplace is almost exclusively Arab. He does not live in Dearborn, and there are no Arabs in his neighborhood.

Although an immigrant, he has adapted fully to the dominant vowel system in Dearborn. His vowels are neatly arranged into the six main clusters, with /e/ fronting its way away from /ɪ/. /i/ and /u/ are distinct, /ʊ/ and /o are parallel and separate from the high or low back vowels, and /ɑ/, /ɔ/, and /ʌ/ are conflated. /ae/ and /ɛ/ are cozily together; while raised slightly, they are still distant from the mid-front cluster.

Steve received a 12/20 on the comprehension test, at or slightly below average for all of his demographic categories.

I think his vowels and performance on the comprehension test are indicative of his fluency with English due to receiving his education in the United States. Whereas Bill was educated in Lebanon and was approaching English solely as a second language (that he doesn't have to rely on in his services), Steve needed English fluency in order to achieve his life's goals. Due to more rigorous exposure to the language, Steve was adapting his English to Dearborn's accent. Bill, on the other hand, was adapting a foreign L2 to his Arabic. We will see this distinction again with the next subject.

Ray – Subject 21
Age – 29 Sex - M
Generation – 1st, 18 yrs in MI
SES – Lower Middle

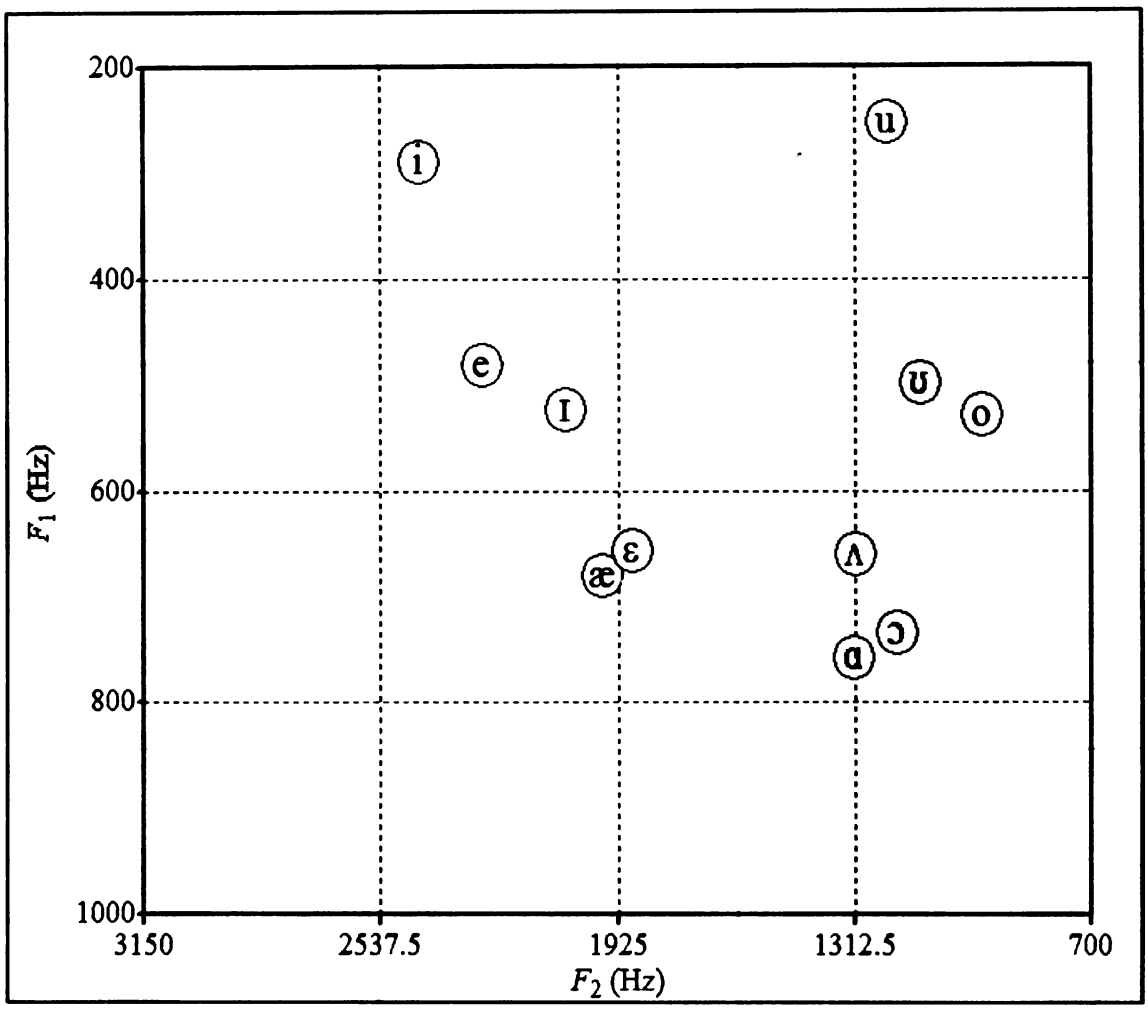


Figure 6.21 – Ray vowel chart

Ray is a surprising example of adapting one's English to the dominant system. He was born in Liberia to Lebanese parents, then lived in England, and finally immigrated to Michigan at age ten with his family. Despite all of this, his English is quintessentially that of the Dearborn accent. The six vowel clusters are distinct and tightly grouped, /i/ and /u/ are strongly distinct, and he exhibits the fronting of /e/ that is most common with younger people in the city. Like the other men, this fronting is not

as pronounced as with the most extreme of the women (like Marcy earlier), but is still noticeable. His /ae/ and /ɛ/ show slight raising, but not more than that of others who have shown a similar pattern. The low-back cluster is neatly assembled.

During his interview, Ray commented on knowingly adjusting his dialect depending on his audience, saying he could sound 'British' or 'African' if he wished, and that he could identify how to sound 'White,' upon which he gave an approximation of an NCS-style accent. His claims appear to have some merit, as he scored 15/20 on the comprehension test, above average for all demographic categories.

It may be that his fluency in English upon arrival to Dearborn was a boon in picking up the accent. Rather than having to grapple with the full brunt of an L2 like Bill, he could simply adjust his L1 to blend in better with the dominant Arab culture. Although he lives in non-Arab Dearborn Heights, he works at the Arab History Museum as a security guard and the majority of his social network is Arab, meaning he would get more mileage in adjusting to the Dearborn Lebanese accent than that of the NCS speakers next door to his home.

6.4 Comprehension Data

6.4.1 Dearborn Lebanese

In addition to the study of the acoustics of the Dearborn Lebanese, they were also given a short comprehension test, the same as that used in Roeder (2006), Ito (1999), and Evans (2001). In it they heard digitally altered sound files of NCS-shifted words. They were asked to write down the word they heard spoken, and were allowed to hear it twice before writing down their response. The files were played on the same MacBook used to display the word lists, with an additional speaker if the subjects couldn't hear. All of the words were altered to be extremely shifted, at the upper limits of how an NCS speaker would pronounce them. When the results were graded, responses were scored correct if they wrote a word with the target vowel (ie if the target was 'vase' and the subject wrote 'face,' it was correct).

Seeing as the acoustic data of the Dearborn Lebanese shows that they are not using NCS in their speech, let us consider whether they are aware of it at all. As mentioned before, the community is very tightly drawn together, which could mean that subjects would have minimal contact with NCS. In the first table, we see the twenty words, the target vowel of each, and the number of respondents who scored correctly, out of twenty-five subjects.[1] The list is sorted by vowel sound, although the subjects heard them in a more random order. The word 'bed' appeared twice in the word set.

1) Although the results of only 23 of 28 subjects were used in the earlier discussion of wordlist responses, I include 25 respondents here. The two addtional subjects were excluded in the wordlist data due to missing or corrupt recordings, despite meeting all of the eligibility criteria. Those two eligible subjects' responses have been included here.

Target Word	Target Sound	Correct Per Word	% Correct	Avg Correct Per Sound	% Correct per Sound
Bag	**æ**	21	.84	17	.68
Can	**æ**	16	.64	17	.68
Pat	**æ**	13	.52	17	.68
Bed	**ɛ**	22	.88	18	.72
Bed	**ɛ**	21	.84	18	.72
Been	**ɛ**	12	.48	18	.72
Bond	**ɑ**	20	.80	13	.52
Hot	**ɑ**	17	.68	13	.52
Sock	**ɑ**	2	.08	13	.52
Cut	**ʌ**	25	1.00	24	.96
Done	**ʌ**	22	.88	24	.96
Beet	**i**	23	.92	23	.92
Tin	**ɪ**	9	.36	9	.36
Big	**ɪ**	8	.32	9	.36
Bait	**e**	20	.80	20	.80
Boot	**u**	18	.72	18	.72
Boat	**o**	22	.88	22	.88
Caught	**ɔ**	11	.44	7	.28
Dawn	**ɔ**	8	.32	7	.28
Hawk	**ɔ**	2	.08	7	.28

Table 6.3 – Dearborn Comprehension Results

In some ways the results above are not surprising; most of the sounds that exist in Arabic are picked out well, such as /i/, /u/, and /o/. (The average sound was picked correctly by 16 people, and all three of those sounds fared better than average.) Because those sounds are mostly out of the fray in terms of NCS changes, it should not surprise that the Dearborn Lebanese could easily identify them. Also following expectations is their poor performance with /ɔ/. The sound does not exist in Arabic and in NCS is becoming conflated with /ʌ/ and /ɑ/. However, /ʌ/ was by far the best understood, despite being in a virtually identical situation as /ɔ/ - conflated in NCS, not realized in Arabic. Even more surprising is that the Dearborn Lebanese had little trouble picking out NCS' centralized /ɛ/ from ʌ.

/l/ posed difficulty, one of the few Arabic sounds that did so. I believe this can be explained in a fashion similar to /ɑ/, which behaves in much the same way. While existing in Arabic, these two sounds have been altered in NCS such that Arabs would have a more difficult time recognizing them.

Avg Per Subj	Avg Female	Avg Male	Avg Age <30	Avg Age 30-50	Avg Age >50	Avg SES Upp Mid	Avg SES Low Mid	Avg Gen 1	Avg Gen 2
12.4	12.3	13.0	11.8	12.8	12.0	13.4	11.3	11.8	13.3

Table 6.4 – Mean correct responses for Comprehension

Turning to the question of which demographic groups did well on the comprehension test, we get a clear picture of who receives the most exposure to the Northern Cities Shift. While all demographics participate only in Dearborn's accent, there are some who are more familiar with NCS. With an average correct score of 12.4 for all demographics, we can see that men perform slightly better, averaging 13 correct answers. Predictably, the second generation Arabs fare better than their parents; they have had a whole life of speaking English rather than a few years. Notice that younger subjects did not fare well, which would seem to contradict with work showing young people as most proficient with new dialects. We must remember that Dearborn can be a very closed city; many twenty-year-olds have lived there their whole lives, going to high school at Fordson High and moving straight on to Henry Ford Community College or University of Michigan Dearborn. Young people, particularly those of low SES, may rarely have ventured far from the city.

The main demographic that does best with comprehending the shift is that of working professionals. Those aged 30-50 are the most likely to be participating in

commerce outside of the city, and of my subjects, the most successful of them were the directors, curators, and administrators, all of whom had regular contact outside the city in the form of dealings with the press, purchasing, acquisitions, and so forth. People of higher SES in these types of positions also frequently reported living outside of the city in White neighborhoods, whereas those of lesser incomes seldom left the city.

6.4.2 Comprehension Comparison

I am going to discuss results from some of the conflated vowel clusters seen from the wordlists, to see if the same conflation found in production carries through in comprehension. First, however, I want to mention the results of another study, Preston (2005). In that work, several groups of White Michiganders were given an identical comprehension test to mine, and their results can be compared with the Dearborn subjects. Very worthy of note is that even NCS natives did not receive perfect scores for NCS-affected sounds, similar to Friesner and Dinkin's suggestion that not all Philadelphians' speech contained all Philadelphian traits.

Vowel	Preston % Correct	Dearborn % Correct
æ	.85	.68
ɑ	.83	.52
ʌ	.80	.96
ɛ	.69	.72
ɔ	.42	.28
ɪ	.42	.36
u	.96	.72
i	.98	.92
e	.98	.8
o	.99	.88

Table 6.5 – Percent correct responses for Comprehension

The subjects in Preston are virtually flawless in understanding vowels untouched by NCS such as i and o, and the Dearborn Lebanese perform strongly there as well. /ɔ/ and /I/ are weak for both groups, although the strongly shifted nature of those sound clips may have made understanding difficult for anyone. In general, the Dearborn Lebanese were worse at understanding heavily NCS-shifted speech than Whites, with the exception of soundly outperforming on /ʌ/.

ae	Bag	Can	Pat	Total
Correct	21	16	13	50
ɛ	4	8	12	24
I	0	1	0	1
Total	25	25	25	75
ɛ	Bed	Bed	Been	Total
Correct	22	21	12	55
ae	3	3	0	6
ʌ	0	0	12	12
Null	0	1	1	2
Total	25	25	25	75

Table 6.6 – Correct answers and mistakes for /ae/ and /ɛ/ by Dearborn Lebanese

Table 6.6 shows us results of the /ae/ and /ɛ/ tokens, which were understood about equally well, roughly two thirds of the time. For /ɛ/ they performed slightly more strongly than Preston's subjects, but did notably worse with /ae/. Like with Preston, the majority of mistakes are 'pre-shift,' mistaking vowels for their pre-NCS positions. Notably weaker performance than Preston on /ae/ suggests NCS is not well established.

ʌ		Cut	Done	Total
Correct		25	22	47
ɛ		0	3	3
All		25	25	50
ɑ	Bond	Sock	Hot	Total
Correct	20	2	17	39
ae	2	18	6	26
ʌ	1	3	1	5
au	1	0	0	1
ɛ	1	0	0	1
Null	0	2	1	3
All	25	25	25	75
ɔ	Hawk	Caught	Dawn	Total
Correct	2	11	8	21
ɑ	16	8	10	34
ʌ	5	6	7	18
ae	2	0	0	2
I	1	0	0	1
Null	1	0	0	1
All	25	25	25	75

Table 6.7 – Correct Answers and Mistakes for /ʌ/, /ɑ/, and /ɔ/ by Dearborn Lebanese

Looking at Table 6.7, we can see that while the Dearborn Lebanese conflate the above three sounds in their speech, the errors they make show a mixed recognition of NCS tendencies. /ʌ/ is only ever mistaken for /ɛ/, suggesting some awareness of /ɛ/'s NCS centralization. Still, as in Preston, the subjects are unexpectedly capable at identifying wedge, which is strange since they do not appear to separate it distinctly in their speech. This may be explainable by its duration, however. As the only lax vowel in the low-back cluster, it would receive the short duration in English that is a phonemic distinction in Arabic, as we saw with Al-Ani. Although the sound does not exist in Arabic, wedge's short duration could serve to clearly differentiate it from its neighbors.

Because this contrast is like that of Arabic long/short vowels, Dearborn subjects would not need to be advanced speakers of English to recognize it, explaining why all groups performed well.

Incorrect answers of /ɑ/ are overwhelmingly mistaken for /ae/. The high number of errors makes me suspect that they are unaware of /ɑ/'s fronting – they may simply register such behavior as being /ae/. Difficulty recognizing fronted /ɑ/ adds further credence to the idea that Dearborn's progress in NCS is minimal; this is an early link in the chain, and poor comprehension of it would demonstrate low NCS overall. /ɔ/ is mistaken for /ɑ/ more often than it is guessed correctly, indicating a low comprehension of the sound in general. Very telling is that while it is mistaken frequently for /ɑ/, the reverse never occurs. I believe this to be a product of SLM's Hypothesis 5; the L2 sound of /ɔ/ is so similar to the shared L1/L2 sound of /ɑ/ that the former is simply absorbed (Eckman 2004). The shared tenseness and duration of /ɔ/with /ɑ/ would also make differentiating the two difficult if L1 was Arabic. Finally, it is possible that the 3rd stage of NCS involving /ɔ/ lowering might never happen for the Dearborn Lebanese; they may not perceive a sound that exists to be moved.

To conclude this section, the Dearborn Lebanese show no exceptional ability with NCS in the comprehension data, and perform at a noticeable deficit in almost all NCS areas compared with the Michigan natives from Preston (2005). I believe the Dearborn Arab community to be firmly insulated from the shift, with a majority of people receiving little, if any exposure.

7.0 Conclusion and Closing Remarks

From these data, it appears that the standard of complete assimilation of dialect and culture by the second or third generation of immigrants is not automatic, likely due to the same sort of local loyalty exhibited by subjects in Gordon (1997). The acoustic plots show us a vowel system that is at once stable and *not* reflective of adapting NCS. Furthermore, the few signs of change within the system also do not portray an adaptation of native Michigan vowels; instead the system is restructuring to be more compatible with Arabic norms.

The circumstances of the community's creation have contributed largely to this state of affairs; due to a large influx of Arabs over a short period, the Dearborn Lebanese were not isolated arrivals into a sea of Michiganders. Instead, they came to Dearborn as entire families, surrounded by other faces they had seen in their home country. The community was able to stay tightly meshed and self-sufficient, creating the isolation that would preserve their customs and dialect. The solidarity of this group has allowed them to make adaptations on their own terms; new things are assimilated into an Arab way of life and not the reverse.

It's impossible to say if this group has shrugged off a merger with the Michigan culture and accent, or if this is simply a delay of the inevitable. Sociolinguists forty years from now may find that the Arab community has fragmented and begun to sound like the NCS circa 2048, or the Dearborn Lebanese may be as united as they are today, still speaking with an accent based in Arabic. I think the outcome will ultimately boil down to the choices of the city's young people. In Labov (1963), younger residents of

Martha's Vineyard were generally looking for a way to get off the island, and were eager to sound more like someone from the mainland. Although Michigan's flagging economy has prompted many (including myself) to leave the state for rosier prospects, the young people I spoke with expressed no such wishes. Only the older folks were expressing a desire to live outside the city (for nicer homes and 'less drama'), and most of their children were grown, meaning they weren't siphoning kids away from early years in Dearborn. As long as the Arab youth continue to remain within the city, and as long as the Arab community continues to be active and self-promoting, I suspect that the NCS will not make substantial inroads.

Although such conjectures can only be proven over a long time period, there is work to be done in the meantime, particularly if one is interested in Arabic. Virtually all subjects in Dearborn spoke the language, and many of them made frequent visits to Lebanon to visit family, making efforts to bring their children on such trips. Some reported being told their Arabic 'sounded American' when they were back home, others said no one noticed a difference. While the Dearborn Lebanese are immersed in an Arab culture, they are immersed in *Dearborn's* Arab culture. Their only contact with the Middle East apart from the occasional visit comes in the form of television and telephone, e-mail and Youtube. While they remain cohesive among *themselves*, they are unquestionably diverging from the country of Lebanon. American English words creep into places they couldn't reach in Beirut, and any dialect changes there will take a long time to arrive in Michigan. This process of divergence would make for interesting research, especially since the fork in the road is relatively recent. Can a Lebanese native

pick out a Dearborner's Arabic as 'accented?' Would one of my subjects recognize a Dearborn accent, or react more favorably to it? Has the English of the Dearborn Lebanese affected their Arabic acoustics, or do they keep the two totally separate?

One could also of course repeat this type of research with other immigrant groups and other languages. Do certain circumstances foster or inhibit dialect assimilation? Does language family make a difference in speed, or would like sounds in L1 and L2 make for an easier transition? Seeing as the scope of this thesis only included sounds from a wordlist studied in isolation, this very same set of subjects' speech could be used to ask further questions. The environments of the vowels could be studied as in Roeder (2006) and Ito (1999), and the acoustics of the reading sample and conversational pieces could be examined for a view of less formal English. Additional subjects could be interviewed, men particularly. This study was built on the presumption that the subjects were interacting with the NCS, and as such, the wordlist and reading passage were constructed with heavy weight on words with NCS vowels in them. Presenting research passages with more diverse token types would allow for more to be said about vowels like /i/ and /u/, underrepresented in this sample. Minimal pairs with Arabic vowels (beat/bit) could be seeded in, and more effort could be devoted to lax/tense pairs, again not something this study was aimed to do.

Regardless, the avenues of inquiry for L2 learners and their descendents acquiring remain multitudinous, and this thesis has hopefully added new branches along the path.

Appendix A

Michigander Survey Word List

1. Sam
2. past
3. cup
4. have
5. body
6. mop
7. ask
8. dust
9. hole
10. tip
11. bet
12. horse
13. block
14. oil
15. state
16. road
17. pull
18. pig
19. fed
20. chalk
21. awful
22. possible
23. stop
24. rag
25. plant
26. laugh
27. toy
28. make
29. cabin
30. pot
31. bell
32. head
33. has
34. good
35. sub
36. hit
37. pen
38. closet
39. gosh
40. loud
41. hate
42. hope
43. duck
44. kid
45. mesh
46. gone
47. rock
48. watch
49. brag
50. rack
51. jazz
52. bath
53. mouse
54. sleep
55. business
56. father
57. weather
58. cash
59. mattress
60. boot
61. bun
62. bend
63. fog
64. lost
65. car
66. house
67. bead
68. foot
69. puff
70. tin
71. song
72. pause
73. logic
74. tom
75. banker
76. buzz
77. dad
78. tab
79. night
80. meat
81. mess
82. Bob
83. black
84. Lansing
85. gamble
86. pool
87. fist
88. step
89. tall
90. bug
91. John
92. ride
93. pill
94. food
95. fish
96. neck
97. dog
98. caught
99. doll
100. gun
101. Saginaw
102. pal
103. dull
104. saw
105. pat
106. apple
107. bite
108. peel

APPENDIX B
READING PASSAGE

A Bad Day for Ducks

Tom and Bob were supposed to meet at Tom's house. They planned to got 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 up 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 could go shoot some pool instead. Tom thought that was a good idea and forgot all about the ducks and his burned hand.

Appendix C
Comprehension List

1 BAG
2 CUT
3 BOOT
4 BIG
5 CAN
6 BOND
7 BEET
8 BED
9 HAWK
10 DONE
11 BOAT
12 SOCK
13 TIN
14 HOT
15 CAUGHT
16 PAT
17 BEN
18 BAIT
19 DAWN
20 BED

NB: "Bed" is repeated (8 and 20)

Appendix D
Interview Questions

(This script was used as a guide during the interviews, mostly to ensure all relevant questions had been asked)

1. [Name] Can I get your first/last name? Can you spell that for me?

2. [Address] What is your address?

   How long have you lived here?

   Do you like it here?

   Did you like where you lived before?

3. [Phone] Can I get a phone number? (Or some other sort of contact information? Email? Friend? Etc?)

4. [Age] How old are you?

5. (Note Sex, Group Membership)

6. [Occupation] What do you do for a living?

   Really? What's that like?

   Do you enjoy it? (etc.)

   Did you ever do anything else?

7. [Education] (If appropriate) How much training did you need for that?

   Is that what you always wanted to do?

   Did you ever go to school to do something else?

   (Did you get to go to/finish school, etc?)

8. [Network Info] How well do you know people that you work with? How well do you know people that live in this neighborhood?

   Do you like who you work with?

How many people that you work with live around here?

Does anybody that you live with work in the same place?

(How many people do you live with?)

Do most of the women around here work at one place and the men in another?

How many people of the same sex do you work with?

Do you hang out with people from work outside of work, then?

Do you spend a lot of time with people from this neighborhood?

9. [More Network] (I know this is kind of awkward, but I am supposed to ask you to give me an estimate on the following.) Around here, there are the following groups: African Americans, European-Americans, and Mexican Americans. What percentage of people from the following groups are your close friends? (For example, How many people would you count as close friends? How many of each are members each group?)

African Americans _____

European Americans_____

Mexican Americans _____

10. [General Conversation]

So is this [network] pretty typical of people around here?

What is the best thing about working/living in Benton Harbor?

What do you miss most about where you lived before?

Do you get to talk to people from home still?

What does the rest of your family think about the area/schools/the cold weather/etc?

11. Metalinguistic Questions

How many languages do you speak?

How good is your Spanish/English?

Where is it appropriate to speak Spanish around here? (work, home, etc?)
Do you ever feel embarrassed to use your language in public?

Has anybody every made fun of you for the way you say things (in either language?)

How well do younger people in the area speak Spanish?
Do they sound like Michiganders when the speak English?

Do boys and girls talk differently?

What kind of English do you think you learned?

Do you think you talk like (other) Michiganders?
What do native Michiganders sound like?

12. Reading Passage: I'm going to give you a short story to read. It's only about a page. I'll give you a minute or two to look it over, then we'll have you read it outloud.

13. Word List: I'm going to show you some words on the computer. Just read the word on the screen, and I'll hit a button to have it move onto the next screen.

14. Comprehension Test: I'm going to play a word twice. Please write down the word you hear. If you aren't sure which word it is, do the best you can. We're not interested in right or wrong answer, just what you think you hear.

15. [Estimates of Use]: Sometimes you hear people pronounce words like 'bag' and 'man' with a different vowel. (Play the 'banker' example at the end of the comprehension test.) Have you ever heard people pronounce it this way? (Once you are sure that the respondents understand the variant you are after, ask them to estimate the percentage of use in their own speech. Remember to press for a numerical estimate?) Do you know of any groups or subgroups around here who do pronounce it that way?
16.
Estimates of ae _____

16. Have you heard people in your neighborhood (or friends) who don't make a difference between /i/ and /I/? For example, do they say "lead" for "lid"? How much do you think they do this?

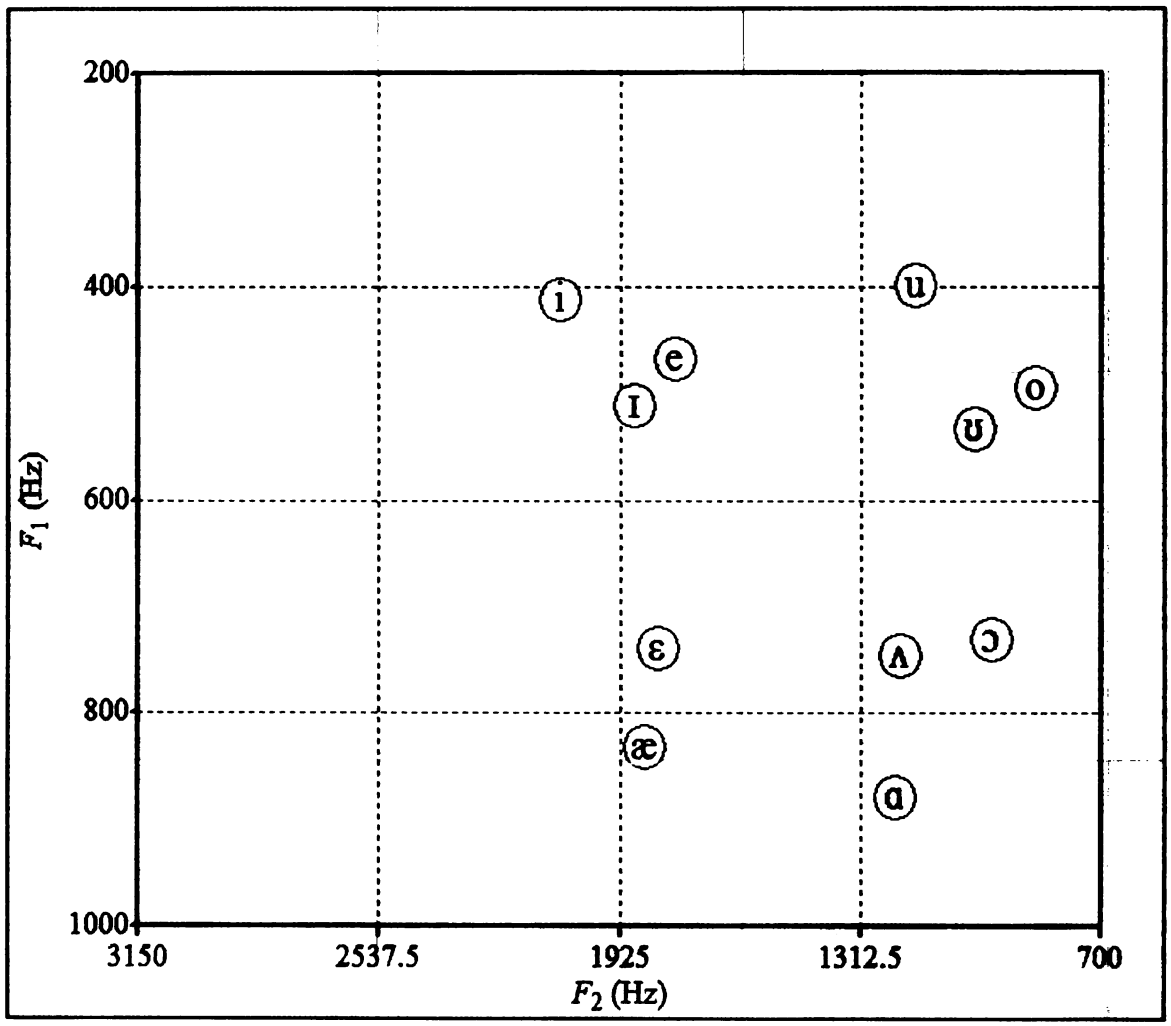
Estimates of /i/ and /I/ conflation _____

(Do you think you do this?)

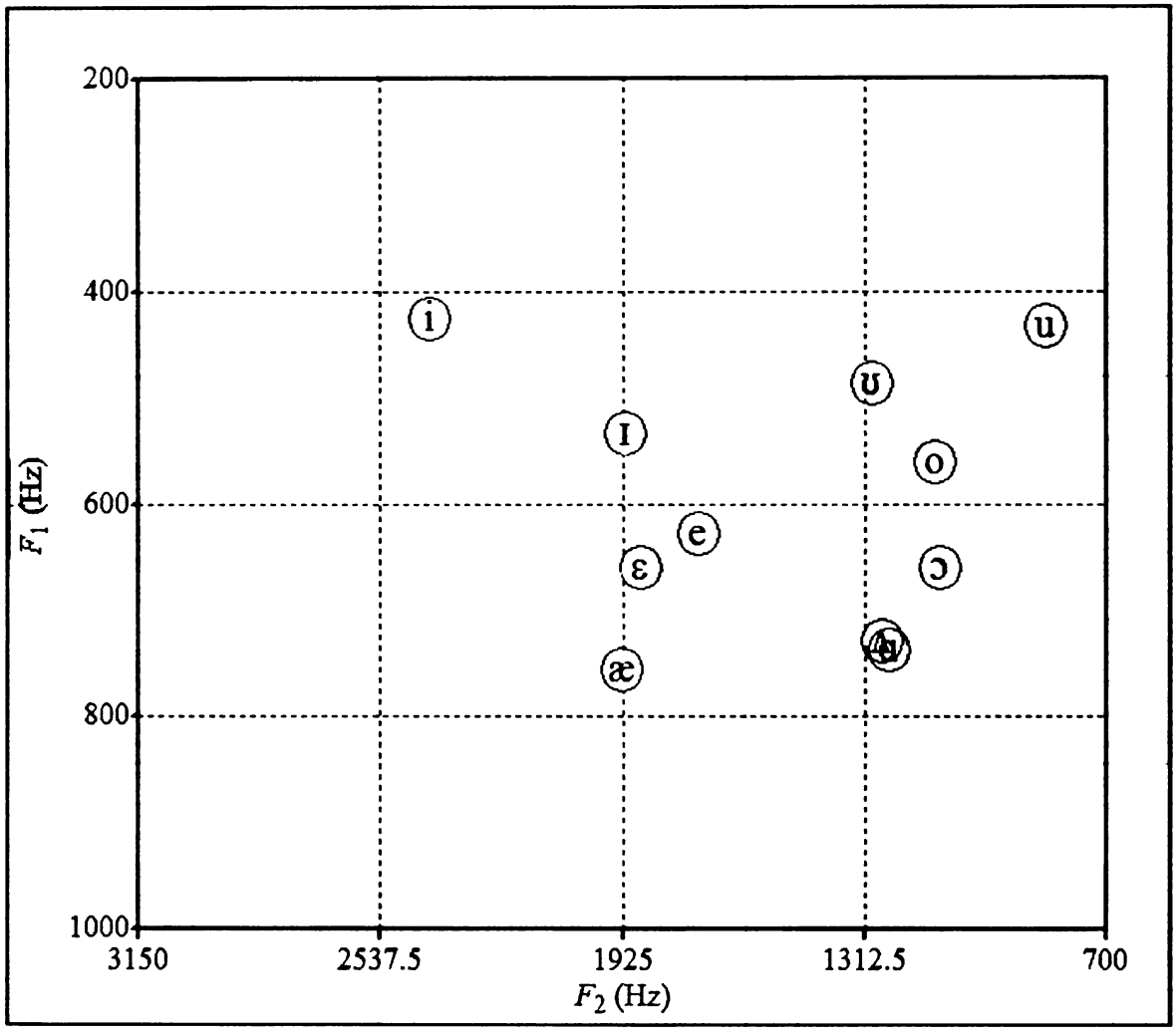
Appendix E
Individual Subject Plots

Following are the individual vowel charts for each subject interviewed. All plots were rendered in Praat and represent the mean vowel positions of all the subject's tokens. Plots for subjects 2, 3, 4, 5, and 15 are not included, as their data were unusable. Subject 2 did not complete the wordlist, 3 was illiterate, 4 was not Lebanese, 5's L1 was Venezuelan Spanish, and 15's sound file was corrupt. All subjects except Oliver speak Arabic.

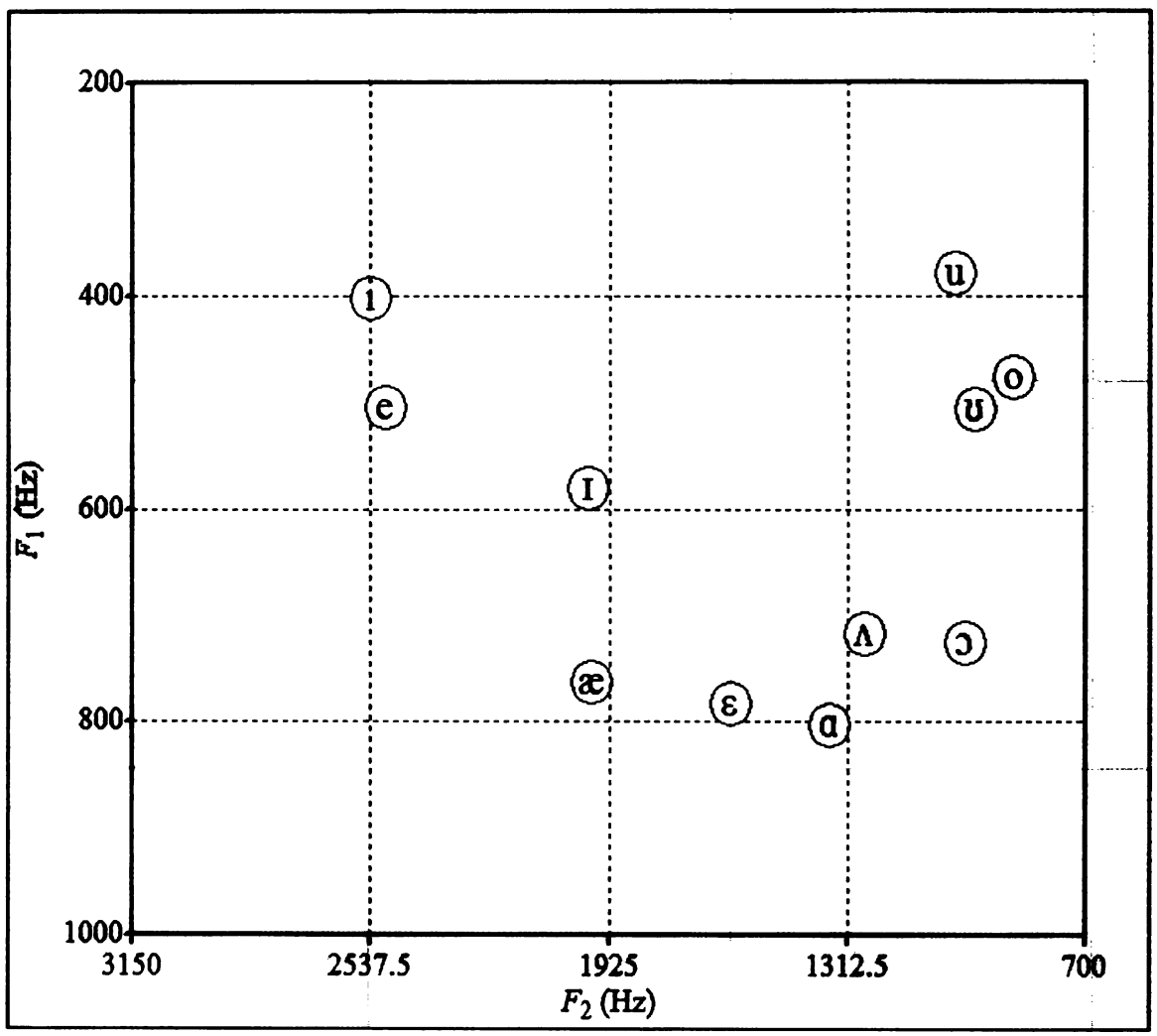
Zoe – Subject 01
Age – 66
Sex – F
Generation – 2nd
SES – Upper Middle Class



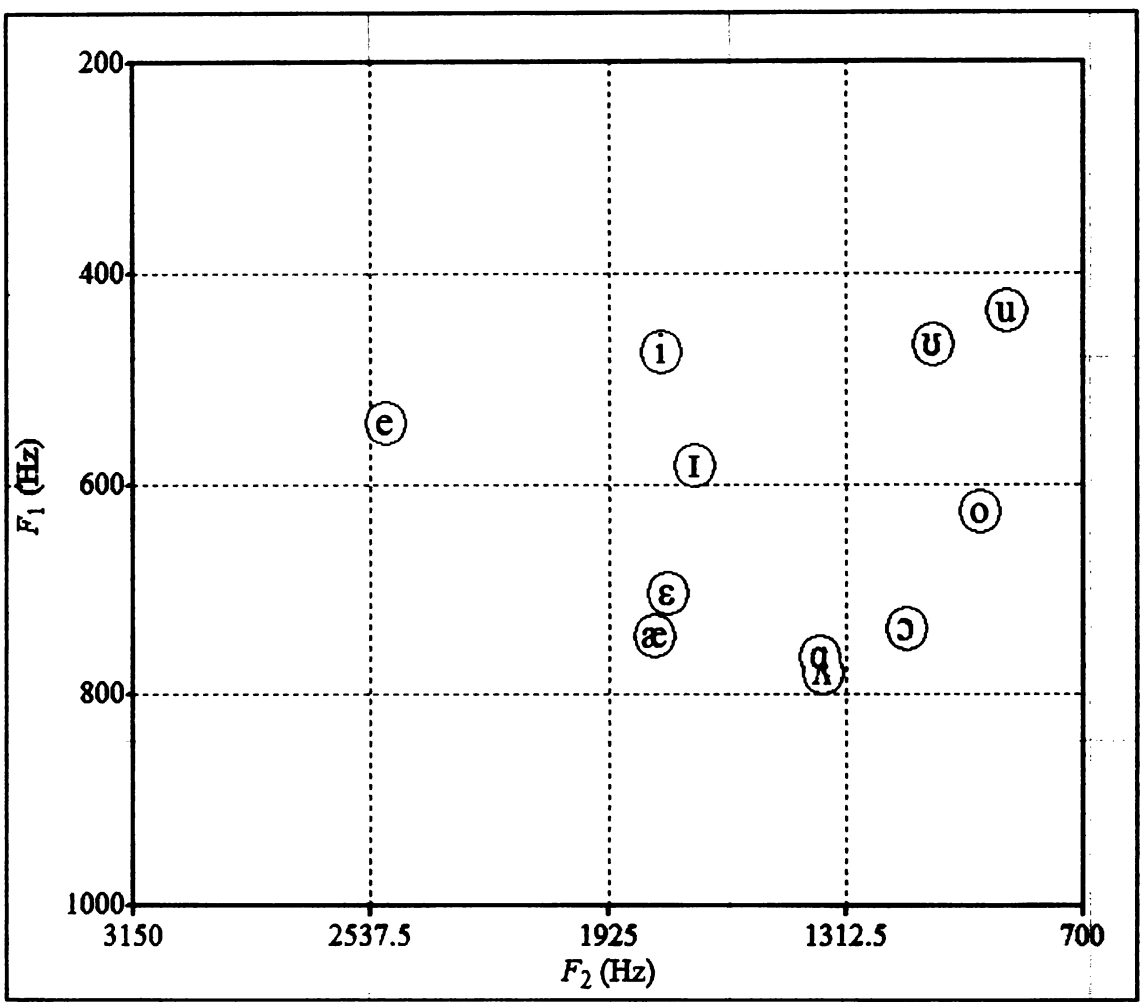
Bill – Subject 06
Age – 55
Sex – M
Generation –1st, 16 yrs in Michigan
SES – Lower Middle



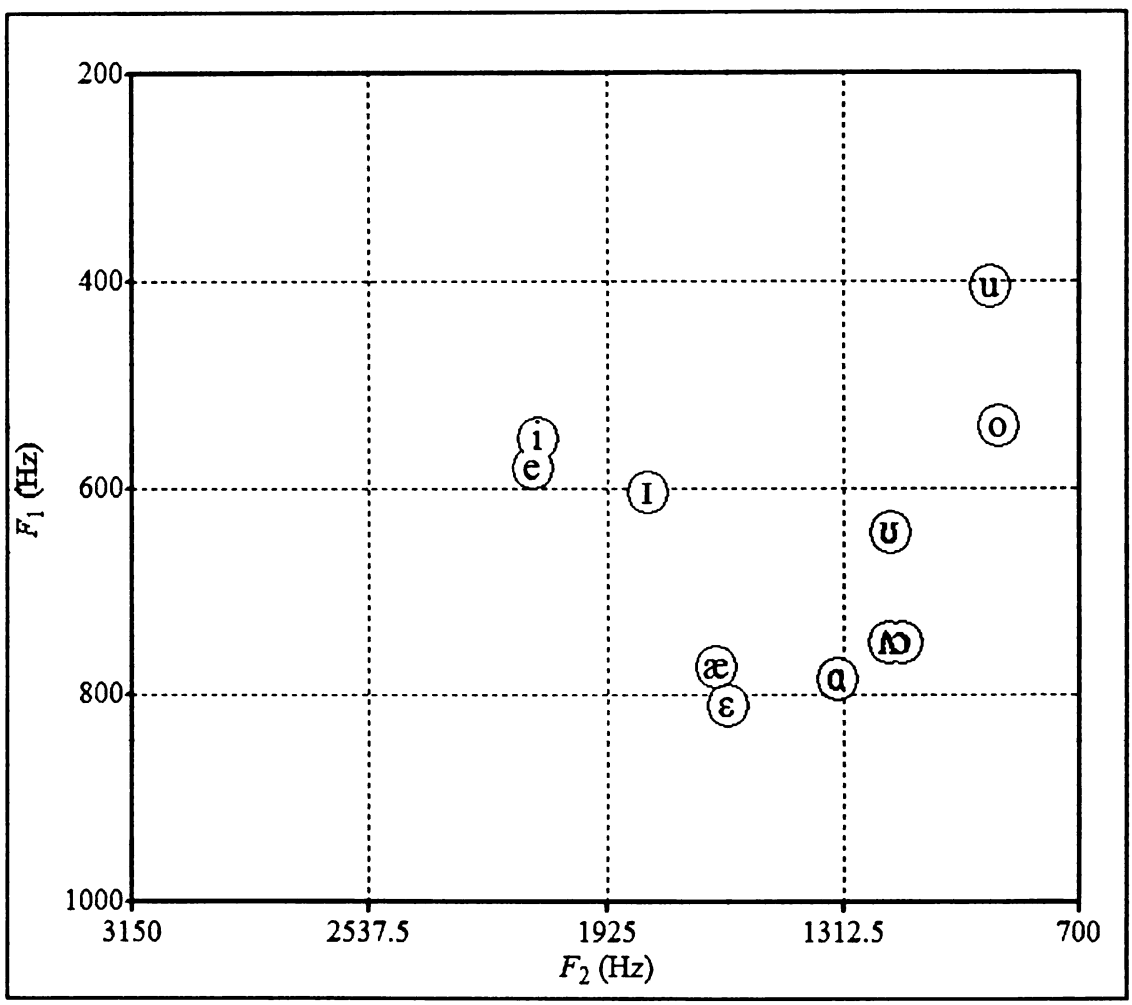
Cathy – Subject 07
Age – 21
Sex – F
Generation – 1st, 12 yrs in MI
SES – Lower Middle



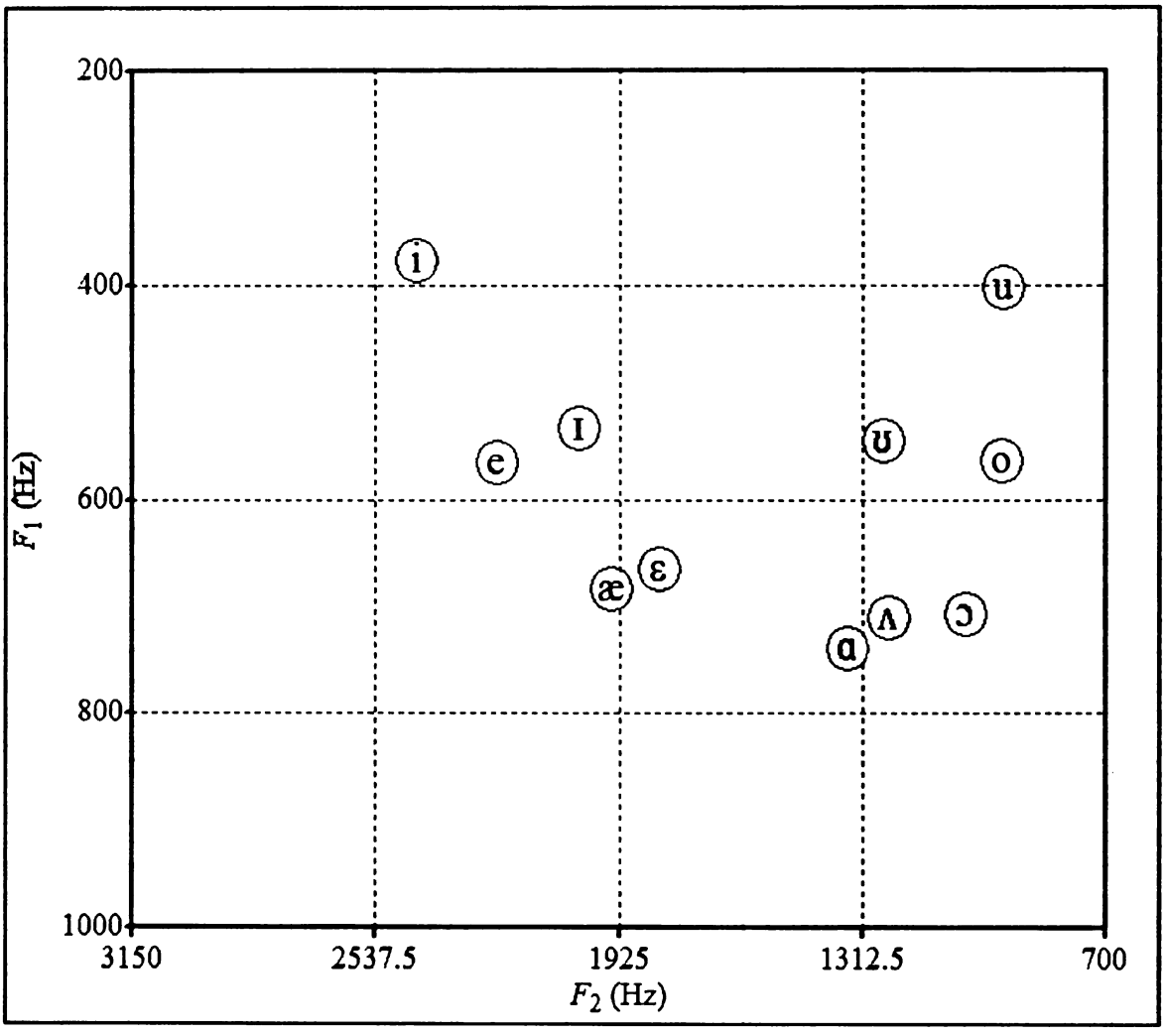
Rose – Subject 08
Age – 23
Sex – F
Generation – 1st, 2 yrs in MI
SES – Lower Middle



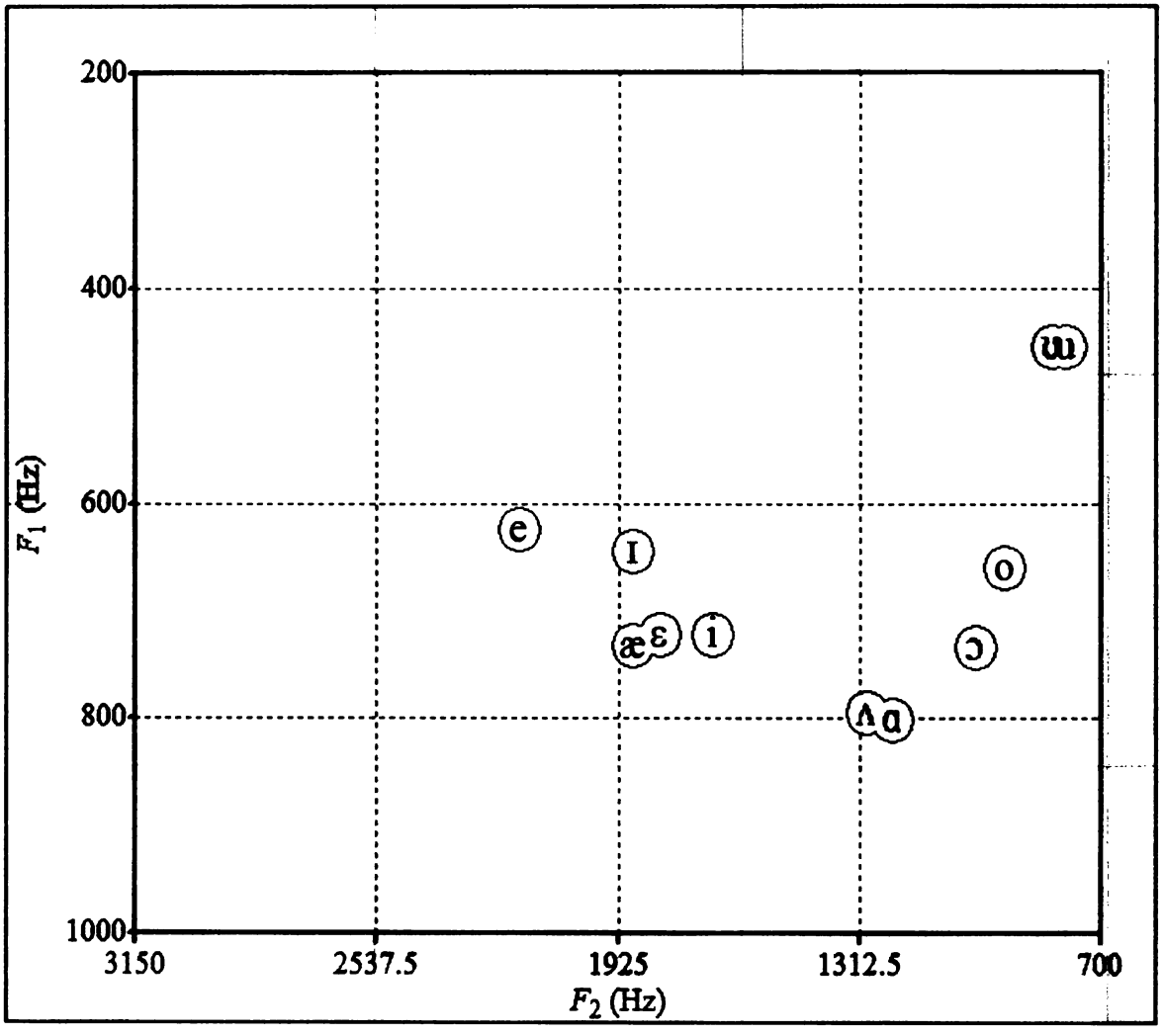
Sally – Subject 09
Age – 20
Sex – F
Generation – 2nd
SES – Upper Middle



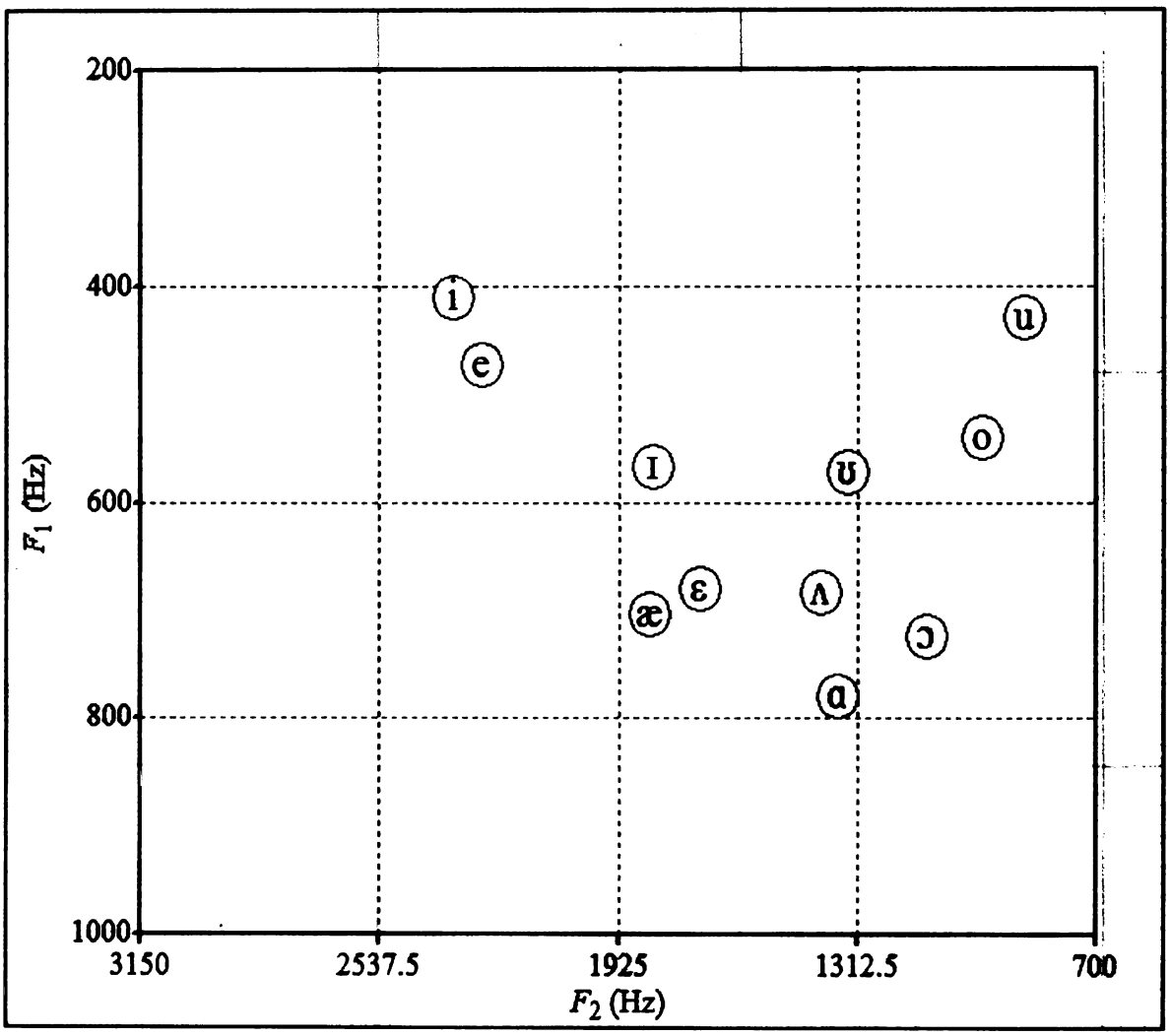
Steve – Subject 10
Age – 45
Sex – M
Generation – 1st, 18 yrs in MI
SES – Upper Middle



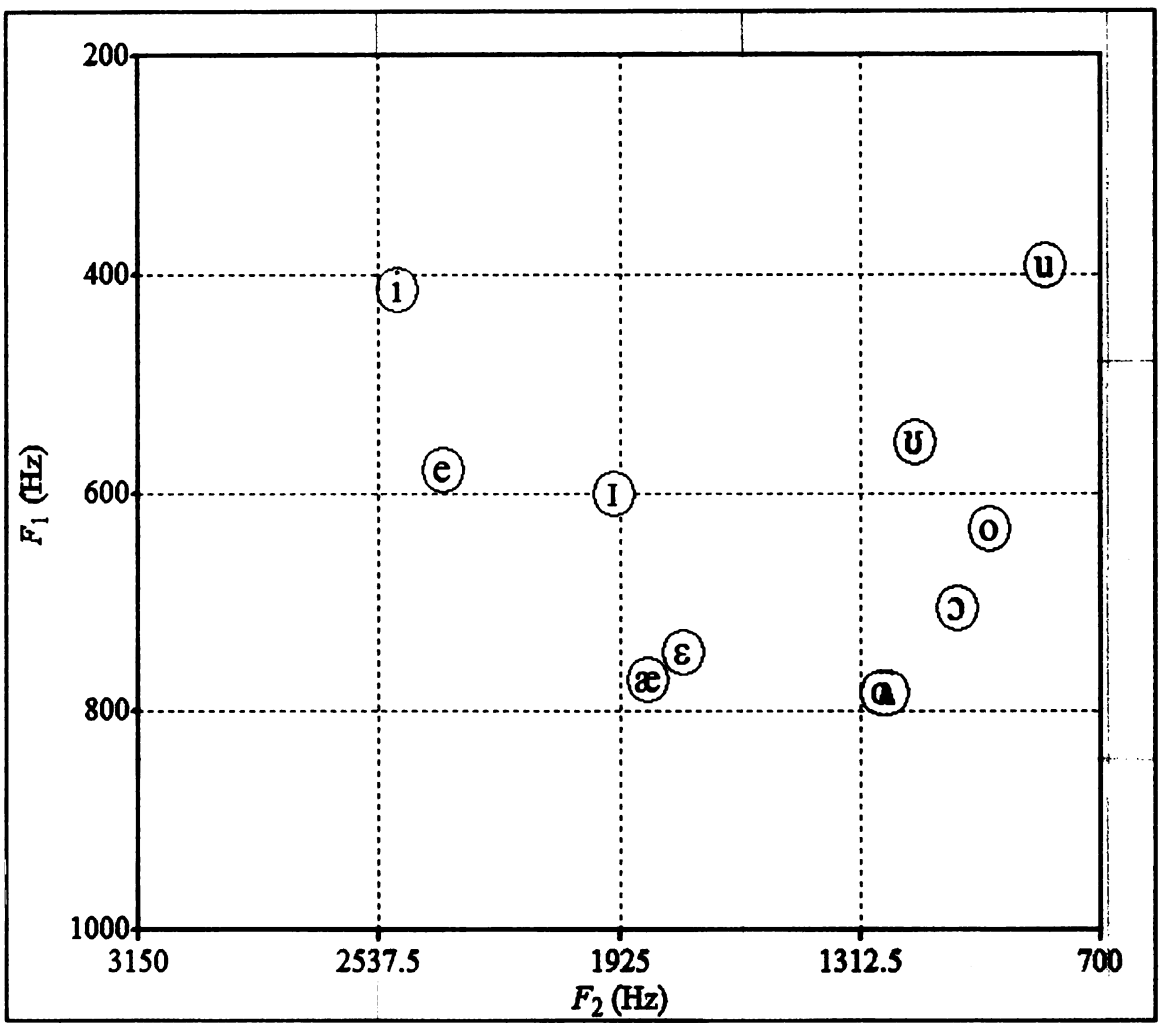
Lucy – Subject 11
Age- 43
Sex – F
Generation – 2nd
SES – Upper Middle



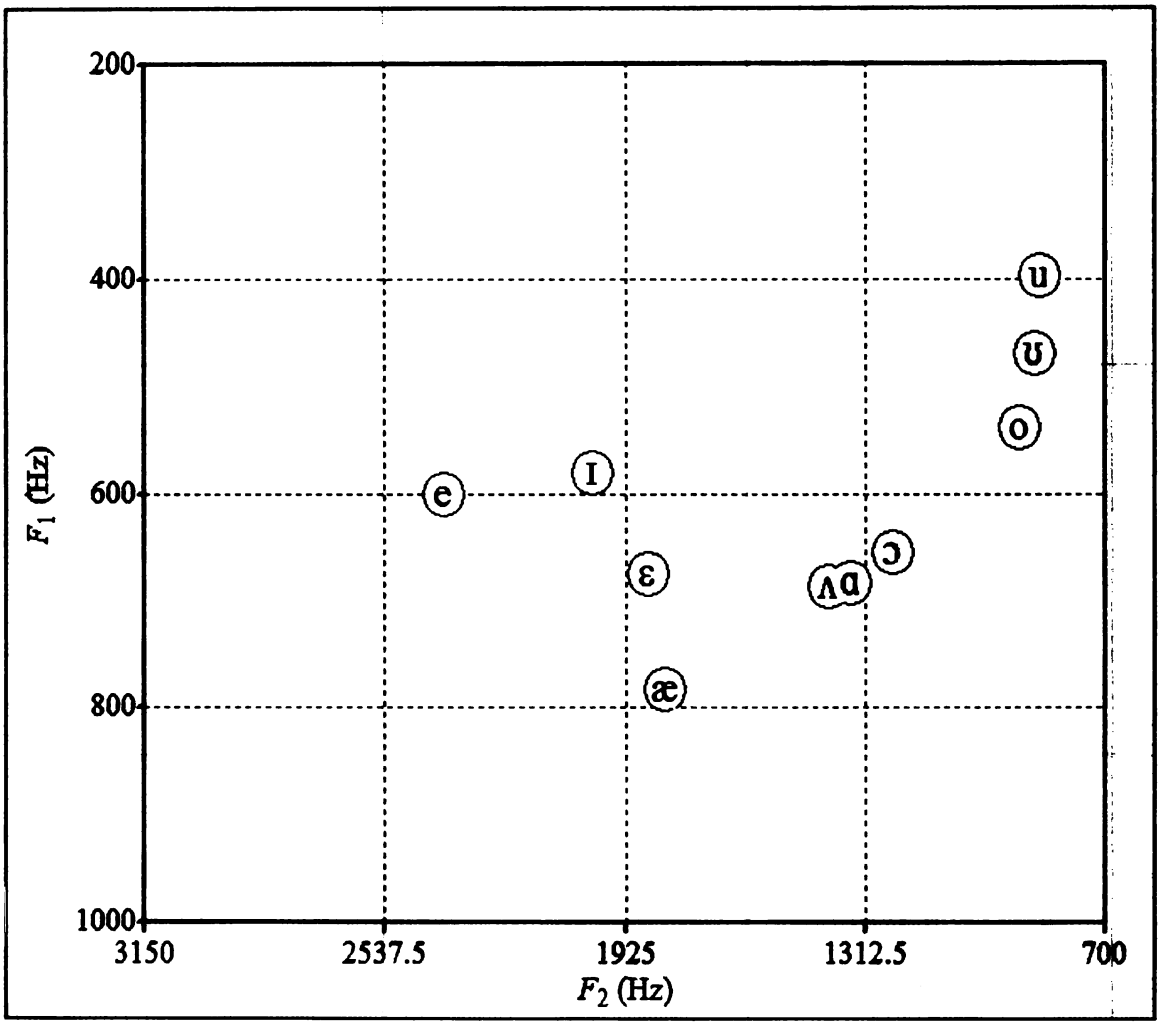
Elly – Subject 12
Age -46
Sex – F
Generation – 1st, 29 yrs in MI
SES – Upper Middle



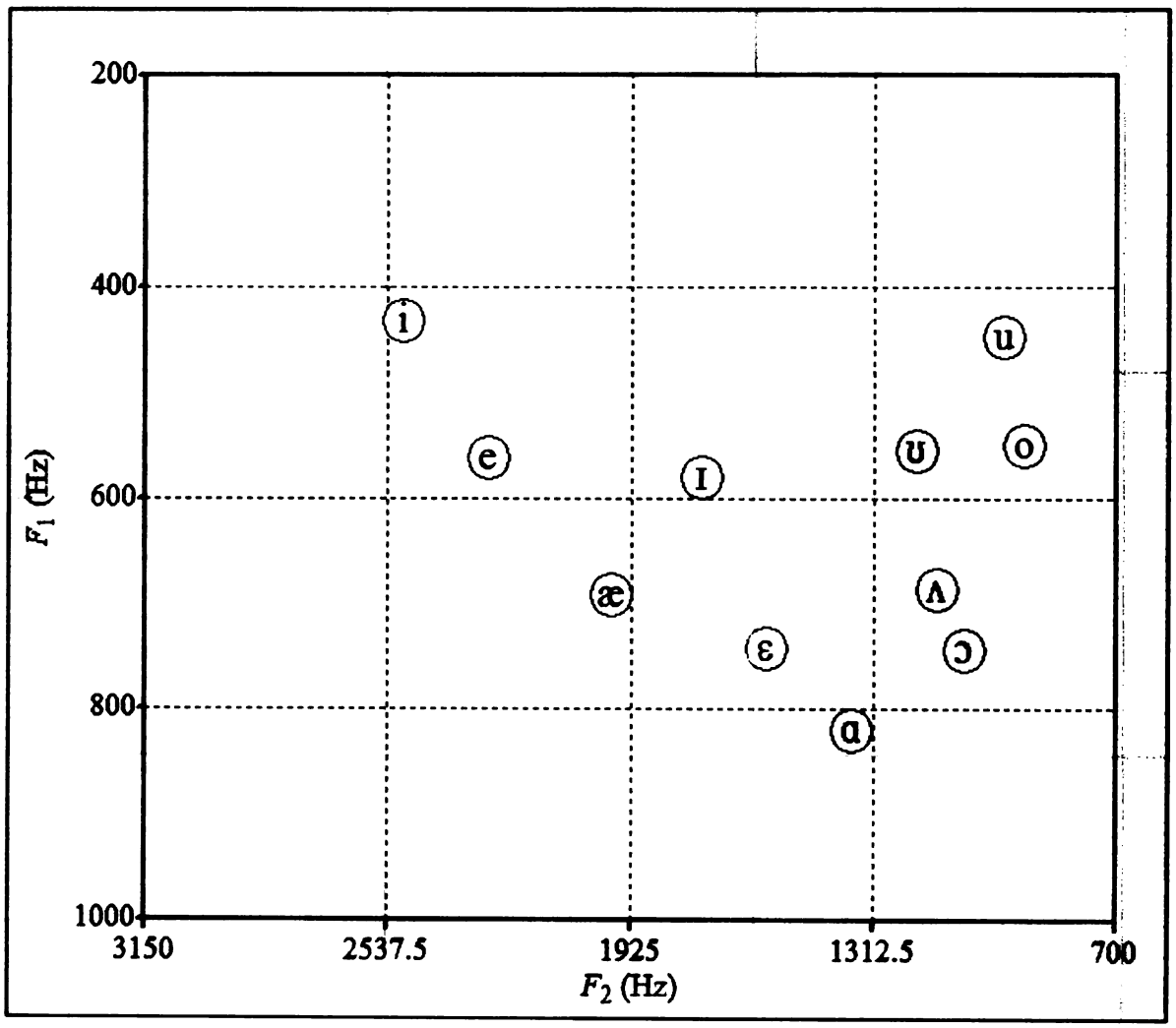
Liz – Subject 13
Age – 31
Sex – F
Generation – 1st, 12 yrs in MI
SES – Lower Middle



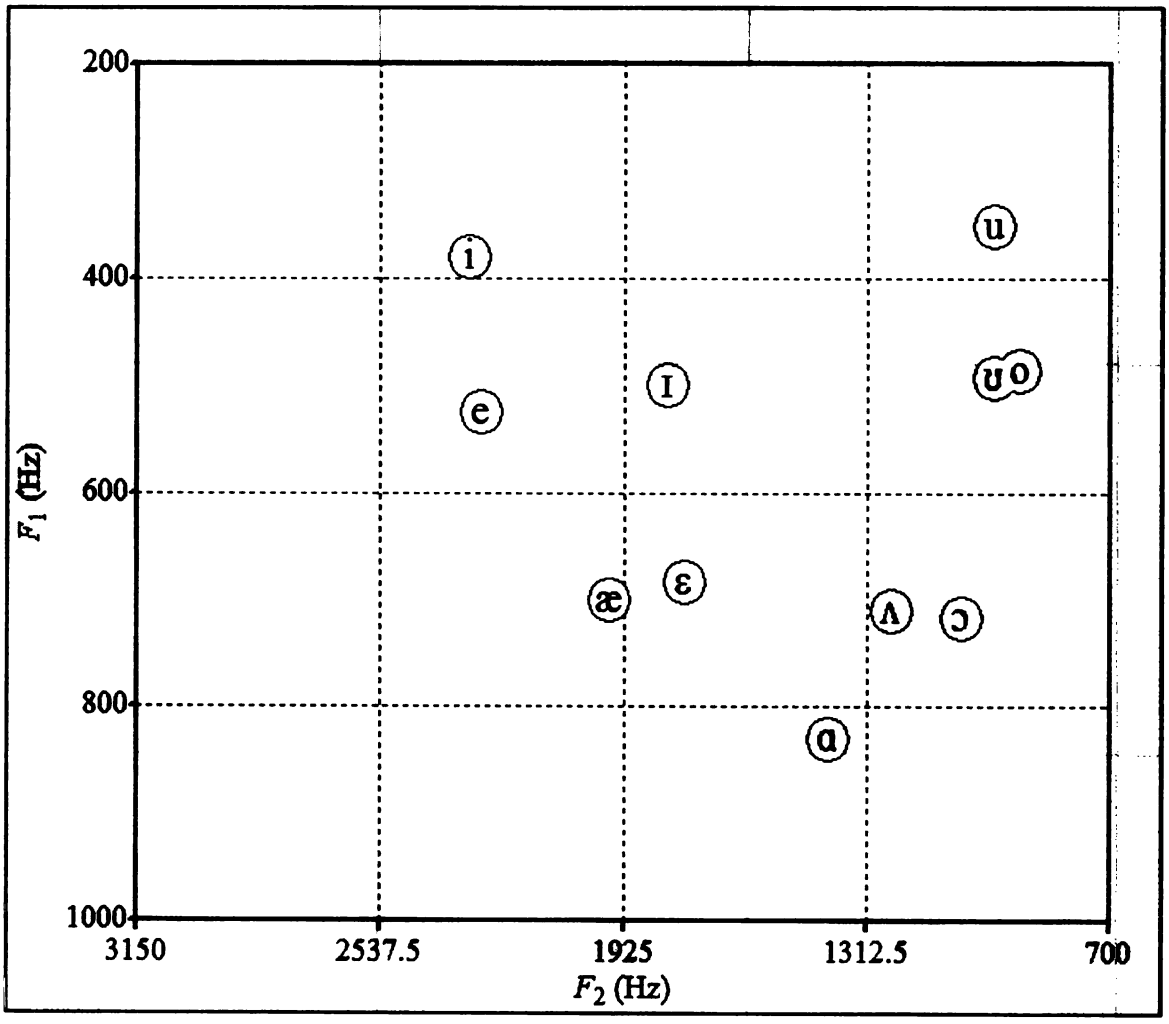
Wanda – Subject 14
Age – 41
Sex – F
Generation – 1st, 13 yrs in MI
SES – Upper Middle



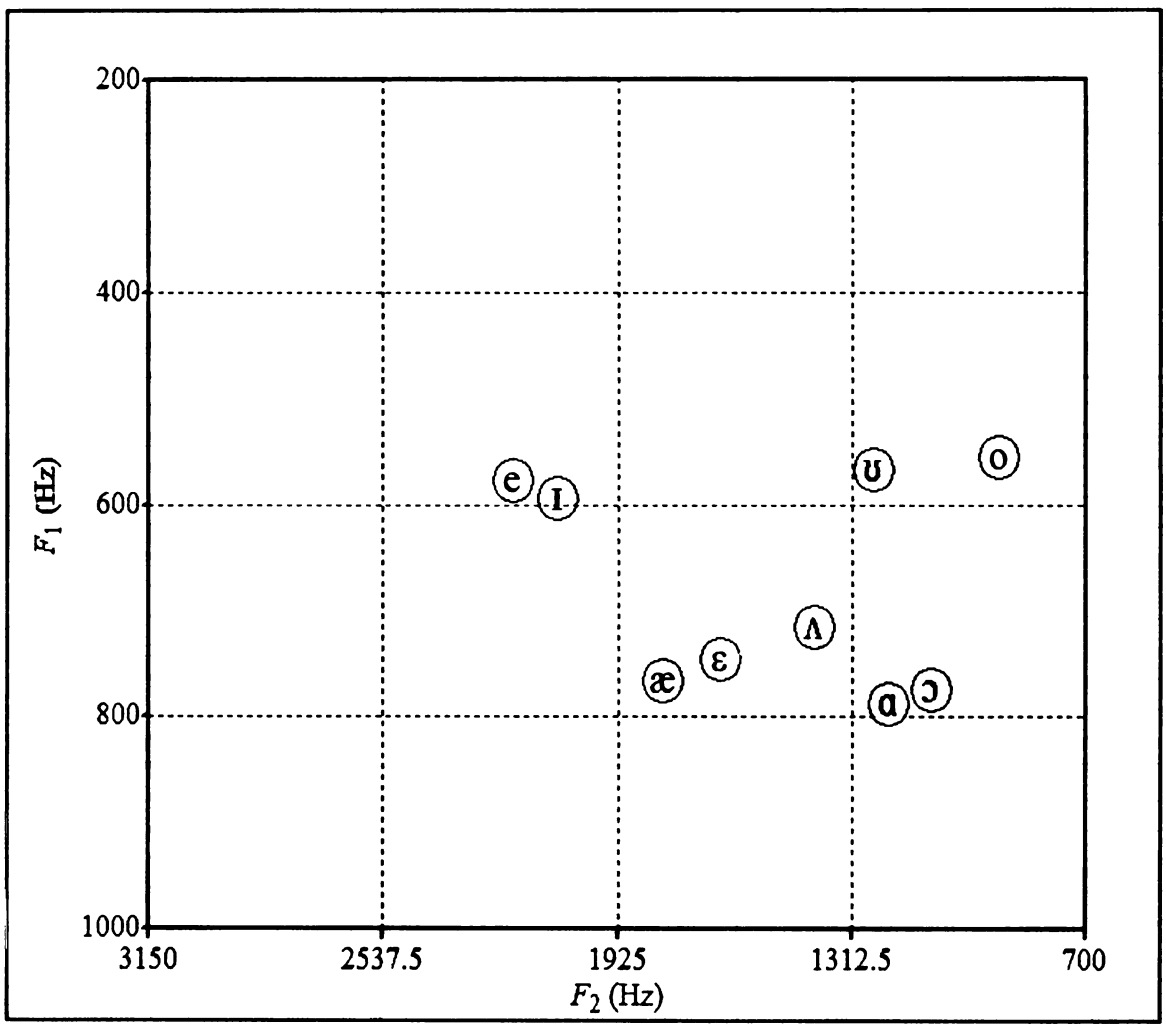
Susie – Subject 16
Age -32
Sex – F
Generation – 2nd
SES – Upper Middle



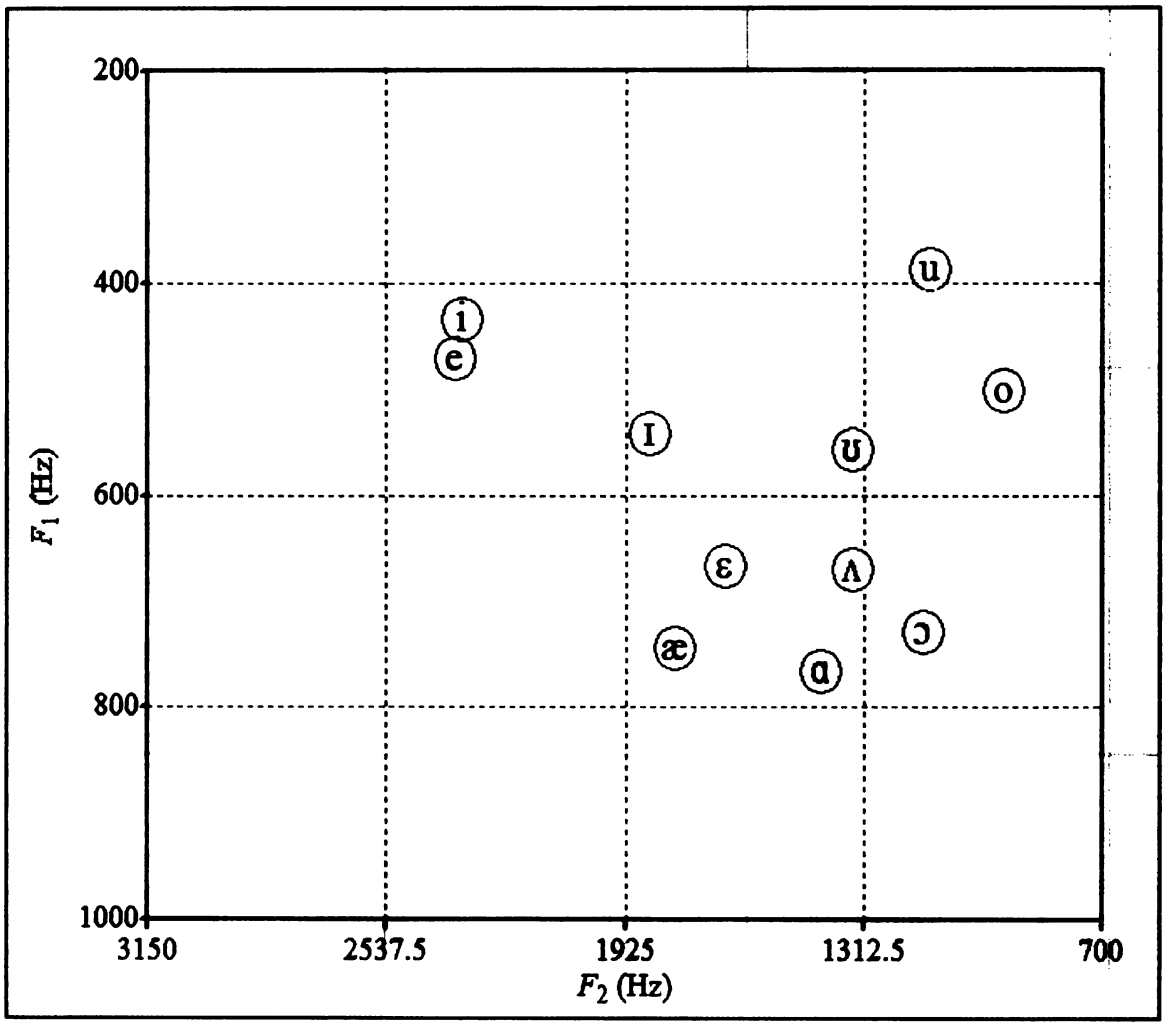
Calvin – Subject 17
Age – 60
Sex – M
Generation – 2nd
SES – Upper Middle



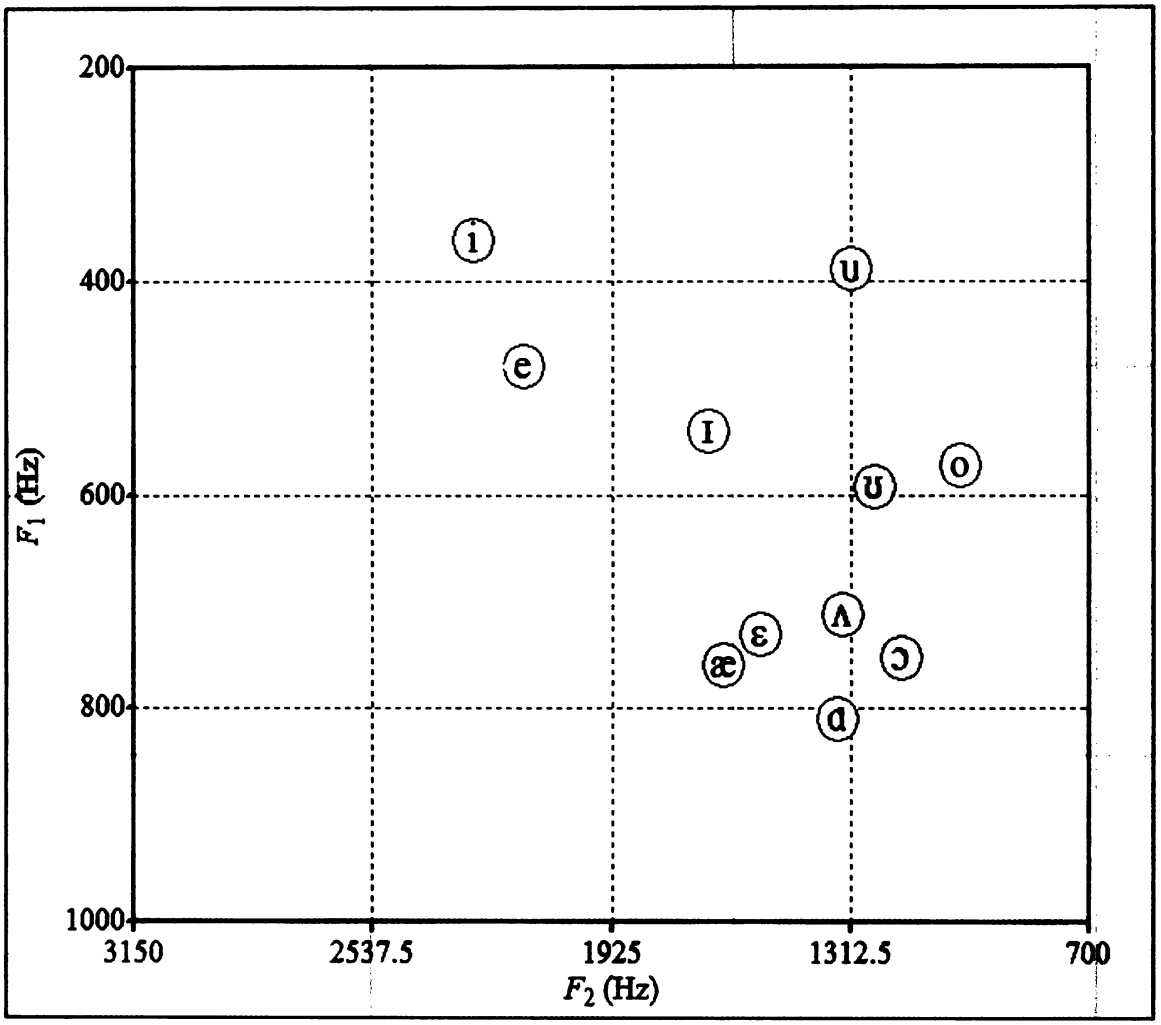
Molly – Subject 18
Age – 35
Sex – F
Generation – 1st, 10 yrs in MI
SES – Upper Middle



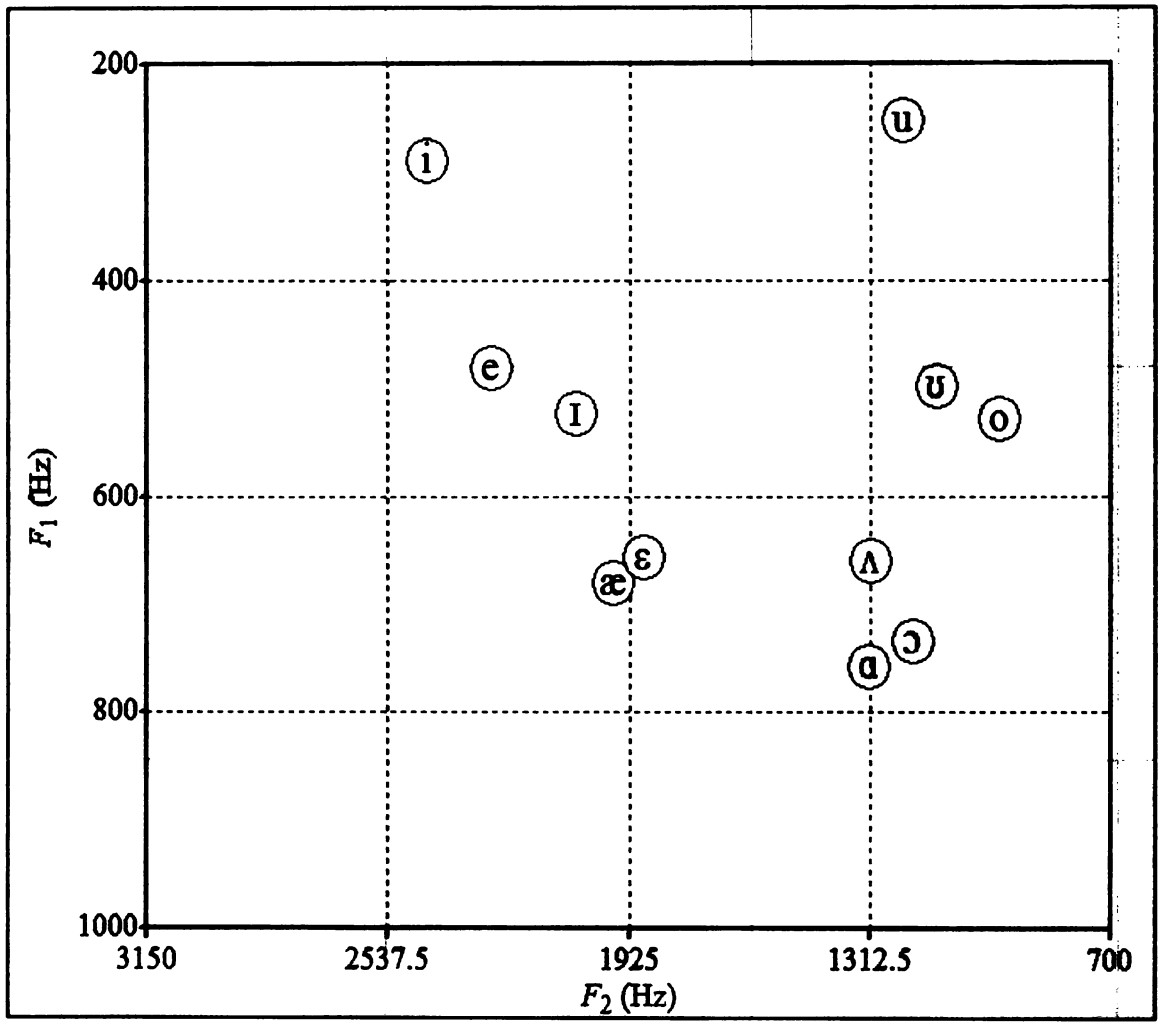
Oliver – Subject 19
Age – 30
Sex – M
Generation – 2nd
SES – Upper Middle



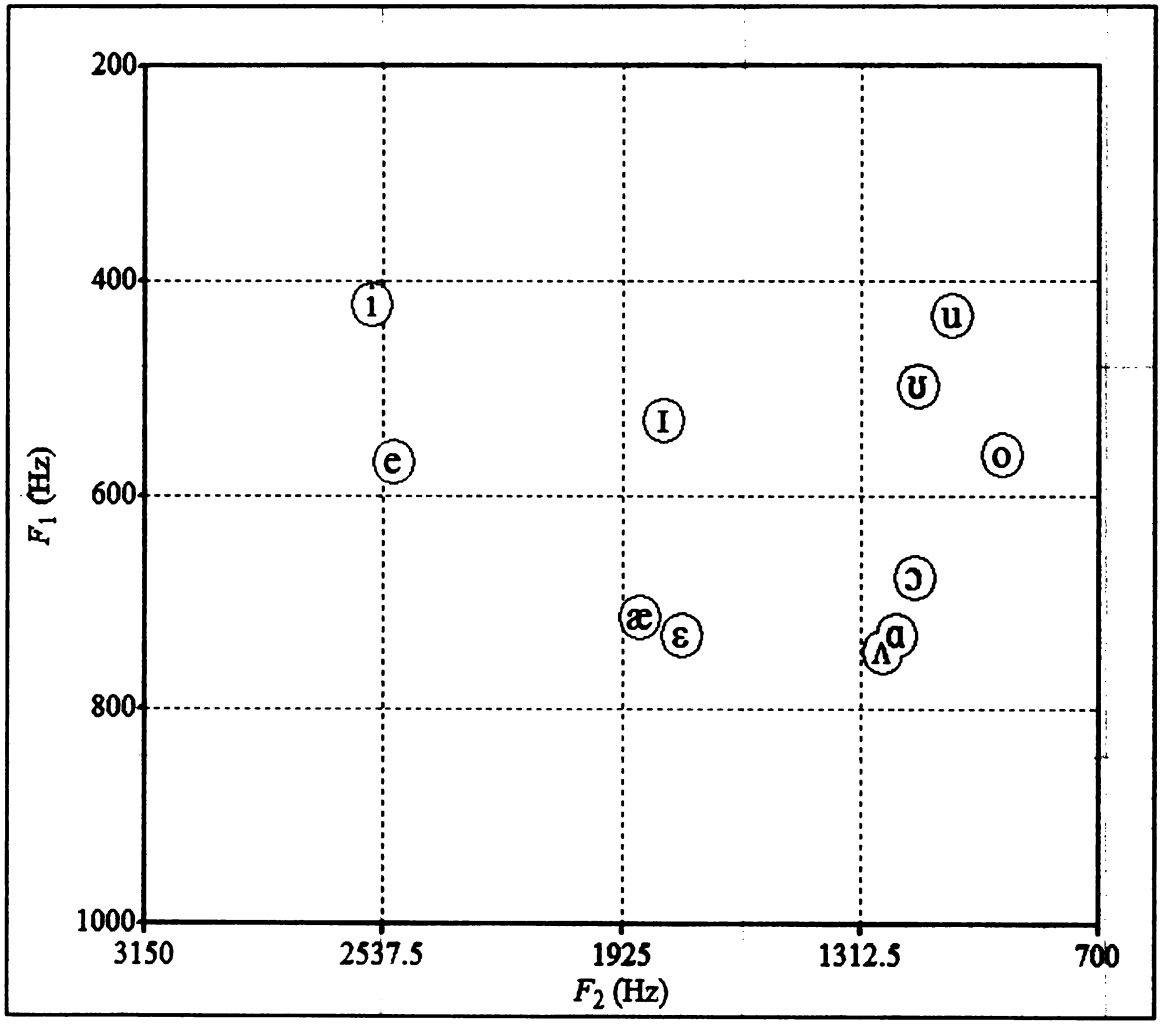
Kara – Subject 20
Age – 37
Sex – F
Generation – 2nd
SES – Lower Middle



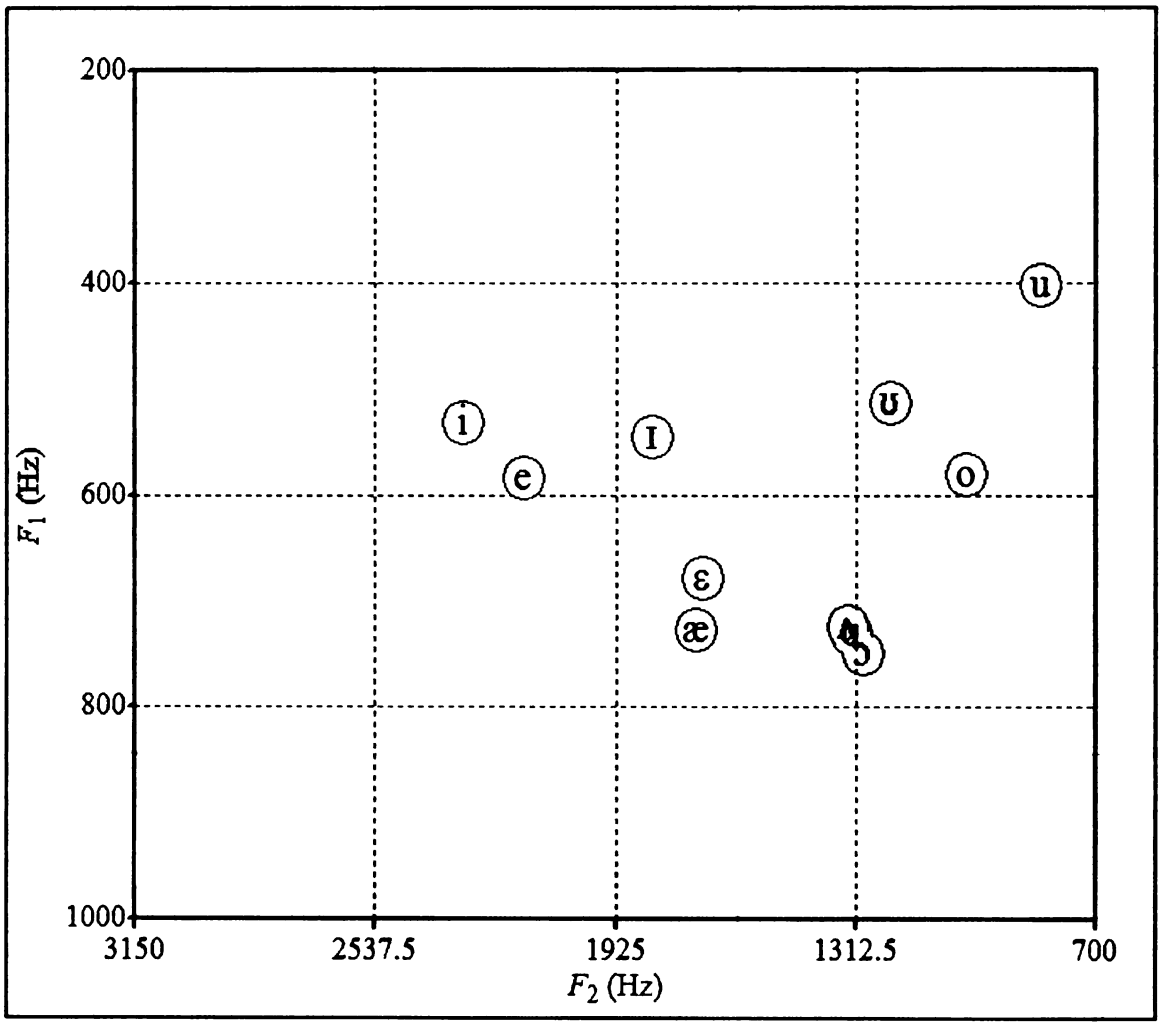
Ray – Subject 21
Age – 29
Sex – M
Generation – 1st, 18 yrs in MI
SES – Lower Middle



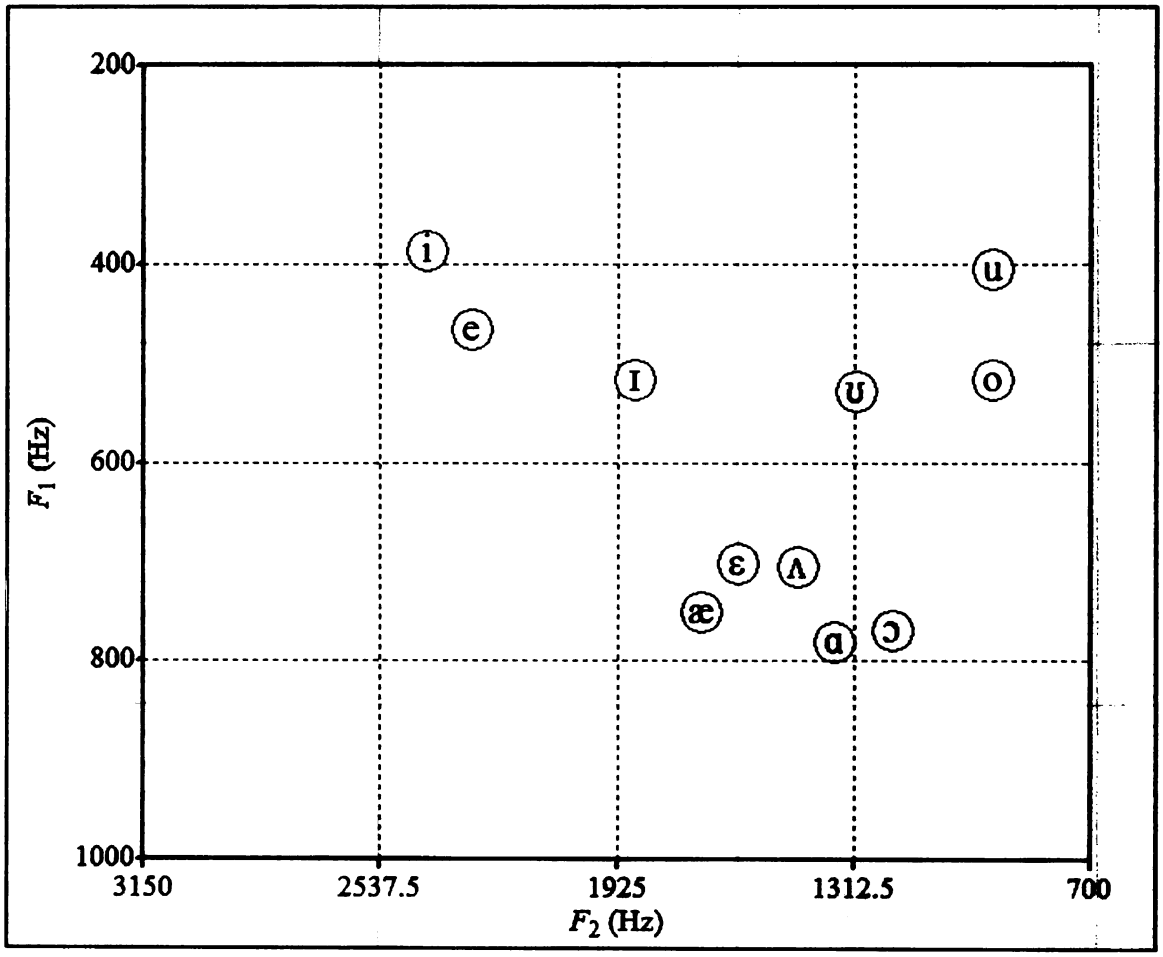
Brenna – Subject 22
Age – Unknown, 30-50
Sex – F
Generation – 1st
SES – Lower Middle



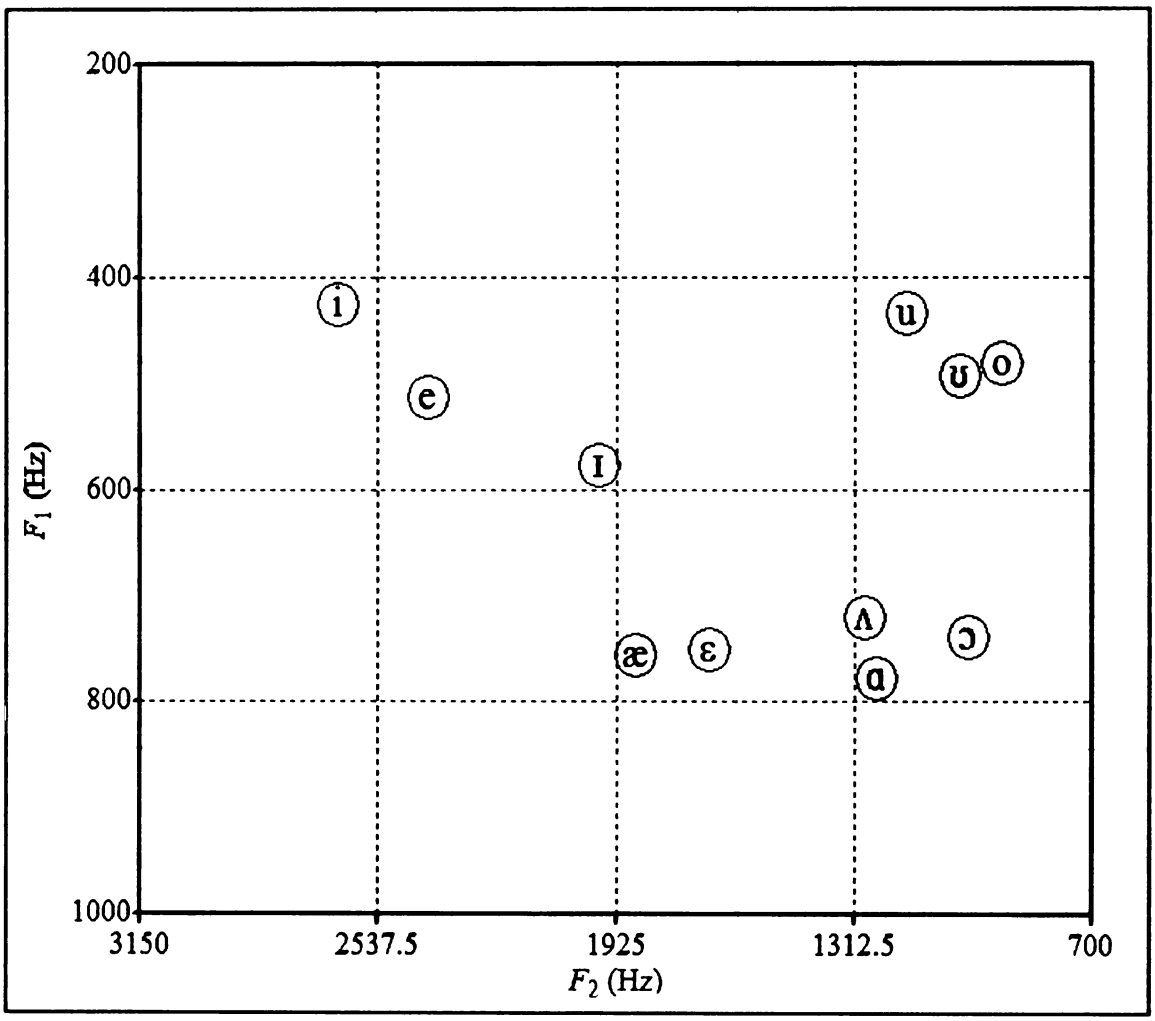
Gabriel – Subject 23
Age – 25
Sex – M
Generation – 1st, 6 yrs in MI
SES – Upper Middle



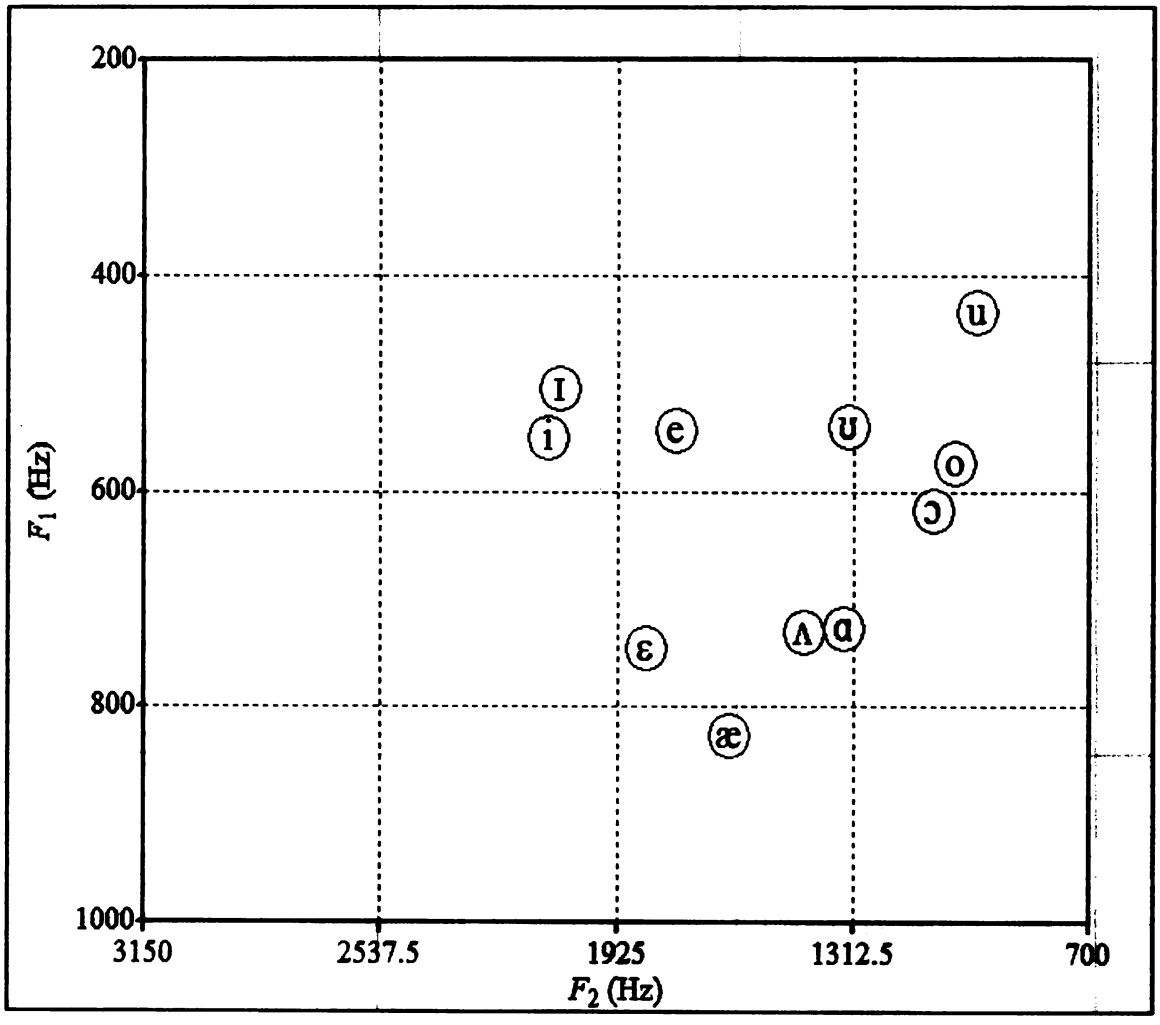
Ann – Subject 24
Age – 26
Sex – F
Gen. – 1st, 16 yrs in MI, Daughter of Janis
SES – Upper Middle



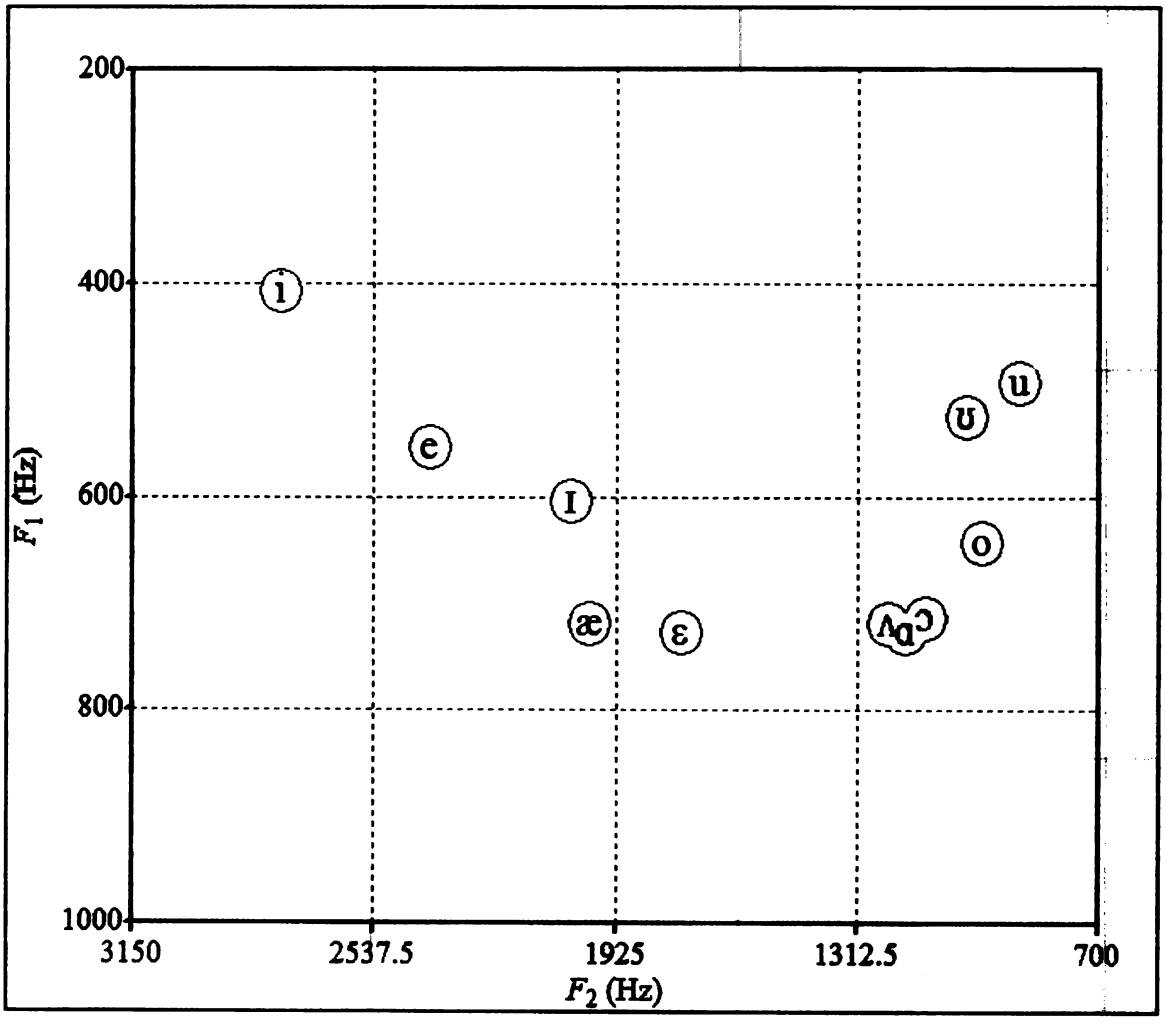
Paige – Subject 25
Age – Unknown, 30-50
Sex – F
Generation – 2nd
SES – Lower Middle



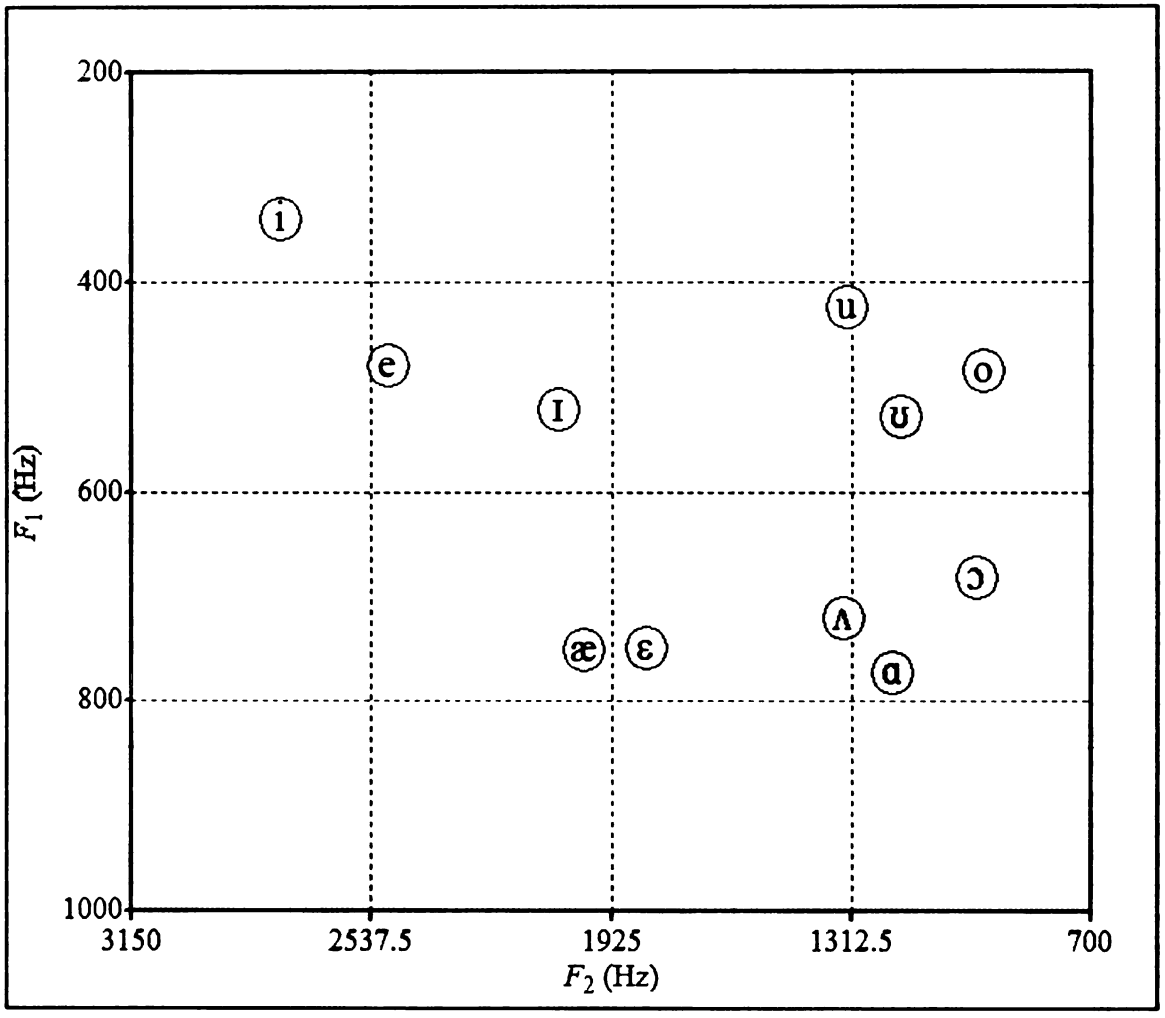
Janis – Subject 26
Age – 56
Sex – F
Gen. – 1st, 17 yrs in MI, Mother of Ann
SES – Lower Middle



Maura – Subject 27
Age -39
Sex – F
Generation – 1st, 20 yrs in MI
SES – Lower Middle



Marcy – Subject 28
Age -24
Sex – F
Generation – 2nd
SES – Upper Middle



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