LANGUAGE, ETHNICITY AND IDENTITY

IN A NEW JERSEY KOREAN-AMERICAN COMMUNITY

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By

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ABSTRACT

This dissertation investigates the variable patterning of two phonological features in the speech of 24 Korean Americans in the most densely populated Korean American community in the US, Bergen County, in the northeast corner of New Jersey, bordering Manhattan, New York City. The quantitative analysis, including detailed acoustic phonetic analysis, is augmented by ethnographic observation and analysis of variation in the speech of individual speakers, to gain further insight into the social meanings of linguistic variation in this community. The variable features investigated, /ɔ/ and /æ/ (which is commonly referred to as a short-ɑ), are pivotal in delimiting US dialect areas, especially in the Northeastern US, since two major cities, New York City and Philadelphia, show patterns for the variables raising of /ɔ/ and raising/fronting of /æ/ that distinguish them from other US dialect areas and from ‘general American English’. The study also presents the first quantitative sociolinguistic study of Korean American English.

The analyses yield two major findings. First, Bergen County Korean Americans show participation in the traditional New York City Metropolitan area English (NYCE) regional production pattern – raised /ɔ/ and a recently developed pattern of phonological conditioning for tense /æ/, the pre-nasal /æ/ tensing system. The findings thus help dispel
the common assumption of non-White ethnic groups’ non-participation in regional variation and change (Labov 2001: 506).

The second major finding investigates the effect of social factors on variation within the community. The examination of speaker gender, residency area, and religion strongly suggest that the variable patterning of each feature is associated with a different aspect of Bergen County Korean Americans’ local ethnic identity. Results suggest that the height of /ɔ/ is associated with Korean ethnic identity, while the degree of /æ/ tensing in pre-nasal environments is associated with local Bergen County identity of Korean Americans. The associations between various types and facets of identity and patterns of language variation are further revealed in the examination of intra-speaker variation across sociolinguistic interview topics, and it is found that participants use variants of /ɔ/ and /æ/ to shape their desired identity and refrain from undesired identities.

Focusing on a major ethnic community and its members provides significant contributions to the study of language variation and change, language and ethnicity, and language and identity. This dissertation introduces Korean Americans and their English production patterns, and fills an existing gap in the field. Secondly, it helps dispel the widely held belief that ethnic minorities in the US do not participate in patterns of (White) regional variation and change. Finally, this dissertation indicates that there are important connections between the variable use of regional features and Korean Americans’ ethnic and local identity and those different features can be associated with different facets of identity.
To my beloved wife, Eunyoung, my daughter, Claire, and my family
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Chapter 1.

Introduction

1.1. The Research Site and I

“So, you’re Korean? South or North?”

-An American neighbor who lived next door (a day in 1990)

The first day our family arrived in the borough of Palisades Park, Bergen County, New Jersey, in 1990, we were the only Koreans on the block. There were no Korean businesses on Broad Avenue, the biggest commercial street in Palisades Park, except a tiny corner shop owned by a Korean woman. The neighbors were predominantly White Americans (mostly with Italian ancestry), who mostly did not know of, or perhaps were indifferent to, Korea. Because my family moved to the United States quite suddenly due to an abrupt decision by my father’s company to relocate him, my family’s American life had begun without any idea of where we were or what to do. After a week spending most of our time staying in our house (since my mother, brother and I did not speak English at all, we had to wait for my father to come back from his work and take us out), my brother and I finally had a chance to go outside regularly: to attend school. The first day at Lindbergh Elementary School, I was surrounded by a lot of non-Korean kids and by the English language, neither of which I had ever been exposed to in Korea, since the only
language I had been using there was Korean. After the first day at school, I was introduced to a Korean girl, Yurie Park, whose family came to the United States a year earlier than my family did, and she was the first Korean child I met since I moved to the United States (except my father’s business colleagues’ children who came to the United States at the same time). I was assigned to the class where Yurie was assigned. As I recall, there were approximately 10 Korean students in each grade (out of approximately 100 students per grade), and I think the school was trying to assign all the Korean students to a class or two rather than distributing them evenly across all classes (see figure 1.1). This was understandable in terms of managing the incoming immigrant children who were unfamiliar with the new environment. Much of the incoming Korean immigrant population in the area at the time consisted of resident employees of Korean companies, such as Samsung, LG, or Hyundai, and their families. While my family went back to Korea less than two years after we arrived, right after my father’s duty, some of the resident employee families remained in the United States to settle down and raise their children or came back to the Bergen County area after their retirement in Korea.\footnote{Resident employees, or chwucaywen (주재원), are employees who are relocated to foreign countries by their companies for certain purposes such as conducting cooperative projects with foreign companies, or establishing international branches of Korean companies. Their term of service usually is less than ten years.}

Palisades Park borough (also known as Pal Park) is located in Bergen County, in Northeastern New Jersey, which is very close to New York City. Before the Korean immigrants came to Bergen County, concentrating in Pal Park and neighboring boroughs, there actually were Japanese immigrants who mostly resided in Fort Lee borough, right next to Pal Park, incoming mostly as resident employees from Japanese companies such as Sony and Toshiba, in the 1970s. The main difference between the Japanese resident
employee families and Korean resident employee families is that almost all of the Japanese families moved back to their home country after their duty was over, while relatively many Korean resident employees retired in the United States and did not go back to their home country even though their duty was over. Moreover, a good portion of the Korean immigrant population who settled down in New York, such as Queens and Manhattan, moved to Bergen County after the Korean community has been stabilized in those regions. As a result, even though there are a couple of places where people can still recognize the heritage of Japanese immigration history in the community, Korean immigrants became the biggest immigrant group in Bergen County.

The Korean population in Bergen County was starting to grow rapidly from its beginnings in the early 1990s (Min and Kim 2012), but the Koreans were still minorities
in the community back then\textsuperscript{2}. It was not that White residents were hostile to the incoming immigrant group, but they were rather unfamiliar with the newcomers. Every time I opened my lunch box (and of course it was a thermos lunch box in a cylinder shape), most of non-Korean classmates were excited to discover what I would have for my lunch. They were amazed that nori (edible seaweed usually used as wrap for sushi) was edible (and they sometimes called it black papers) and shocked about having cooked rice every meal. Also, my neighbors had no idea why my mother was collecting various green edibles growing in neighbor’s lawns and backyards. One of my neighbors actually thought my mother was so diligent that she was taking care of all neighbors’ lawns plucking out weeds, but the reality was my mother was gathering them since Korean dishes use various green edibles.

After spending a year and eight months in the community, my family had to go back to Korea because my father’s duty for his company in America was over. Until I had finished my college-level education in Korea, and even after coming back to the United States for my graduate degrees in 2007, I have never thought about going back to Pal Park. However, when I was visiting one of my friends in New York City in 2009, he told me a very intriguing fact about Pal Park and neighboring communities: the community has now become the densest Korean enclave in the United States in terms of the percentage of Korean population. Until I visited Palisades Park again in 2010, I still was not expecting what I actually saw. Spending about 30 minutes on the 166 NJ Transit bus from the Port Authority Bus Terminal in Manhattan, I could not believe my own eyes

\textsuperscript{2} In this dissertation, I use the term ‘Koreans’ or ‘Korean Americans’ to refer to Koreans living in Bergen County including ‘Korean immigrants and Korean Americans’. The term encompasses both Korean immigrants (first generation Korean Americans) and younger generation Korean Americans (1.5 generation and second generation Korean Americans).
to see how much Broad Avenue (currently the biggest Korean commercial street in Pal Park) had changed over the past 20 years. The avenue was full of Korean businesses and signs, and most of the people I could see around the community were Koreans. Based on my own impressions, it just looked like an ordinary neighborhood in Korea at a glance. Whichever store I would go into, almost all the people were conversing in the Korean language, and no one seemed to be uncomfortable with the Korean atmosphere. There were no sign of hesitation in giving and receiving orders in the Korean language. Moreover, some of the non-Korean people in the store also sometimes understood basic Korean words and expressions. The community was no longer a White-dominant community anymore. In fact, according to the United States Census 2010 Report, Bergen County is the region with the highest percentage of Korean American population (6.3%) in the United States.

Since the major Korean immigrant enclaves are concentrated in several municipalities in Bergen County, especially in and around the Pal Park area and along the Hudson River, with an exceptionally high percentage of Korean population, the area not only provides a perfect dwelling place for both the Korean immigrant and Korean American population, it also provides a perfect place for researchers to investigate Korean Americans, their community, and their linguistic usages.

1.2. Project Overview

As a sociolinguist and ethnographer, I started searching for earlier academic studies and non-academic articles focusing on the relatively new Korean immigrant
enclave, Bergen County, and was very surprised to discover the fact that few linguistic studies have been done focusing on the community. Especially in the field of sociolinguistics, there were only a handful of studies on Korean Americans, and most of those were focused on discourse analysis (see e.g. Chun 2001; Kang 2003, 2004; H Lee 2000; Lo 2004). While only few linguistic studies can be found on the topic, scholars in the field of sociology have been focusing more on Korean Americans than those in other fields (see e.g. Hong and Min 1999; Hurh and Kim 1984; Kim 1981; Min 1992, 2010). However, sociological studies focusing on Korean Americans do not focus on language as their primary concern, or only discuss language tangentially, when looking at language usage according to reported census data or other questionnaires. Moreover, the fast-growing New Jersey Korean immigrant community has not been the main topic of any study to date.

Since the community has not been drawing much attention from scholars in linguistics, as a variationist sociolinguist, ethnographer, and a former member of the community, I decided to be the first researcher to conduct a community-level linguistic study in Bergen County, New Jersey. The current study will shed light on the sociolinguistics of Bergen County, as well as other Korean American communities in the United States. Moreover, this study is also relevant to the study of Asian Americans more generally and will encourage more focus on Asian Americans in the field of linguistics, which will be an invaluable way of giving back to my former community. By looking into the linguistic production patterns of Korean Americans’ English in the community relative to established and changing regional (White) patterns of variation, as well as the

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3 When Korean American communities in the northern New Jersey area are referred to in sociological studies, they are always categorized as belonging to the ‘New York City Metropolitan area’ or the ‘New York New Jersey Korean American enclave’.
social correlates of linguistic variation, this study provides useful insights into understanding ethnic minority groups in the United States in terms of regional patterns of language variation and change, and as well as the role of language variation in displaying and shaping ethnic and local identity. Hence, the current study is invaluable in terms of revealing the position of ethnic minority groups with respect to American regional dialect variation and change, as well as increasing our understanding of crucial connections between language, dialect, and identity in immigrant and other ethnic United States populations.

As briefly introduced in the section 1.1 above, this study focuses on a relatively new Korean enclave, Bergen County (especially concentrating in Pal Park and its surrounding boroughs), in Northern New Jersey from a variationist sociolinguistic perspective. The recent academic interest in patterns of language variation of Asian Americans is growing in response to their rapidly growing population in the United States. This study is designed to help to fill a number of existing gaps in the fields of sociolinguistics and linguistic anthropology, especially in terms of patterns of language variation among minority ethnic groups in the United States. There are two major purposes of this study: (1) Documentation of patterns of variation for two target regional English variables, /ɔ/ and /æ/, by Korean Americans from Bergen County who are speakers of English as their native language or the most comfortable language, and (2) the connection between their production patterns of those two target features with social meanings, especially those related to identity. The first purpose mainly concentrates on the general patterning of English spoken by younger generation Korean Americans (those who are US-born or migrated to the US before their age of 12) of this community in the
context of large-scale patterns of regional variation in the US\(^4\). In order to define and position their English in the big picture of regional variation in the United States, two major regional features, extracted from sociolinguistic interviews, are examined: the low-back merger (also commonly known as COT-CAUGHT merger) and the pattern of /æ/ by following environment, as either the New York City English (NYCE) (short-a (/æ/, hereafter) split, in which /æ/ is split into tense) and non-tense variants based on complex phonological conditioning (with ‘tense’ hereafter referring to the fronting and raising of the low front /æ/ nucleus); the somewhat less complex Philadelphia /æ/ split, or the much simpler general American pattern, in which /æ/ is tense before nasals but relatively lax elsewhere. Both of these features and their patterns in US dialects, particularly those nearest to Bergen County, will be explicated in detail in Chapter 2. The first part of the dissertation will provide useful insights into various topics in variationist sociolinguistics, such as the possible existence of a Korean American ethnic English, and the participation or lack thereof of ethnic minorities in (White) regional linguistic variation and change. The second part of the study examines the correlations between the variation patterns of target features and various social factors, including gender, residency and religion, thereby exploring the social meanings of linguistic variation. Moreover, each sociolinguistic interview is also examined in depth, scrutinizing how the two features under study are used in unfolding interaction to project and create various social meanings, including taking up particular types of stances as well as shaping certain

\(^4\) Younger generation Korean immigrants refers to second generation Korean Americans who were born in the United States with both of their parents who immigrated to the United States from Korea after reaching their maturity, and 1.5 generation Korean immigrants who are Korean immigrants who migrated to the United States in their formative years. In this study, 1.5 generation Korean immigrants who came to the United States before their age of 12 and who speak English as their most comfortable language are included in addition to the second-generation Korean immigrants.
speaker identities. These understandings are augmented by the investigator’s extended ethnographic observations of the Bergen County Korean American community.

1.3. The Place of Asian Americans in Sociolinguistics

The United States is well known to be one of the most diverse countries in the world as a result of the massive immigration from all around the world. Considering this background, the United States can be seen as an ideal place to examine how language and ethnicity interact with one another. However, it is also true that the focus of sociolinguistics on ethnicity and language in the United States has been somewhat unbalanced, often times showing major concentration on specific ethnic groups and languages/dialects such as Latino/a (Latino hereafter) ethnic groups and Latino English and/or Spanish (see e.g. Bailey 2001, 2002; Fought 2003; Zentella 1997), and especially African Americans and African American Vernacular English (AAVE hereafter) (see e.g. Baugh 1983; Fasold 1972; Kochman 1981; Mufwene 1998; Labov 1997; Morgan 2002; Wolfram and Thomas 2002, among many others). A number of scholars in sociolinguistics and linguistic anthropology have pointed out that smaller ethnic groups have not drawn enough attention compared to these two larger US ethnic groups. In particular, it is no exaggeration to say that the vast majority of the studies on the English of non-White ethnicity is devoted to AAVE since the founding of modern variationist sociolinguistics in the mid-1960s, and, at last count in the mid-1990s, the number of publications on AAVE was greater than five times the number of publications on any other American English dialect (Schneider 1996). Fought (2006) notes the important
status of AAVE in sociolinguistics by stating that “it stands as the center of so much that is crucial in sociolinguistics, and in the study of language and ethnicity specifically” (Fought 2006: 45). AAVE has been the main concern not only for many linguists because of its intriguing characteristics and the controversial status of its origins, but also for people in the public sphere because of its salience in the social domain. Wolfram and Schilling (2006) also point out that “AAVE has drawn widespread media attention and public discussion on a number of occasions in the relatively brief history of social dialectology” (Wolfram and Schilling 2006: 211). English spoken among people of Latin American ancestry in the United States (‘Latino English’ hereafter) is also one of the varieties focused on in many studies of language, ethnicity and variation. Although quite different dialects in many respects, Latino English and AAVE are similar in that they both include a rich set of distinguishing linguistic features in their phonology and syntax, and some of the salient phonological and syntactic features have their roots in the heritage languages in which the varieties have their roots.\(^5\)

The two non-White ethnic dialect varieties that are mainly studied by linguists bring up the notion of the so-called ‘sociolinguistic distinctiveness model’ that has traditionally guided variationists (Bucholtz and Hall 2004). Under this model, the focus is on distinctive linguistic features in connection with ethnicity. This concentration on linguistic distinctiveness has led researchers to overlook Asian American English speakers’ linguistic practices, which are not always very dialectally distinctive from those of other ethnic groups and often not recognizable as indexing a particular ethnicity or race (see, e.g., Bucholtz 2008; Hanna 1997; Lindemann 2003; and Lo and Reyes 2008 on

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\(^5\) Even though some Latino English speakers show code-switching between English and their heritage language (Spanish), code-switching is not a required feature in defining Latino English, as speakers of Latino English may be monolingual English speakers.
the linguistic usages of Asian Pacific Americans [APAs]). In other words, focusing
mainly on linguistic distinctiveness is destined to fail if we hope to achieve a full
understanding of the language(s) and linguistic practices of ethnic groups with few or no
distinctive ‘ethnic dialect’ features, although such groups may still exhibit quite
distinctive linguistic practices on other levels (e.g. discourse) and will of course use
language to display, create and shape identity, as does any group. This failure of the
sociolinguistic distinctiveness model results from (and perhaps helps bring about) the
process of erasure (Gal and Irvine 1995). In other words, Asian Americans are ‘erased’ in
the linguistic distinctiveness-centered models because their English does not fit into a
model that predicts ‘x speaks x language and y speaks y’. This brings up an argument that
distinctive ethnic dialect may not be necessary in indexing ethnicity for all ethnic groups.
Another main reason why Asian Americans, including APAs, are overlooked in studies
on language and ethnicity stated in Lo and Reyes (2008) is that they are frequently
pigeonholed as either ‘forever foreigner’ or ‘honorary white’ (Tuan 1998). From a
‘forever foreigner’ perspective, the focus of study of APAs (and indeed other groups with
immigrant L2 heritage) is on speakers’ bilingualism related to their heritage languages
and code-switching. Moreover, this point of view also promotes the idea that Asian
Americans are not native speakers of English and presumes them to be predominantly
speakers of their heritage language. This ideology is also applied to younger generation
Asian Americans who, in many cases, are highly acculturated and socialized in the larger
mainstream society, although they too are often considered separate from the larger
society, as with their immigrant ancestors. As a consequence, the ‘forever foreigner’
point of view erases Asian Americans’ membership in American society by simply
considering them as non-native speakers of English, and monolingual/monocultural people of their heritage language and culture, which is not true at all. On the other hand, the ‘honorary white’ point of view assumes that younger generation Asian Americans assimilate to mainstream White America. This erasure of ethnic heritage is problematic in the opposite way compared to the ‘forever foreigner’ view. Whereas the ‘forever foreigner’ view erases the belonging of Asian Americans to American society, the ‘honorary white’ view erases the distinctive ethnic identity of the group and blends them into the gigantic melting pot. This view assumes that younger generations will become equivalent to mainstream White speakers.

Besides these reasons why Asian Americans have been overlooked and erased in the study of language and ethnicity, there is another controversial view on ethnic minorities in the field of American dialectology/variationist sociolinguistics, especially with respect to phonological variation. Labov (2001) claims that non-White ethnic groups do not participate in local sound change:

“All speakers who are socially defined as White, mainstream, or Euro-American, are involved in the changes to one degree or another… But for those children who are integral members of a sub-community that American society defines as non-White - Black, Hispanic, or Native American - the result is quite different. No matter how frequently they are exposed to the local vernacular, the new speech patterns of regional sound change do not surface in their speech (Labov 2001: 506)”.

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Hall-Lew (2009) states that this claim can be summarized into two major points: (1) ‘non-White speakers will not show the same patterns of sound change as White speakers’ and; (2) ‘patterns of regional sound change are not, by definition, patterns of non-White speech’. Because of this belief about the relationship between regional variation and ethnicity, the relationship between regional (White) patterns and features of ethnic minorities has not been examined very closely until recently. The idea of ‘(non) participation of non-Whites in the regional variation’ has been attested in relevant studies focusing on either African Americans (e.g. Thomas 1989; Anderson 2002; Fridland 2003; Childs and Mallinso 2004; Jamsu, Callier, and J Lee 2009; S Lee forthcoming) or Latino Americans (e.g. Fought 1999; Fought 2003), who are identified as ethnic minorities with distinctive linguistic features that often saliently associated with their ethnicity. However, recent works on Asian Americans’ participation in regional change and variation suggest that the claim might not be true for all non-White speakers in the United States, as non-White speakers may adopt regional features or participate in regional trends of change (see e.g. Wong 2007; Wong 2010; Coggshall and Becker 2009; Becker and Wong 2010; Hall-Lew 2009).

Despite the fact that more and more scholars are starting to focus on Asian Americans from a variationist sociolinguistic perspective, still, unfortunately, there are relatively few studies that focus on Asian-American English(es), and, among those few studies, most of the linguistic studies focusing on Asian Americans deal with the issue of language, ethnicity and identity mainly by focusing on their discourse (see e.g., Lo, 1999; Chun, 2001; Reyes, 2002; Kang, 2003; Kang, 2004; Lo, 2004; Reyes and Lo, 2009). For

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6 Hereafter, the term ‘regional (variation) patterns’ or ‘regional features’ is used to refer to ‘regional White (variation) patterns’.
example, Lo (1999) analyzed an interaction between a Chinese American, Chazz, and a Korean American, Ken, in Los Angeles, focusing on the connection between their code-switching and their identity projection and stances towards various cultures throughout the interaction. Chun (2001) focuses on Korean American students at the University of Texas at Austin negotiating their ethnic identity by drawing on African American Vernacular English (AAVE) features to locate themselves against racial ideologies privileging whiteness.

I, as a variationist sociolinguist, believe that studies examining Asian Americans’ language from the variationist perspective can add other valuable insights in understanding their linguistic patterns, as well as how they use language variation in shaping their identities through interactions. While analyzing APAs’ discourse has shown a number of valuable insights in negotiating ethnic identities in interactions between speakers, examining the variable patterning of phonological features (and other canonical types of features studied by variationists) among Asian Americans will also add valuable insights in different aspects of Asian Americans’ use of English and its connection to their ethnicity.

Hall-Lew’s (2009) study on San Francisco Asian Americans is one of the most valuable works taking the variationist sociolinguistic approach to examine Asian Americans’ linguistic patterns in connection with social meanings. Hall-Lew (2009) examines how Asian Americans in the Sunset District, San Francisco (an area that is heavily populated by Asian Americans) participate in two regional linguistics changes characterizing California (White) English: the low-back merger and the fronting of back vowels. Results from her study show that Asian Americans in the region are moving
towards both the low-back merger and fronting of back vowels in apparent time. The participation of Asian Americans in regional trends is led by female speakers (except with high back vowel /u/ fronting), while male speakers do not yet participate in the regional changes to a significant extent. She explains their participation or non-participation in these regional changes as indexing the speakers’ orientation to the two major competing linguistic markets associated with different social meanings: the traditional marketplace (the traditional native market with Irish American identity, representing the earlier immigrant population), which is associated with aging and tradition, versus the emergent local marketplace (the emerging market with Asian American identity, representing the newer immigrant population) which is associated with youth and newness, where speakers who associate themselves with the former market do not produce the regional features, while speakers who associate with the latter produce the regional features.

Other studies have been conducted examining Asian Americans’ phonological variation patterns in regional features and orientation to ethnicity and identity in New York City. Becker and Wong (2010) conducted a study on the status of /æ/ in NYC by speaker ethnicity and age (whose variability, again, is defined by complex phonological conditioning; see chapter 2 for details). The study found that speakers in three ethnic minority groups (African Americans, Puerto Rican Americans, and Chinese Americans), rather than using the complex /æ/ pattern that traditionally has characterized NYC English (which was first reported in Babbitt 1896), use the general American system, in which, as noted above, /æ/ is tensed before nasal stops but lower and backer in all other environments (e.g. tense /æ/ in ‘tan’ versus lax /æ/ in ‘tap’). This latter pattern is similar
to that toward which young White speakers in NYC are moving. The only difference between younger White speakers and ethnic minorities is that younger White speakers show a pattern with a trace of the traditional NYCE split /æ/ system along with the nasal tensing pattern, while young ethnic minority speakers show no evidence or trace of the White traditional NYCE tensing, and tensing /æ/ only in pre-nasal environments. It is argued that this production of the nasal tensing is associated with the regional identity of ethnic minorities in NYC along with their ethnic identity. Wong (2007, 2010) reports that American-born Chinese informants show adoption of the NYCE raised /ɔ/ in their speech regardless of formality/style, despite the fact that a raised production is associated with a stereotypical, often stigmatized ‘thick’ New York City accent. This result is contra Becker, et al. (2005) and Labov (1966), who reported that White NYCE speakers’ nucleus of /ɔ/ was lower in formal styles. Moreover, Wong’s study showed that speakers who orient more to a Chinese-Dominant lifestyle and networks employ the raised /ɔ/ to a lesser extent. These two studies above on NYC speakers show that Asian Americans do produce some regional features (but often not all of them), and these features may be associated with projection of their regional/ethnic identities.

As we will see in more detail in chapter 2, the above studies show two major points, one each from focusing on discourse and on the patterning of variable phonological features. As analyzing discourse can be useful in providing insights into how Asian Americans construct their identities by aligning to other ethnicities, for example by adopting and utilizing AAVE features or even other languages during the course of interaction with interlocutors (e.g. Chun 2001), variationist studies also have

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7 Degree of Chinese Dominance was determined by using an index of ethnicity calculated from participants answers to questions concerning their networks and lifestyle, which yielded a ratio of the number of non-Chinese ties to the number of Chinese ties in each participant’s social network.
provided useful insights showing that Asian Americans may utilize regional features of majority groups to index their regional/ethnic identities. Overall, then, the data is complex and nuanced, showing that Asian Americans draw on a range of language resources in different ways, at different times, and for different reasons.

1.4. Organization of Chapters

This dissertation consists of seven chapters, including the current introductory chapter and the conclusion as a final chapter. The current chapter has provided the introduction to the current dissertation research with general information on various relevant topics along with my personal past experience in the community. Chapter 2 provides summaries of earlier studies of the two target variables, /ɔ/ and /æ/, language and ethnicity of Asian Americans, and Christianity and the Korean American community, establishing a solid base for the current study. Chapter 3 describes the focused Korean American community in Bergen County based on various types of information, including Census data and my ethnographic fieldwork in the community. Chapter 4 provides information on the data and methods used in the current study by describing the research design in detail. Chapter 5 provides the overall outcomes of the quantitative study, including vowel plots and statistical analyses. Based on the results provided in chapter 5 and background information in chapters 2 and 3, chapter 6 provides thorough discussion of and explanation for the outcomes, including the situation of Bergen County Korean Americans within the macro-level scope of regional variation in the United States, the effects of social factors on variation in the focused community, and the micro-level
patterning of intra-speaker variation and the social meanings such patterning reveals. The final chapter concludes this dissertation by summarizing the previous chapters, as well as providing the limitations of this dissertation and future directions.
Chapter 2.

Earlier Studies

2.1. Sociolinguistics of the Target Variables

This section reviews the regional English features, especially phonological, of the focused community, Bergen County, New Jersey, and the New York Metropolitan area. To examine the features of languages spoken in a certain community or a region, especially for English in the United States, it is ineluctable to look at the position of the community within a bigger picture: regional linguistic variation and change in the United States of America. In this section, I start by outlining the general characteristics of American English, especially the variable patterning of the /æ/ and /ɔ/ vowels on which this dissertation is focused. I then narrow down to the patterning of these features in the New York City metropolitan area and Northern New Jersey. Beginning with a broad view is necessary to establish a backdrop or a baseline from which to understand the study of the features of the Bergen County region, since this project is focusing on a small community in Northern New Jersey that few scholars have focused on. The next section (2.2) provides a summary of valuable earlier sociolinguistic studies on language and ethnicity in Asian Americans. Section 2.3 introduces the importance of Christianity, the religion most closely tied to Korean immigrant life, to a full understanding of the sociolinguistics of Korean American immigrant communities in general.
2.1.1. The Big Picture: Language Variation and Change in the United States

The general characteristics of the general North American English vowel system are described in the Atlas of North American English, ANAE (Labov, Ash, and Boberg 2006). ANAE describes the General American English vowel system as a binary system, which distinguishes checked vowels (or short vowels) from free vowels (or long vowels), where checked vowels are more restricted in terms of which environments they can occur in. Another view of the general North American English vowel system is presented in table 2.1, adapted from ANAE.

Labov, et al. (2006) specify two phonological changes which cause the phonemic inventory of American English to alter: the ‘low-back merger’ (the unconditioned merger between two phonemes /ɔ/ and /ɑ/) and ‘short-a (/æ/) split’9. The ingliding rounded mid back vowel /ɔ/ and the low-back vowel /ɑ/ in the North American English sound system are involved in a major unconditioned merger (the low-back merger), which is also widely known as the COT-CAUGHT merger (Labov, et al. 2006). The low-back merger in progress is reported in the whole western region of the United States, and in some parts of eastern regions, including Eastern New England and western Pennsylvania (see Figure 2.2). Because the merger is present widely in the United States, many scholars are aware of and have conducted studies attesting to the merger in a number of regions in the United States (see e.g. Herold 1990; Majors 2005; Irons 2007; Doernberger and Cerny 2008; Dinkin 2011, among others).

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8 Labov, et al. (2006) include vowel classes preceding /ɹ/ and /l/ separately from table 2.1. However, those vowel classes are not included in this dissertation.
Table 2.1. The North American vowel system (adapted from Labov, et al. 2006: 12)\(^\text{10}\)

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<thead>
<tr>
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<th>Short</th>
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<tr>
<td></td>
<td>Front</td>
<td>Back</td>
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<tr>
<td>Nucleus</td>
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<tr>
<td>High</td>
<td>/i/</td>
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<tr>
<td>Mid</td>
<td>/e/</td>
<td>/ɛ/</td>
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<tr>
<td>Low</td>
<td>/æ/</td>
<td>/ɑ/</td>
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</table>

\(^\text{10}\) /ɑ/ and /ɑ:/ (“short-\(\)a” and “broad-\(\)a” in Labov, et al. 2006 respectively) are merged in many North Americans regions (Labov, et al. 2006). However, /ɑ:/ (broad-\(\)a) is not included in this dissertation in examining the low-back merger, since both show distinction in terms of the historical development of each phoneme.
The map in figure 2.2 indicates the region where the merger is complete, transitional, and resisted. Areas inside the green line shows regions where the merger is dominant and areas inside the brown, purple, and magenta lines indicate the areas that show resistance to the merger\(^{11}\). The Inland North inside the brown line shows the maintenance of the /ɔ/-/ɑ/ distinction by the fronting of /ɑ/. The area inside the purple line includes regions along the Atlantic coast down to Baltimore, with these areas distinguishing the two phonemes by raising the nucleus of /ɔ/ (raised /ɔ/). Areas inside the magenta line, mainly concentrated in the South, distinguish the two phonemes by fronting of the nucleus and back-upgliding of /ɔ/ (recently, the back-upglide is disappearing).

The status of /æ/ across the United States also provides helpful insight into regional patterns of dialect variation in American English. The most common and simple phonological patterning is the nasal tensing pattern, whereby the nucleus of /æ/ is tensed (raised and fronted) when preceding nasal sounds (for example, tense bang vs. lax bag)\(^{12}\). In New York City (‘NYC’ hereafter) and Philadelphia, /æ/ is split into two classes, tense and lax, governed by a complex set of conditions. ‘Tense’ hereby involves both fronting and raising of /æ/ nucleus ranging from low to upper mid or higher (Labov, et al. 2006: 173). The conditioning environments for NYC /æ/ are as follows:

(1) NYCE Tense /æ/ environments

\(^{11}\) Labov, et al. (2006) suggest areas outsides the green lines may be considered transitional, particularly in the midland, where many speakers are with many yellow dots are close but not completely merged in the production and perception of /ɔ/ and /ɑ/.

\(^{12}\) This nasal tensing system of /æ/ is often considered as the default system of American English (Thomas 2001).
- /æ/ is tense before voiced stops, front nasals, and voiceless fricatives, only in closed syllables where syllables are closed by inflectional boundaries, and lax elsewhere. Example: tense tab vs. lax tap; tense planning vs. lax planet; tense laugh

- /æ/ is frequently tense before voiced fricatives or affricates. Example: tense magic

- /æ/ is tense in word initial position in common words. Example: tense ask, after

(2) Lax NYCE /æ/ environments

- /æ/ is lax in all auxiliaries and function words. Example: lax can, have, had

- /æ/ is lax in word initial position. Example: lax add, apple

- /æ/ is lax in learned words. Example: lax alas

- /æ/ is lax in less common words. Example: lax asterisk

Additionally, Labov, et al. (2006: 173) make a note that tensing of /æ/ is stigmatized in New York City, and /æ/ in the tense environment is frequently lax in careful speech. In Philadelphia, the split shows a different, rather slightly simpler system compared to the New York City /æ/ system(s). Philadelphia /æ/ conditioning environments are as follows:

(1) Tense Philadelphia /æ/ environments

- /æ/ is tense when the vowel is followed by front nasal stop codas, /m/ and /n/, voiceless fricative codas. Example: tense stand, athlete
/æ/ is tense in three common adjectives ending with /d/: mad, bad, and glad.

(2) Lax Philadelphia /æ/ environment

- /æ/ is lax elsewhere

Figure 2.3, adapted from ANAE (Labov, et al. 2006: 173) summarizes the NYC and Philadelphia /æ/ conditioning environments.

**Figure 2.3. Following environments for tense /æ/ class in NYC (inside the outer border) and Philadelphia (inside the inner border and also indicted for mad, bad and glad by the dotted line) (adapted from Labov, et al. 2006: 173)**

The Philadelphia and New York City /æ/ systems work together to produce a systematic split pattern, which leaves a major group of (lax) /æ/ in the low position. The distinction between /ɔ/ and /α/ is maintained and maximized by the raised nucleus position of NYCE /ɔ/, away from /α/ (thus, not showing any evidence of the low-back merger)\(^{13}\). In summary, NYC and Mid Atlantic states share the distinction of /ɔ/ and /α/, but differ in the conditioning patterns for tense versus lax /æ/.

### 2.1.2. Narrowing Down: Language Variation and Change in the New York Metropolitan Area

\(^{13}\) Raised /ɔ/ is defined by an F1 value lower than 700Hz, thus raised, (Labov, et al. 2006). This is the same criterion used for raised /æ/ which is raised in parallel with /ɔ/ in the Mid Atlantic area (Labov 1966).
With the summary of General North American vowel characteristics and trends of ongoing major regional changes, the scope will be narrowed down to New York City (NYC) and the metropolitan area (NYC Metropolitan Area, hereafter). The dialect of NYC Metropolitan area (or NYCE) is confined to the city limits and a few neighboring cities in New Jersey (Labov, et al. 2006: 233). Despite the fact that NYC is the biggest city in the United States, the diffusion of its features is surprisingly conservative, with only a small portion of northeastern New Jersey included in the NYC dialect area. Figure 2.4 shows the distribution of /æ/ patterns in NYC and the Mid Atlantic states.

The NYC metropolitan area can be specified with several features combined. The most prominent features of the NYC metropolitan region are the NYC split /æ/ system and raised /ɔ/ with an ingliding movement. Labov (1966) reported that the two prominent NYCE features are associated with Italian Americans and Jewish Americans in New York City, raised /ɔ/ with Jewish New Yorkers, and the NYC split /æ/ system with Italian New Yorkers particularly. On the recent status of the split system of /æ/ and raised /ɔ/ in NYCE, various scholars examined both variables by age and ethnicity to look at variation and change in the features.

The recent status of NYCE raised /ɔ/ in various ethnic groups in NYC is attested by a number of linguists. Wong (2007, 2010) reports that the American Born Chinese (ABCs) informants in her study show the adoption of the NYCE raised /ɔ/ in their speech regardless of the formality/style. This is different from the previous findings from NYC White speakers (Labov 1966, Becker, et al. 2005), where White speakers showed less raising of the nucleus of /ɔ/ in formal style. Slosman and Newman (2004), and Newman (2010) also report the adoption of raised /ɔ/ among NYC Latino speakers. Slosman and
Newman (2004) focuses on NYC Latino speakers’ adoption of raised /ɔ/ with an inglide. They explain this adoption of the traditional regional feature as a component of a newly constructed linguistic variety, NYC Latino English, suggesting that raised /ɔ/ is associated with regional/local identity. Coggshall and Becker (2009) and Becker (2009) focus on various NYC ethnic groups’ (including White, Asian, and African Americans) NYCE raised /ɔ/ by age group. These studies reports that by age group, younger White speakers showed the least raised nucleus among informants regardless of ethnicity, which suggests that White NYCE speakers are moving away from this feature in apparent time. Asian NYCE speakers showed similar results with that of the White speakers, although their correlation was not statistically significant. However, African American informants retain the raised /ɔ/ in all age groups. Studies of the recent status of NYCE raised /ɔ/ reveals that the historically Jewish American associated feature is now also used by non-White ethnic groups, including, for Chinese Americans, in all speech styles, regardless of
formality. On the contrary, White speakers seems to be moving away from raised /ɔ/ in apparent time, with young White speakers showing the least raised nucleus.

The recent status of NYCE split /æ/ pattern attested by scholars also indicates that the traditional complex split system might be fading away among White speakers. Coggshall and Becker (2009) and Becker (2009) examine the /æ/ split of various ethnic groups of New Yorkers and found evidence that young White speakers, and non-White speakers were not involved in the traditional NYCE split /æ/ system, but rather involved in the nasal tensing pattern. Becker and Wong (2009) examined split /æ/ patternings of NYC White, African American, Puerto Rican American, and Chinese American speakers by speaker ethnicity and age, and also report that White speakers are undergoing a change in apparent time, moving away from the traditional system, towards tensing /æ/ in pre-nasal environments. Younger speakers in the other three ethnic minority groups all showed involvement in producing tense /æ/ in pre-nasal environments with no evidence of any involvement in traditional split system.

These studies of the current status of two NYCE features suggest two major points in a big picture. First, the two NYCE features, raised /ɔ/ and the traditional NYCE split /æ/ system, may be fading away among White speakers of NYCE in apparent time analysis. Second, non-White ethnic minority speakers do participate (at least partially) in White regional linguistic changes, including adoption of older changes that are now receding, such as the raising of open o, as well as the adoption of newer changes such as White’s movement away from the traditional NYCE /æ/ raising pattern. The (partial) adoption of White regional features by Korean Americans can be understood, at least in
part, as a way for Korean Americans to index regional identity without relinquishing their ethnic linguistic distinctiveness.

Unlike NYCE, there are few studies of the linguistic features of New Jersey. In addition, the northeastern counties of the state are often simply treated as a part of the New York City metropolitan area. Coye (2009) argues in his study that the closer the county of New Jersey is located to NYC, the more linguistic features are affected by the NYCE system. He specifically points out five northeastern counties (Passaic, Bergen, Essex, Union, and Hudson) (counties in yellow rectangle in figure 2.6) as an NYC suburban region (Coye, 2009: 417), suggesting a possibility that those five counties are heavily affected by NYCE. His survey questionnaire14 study focuses on regional lexical variations, phonological variations, and syntactic variations. Since the current dissertation here is focusing mainly on phonological features, only phonological features are considered in this section. Figures 2.5 through 2.7 show the surveyed counties and his findings regarding the low-back merger.

Coye’s (2009) survey results suggest that Northern New Jersey’s vowel features are affected by New York City vowel features such as no evidence of the low-back merger in most of the state, as shown in figure 2.6. However, although Labov, et al. (2006) show no evidence of low-back merger in New Jersey, Coye’s survey suggests that the merger is beginning to spread into the northwestern counties of New Jersey (the

14 The questionnaire subjects were college students in a History of the English Language class (in which most of the students were from New Jersey) and college-bound high school seniors in New Jersey high schools who have lived in target counties since at least the age of five. The total number of informants was 717 (429 from 198 communities answering a long questionnaire, and 220 from 68 additional communities answering a short questionnaire). The short questionnaire included questions regarding the demographic information of the survey taker and 10 multiple-choice questions on how the survey taker would pronounce the given words or what kind of expression the survey taker would use to fill in the blank. The long questionnaire included questions about more pronunciations and expressions. The long questionnaire informants were born between the years 1975 and 1990; 36% were male and 64% female; 87% were White, 4% were Hispanic or Puerto Rican, 3% were African American, 2% were Asian, and 0.5% were mixed.
merger is led by Sussex County followed by Warren, Morris, and Mercer in order), and the Southern counties of New Jersey (which reported slightly more merger than Northeastern counties). Unfortunately, however, this cannot be taken as clear evidence of the spread of the merger into New Jersey since there is always a possibility of error in survey data that is based on self-reported usages. Rather, it can be taken as suggestive of the development of the low-back merger in some regions of the state. One thing that is less problematic is that Northeastern counties usually have more NYCE features than any other regions of New Jersey, indicating that the closer the county is located to NYC, the more it is affected by NYCE features, such as no presence of the low-back merger, perhaps do to the presence of the NYCE feature of raised, ingliding /ɔ/ (Labov, et al. 2006; Coggshall and Becker 2010).
On the NYCE split /æ/ system, Labov (2007) and Labov, et al. (2006) report the diffusion of the NYC split /æ/ system (Labov 1966) to Northern New Jersey. However, Labov (2007: 356) reports that the diffusion of the feature to the neighboring areas is present only in four bordering regions of New Jersey: Weehawken, Hoboken, Jersey City, and Newark (excluding Bergen County). This suggests that Bergen County, the research site of this dissertation, may hold a special position among the northeastern New Jersey counties that are bordering NYC, since the county has a dual position of (1) the county that is highly affected by NYCE /ɔ/ (Coye 2009) and (2) the county that is not involved in the traditional NYCE split /æ/ system (Labov 2007). In sum, according to earlier studies,
Bergen County, New Jersey is expected to have no low-back merger, coupled with a raised nucleus of /ɔ/, as well as /æ/ patterning that differs from the traditional NYCE split /æ/ system.

The intermediate system specified in figure 2.4 with gray dots in New Jersey close to Philadelphia indicates a system that is in between the NYCE split /æ/ and the Philadelphia split /æ/ system. In the intermediate system, we find the coexistence of certain NYCE /æ/ conditionings and Philadelphia tense conditionings, such as coexistence of tense /æ/ in pre-/d/ position (NYCE) and lax /æ/ in pre-/g/ position (Philadelphia). Although the intermediate system is reported in certain New Jersey regions bordering Philadelphia, by Ash (2002), Labov, et al. (2006), and Labov (2007), the research site of this dissertation, Bergen County, does not show any evidence of the influence of the Philadelphia split /æ/ system.

Situating Northern New Jersey within the big picture of general phonological system of North American English as well as within NYCE, New Jersey English and Philadelphia English yields various insights on regional variation in the United States, as well as the position of the focused community within the immediate regional and larger dialect geographic picture, and also on how ethnic groups participate in regional patterns of language variation and change.

### 2.2. Language and Ethnicity of Asian Americans in the United States
This section will cover sociolinguistic studies on Asian Americans’ language, particularly English, and ethnicity in the United States. Unfortunately, there are relatively few sociolinguistic studies that focus on Asian Americans’ English, and, among those few studies, fewer studies have been conducted using quantitative variationist methods to examine Asian Americans’ phonological features and regional patterns. In other words, most of the sociolinguistic studies focusing on Asian Americans deal with the issue of language, ethnicity and identity from a qualitative, discourse analytic perspective (see e.g. Lo 1999; Chun 2001; Reyes 2002; Kang 2003; Kang 2004; Lo 2004; Reyes and Lo 2009). Among those valuable discourse studies focusing on the negotiation of ethnic identities by Asian Americans, Lo (1999) analyzes an interaction between a Chinese American, Chazz, and a Korean American, Ken, in Los Angeles. Lo reports that code switching can be used in “making apparent speakers’ imaginations about the speech communities they and their interlocutors belong to” (Lo 1999: 475). The Chinese American subject’s code-switching to Korean and his participation in the Korean American community is interpreted as his way of being more Chinese than most contemporary Chinese Americans, since Chazz identifies the modern Korean ideology as being very close to the traditional and true Chinese ideology. From the Korean American subject’s point of view, Chazz’s code switching from English to Korean constitutes an unwarranted claim to insider status in a group he is not entitled to be affiliated with. Lo further demonstrates how ethnic identity is achieved in this interaction by showing that Chazz tries to index some degree of affiliation with Koreanness by discussing Vietnamese as a problematic ethnicity for a girlfriend, since it is a prominent Korean ideology to look down on Southeast Asians. At the same time, though, Chazz resists aligning completely with his
Korean interlocutor’s Korean point of view by speaking in Japanese, showing that a fully Korean identity is also problematic. Thus, the code switching used throughout the interaction shows that the construction of ethnic identity of the Chinese participant is achieved during the interaction by his aligning with and distancing himself from various other ethnic cultures. Similarly, Chun’s (2001) study of Korean American men’s identities illustrates how Korean American students at the University of Texas at Austin negotiate their ethnic identity by drawing on African American Vernacular English (AAVE) features to locate themselves against racial ideologies privileging whiteness, because most Asian Americans do not have access to a variety of English with an ethnically specific meaning invested to it. She shows that employment of AAVE features such as copula absence, certain lexical items, and phrases such as *keep it real*, *whitey*, and *they always back stabbing*, become useful tools for rejecting White dominant racial ideologies, as well as creating an antiracist Asian American identity.

Studies examining Asian Americans’ language from the quantitative perspective add other helpful insights in understanding Asian Americans’ specific linguistic strategies in shaping their identities throughout interactions. While qualitative studies have shown Asian Americans utilize linguistic features or even languages of other ethnic groups to negotiate their ethnic identities throughout the interaction with interlocutors, quantitative studies focus on examining the participation or non-participation of Asian Americans in regional (white) patterns of language variation and change, in connection with their ethnic identity. Hall-Lew (2009) examines the San Francisco Sunset District Asian American population’s participation in two White regional Californian sound changes: the low-back merger and the fronting of non-low back vowels (i.e. fronted vowel nuclei
for /u/ and /o/, as in the productions [gʊs] for *goose* and [gət] for *goat*. Results from her study show that Asian Americans in the region are moving towards both the low-back merger and fronting of non-low back vowels in apparent time. This participation of Asian Americans in (White) regional trends is led by female speakers (except with high back vowel /u/ fronting) while male speakers do not show any significant correlation with regional trends. Hall-Lew explains female participants’ participation in those regional features as indexing the speakers’ orientation to two major competing linguistic markets: the traditional marketplace versus the emergent local marketplace (the former being associated with aging and tradition and the latter with youth and innovation), where the speakers associated with the former market do not produce the newer regional features while the latter speakers produce the newer regional features.\(^{15}\)

Other studies have examined Asian Americans’ regional features in connection to orientation to ethnicity and identity in New York City. In the study noted above, Wong (2007, 2010) reports that American Born Chinese informants show the adoption of the NYCE raised /ɔ/ in their speech regardless of formality/style. Moreover, the study showed that speakers who orient more to Chinese Dominant lifestyle and networks (measured with each speaker’s self-reported questionnaire result) show a lesser degree of adopting the regional vowel feature, the raised /ɔ/. Similarly, in the Becker and Wong’s study (2010) discussed above on the status of the split /æ/ system in NYC by speaker ethnicity and age, they found that African Americans, Puerto Ricans, and Chinese in NYC produce a nasal raising system which is similar to that which young White speakers

\(^{15}\) The notion of two competing linguistic markets in Hall-Lew (2009) refers to two competing linguistic markets which value differently towards a linguistic feature, which assign different types of personae in Sunset District community members, based on their migration history and how they view their community where the older linguistic market grants prestige to distinguishing /ɔ/ from /a/, while the newer linguistic market values the merger.
are moving towards. The only difference between younger White speakers and ethnic minorities is that younger White speakers shows a combined pattern of both the traditional NYCE split /æ/ system and the nasal raising pattern (which can be seen as a transitional stage of moving towards the nasal system from the traditional system), while young ethnic minority speakers are only involved in the nasal raising. This adoption of regional feature is argued to be a feature that is associated with the regional identity of ethnic minorities in NYC along with their ethnic identity. These two studies of NYC speakers show that Asian Americans do produce regional features (though not necessarily all regional features), and many times they are associated with projection of their various identities such as regional, ethnic identities.

The tour throughout the literature focusing on Asian Americans’ English and identity showed two major points, one each from qualitative and quantitative studies. Qualitative studies analyzing discourse have shown how Asian Americans construct their identities by aligning with other ethnicities by adopting and utilizing features of other ethnic varieties (e.g. AAVE) or even other languages (e.g. Japanese) during the course of interaction with interlocutors. On the other hand, quantitative studies have shown that, instead of developing their own ethnic dialect, Asian Americans utilize regional features to index their regional and ethnic identity. Korean Americans, however, have not been thoroughly examined in the literature of language, ethnicity, and identity. Although there are several studies of Korean Americans’ identity construction focusing on discourse, none of them looks at religion, which is one of the most important common features of Korean-American communities in the United States. In addition, few quantitative sociolinguistic studies have looked at Korean American’s production of regional features.
in connection to their ethnicity and identity. As I stated above, this project responds to the need for quantitative research on Korean-American language and identity. Moreover, this project introduces a new factor, religions of Korean Americans, into the Korean American linguistic studies literature.

2.3. Christianity and Korean American Immigrants

In this dissertation, I introduce religion as an important aspect to be considered in the study of Korean American communities and speakers. In order to look into the key features of Korean American communities, it is crucial to take religious aspects seriously into account. Given that Christianity is not a traditional or major religion in Korea, it may sound absurd to directly connect Christianity to Korean ethnic identity. However, Christianity actually is one of the key aspects of Korean American communities and has long been intertwined with Korean immigrants’ everyday life. None of the studies in the field of sociolinguistics or linguistic anthropology pulls out religion as a major factor to examine in considering Korean American communities and Korean American ethnic identity. Most of the works on Korean American communities and ethnic identities have been conducted by scholars in sociology, which use data from large-scale questionnaires, census figures, and sociological interviews (see e.g. Min 1992, Ha 1995, Chong 1998, Hong and Min 1999, Kim and Wolpin 2008, among others). Almost all the sociological studies focusing on Korean American communities in the United States state that Korean

16 H Lee (2000) examines Philadelphia Korean Americans’ word medial /u/ flapping and the Philadelphia split /æ/ system. However, this study looks at the patterning of variation according to contact and network structure more so than ethnic identity.
American religious institutions play a crucial role for Korean Americans as they negotiate their ethnic identity (see e.g. Kim 1998; and Min 2010; among others).

There are a couple of reasons why this historically non-traditional religion has to be connected to ethnic identities of Korean immigrants. One reason can be found in the demographic characteristics of Korean immigrants. Kim (1981) and Min (2010) point out that most of the Korean immigrants in the United States are drawn from the urban middle classes of their homeland, especially professionals and white-collar workers who have received higher education; the majority of Korean immigrants are Christians, mostly Protestants. Park and Cho (1995) showed that, in a pre-departure survey of Korean emigrants during their visa interview, about 55 percent of the interviewees were from Seoul, despite the fact that the total population of Seoul comprises only a quarter of the Korean population (see table 2.2). The Korean urban middle class population shows a higher tendency of migration to the United States not only because they have more access to sources for information about immigration to the US, but also because they see the US as a country of Christianity. Additionally, many religious leaders, such as pastors, moved to the US in the past during the Japanese Invasion period (1910-1945) and around the Korean War period (1950-1953), since most Christian religious leaders in Korea historically were from the north of Korea regions before the Communist regime took over the northern part of the Korean peninsula. Between 1903 and 1905, approximately 40% of the 7,200 Korean immigrants were Protestants, and the majority of Korean students and political refugees in the United States during the Japanese invasion of the Korean Peninsula (1910-1945) were also Protestants (Lyu 1977; Patterson 1988). The following table from Min (2010) shows the dominance of Christianity, especially Protestantism,

<table>
<thead>
<tr>
<th></th>
<th>Total Korean Population</th>
<th>Korean New York Immigrants before migration</th>
<th>Korean New York Immigrants after migration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage</td>
<td>Number</td>
<td>Percentage</td>
<td>Number</td>
</tr>
<tr>
<td>Protestantism</td>
<td>19.80%</td>
<td>133</td>
<td>48%</td>
</tr>
<tr>
<td>Catholicism</td>
<td>7.40%</td>
<td>35</td>
<td>12.60%</td>
</tr>
<tr>
<td>Buddhism</td>
<td>25.30%</td>
<td>36</td>
<td>13.00%</td>
</tr>
<tr>
<td>Other</td>
<td>1.40%</td>
<td>1</td>
<td>0.40%</td>
</tr>
<tr>
<td>None</td>
<td>46.10%</td>
<td>72</td>
<td>26.00%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>277</td>
<td>100%</td>
</tr>
</tbody>
</table>

among Korean immigrants to NYC prior to immigration, and the even higher percentage afterwards, during the year 2005.

Another reason why Christianity has become a crucial part of the Korean American community can be found in the common settlement pattern of Korean immigrants in the United States. Kim (1981) devotes a whole chapter to explaining how churches formed a base for the Korean American community in New York City from the outset of Korean immigration history in New York City. He cites an elderly Korean’s recollection of the founding days of the Korean ethnic churches, which demonstrates that the New York Korean Protestant church, the only Korean ethnic church in New York City during the starting era of Korean immigration, was, and continues to be, an important force in solidifying the Korean community in the New York City. This shows that the Korean immigrants’ life was somewhat centered on the church starting from 1920s17. From that time forward, Korean ethnic churches have been providing not only religious services to the immigrants, but also various other community services, so much

17 Approximately 600 Koreans migrated to New York City between 1905 and 1924, and this was the first Koreans to move to New York City.
so that Korean ethnic church activities constitute the most important facet of day-to-day community life of Korean Americans. Kim’s description of the importance of Korean ethnic churches, especially prior to the emergence of majority Korean neighborhoods in the last couple decades, is as follows (Kim 1981: 187):

“By opening membership to all segments of the population, the churches provide a grassroots base for common action. At least for members, the churches provide some degree of integration that does not exist in non-religious organizations. In the absence of a territorial base for a “natural” community, church activities are all the more self-consciously organized\(^\text{18}\). Indeed, the church community has become the substitute for a territorial ethnic community, and thus the interplay between the minister and devoted professionals produced a leadership crucial to carrying out both religious and secular activities.”

Kim specifies a number of non-religious functions for Korean ethnic churches in addition to those in the above quote. In addition to serving as a base for common action and as cultural centers, especially prior to the formation of territorial enclaves, they also serve as a force in strengthening immigrants’ psychological defenses against the dominant institutions of the larger society; as brokers between Korean immigrants and dominant institutions; as a surrogate for the extended family in a situation where immigration often severs the generational and local ties that constitute the basis of the extended family; and as a means of reinforcing the extra-religious culture of the population.  

\(^{18}\) Note that Kim’s observations somewhat predate the emergence of an actual territorial base for the Korean American community in Bergen County.
homeland among Korean immigrants which has maintained and strengthened Korean nationalism. These roles of Korean ethnic Churches can thus be understood to be encompassing all routine community activities as the center of Korean American life. Min (1992) also stresses the ‘Church as a helper for newcomers (first generation immigrants)’, as well as the growing importance of ‘Church as a guardian and promoter of Korean culture and identity’, which might have important effects on later generations. In these ways, Korean Protestant churches became the dominant organizations in Korean American life. Min specifies four social functions (fellowship, maintenance of the Korean cultural tradition, provision of social services, and a means of gaining social status and position) of Korean immigrant churches, and he asserts that these social functions help Korean immigrants maintain their native cultural traditions and social interactions with co-ethnic members. Thus Koreans in the United States maintain strong ethnic identity.

Since Korean ethnic churches are very important, it isn’t surprising to find that there even are non-Christian Korean immigrants converting their religious affiliation to Protestantism after their arrival at the United States for their easier settlement and life in the new world (Lee 1981 and Min 2010). Table 2.2 suggests that since their migration to the United States, many non-Christians became Christians, either for religious reasons or for reasons of community and/or convenience in their new lives in the US. Many scholars (e.g. Hurh and Kim 1990, Kim and Kim 2001, Kwon et al. 1997, Min 1992)

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19 Hurh and Kim (1984), Reitz (1980), and Yinger (1980) refer to this maintenance of cultural tradition and social interactions with co-ethnic members as “ethnic attachment” or “ethnicity”.
20 Min (2010) states two reasons why Korean non-Christians can convert to Protestantism rather easily. First, Koreans have not experienced any serious regional, political, or social conflicts based on religion. Second, all Korean people, regardless of religion, share the norms of Confucianism and Shamanic beliefs (Kim 2006; Yoon 2002). Kwon (2003) notes that there are also some Korean immigrants who are affiliated to both a Korean Christian church and a Buddhist temple.
explain that religious conversion to Christianity among Korean immigrants can start immediately after their arrival in the US, since Korean Protestant churches serve a number of practical functions such as newcomer orientations and fellowships, especially for those who came to the US in the 1970s and earlier (prior to the establishment of Korean-majority communities in NY/NJ) who could not survive without participating in a Korean church.

Recent work by Min (2010) indicates, however, that although Korean immigrants maintain their ethnic attachment by increasing their co-ethnic fellowship, practicing Korean culture, and participating actively in such activities in Korean American immigrant Protestant churches, younger generation Korean American ethnic Protestant churches (including English congregations in parallel congregations where both first and younger generation congregations exist in a single church) show weaker connection to the retention of Korean ethnic identity compared to the first generation immigrant Protestant churches, Korean American Catholic churches, or Korean American Buddhist temples. One of the major reasons for this discrepancy between younger generation Korean American Protestant churches and other Korean American religious organizations (including first generation immigrant Protestant churches, Catholic churches, and Buddhist temples) is that Korean American Protestant churches are the only kind of Korean American religious institutions that shows separation between generations (namely, the immigrant generation versus the younger generation), while non-Protestant immigrant groups usually do not have separate congregations for younger generations (Crane 2003; Ebaugh and Chafetz 2000). This has driven the younger generation churches to become eventually independent from the first generation immigrant churches.
as time goes by, and after they become fully independent from the first generation churches, they often become Pan-Asian Protestant churches, which blurs the Korean-only identity. S Kim (2008) argues that younger generation Korean American Protestants have created their own hybrid religious organizations that radically differ from those of both White American churches and their parents’ first generation immigrant churches. Also, many scholars (see e.g. Alumkal 1999, 2003; Chai 1998; Jeung 2005; S. Park 2001) have pointed out that English-speaking Korean congregations (English congregations in parallel congregations, and younger generation churches) have been strongly influenced by American evangelical movement and sociocultural activities. Moreover, R. Kim (2006) states that this is reinforced especially during their college years, when they no longer go to churches with their parents and people from their original community and may be influenced by evangelicals through campus ministries. This transformation into race-blind evangelical churches for younger generation Korean Americans indicates the strong influence of the evangelical movement in the United States (Min 2010: 5).

Min and Kim’s (2005) study on the intergenerational transmission of religion and culture among Korean Protestants in the United States argues that the intergenerational transmission from the first generation to second generation has failed since the congregational culture of English ministry deliberately eliminates Korean cultural components, while religious transmission is successful. More specifically on the retention of Korean culture and values, first generation Korean immigrant churches achieve preservation of Korean ethnic culture and ethnic networks through members’ active participation in ethnic congregations. On the other hand, younger generation congregations are heavily evangelical and their Christian identity supersedes their Korean

As stated above, most of the works on Korean American communities and their ethnic identities were conducted by scholars from the field of sociology, mainly based on large-scale data (questionnaires and sociological interviews). As sociological studies successfully point out in dealing with the ethnic orientation and ethnic identity of Korean American immigrants in connection to Korean ethnic churches, it seems that Korean Americans’ affiliation with ethnic Protestant churches plays an important role in negotiating ethnic identities of Korean Americans (whether it is strengthening or weakening Korean ethnic identity). However, although sociological studies provide helpful insight in how Korean ethnic churches are closely connected to ethnic identity, they do not specifically examine how those key factors are connected to linguistic practices of Korean Americans. Although Hong and Min (1999) look at Korean church-members’ self reported language usage with people around them to examine their ethnic attachment and identity, since the theoretical basis of the study is rooted in a sociological perspective, they do not scrutinize Korean Americans’ actual language usages, but only subjects’ self-reports collected via surveys, and not looking into the English variety spoken among Korean Americans.
2.4. Summary of the Chapter

This chapter has provided an overview of earlier studies relevant to the target linguistic variables, including those examining the regional situation of Bergen County in the scope of language variation and change in the New York City area and in the US, those investigating language and ethnicity of Asian Americans, and studies showing that religion is one of the key factors in Korean American identity. The next chapter introduces the focused region in this dissertation. Based on statistical reports from the United States Census Bureau, my personal observation and participation in the community, chapter 3 provides a general and thorough understanding of the community, including religious aspects of the community, before getting into linguistic analyses.
Chapter 3.

The Research Site

In this chapter, the research site of this dissertation is introduced. Variationist sociolinguists choose various types and levels of community on which to focus their studies. The size of the community can range from as small as a group of a few speakers (see e.g. Podesva 2006; Schilling 1998, 2004) to as great as a whole nation (see e.g. Labov, Ash, and Boberg 2006). Since the behaviors or the social characteristics of the target subjects or groups can vary along with the scale or composition of the groups, the way of approaching the data should differ according to the characteristics of the focused population. For instance, we cannot approach a group of students at a suburban high school and adults living in a city with the same standards for looking into their behavior. In this dissertation, I take a dual approach of conducting ethnography in the research site and collecting sociolinguistic interviews with Korean Americans in the community for data collection. I borrow this combined approach from Hall-Lew (2009), who stayed in the heavily Asian American populated Sunset District of San Francisco for about half a year to perform ethnographic fieldwork and conduct sociolinguistic interviews to obtain a thorough understanding of the community, along with a large quantity of quality speech data. To accomplish the fieldwork component of my study, I rented a room in a Korean family’s house three blocks away from Broad Avenue, which is considered to be the center of the Korean American community in Bergen County. I stayed there for
approximately five months from the end of January until the end of June 2013. During my fieldwork stay in the community, I participated in several local Korean organizations such as Korean ethnic churches and one of the Saturday Korean Language schools.

Besides the sociolinguistic interview data from Korean Americans in Bergen County, I also conducted informational interviews with various Korean American organization leaders and residents to learn about various issues which might be difficult for a relatively short-time resident to recognize, directly from the insiders. The first section in this chapter provides general information on the research site. The second section summarizes what I experienced and witnessed during my stay in the community as an ethnographer, a discussion which can be seen as a sequel to the introductory chapter in which I described my first experiences as a Bergen County resident, as a young child. The third section describes the importance of the notion of generation 1.5, the reason for including them for this study.

3.1. The New Korean American Community: Palisades Park and its Surrounding Boroughs

3.1.1. General Information

This section introduces a Korean American community that no previous sociolinguistic studies have focused on. Despite the fact that the community is relatively unknown to many sociolinguists and linguistic anthropologists, Bergen County provides an ideal site to look into the language and community of Korean Americans. Compared
Table 3.1. Change in Korean American population in Bergen County boroughs with over 10% Korean American population (extracted and regenerated from The United States Census Bureau 2000 and 2010)

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<td></td>
<td>People</td>
<td>People</td>
<td>%</td>
<td>People</td>
<td>People</td>
</tr>
<tr>
<td>Palisades</td>
<td>17073</td>
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Legends
- Increase over 10 years
- Decrease over 10 years
- Very Heavy Korean Population (over 50%)
- Heavy Korean Population (over 20%)
- Medium Korean Population (over 10%)

To the two best-known major Korean communities in the US, in Los Angeles (California) and Flushing (New York), Bergen County is less known to the public and even lesser known to linguists. Although the community has a relatively short history of Korean American settlement, it is one of the fastest growing Korean American communities. Moreover, the top ten municipalities by Korean American percentages of overall population in 2010 are all Bergen County municipalities (The ten municipalities from the top starting from Palisades Park down to Demarest in table 3.1 can be understood as the top ten municipalities by Korean American percentages in the US). Table 3.1 provides information on the population of Korean Americans in Bergen County municipalities with Korean American population of 10% or higher in the years 2000 and 2010.
Figure 3.1. The location of Bergen county (the red region inside the yellow circle) in the state of New Jersey (extracted from https://upload.wikimedia.org/wikipedia/commons/thumb/a/a2/Map_of_New_Jersey_highlighting_Bergen_County.svg/2000px-Map_of_New_Jersey_highlighting_Bergen_County.svg.png)

Figure 3.2. Bergen County and its bordering regions (extracted from http://www.buyersadvisors.com/CountyMaps/bergen_county_map_files/image_map5.gif)
Figure 3.3. Korean Population by percentage in Bergen County (Extracted from http://www.state.nj.us/ and modified by Jinsok Lee)

Legends
- Very Heavy Korean American Population (over 50%)
- Heavy Korean Population (over 20%)
- Medium Korean Population (over 10%)
- Low Korean Population (over 5%)
- Very Low Korean Population (over 0%)
Bergen County is located at the northeastern corner of New Jersey (Figure 3.1 and 3.3). The county borders Rockland County, New York to the north; Manhattan and the Bronx in New York City, as well as Westchester County, New York, across the Hudson River to the east; Hudson County to the south; and Passaic County, New Jersey to the west (Figure 3.2.). The total area of Bergen County is 233.01 square miles and is the most populous county (2012 estimate: 918,888) in New Jersey (2012 estimate: 8,864,590) (The United States Census Bureau 2012). The Asian population, at 14.5%, ranks the third out of the total population after the White and Hispanic populations (United States Census Bureau 2010). One of the major immigrant groups in Bergen County is Korean Americans who concentrated along the Hudson River (especially around the George Washington Bridge area). 6.3% (56,773) of Bergen County’s population reported their ancestral origin as Korean, which is the highest percentage in the United States. Among the municipalities in the county, the largest Korean population is present in Palisades Park Borough (10,115). Fort Lee has the second largest Korean American population (8,318), and Ridgefield is ranked the third (2,835). Plus, Ridgewood, Little Ferry and Paramus have emerged as newer Korean American enclaves in Bergen County. Korean American commercial districts are located in several communities, including Palisades Park, Fort Lee, Ridgefield, Leonia, and to a lesser extent, Cliffside Park and Edgewater. There is also a growing Korean population in Tenafly, Cresskill, Demarest, Closter, Norwood, Old Tappan, Paramus, Rutherford, and Little Ferry. Palisades Park is considered the heart of Korea Town in Bergen County, while Fort Lee is also emerging
as such. Fort Lee, which used to be one of the major Japanese communities in the 1970s, is now considered another major Korean American community. The Chinese American population shows a sizeable presence in Fort Lee (7.5%: 2,653), Paramus (3.7%: 977), and Englewood Cliffs (9%: 472). Fort Lee and Paramus have the highest total number of residents of Chinese ancestry among Bergen Municipalities, while Englewood Cliffs has the highest percentage. The Japanese population has had a long presence in Fort Lee, whose current population still holds approximately a quarter (1,302) of the county’s total Japanese population (5,920) (The United States Census 2012). The remaining Japanese population in Bergen County is concentrated in the towns surrounding Fort Lee as well as in a few northern communities such as Ridgewood and Edgewater. Italian Americans were the major ethnic group who had a long significant presence in Bergen County, and Italian American is still the most commonly identified first ancestry in Bergen, at 18.3% (The United States Census Bureau 2012). However, their numbers have diminished in recent years as other ethnic immigrant groups have taken their place. Municipalities with Korean Americans comprising over 20% of the total population include Palisades Park, Fort Lee, Leonia, Ridgefield, Closter, Englewood Cliffs, and Norwood. The first three boroughs on the list all have Korean American commercial and residential areas, whereas other areas mainly are residential areas for Korean Americans. They also sometimes have some Korean American businesses in the community, but not major ones overwhelming other ethnic businesses such as White and Hispanic. Table 3.1 summarizes changes in the Korean and White populations (many of Italian descent, as noted above) in municipalities

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21 Even though Palisades Park is the biggest (by both percentage and population) Korean American borough in Bergen County, many longtime residents in the area state that Fort Lee was where the region’s Korean American community first took root.

22 In Edgewater, there is an open mall, which consists exclusively of Japanese grocery and businesses.
with more than 10% Korean American population between 2000 and 2010, and figure 3.3 shows the map of Bergen County by the percentage of Korean American population for each municipality.

Except the increase in the number of White residents in Edgewater (although their percentage has decreased), the Korean population increased in all Bergen County municipalities by both numbers and percentages. This indicates the existence of a growing Korean American community in a number of municipalities in Bergen County, while the former majority ethnic group, Whites, are gradually decreasing. Min and Kim (2012) note that the beginning of Bergen County’s attraction of new immigrants directly from Korea, and of Korean immigrants moving in from New York City, started in the 1980s; in addition, they describe the acceleration of Koreans’ preference for Bergen County that took place in the 1990s and 2000s. During the acceleration decades, Korean Americans showed a suburbanization movement from New York City to neighboring suburban counties, such as Bergen, Nassau, and Westchester, after their businesses have developed and stabilized in New York City. The suburbanization movement of Korean Americans took place in major Korean communities in the United States starting in the 1980s, and this phenomenon has been more evident in the New York-New Jersey area than in the Los Angeles area between 1990 and 2010 (Min and Kim 2012: 49). Min and Kim (2012) and S Oh (2007) indicate that the following four major factors have contributed to the suburbanization of Korean immigrants to Bergen County.

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23 Considering all Cities, Boroughs, and townships in Bergen County, only Englewood city and Rockleigh borough recorded an increase of White population and percentage during the ten years.
Many Korean immigrants who had originally settled in Queens moved to Bergen County in the late 1980s and the 1990s to Fort Lee, Palisades Park and other neighborhoods, seeking better schools for their children, lower crime rates, and good suburban amenities (S Oh 2007: 82).

The easy accessibility to Manhattan and other parts of New York City accelerated the suburbanization, since a lot of Korean immigrants in the area commute to their workplace in New York City (S Oh 2007: 84).

The relocation of many Korean multinational corporations originally located in Manhattan to Bergen County in the mid-1980s contributed to the increase of the Korean population in Bergen County.

The development of a Korean ethnic enclave in Bergen County since the late 1980s itself attracted more Korean immigrants from Korea and also from New York City.

As a result of the suburbanization movement of Korean Americans, a number of municipalities around the George Washington Bridge (blue line connecting Fort Lee borough and New York City in figure 3.3) in Bergen County became highly concentrated Korean enclaves. The next section describes some of the major Korean American municipalities in the county. With relevant maps and pictures of communities, it provides a closer look into the community.

3.1.2. Major Korean American Communities in Bergen County
This section focuses on three major Korean enclaves (Palisades Park, Fort Lee, and Leonia) in Bergen County, all of which have major Korean commercial streets. Roughly, there are three major Korean dominant commercial streets located in those three boroughs in Bergen County, and these streets are important because they give each community a highly visible Korean American atmosphere. Descriptions and illustrations of the three boroughs are mainly based on United States Census Bureau reports (2000 and 2010) and my personal observations in the community.

Palisades Park (or Pal Park) is located in the southeastern part of Bergen County, approximately nine miles from central Manhattan. Pal Park is the densest Korean enclave in the United States with the Korean population having rapidly grown in the borough since the early 1990s. According to the census data, the Korean population in Pal Park in 2000 was 6,065 (36% of the total population) compared to the White American population of 8,241 (48%). In 2010, the Korean American population increased to 10,115, accounting for 52% of the population, surpassing the White American population, which comprised 29% of the borough’s population in 2010 (see Table 3.1). This is the highest percentage of Korean Americans in any place in the United States with 1,000 or more residents.24

24 The American Community Survey questionnaire asks about both the race and ethnic origin of the survey taker in separate items. The item asking about the survey taker’s race provides check boxes (including check boxes for other races that are not provided in the selections), while the item asking about the survey taker’s ethnic origin is an open-ended question.
Broad Avenue, the street running through the center of the borough (the red line in Figure 3.4), is considered to be the heart of the Korean American commercial district in Bergen County. The avenue is full of Korean businesses for 13 blocks (between Harriet Avenue and Oakdene Avenue, southwest to northeast, respectively). Almost all the store signs are in Korean only or English/Korean bilingual (Figure 3.5), and there are also a lot of chain stores which came directly from Korea such as ‘Paris Baguette’ (popular Korean bakery chain) and ‘Caffe Bene’ (popular Korean coffee shop chain). Broad Avenue of Palisades Park provides the biggest and densest Korean commercial district among the Korean American commercial districts in Bergen County. Grand Avenue, another major street which penetrates Palisades Park, is the second major Korean American commercial street (the blue line in Figure 3.4). There are also a lot of Korean stores and businesses on Grand Avenue along 11 blocks between Ruby Avenue and Oakdene Avenue, southwest to northeast, respectively (Figure 3.6).
Palisades Park is where you can visibly experience the Korean American population in Bergen County the most. Not only on the major commercial streets, but also in residential areas, most of the people walking around the community are Korean Americans. Although the Census reported that the Korean American population of Palisades Park makes up 51% of the total population, Jong-hoon, the legal advisor of the Palisades Park Korean Association, and Sung-ho, the President of the New Jersey Korean Association, informed me that the percentage of Korean population in Pal Park would probably exceed 70% if all illegal Korean residents, who do not tend to report their presence, were included. Also, many Korean Americans I interviewed for this project indicated that Palisades Park provides a very comfortable place for both Korean Americans who have already settled down, and newcomers. Especially for newcomers,
Pal Park is very comfortable because of the absence of the linguistic and cultural barriers that newcomers would usually experience right after their migration to a new country. For Korean Americans who have settled down in the community already, the community also provides them with a comfortable place to live, because most Korean Americans are raised in a Korean way, at least to some degree, by their first generation Korean immigrant parents and socialized with younger generation cohorts who have culturally similar backgrounds. Most of the Korean Americans who participated in this research project said that the best thing about Palisades Park is being able to get any kind of real Korean food at any time, a very important matter given that the food participants usually eat is Korean.

According to my personal observation during the fieldwork, many students from Korea came to this area to enroll in language courses (ESL or EFL) or attend colleges in New Jersey, like Bergen Community College. For them, the community is convenient in two ways: living and working. Since it is possible to speak only Korean and interact with Korean speakers in the community, Palisades Park provides Korean international students with a place to live comfortably. Second, because there is a major Korean commercial district in the borough, it is relatively easy for Korean students to get a part time job in the community. Many Korean storeowners hire Korean international students as part-timers even though their visa status does not technically allow them to work in the US. Many Korean American participants in this research project made comments, mostly negative, regarding the Korean international student newcomers to the community. Mainly, the interviewees stated that even though the community might provide conveniences for incoming Korean international students, the students will never have a
proper chance to learn English and experience the ‘real America’. Another new incoming 
group is the first generation Korean immigrants from regions of the United States other 
than New York City. The first generation Korean Americans from other regions move 
into the community. In particular, Korean Americans who have retired from their work 
had moved to Palisades Park because they want to live the rest of their lives in a 
convenient Korean American community. The retirement group doesn’t seem to form a 
major new incoming group, but it is likely that the retirement group will increase as Pal 
Park and its neighboring communities become increasingly popular to Korean Americans 
from other regions. My landlord and landlady moved in from Colorado to Pal Park after 
retirement. Some of their friends in the community had a similar situation where they 
originally immigrated to other parts of the United States and moved to Bergen County 
after their retirement, or after their children became independent. My landlords’ and their 
friends’ comments on their reasons for moving into Pal Park and neighboring 
communities are mostly the same. The major reason among them was that they wanted to 
spend their life after retirement more comfortably in a Korean atmosphere rather than 
continuously struggling with regular American life. The most important factor they 
pointed to accounting for their difficulties in their former non-Korean communities was 
the language barrier. As anyone can easily anticipate, lack of knowledge of English is one 
of the major factors contributing to first generation Korean Americans’ hardships, and it 
was not an exception for the senior first generation Korean Americans who I met during 
my fieldwork in Palisades Park. In front of the Palisades Park public library, there is a 
memorial plaque which also reflects the strong influence of the Korean American

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25 Information provided about the Korean post-retirement group is based on my observation and personal conversations with residents in the community.
population in the community (Figure 3.7). This memorial, established by the ‘Korean American Coalition for Civil Empowerment’ in 2010, is the first memorial dedicated to World War II comfort women, who were tens of thousands of women and girls (mostly Korean) who were forced into sexual slavery by Japanese soldiers during World War II.

Finally, there is another significant indicator that reflects the dense Korean population in the community. Compared to other growing Korean American communities in Bergen County, one can see more public signs in English with Korean translations in Palisades Park.

Fort Lee borough, the second major Korean American community in Bergen County (Korean population of 8,318 out of total 35,345), also shows a very similar situation to that of Palisades Park. The community is right next to Palisades Park, and it is directly connected to Manhattan by the George Washington Bridge. Figure 3.9 shows the map of Fort Lee. Similar to Palisades Park, Fort Lee possesses both a major Korean
American residential area and Korean American commercial streets: Main Street and Lemoine Avenue (see figure 3.10). Fort Lee also provides a visible Korean American community, where one can witness many Korean American people walking around both in residential and commercial areas. The difference between the two municipalities is that Fort Lee also has some Japanese businesses along with Korean ones, indicating the Japanese population and their immigration history in the borough (figure 3.11).

Fort Lee is where the Korean American Association of New Jersey (KAANJ), the oldest and biggest Korean American organization in New Jersey is located. Even though Palisades Park is the municipality with the biggest Korean population in Bergen County, Sung-ho (the president of KAANJ) noted to me in an interview that Fort Lee is where Koreans first started settling down in Bergen County prior to the massive suburbanization of Korean Americans from NYC in the early 1990s. The organization has been serving New Jersey Koreans since 1975, providing various social services to the Korean
Figure 3.9. Fort Lee (the red area in the yellow circle in the left) in Bergen County and map of Fort Lee (in the right), Main Street (the red line), and Lemoine Avenue (the dark blue line) (extracted from The United States Census Bureau and modified by Jinsok Lee)

Figure 3.10. Store Signs Written in Korean only, or Korean and English on Main Street (Pictures taken by Jinsok Lee 2013)

Figure 3.11. Japanese businesses in Fort Lee (Left two: Pictures taken by Jinsok Lee 2013; Right: Google maps http://maps.google.com)
American community. Back in 1970s and 1980s before the suburbanization movement from New York City to Bergen County had taken place, the majority of Koreans in Bergen County were resident representative employees and their family members from Korea, and they were mostly concentrated in the Fort Lee area. The major reason why resident representative employees chose to move to Fort Lee is its accessibility to New York City, where a lot of their workplaces were located, the same reason why the Japanese population was concentrated in Fort Lee. However, the difference between the Japanese group and the Korean group who moved into the community is that resident representative officers and their families were the major component of the Japanese immigrant group, while the Korean group was composed of various types of groups who formed an ethnic enclave.

Though smaller in population numbers than Fort Lee, Leonia borough is the second Korean American municipality by the Korean percentage in Bergen County. It shares Broad Avenue and Grand Avenue with Palisades Park. The percentage of Korean population (2,369) out of the total population (8,937) is 26.51% (The United States Census Bureau 2010; also see table 3.1). Even though the density of Korean businesses on both commercial streets gets lower and lower as one walks away from Palisades Park and enters Leonia and walks towards Englewood, there are still a number of Korean businesses, and this number is growing. Figure 3.12 shows some Korean establishments on Broad Avenue in Leonia. The location of Leonia can be seen in figure 3.13.

As one walks along Broad Avenue toward Englewood and Englewood cliffs, there are fewer Korean American businesses and Korean Americans walking around. However, Leonia is recognized as a better and quieter place to live than Palisades Park.
among Koreans, and the Korean American population in Leonia has been growing fast for the past ten years, from 1,485 to 2,369 (The US Census 2000 and 2010).

Other major Korean American municipalities of Bergen County such as Closter, Norwood, Englewood Cliffs, and Edgewater mainly serve as residential areas for Korean Americans. These mainly residential communities may also have commercial areas to varying degrees, as the Korean American population increases.
The next section describes life in the Korean American community in Bergen County. The description is mostly based on ethnographic participant-observation during my stay in the community for five months.

3.2. Life in the Korean American Community in Bergen County

As I have briefly stated at the start of this chapter, this section can be seen as a sequel to the first section of the introductory chapter. For the fieldwork and data collection of this dissertation, I stayed in Bergen County for five months from the end of January until the end of June of 2013 in order to observe and participate in the community in an in-depth manner. As I rented a room in a family house and lived in the area for several months, I was not only excited to experience the community as a researcher, but also excited to observe the changes in the community as a former resident from 20 years ago. Even though I had revisited the community in 2009, major changes in the community over the past 20 years were still striking to me. The first week, I started walking around the major Korean American municipalities in Bergen County to get used to the community and directly observe how it is laid out. Eventually, walking around the community became one of my routines during the entire time of my stay, and I walked around and observed the community for three to five hours every day until the last day. The range of walking was from Palisades Park (where I rented my room), up north to Tenafly borough, down south to Edgewater borough, west to Ridgefield Park borough, and east to Englewood Cliffs borough. The following figure describes the municipalities where I mainly conducted the fieldwork.
Besides my fascination with the major Korean American commercial district in Palisades Park, there were also a lot of Korean Protestant Churches wherever I went. Due to the overrepresentation of Protestants among Korean immigrants, one can easily find multiple Protestant churches almost everywhere (see figure 3.15 for photos of some of the Korean Protestant Churches in the community). As noted in section 2.3 above, this strong presence of Protestants in the community indicates an important point: Protestant churches are very closely tied to the life of Korean Americans in the community.

Not surprisingly, the majority of participants I interviewed were Protestants (19 out of 24). As noted in section 2.3 above, since a number of sociological studies have noted that the religious aspect of Korean Americans is important and that it is indeed closely tied to Korean Americans’ lives, I paid visits to several religious organizations a number of times, and regularly attended three Korean American Protestant churches during my stay in the community to participate in their services and events and observe what Korean Americans do in those organizations.

The major difference (besides the religious aspects) between Korean ethnic Protestant churches and other Korean ethnic religious organizations in this community (as well as in Korean American communities across the US) is their number. In other words, compared to Korean ethnic Catholic churches and Buddhist temples, Korean ethnic Protestant churches comprise an overwhelmingly larger number of religious institutions/organizations in the community: Min (2010) argues that the number of Korean Protestant churches in the NY/NJ metropolitan area may actually be close to 600,
and about 3,000 within the US. The main reason is the fact that an overwhelmingly higher numbers of Korean Americans are Protestants versus other religions. Also, there are many Korean pastors in the United States, and they have contributed to establishing a very large number of Protestant churches. Moreover, founding a Protestant church is relatively easier than founding a Catholic Church, since Catholic churches must obtain

26 All municipalities where I conducted my fieldwork are boroughs, except Englewood (city) and Ridgefield Park (village). The total area of all municipalities where I conducted fieldwork is 28.253 square miles.
permission from the local diocese, and the local diocese does not tend to establish multiple churches in a single area. The situation of Buddhist temples is even worse in Bergen County. There are only two small Korean Buddhist temples in the county, and most of the Korean Buddhists have to drive across the border up to New York State or Queens, NYC. Additionally, as noted in chapter 2, Korean Protestant churches have been diversified in terms of generation. As children of first-generation Korean immigrants grew up, they started to establish their own churches apart from Korean immigrant Protestant congregations, whereas non-Protestants usually do not have separate religious organizations for second or later generations (Crane 2003; Ebaugh and Chafetz 2000).

3.2.1. Korean Ethnic Protestant Churches, Catholic Churches, and Buddhist Temples in the Community

Korean ethnic Protestant churches can be roughly divided into two types by their attendees and style of ministry: Korean immigrant churches and younger generation
English language churches. I attended Onnuri Church, a Korean immigrant Protestant church, in Fort Lee during my stay in the community. A Korean immigrant church is a type of church mainly with first generation Korean immigrants as its attendees\textsuperscript{27}. Their sermon is always in Korean only, and the church system and manner of service are almost the same as with typical Protestant Churches in Korea. First of all, the organization is hierarchical in terms of one’s age and position in the church. Almost all the church members (including second generation church members) converse in the Korean language. Pastors frequently talk about issues in Korea or in the community during their sermons.

On the other hand, younger generation churches have characteristics that are very different from Korean immigrant churches. First, the membership is composed almost exclusively of younger generation Korean Americans. While the membership of immigrant churches consists of first generation immigrants as a major group and younger generations as a minor group, showing a wide age range, it is no exaggeration to say that younger generation church members are all non-first generations. Because the churches are exclusively designed for younger generations, the age range among members does not vary much, and they perhaps look like an age cohort peer group at a glance\textsuperscript{28}. Moreover, the church members all communicate in English, and sermons are also completely in English. During their sermons, pastors seldom bring up issues in Korea, and most of the topics are related to non-Korean matters. Some pastors even state that their church is not

\textsuperscript{27} Even though the majority of Korean immigrant church members are first generation immigrant Koreans, there still are some second-generation Korean Americans who mainly attend a Korean immigrant church.

\textsuperscript{28} The age range of the congregations of second generation churches is not wide because the age range of second generation Korean Americans in the community is quite narrow, due to the relatively short history of Korean American settlement in the community. According to my observation, the age range of younger-generation church members did not go over mid 30s.
Korean American, but an American church, during their sermons. I attended two younger generation churches, Grace Community Chapel (GCC, hereafter) and Joy Christian Fellowship (Joy Church, hereafter). Both younger generation churches share the characteristics described above, but differ in the background of the establishment of the organization. Joy Church can be seen as a typical younger generation church which branched out from a first generation Korean church, Korean Presbyterian Church of New Jersey (KPCNJ) in Palisades Park, while GCC was first founded at Rutgers University in New Jersey as a campus ministry\(^29\). Unlike most of the younger generation Korean churches such as Joy church, GCC’s mother church is the campus ministry at Rutgers University, where also most of the members are younger generation Korean Americans. Both churches, GCC and Joy Church, overtly and constantly state that they are not Korean American churches but an Asian American church or just an American Church open to anyone, not just Korean Americans.

Additionally, there is another type of a Korean Protestant church where the both types of congregation coexist. In other words, the church provides both Korean and English ministries in their service schedule (parallel congregation, hereafter). The English ministry offered in the parallel congregation strongly resembles that of the younger-generation churches. However, unlike younger generation-only congregations, parallel congregations are still under the supervision of a Korean-only congregation, which is usually the main congregation. Also unlike most younger generation churches, parallel congregation churches provide Korean language and culture classes to younger generation church members. The establishment of parallel congregations can be seen as

\(^{29}\) Joy Christian Fellowship became independent from their mother church, KPCNJ, soon after they branched out.
an effort to prevent the younger generation Korean members from changing churches after they grow up – in other words, from moving from the immigrant churches of their parents to younger generation churches. By providing Korean language and culture classes, churches with parallel congregations aim to help younger generations feel more comfortable with a Korean atmosphere in the church setting starting from their childhood, so they might stay at the same church after they grow up. Moreover, providing English services along with Korean services will lower the younger generations’ will to seek another English-speaking church, which they might feel more comfortable with. Conversely, Korean immigrant churches and younger generation churches seem to lack the intention to embrace a range of generations compared to the parallel congregation church.

As one may expect, there were not many Korean American teenagers among the members of the Onnuri Church (which is an immigrant generation church). At Onnuri, elementary school students and preschool children attended family services with their parents, while older members of the younger generation attend different churches on their own, rather than going to church with their parents. There were some younger generation members in the parallel congregation church (including some of the participants in this research project), who attend the same church with their parents. However, they still attend the English service, while their parents attend the Korean service.

The majority group in younger generation churches is, of course, younger generation Korean Americans, while and the minority group is non-Korean Asian American younger generations. The participation of non-Korean members in younger generation Korean churches is actually a product of many younger generation churches’
idea, ‘we are not Korean American’, which is overtly promoted frequently. This matches with many scholars’ (see e.g. Chai 2005; Min and D. Kim 2005, etc.) arguments that younger generation Korean churches gradually turn into Pan-Asian or multiracial churches. In fact, the two younger generation churches stated above, GCC and Joy Church, which I observed and participated in, both showed a similar composition of church members. Even though the majority of the church members were younger generation Korean Americans, there is also a growing group of non-Koreans in their churches. During a sermon, one of the pastors of GCC stated that it is more important for church members to consider themselves as a Christian and American before Korean American or Asian American. A pastor of Joy church also stated in his sermon that the church should not limit church members and the church to only Korean American or Korean, but should simply be Christian by moving away from any specific cultural tradition in which people grew up, and going back to the Bible. Positioning Christian identity before Korean identity is common practice among younger generation Korean American churches in the US, and this transformation into race-blind Protestant churches stems from the strong influence of the evangelical movement in the United States after 1965 (R. Kim 2006; Min 2010).

Korean American Catholic churches and Buddhist temples are rather different from Korean American Protestant churches. Catholic churches and Buddhist temples usually do not establish separate organizations for different generations or certain groups. In Bergen County, there are three Korean American Catholic churches, in Fort Lee (Church of the Madonna), Demarest (Parish of St. Joseph), and Saddle Brook (Roman

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30 The growing group of non-Koreans in second-generation churches consists mainly of second generation Asian Americans, such as Chinese Americans and Vietnamese Americans. Interestingly, Joy church also had a couple of White American church members.
Catholic Church of the Korean Martyrs). All three Catholic churches provide English services. Some of the differences between Korean American Catholic churches and Protestant churches might stem from the difference between Catholicism and Protestantism in Korea, in terms of each religion’s history and degree of nativization in Korea. Compared to the relatively short history of Protestantism in Korea starting from around the late 19th century, the history of Korean Catholicism started around the late 18th century, and the spread of Catholicism in Korea was not done by Western missionaries, but by Korean people voluntarily, and they accepted the religion and nativised it by including Korean traditional values and practices to certain extent. Moreover, the Second Vatican Council (Vatican II) in 1962 officially allowed Korean Catholics to maintain their traditional culture and rituals. In other words, Korean Catholicism is infused with Korean traditional values to a certain extent, such as practicing ancestor worship ceremonies and observing Korean traditional holidays. In this sense, Korean Catholicism seems to already include Korean values and traditions at least in some degree, and because of this, Korean American Catholic churches might not have to explicitly promote Korean culture, since Korean cultural values are already embedded in Korean Catholic practices and values. As a matter of fact, all three Korean American Catholic churches in Bergen County do maintain nativised Korean Catholic practices and values which are not present in most of the Korean American Protestantism. Figure 3.16 illustrates how some Korean traditional cultural activities and values are incorporated into Korean American Catholic church activities.

31 Unlike topics of sermons in Protestant churches, which depends on the pastor of the church, sermons of Catholic churches are somewhat fixed and scheduled, yielding less opportunity for priests to change topics of sermons on their own.
Most of these activities cannot be seen often in many Korean Protestant churches in either Korea or America. In particular, ancestor worship ceremonies (see figure 3.16 top center and right) are strictly banned among most of the Korean Protestants, because they are considered forms of ‘idol worship’. Another interesting point is that Korean American Catholic churches frequently incorporate Korean cultural and traditional elements into both religious and non-religious church-related events. In figure 3.16, a number of members are wearing ‘Hanpok’ (Korean traditional clothes) during the Legio Acies (bottom left), which is a Catholic traditional religious event, and performing ‘Kkotukaksi’ (Korean traditional skit play) (top left) and ‘Samwulnoli’ (Korean traditional percussion quartet) (bottom right) during various church events such as New Year’s service and church bazaar day. The bottom center shows the traditional Korean New Year’s ceremony, seypay, at the church, where Korean minors show their respect to the Korean seniors and receive words of blessing with some money.

The number of Korean Buddhist temples in Bergen County is even lower than the number of Korean Catholic churches. There are two minor ‘Sachal’ (Korean Buddhist temples), in Teaneck borough (Bodhi Mind Zen Center) and Garfield City (Santisukha Meditation Center) (figure 3.17).

The membership of each Sachal is not large, and although they do have English service schedules, there are few or no younger generation Korean American members, except for some children who come to Sachal mainly with their parents. Many Korean Buddhists in Bergen County instead drive to Tappan, upstate New York (Bulkwang Zen Center) or Flushing, NYC (Hankaum Zen Center) to attend bigger Sachal. Between those two major institutions, I have visited Bulkwang Zen Center for observation and participation
The first impression of the Sachal was that the main members are mostly first-generation Korean Americans even though there are more younger generation Korean Americans than in the small Sachals in Bergen County. The most interesting feature of major Sachals is that they officially offer Korean language and culture schools and
classes. Considering that Buddhism is the most nativized religion in Korea (introduced to Korea around the fourth century), with Korean traditional values naturally embedded into religious practice, the fact that the Bergen County area Korean Buddhist temples offer Korean language and culture classes may at first glance be seen as a bit absurd. However, the offering of Korean language and culture classes by the Sachal can be understood in terms of children’s Buddhist education. Since Christianity is the major religion in the Korean American community, most of Korean language and culture classes or Saturday/Sunday Korean schools are supported by Christian church funds or offered by Christian churches, and because of this, first generation Korean Buddhists have no other Korean schools to provide their children with an opportunity to learn Korean traditions in a Buddhist manner. Also, the offering of Korean class by Sachals might be a result of Korean immigrant Buddhists’ loyalty to Korea. S Suh (2003) reports that male Sachal members in Los Angeles claim themselves to be more loyal and authentic Koreans by remaining Buddhists. In sum, the Sachal members’ need for Korean language and culture education for Buddhists, and their ‘authentic Korean’ pride may both explain the providing of Korean language and culture schools by Sachals.
A close look at the Korean American religions in Bergen County revealed differences in how they are connected to preserving (or rejecting) the Korean ethnic identities of their organizations’ members. Preserving Korean ethnic identities in Korean immigrant Protestant churches and Korean congregations in parallel congregations is mainly done during fellowship activities and by providing Korean classes, but not during their religious services. On the other hand, younger Korean American Protestant churches and English congregations in parallel congregations explicitly reject Korean American ethnic identity and promote race-blind ideology by promoting Christian identity over other identities. Korean American Catholic churches promote Korean culture and ethnic identity through their longstanding incorporation of Korean values and practices into both the religious and non-religious aspects of their churches. Buddhism, the most nativised religion in Korea, is the religion with the closest tie between religion and Koreans’ ethnic identity. However, although Korean cultural values and elements are naturally embedded in the religion, Korean American Buddhist temples provide Korean classes for a couple of reasons: (1) The temple members’ need for Korean classes in a Buddhist manner due to the fact that most of the Korean schools outside the temple are offered in Christian churches or with Christian church funds; (2) The high sense of loyalty and authenticity of members to the homeland.

This section on Korean ethnic religious institutions provided information on how they are connected to (or disconnected from, in the case of many younger generation churches) preserving Korean ethnic identity and retaining the Korean traditional cultural values, based on my ethnographic fieldwork in the community. The next section illustrates the tension between Korean Americans and White Americans, the former
major ethnic group, based on my observation in the community. By providing information on the ethnic tension in the community in the past and currently, I offer insight into how Korean Americans and White Americans perceive each other.

3.2.2. Tension Between Korean Americans and Other Groups in the Community

As soon as I discovered the dramatic changes to Korean American communities in Palisades Park and neighboring communities that had taken place since the early 1990s, I was curious about the possible tension between the former majority group, the White population (many of whom are of Italian descent), and the growing majority group, the Korean population. Because the community has experienced a major transition in such a short time (roughly during the past 20 years, and still ongoing), I tried to ask questions on the topic to the people I interviewed (in both sociolinguistic interviews and informational interviews) to find out if there is any tension between ethnic groups in the community. When interviewees were asked about the topic, most of them talked about Korean American merchants’ protests and demonstration rallies in Palisades Park in the mid- and late-1990s. The first demonstration in the mid 1990s comprised a protest against the borough government’s banning of Korean-only signs in Korean businesses and stores. The second protest in the late-1990s was against court-ordered revisions to a law setting closing hours for many businesses in town, which was considered as oppressing Korean businesses to Korean Americans in the community, since the revised store closing hours was applied to a number of Korean businesses such as Korean karaoke and restaurants to stop 24-hour operation. These two incidents are representative of the tension between
Korean Americans and the larger society in Palisades Park and the neighboring communities.

Another possible tension might lie between the White American landlords/building owners and the Korean American storeowners who rent the White-owned buildings. Although it looks as if Korean American businesses and stores have taken over the major commercial streets in Palisades Park and neighboring communities, some of my interviewees stated that many of the buildings and retail sites are still owned by White Americans, and most of the Korean retailers and business owners are tenants. One of my informants, Jeff, who is a lawyer/politician, also said that some building owners in Fort Lee are trying not to rent out their offices and retail spaces to Korean people, because they do not want Fort Lee to become like Palisades Park. Fortunately, since Korean businesses and stores are already dominant in commercial areas in Bergen County Korean enclaves, the anti-Korean sentiment among some White American building owners is not serious enough to cause major tension or become a community-level issue. However, similar tensions might arise in other boroughs where the Korean American population is starting to grow and more Korean businesses and stores are opening.

Interviews with leaders of several Korean community leaders in Palisades Park and Fort Lee revealed that there might be some minor issues among White Americans at the individual level, but that there have never been any major issues since the two demonstration rallies in the 1990s. The president of the Korean Association of New Jersey indicated that White Americans might feel uneasy about the changes in the community, since the whole atmosphere has become Korean so rapidly. As Korean
American informants I interviewed agree that there is no perceptible ethnic tension in the community nowadays, Korean and White Americans in Bergen County do seem to be getting along well with each other. There were even some White Americans in the community who knew some basic Korean vocabulary and tried to participate in Korean events to learn about Korean culture. At least overtly, there does not seem to be a competition between the newer Korean immigrant group versus the former White group, where one group is trying to win and leave the other group a loser.

3.3. First, 1.5, and Second Generation Korean Americans

Since the inception of the Korean American Community in Bergen County dates only back to late 1980s and early 1990s, there are not many Korean Americans who are third or later generations. In other words, the Korean population mainly consists of first, second, and a very few third generation Korean Americans. In addition to those generational groups, it is also important to look at the generation between the first and the second generation, namely 1.5 generation. When we distinguish the first and second generations, it does not seem to be controversial at all. ‘First generation Korean immigrants’ (‘ilsey’, literally meaning first generation in Korean) refer to people who were born in Korea and migrated to the US. The second generation Korean American (‘isey’, literally meaning second generation in Korean) refers to children of first generation Korean immigrants, who were born in the US. However, there are a number of Korean immigrants who are often referred as the 1.5 generation (‘ilcemosey’, literally meaning 1.5 generation in Korean) who do not perfectly fit in either of these categories.
The term 1.5 generation was introduced to English speakers by a Korean American reporter named Charles Kim in the early 1970s\(^{32}\), but the Korean term had already been casually and popularly used in Korean communities (both in the Los Angeles and New York area Korean American communities) (Danico 2004). The term refers to people who were born in Korea but who migrated to the United States as children. Following the place-of-birth criterion, 1.5 generation would be included in the first generation immigrant category since they are still immigrants who were born in Korea. However, there are many reasons why the term 1.5 generation Korean Americans should be treated as a separate category (at least apart from the first generation). For example, scholars such as Koh (1994), Hurh (1998) and Ryu (1991) point out the reason for distinguishing 1.5 generations from other generations is that they are bicultural and bilingual since they immigrated to the United States during their formative years. In other words, 1.5ers can be seen as immigrants who had a chance to be socialized in both Korean and American cultures and languages and consequently express both cultures’ linguistic usages, values and beliefs. However, unlike the clear distinction between the first and second generation Korean Americans, there still isn’t any clear way of distinguishing members of the 1.5 generation from other generations. While an arbitrary dividing line could be introduced (for example, ‘under 15 years old at time of arrival’), this would not account for the fact that people in the 1.5 generation are exposed to the native Korean culture and to US culture for varying amounts of time, and to differing extents. For example, whereas many Koreans arriving in the US as teenagers will be relatively closer to first generation, and those arriving as infants relatively closer to second generation Koreans, some very young

\(^{32}\) Unfortunately, I was unable to find the original newspaper article, where the term ‘1.5 generation’ was first introduced.
arrivals might be raised in Korean-dominant communities and so resemble first
generation Korean Americans more so than other young arrivals raised in other types of
communities. Conversely, a teenage Korean arriving in the US may acculturate to
mainstream US society more quickly than other older arrivals due to factors such as
language knowledge and ability and a positive orientation toward US culture; hence such
a person might be more similar to a second-generation Korean American than to other
first generation immigrants. Thus, boundaries between generational categories remain
fuzzy rather than sharp. As stated above, if we consider only the place-of-birth criterion,
people in the 1.5 generations demographic should be included in the 1st generation pool.
This can be diagrammed as in figure 3.19.

However, as just noted, this categorization criterion can be somewhat problematic due to
varying ages at which 1.5ers arrive, amount and type of exposure to Korean and US
culture, and attitudes toward Korean versus US culture and language. When one thinks
about the degree of proficiency in both Korean and English languages and also the degree
of their acculturation in both Korean and American ways, neither the linguistic nor
cultural development processes of 1.5 generation Korean Americans can always be
understood as a Korean and American balanced process. Moreover, interestingly, the
social behavior, such as socioeconomic attainment, of Korean Americans in the NY-NJ
Metropolitan area reveals that 1.5 generation Korean Americans are perhaps closer to the
second generation than the first generation (Min 2013). In this sense, when we consider
exposure to and attitudes toward the two languages and cultures and social behaviors, in
addition to birthplace, the generation diagram can be portrayed as in figure 3.20.
This categorization scheme, in which 1.5 generation Korean American indeed fall in-between first and second generations but are grouped more closely with the second generation, is brought into focus in a study by Park (1999), which examines construction of self and community by young 1.5 generation Korean Americans. In her article, Park defines 1.5 generation Korean Americans culturally as ‘people of Korean descent who came to the United States as minors (infants, children, or adolescents), or are US born, and who practice aspects of biculturalism/multiculturalism involving Korean and American cultures, often with conflict (Park 1999: 158)’. In Park's sociological interview data, many 1.5 generation Korean American subjects describe themselves as a bridge-
builders between the first and second generations. Park also argues that the older Korean American community has a special expectation for the 1.5ers, which is different from those they hold for the second or later generations. In other words, the community expects the 1.5 generation, but not the second generation, to respect Korean values and represent Korean standards. Park states that 1.5 generations’ hybridity is demonstrated in the fact that individual participation in traditional Korean versus American practices is quite varied. In other words, some are content with a consumption-oriented ethnicity/culture that is more typical of majority American culture, while others are satisfied with being members of ‘geographies of ethnicity’ (Park 1999: 159), that is, with practicing and participating in events in Korean American contexts, such as cultivating Korean family and friends and other social relationships, as well as going to Korean church and language school.

Although clearly defining the 1.5 generation entirely differently from the first or second generation group seems almost impossible, it is now at least clear that the 1.5 generation group does still hold a somewhat special and important position, at both the individual and social level, that enables them to be defined as a distinct and important group in a study of immigrant generations of Korean Americans, and indeed immigrant groups in general (e.g. see Ryu 1991; Koh 1994; Hurh 1998; Park 1999). Furthermore, researching the 1.5 generations will give us invaluable sociolinguistic insight, since their linguistic and cultural characteristics seem to vary more depending on individual sociocultural surroundings than do the characteristics of first and second generations.

Following Park’s (1999) definition of 1.5 generation group, many second generation Korean Americans in Bergen County seems to actually fit into the 1.5
generation. Because the Korean community is very tightly formed and concentrated in certain parts of the county, along the Hudson River/George Washington Bridge area, many second generation Korean Americans in Bergen County (especially around Palisades Park area) practice aspects of biculturalism/multiculturalism involving Korean and American cultures on almost everyday basis. However, in this study, I take a compromised approach in separating the second generations and the 1.5 generations. 1.5 generation Korean Americans are defined as Korean immigrants who were born in Korea, and then came to the United States after the age of three, and before the age of 12, while second generation Korean Americans are defined as Korean Americans who were born in the United States or migrated to the United States before the age of three. The age of three is chosen because if represents the first possible starting of socialization with peer groups rather than family (the starting of pre-kindergarten education).

3.4. Summary of the Chapter

This chapter has provided the overall characteristics of the Korean American Community in Bergen County. Section 3.1, ‘The New Korean American Community: Palisades Park and its Surrounding Boroughs’, has illustrated the appropriateness of choosing this site in researching Korean Americans by providing statistics on community ethnic composition. Section 3.2, ‘Life in the Korean American Community in Bergen County’, looked into various religious organizations (which are closely connected to Korean life in the community), and ethnic tensions in the Korean American community. The last section, 3.3, ‘First, 1.5, and Second Generation Korean Americans’, has argued
for the usefulness of including members of 1.5 generations in the research, as well as the necessity for a definition for this category tailored to the Bergen County Korean American community. The next chapter will thoroughly illustrate the collected data and the methodology of the research.
Chapter 4.

Data and Methodology

This chapter presents the examined data, and the methodology of data collection and analysis. As mentioned in previous chapters, this project chiefly consists of two parts: (1) Documentation of the English spoken by Korean Americans in Bergen County, and (2) The linguistic practices of Korean Americans in connection to possible social meanings of the variants through looking at its correlations with various social factors, topic-based stylistic variation across speakers, and how patterns of variation relate to speakers’ commentary regarding such identity-related matters. The first part is based on the variable patterning of /æ/ and /ɔ/ in sociolinguistic interviews and wordlist readings. In the second part on the social meanings of linguistic practices, I look at the linguistic and extra-linguistic patterning of features across different topics within sociolinguistic interviews; in addition, I consider speaker commentary on topics such as orientation toward community, ethnicity, language, and religion in the collected sociolinguistic interviews in connection with the variable patterning of the two features. Tackling the data from various angles will provide answers to the following list of research questions:

1. Do Korean Americans adopt regional features in their English? Do the results of the current study follow the results of earlier studies on regional/ethnic production patterns?
2. If Korean Americans in this current study participate (or don’t participate) in producing regional features and patterns, what variants and variable patterns do they use?

3. Are there correlations between linguistic and social factors, and if so, what do those correlations suggest about the social meanings of the linguistic features, including those related to ethnic and local identity?

Throughout the following sections in this chapter, detailed information on participants in this research project, research design, and methodologies are specified.

4.1. Participants

A total number of 27 Korean Americans, 13 male and 14 female, participated in this research project. Since the main focus of this dissertation is on the English language of Korean Americans in the scope of regional variation, only those who are from Bergen County, and speak English as their first language or the most comfortable language are chosen. Therefore, all subjects are second generation Korean Americans, and 1.5 generation Korean Americans with some restrictions (younger generation, hereafter)\textsuperscript{33}. A summary of general information of research participants in this study is provided in Table 4.1.

\textsuperscript{33} As noted at the end of the last chapter, 1.5 generation immigrant Korean Americans can be roughly defined as people who came to the United States of America after their birth and before or in their early teens. For this study, only those who came to the United States after the age of three and before their exposure to junior-high/middle school education are considered to be 1.5 generation Korean Americans. See above for discussion.
Table 4.1. Summary of Sociolinguistic Interview Participants (orange color cells indicate participants who are excluded from the analysis; all names are pseudonyms)

<table>
<thead>
<tr>
<th>Name</th>
<th>Gender</th>
<th>Age</th>
<th>Residency</th>
<th>Occupation</th>
<th>Generation</th>
<th>Age of Immigration</th>
<th>Religion</th>
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<td>19</td>
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<td>Retail manager - American company</td>
<td>2G</td>
<td>US born</td>
<td>Protestant</td>
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<td>Janice</td>
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<td>US born</td>
<td>Protestant</td>
</tr>
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<td>Fort Lee</td>
<td>4th grade teacher</td>
<td>2G</td>
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<td>Protestant</td>
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<td>Protestant</td>
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<td>Paul</td>
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<td>Buddhist</td>
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<td>38</td>
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<td>Jeff</td>
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<td>Lawyer/politician</td>
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</tbody>
</table>

Since the development of the Korean American ethnic community is fairly recent (roughly during the last 20 years), it was difficult to recruit younger generation Korean American participants who are over 40\textsuperscript{34}. Because of this relatively short history of the Korean community in Bergen County, it may not yet be possible to fully examine linguistic changes in English among Korean Americans in the community. Three participants (Jamie, Paul, and Dave) are excluded from the analysis because they do not satisfy the condition of participant eligibility for this study. Conditions of participant eligibility in this study are as follows:

1. The participant spent at least one third of her/his life in Bergen County (ideally during their formative years).

\textsuperscript{34}Jeff is the only Korean American who is over 40 years old, and he comments that he never had any other Korean American friends from Bergen County when he was growing up.
The participant is of Korean descent.

The participant was born in the United States, or immigrated to the United States no later than the age of 12 (before entering middle/junior high school education).

The participant speaks the English language as her/his first language or the most comfortable language.

Jamie’s sociolinguistic interview was excluded from this study because she identifies the Korean language as her first and the most comfortable language. To assure her ineligibility, two of my American fellow linguistics students were asked to evaluate all participants’ English without any background information provided, and she was the only one to be pointed out as a non-native sounding English speaker in terms of her phonological and syntactic features of speech. Paul was excluded in this study because he has spent most of his life in Salt Lake City, even though he is now living in Bergen County. Dave participated in a sociolinguistic interview together with his wife Becky, but he was excluded from this study because he had never lived in Bergen County before, whereas Becky grew up in Fort Lee in Bergen County. Excluding those three participants, this dissertation uses the remaining 24 speakers.

The gender distribution in the participant pool is balanced (12 female and 12 male), and also the age distribution of participants in each gender group is quite small, ranging from early 20s to mid 30s (except for Jeff, who is 49 years old). The imbalanced distribution in residence of participants represents the high concentration of Korean Americans in Palisades Park and neighboring areas in Bergen County (Participant residence: 9 from Palisades Park; 8 from Fort Lee; 3 from Paramus; 1 from Cliffside Park;
and 1 from Edgewater). There are two participants, Natalie and Becky, who are currently living outside Bergen County (Manhattan and Newark, respectively). However, they are included in the data set since they spent most of their life in Fort Lee and only recently moved out of the immediate area. The heavy representation of Protestants (18 Protestants out of 24 total participants) reflects the fact that many younger generation Korean Americans are Protestants. It was relatively difficult to recruit eligible Korean Americans who are affiliated to Catholicism or Buddhism, and there are only three non-Protestant participants who are religious (Sarah, Diana, and Hank).

4.2. Interviews

Sociolinguistic interviews were conducted with all 27 participants (though, again, three were excluded from analysis, leaving 24 eligible participants), and each interview lasted from approximately 40 minutes to a maximum of 120 minutes (with an average interview time of roughly 60 minutes). The Main topics of questions in every interview concerned participants’ demographic information, the Bergen County Korean American community, family, school and young life, hobby, religion, and language. (The interview module can be found in the appendix.) After the interview, each participant was asked to read a wordlist (the full wordlist can be found in the appendix). The wordlist includes words forming (near) minimal sets for all American English vowel phonemes (two for each vowel) included in a carrier phrase. A part of the wordlist with the carrier phrase is as follows:
Please say **heed** for me
Please say **hawed** for me

I also conducted additional informational interviews with four community members (the president of the Korean Association of New Jersey, the legal advisor of the Palisades Park Korean Association, a Japanese American immigrant (who witnessed transitions in the community since the 1970s), and the president of the Parent Association of Manhattan Korean School). The main purposes of these four informational interviews were to directly hear stories and obtain information about the community which may be relatively difficult to recognize or acquire for a short-time resident (in this case, the researcher) from people who are involved in community-level organizations or have lived in the community longer than most of other participants. Table 4.2 summarizes participants in four informational interviews.

**Table 4.2. Participants in Informational Interviews (all names are pseudonyms)**

<table>
<thead>
<tr>
<th>Name</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jong-hoon</td>
<td>Legal advisor of Palisades Park Korean Association/Principal of Manhattan Korean School</td>
</tr>
<tr>
<td>Sanae</td>
<td>1st generation Japanese immigrant since the early 1970s</td>
</tr>
<tr>
<td>Sung-ho</td>
<td>President of Korean Association of New Jersey</td>
</tr>
<tr>
<td>Yoonseo</td>
<td>President of Parent Association of Manhattan Korean School</td>
</tr>
</tbody>
</table>

**4.3. Recording Equipment and Settings**

Most of the interviews were conducted one-on-one between the interviewee and the interviewer. There are two interviews with more than one interviewee: Tim and Jack participated together in a single interview, and Becky participated in the interview with
her husband, Dave. Most of the interviews were conducted in one of the coffee shops in the community that did not have any loud music playing in the background. Since I did not rent any personal office or other space to conduct the interview, it was difficult to record in a perfectly quiet place. Out of 24 sociolinguistic interviews, six (interviews with Alice, Grace, Natalie, Becky, Jay, and Jack and Tim) were conducted at interviewees’ homes; the others were done in one of the coffee shops in the community. To protect participants’ personal information, each recording was deleted from the recorder after they were transferred to a password-protected external hard drive, which took place right after finishing each interview.

For the recording equipment, I used Sony PCM-D50 Linear PCM Recorder, and all interviews were recorded in 44.1kHz, 16bit resolution, in .wav format. The microphone used in interviews was a built-in electret condenser microphone. There are two reasons for not using external microphone during the interview. First, I was confident about using the built-in microphone of the recorder to produce quality recordings that are eligible for acoustic analysis, since I tested my recording set-up multiple times in various settings (such as indoors, outdoors, with background noise, etc.) before conducting interviews. Second, in order to reduce interviewees’ attention to the fact that they are being recorded, I expected that putting the recorder on the side of a table during interviews would be more effective than putting a microphone in front of interviewees. As I expected, many participants after their interviews made positive comments about my decision, stating that they forgot about the recorder and the fact that they were being recorded after a few minutes. For the same reason, additional recording equipment for backup purpose was not used in any of the interviews. All the interviewees seemed
comfortable and relaxed during their interviews, and interviewees sometimes voluntarily elicited topics that are not on the interview list.

The next section provides the methods of extracting target vowels and conducting acoustic measurements of the extracted tokens.

4.4. Transcription, Vowel Extraction, Acoustic Measurement, and Normalization

This section illustrates the procedure of encoding the recorded interviews into acoustic analysis-ready data. The first step is to transcribe each interview in its entirety. I used the multimedia annotation program ELAN 4.6.1 (http://tla.mpi.nl/tools/tla-tools/elan/) for transcribing all 24 sociolinguistic interviews with an Apple iMac desktop computer and MacBook Air laptop computer. After all interviews were transcribed, all transcription files were converted into Praat (Boersma and Weenink 2013) textgrid files using the ‘export file as’ function in ELAN. Then, two target variables, /æ/ and /ɔ/, and words containing those two vowels were annotated into textgrid tiers (word and vowel separately) by hand. In addition to those two target variables, three anchor vowels (/i/, /u/, and /ɑ/) were also annotated in the identical way. There was a set of criteria in excluding certain vowel tokens for this study. The criteria are as follows:

1. Vowels preceding /ɹ/ or /l/ are excluded.
2. Vowels following /ɹ/, /j/, or /w/ are excluded.

/ɑ/ is also examined with the target variable /ɔ/ to measure the degree of merger between the two vowels.
(3) /u/ is excluded when following coronals (since the coronal frequently promotes fronting of back vowels).

(4) Vowels without primary word stress assigned are excluded.

(5) Vowels in function words are excluded (e.g. can, have, etc.) unless they are emphasized and assigned with stress as the sentential level.

(6) Vowels containing high level of background noise, or occurring in overlapping speech are excluded.

(7) Vowels produced prior to ten minutes into the recording are excluded, except in cases where there otherwise would be insufficient tokens of the vowels.

Once the annotations were done, acoustic measurements of vowel tokens were extracted by running a Praat script, which automatically searches for annotated vowels and extracts its first, second, and third formants (F1, F2, and F3 respectively)\(^{36}\). By running the script, the vowel class, formant measurements from the mid-point (50% inside) of the vowel (representing the nucleus), the word containing the vowel, the starting/ending time of the vowel, and the duration of the vowel are automatically extracted to a .txt (text) file. For /ɔ/, formant measurements of 80% inside the vowel are additionally extracted to obtain formant measurements for any offglide. Figures 4.1 and 4.2 illustrate the example measurement points for /i, u, ɑ, æ/ and /ɔ/, respectively. A sample of the output of extracted vowel information from the Praat script is also provided in Figure 4.3.

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\(^{36}\) Thanks to Shuo Zhang, who wrote the Praat script used in this study for extracting acoustic measurements of vowels.
Figure 4.1. Example measurement in the mid-point (50% inside) for /i, u, ɑ, æ/

Midpoint measurement of the vowel [i] in ‘beat’ [bit]

Figure 4.2. Example measurement in the mid-point (50% inside) and 80% inside for /ɔ/

Midpoint and 80% inside the vowel [ɔ] in ‘bought’ [bɔt]

Figure 4.3. Sample Output of Vowel Information from the Praat Script

<table>
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<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
</tr>
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<td>word</td>
<td>duration</td>
<td>starting</td>
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<td>F2</td>
<td>F3</td>
<td>F3_c1</td>
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</table>
Once all the vowel information was extracted, vowels with duration shorter than 60ms. were excluded, due to the high possibility of centralizing of vowels when they are produced in reduced time (Lindblom 1963). Measurements showing clear discrepancies with other measurements were re-checked for re-measurement, and around 40% of the total measurements were re-measured or discarded (mostly due to the vowel token exclusion criteria number six) individually with PRAAT by the analyst.

The extracted formant values were normalized with The Online Vowel Normalization and Plotting Suite, NORM, developed by Erik Thomas and Tyler Kendall at North Carolina State University (http://ncslaap.lib.ncsu.edu/tools/norm/index.php) (Thomas and Kendall 2007; last accessed May seventh, 2014), to eliminate the effects of anatomical differences among participants’ vocal tract for inter-speaker comparison. NORM provides an online normalization application where one can choose a normalization algorithm among nine options; for this study, I chose the Lobanov algorithm (Lobanov 1971). This decision was made based on Adank, *et al.* (2004), which examined various normalization algorithms by inputting the same data set and evaluating which results best met four standards: (1) preserving phonemic variation; (2) reducing anatomical/physiological variation; (3) preserving sociolinguistic variation (defined as ‘regional’ in the study); (4) comparing the sources of variation. Adank, *et al.*’s results report that the Lobanov (1971) and Neary (1978) techniques outperformed other normalization techniques (Lobanov slightly outperformed Neary in preserving phonemic variation, and Neary slightly outperformed Lobanov in preserving regional variation). In addition to using the Lobanov technique, I follow the vowel intrinsic-extrinsic combined
technique introduced in Hall-Lew (2009), which combines BARK transformation (Traunmuller 1997), which transforms vowel-intrinsic transformation on formant values into an auditory scale, with vowel-extrinsic normalization techniques. Hall-Lew (2009) argues that converting formants into BARKs, and then normalizing the transformed values with vowel extrinsic methods better approximates how a given speaker’s vowel system is perceived and processed by listeners than normalizations based on formant values (Hall-Lew 2009: 138). In this dissertation, I follow Hall-Lew’s combined technique, and all vowel formants were transformed into BARK values, and then normalized with the Lobanov algorithm (Lobanov 1971) for inter-speaker comparison.

4.5. Coding, Variables, and Statistical Modeling

4.5.1. Independent Variables

A quantitative variation analysis consists of measuring the effects of various linguistic and extralinguistic factors on the variable patterning of target dependent variables, in this case /ɔ/ and /æ/. For this study, the linguistic factors consist of following sound and syllable type, while extralinguistic factors consist of social factors such as speaker age and gender. Lists (1) and (2) illustrate the independent linguistic factors and coding criteria, followed by the extralinguistic factors and coding criteria.

(1) Linguistic factors (following environment)

a. Following sound: Following sound in this study is defined as the sound that directly follows the target vowel inside the same lexical boundary (the
following sound is coded as ‘0’ when the vowel is in the word boundary, or there is no following sound). The purpose of coding the following sound is to examine whether variation in /ɔ/ and /æ/ is subject to linguistic conditioning. Especially, it is expected that the variation pattern of /æ/ is highly affected by its following sound (and the syllable type, which is described below).

b. Syllable type: Syllable type in this study is defined as whether the target vowel is in a closed or open syllable – that is, whether or not the syllable has a coda. The specification of syllable types is highly relevant in examining variation in /æ/, since syllable type is one of the important conditioning factors in several /æ/ variation patterns, including the NYCE and Philadelphia /æ/ split systems (Variation conditionings of both NYCE and Philadelphia /æ/ are only eligible in closed syllables, whereas the more-common pre-nasal conditioning is not).

Both linguistic factors above, following sound and syllable type, are combined into a single category ‘following environment’ which contains information of both following sound and syllable type (i.e. the following environment of the lexical item ‘task’: ‘closed-s’). The next list illustrates the social factors and its coding criteria.

(2) Extralinguistic factors

a. Speaker gender: Speaker gender was coded based on the speakers’ self-identification of their gender. All speakers reported either ‘female’ or
‘male’, and no one self-identified as other gender categories, such as a homosexual or transgender.

b. Speaker age: Speaker age was based on speaker’s self-report on their year and date of birth, and their ages were coded based on the date when they participated in the sociolinguistic interview.

c. Speaker immigrant generation: Speaker immigrant generation is determined by the speaker’s age of immigration. Most of the speakers were specified as second generation Korean Americans (born in the United States, or migrated to the United States before the age of three), and some as 1.5 generation Korean Americans with limitations (migrated to the United States between the ages of four and 12).

d. Speaker residency area: The residency area of speakers is determined as the borough where the speaker spent most of their life in Bergen County. There were four boroughs specified as speakers’ residency areas: Palisades Park, Fort Lee, Cliffside Park, and Paramus.

e. Speaker religion: Speaker religion is determined based on speakers’ self-report of their religion (from an open-ended question asking ‘are you religious?’), and speakers provided four categories: Protestant, Catholic, Buddhist, and not religious. There were no other religions reported by speakers other than these four responses. The speaker religion is argued as one of the important factors in determining the speakers’ Koreanness.

f. Speaker proficiency in the Korean language: The speaker proficiency in the Korean language is determined by speaker’s self-evaluation, as well as
my observation of their speaking and comprehension abilities. (I did not consider reading and writing proficiency.) There were two responses for this variable: ‘High Korean proficiency’ and ‘Low Korean proficiency’. The main reason why speaker’s proficiency in the Korean language is specified is that retaining of one’s heritage language can be considered as a strong indicator of one’s level of attachment to their heritage or ethnic identity.

Various social factors listed above are put together into a mixed effect multivariate regression model along with linguistic factors to examine which factors show significant effects on the variations of /ɔ/ and /æ/ In addition to the factors introduced above, speaker and lexical item were also included as random effect. The next section provides a description of the dependent variables.

4.5.2. Dependent Variables

The dependent variables in this study are as follows:

(1) Dependent variables: /ɔ/

a. Normalized /ɔ/ F1 (continuous): Normalized F1 value of /ɔ/ is the representation of /ɔ/ height. Most of the time, ‘Lobanov normalized BARK values’ are used as dependent variables, while ‘Labov Telsur G normalized Hertz’ values are used when comparing /ɔ/ height to Labov, et al.’s (2006) standard for defining ‘raised /ɔ/’ (i.e. F1 value below 700 Hz).
b. Speaker Pillai score between /ɔ/ and /ɑ/ nuclei (continuous): Each speaker Pillai score represents the degree of overlap/distinction between the nuclei of /ɔ/ and /ɑ/. Greater Pillai scores indicate more distinction, while smaller Pillai scores indicate more overlap, which is also helpful in explaining the existence/nonexistence of the low-back merger.

c. Speaker Euclidean distance between the mean F1 values of the /ɔ/ and /ɑ/ nuclei (continuous): The Euclidean distance represents the distance between the mean F1 values of the /ɔ/ and /ɑ/ nuclei.

(2) Dependent Variables: /æ/

a. Normalized /æ/ F1 and F2 (continuous): Normalized F1 and F2 values (by Lobanov algorithm) of /æ/ tokens represent the height and frontness of each /æ/ token, respectively. The results of normalized F1 and F2 by following linguistic environment will reveal the linguistic conditionings affecting the tense and lax /æ/ of Korean American participants.

b. Speaker Pillai score between tense /æ/ and lax /æ/ (continuous): Speaker Pillai score between tense and lax /æ/ tokens represents each speaker’s degree of overlap/distinction between two classes of /æ/.

c. Speaker Euclidean distance between tense /æ/ and lax /æ/ (continuous): Speaker Euclidean distance between tense and lax /æ/ represents each speaker’s distance between the two classes (tense versus lax) of /æ/.

The values for the dependent and independent variables are subjected to mixed effect multivariate regression analyses to determine which factors affect the realization of
the dependent variables, in which directions, and to what extent, including which of the various effects are statistically significant. The next section provides information on the statistical modeling.

4.5.3. Statistical Modeling

To look into /æ/ and /ɔ/ production patterns and the linguistic and extra-linguistic factors that condition their variability among Korean American participants, a statistical platform ‘R’ 3.0.3 (http://www.r-project.org/), and a multivariate logistic regression R package ‘Rbrul’ 2.22 (http://www.danielezrajohnson.com/) (Johnson 2014) are used for statistical analyses in this dissertation.

First, normalized F1 values of /ɔ/ tokens are put into a mixed effect multivariate regression model with all independent variables to determine which factors show significant effects on the variation in /ɔ/ height, as well as the strength and direction of the effects of the various factors. The focus of this portion of the analysis is on variation in /ɔ/ height and the degree of overlap/distinction between /ɔ/ and /ɑ/, since the characteristics of the regional /ɔ/ pattern is no evidence of a low-back merger with a raised nucleus. Using Multivariate Analysis of Variance (MANOVA) with normalized F1/F2 of /ɔ/ and /ɑ/ nuclei (mid-point measurements) as dependent variables in the R platform, Pillai-Bartlett traces (Pillai scores hereafter) for each speaker are calculated to represent the degree of merger (or distinction) of the /ɑ/ and /ɔ/ phonemes in each speaker’s speech37. The Pillai score represents “the proportion of the variance in the dependent variable that can be accounted for, given the independent variable(s)” (Adank

37 Pillai Bartlett’s trace is one of the multivariate measurements in MANOVA analysis. It is considered the most reliable of the multivariate measures, and it also offers the greatest protection against type I errors with small sample sizes.
et al. 2004: 3106), where a higher score represents a greater distinction between two (or more) groups of responses while lower score represents a greater overlap between two (or more) clusters of responses. In this sense, each speaker’s Pillai score can be also used as a dependent variable (in addition to the normalized F1 and F2 of the target vowel), which represents the distance between two vowels, in a mixed effect multivariate regression model to examine which factors significantly influence the degree of merger/distinction between /ɔ/ and /ɑ/, and to what extent. All speakers’ Pillai scores are put into mixed effect multivariate regression model with social factors (speaker gender, speaker age, speaker immigrant generation, speaker residency area, speaker religion, and speaker proficiency in Korean language) testing for influencing the variation by running Rbrul package in R. Speaker Euclidean distances between /ɔ/ and /ɑ/ nuclei are also put into a multivariate regression model as another dependent variable (representing the distance between two low-back vowels) with all social factors to look at the effect of predictors on the variation of distance between /ɔ/ and /ɑ/.

The examination of /æ/ variation patterns is done by running mixed effect multivariate regressions with Rbrul to scrutinize effects of linguistic and extra-linguistic factors on the variable: speaker gender, speaker age, speaker immigrant generation, speaker residency area, speaker religion, and speaker proficiency in Korean. To examine whether /æ/ variation patterns of Korean Americans in Bergen County follow one of the major trends (NYCE split /æ/, Philadelphia split /æ/, or nasal raising), or something else, the following linguistic environment of the each token of the variable was first coded by each individual following sound, as well as its occurrence in an open vs. closed
The following environments were then collapsed into two sets of tense /æ/ and lax /æ/ environments, when needed, depending on the regression results of the effects of following sounds on the F1 and F2 of /æ/. The dependent variables for this portion of the analysis were speaker Pillai scores and Euclidean distances between two categories. Again, the speaker Pillai scores between tense and lax /æ/ represents the degree of overlap/distinction between two classes of /æ/, while speaker Euclidean distances between tense and lax /æ/ represents the distance between mean values for tokens in the two /æ/ classes. Dependent variables, speaker Pillai scores and speaker Euclidean distances between tense /æ/ and lax /æ/ are each put into separate mixed effect multivariate regression model with social factors to reveal its effects on the variation of /æ/ patterning.

4.6. Summary of the Chapter

This chapter provided detailed information on research participants, and procedure and methodologies of processing data for analysis. Sociolinguistic interviews with eligible participants were conducted for linguistic data collection and five vowels, /i, u, ɑ, æ, and ɔ/, are extracted from those interviews to represent the vowel space of each speaker and positions of two target vowels in that vowel space. Extracted vowel information is then normalized by BARK transformation and the Lobanov algorithm to allow inter-speaker comparison. The normalized F1 of /ɔ/ tokens are put into a mixed

\[^{38}\text{The open/closed distinction of the syllable is defined whether the following sound of /æ/ is acting as the coda of the syllable or not. For example, the syllable type of /æ/ in ‘Saturday’ is ‘open’, whereas in ‘sat’ is ‘closed’.}\]
effect multivariate regression model with linguistic and extra-linguistic factors to reveal significant factors affecting the variation of /ɔ/ height. Pillai scores and Euclidean distances between /ɔ/ and /ɑ/ nuclei indicating the degree of distinction and distance between /ɔ/ and /ɑ/ for each participant will attest the status of distinction between the two vowels. Individual Pillai scores and Euclidean distances between /ɔ/ and /ɑ/ are put into multivariate regression models with all social factors to find out whether any of the factors has a statistically significant effect on the variation.

Regarding /æ/, following linguistic environments (syllable type and following sound) are coded to reveal the linguistic conditioning of /æ/ tensing, which will give insight into which /æ/ pattern Korean American participants are involved in. Once it is determined that, for the most part, the current study participants follow a certain pattern of /æ/ tensing in which /æ/ does indeed show a certain pattern of tense/lax /æ/, Pillai scores and Euclidean distances of the two classes, tense /æ/ and lax /æ/, for each speaker are put into mixed effect multivariate regression model with the social factors (speaker gender, speaker age, speaker immigrant generation, speaker residency area, speaker religion, and speaker proficiency in Korean) to find out the correlation between the degree of tensing and the various factors. The next chapter reports the outcomes of procedures illustrated in this chapter and reveals the linguistic patterning of two target variables among Korean American participants.
Chapter 5.

Results

This chapter reports the outcomes of the acoustic phonetic and quantitative sociolinguistic study that forms the bulk of the current project. The first section reports on the acoustic analysis, based on automated vowel extraction (carefully re-checked by hand) of normalized vowels, and presents resultant vowel plots. The second section reports on the quantitative analyses of /ɔ/ height and /ɑ/-/ɑ/ merger/distinction among Korean American participants by first examining participants’ Pillai scores and Euclidean distances. Then, results of mixed effect multivariate regression analyses are presented, examining correlations between the dependent variables (F1 of vowel /ɔ/, /ɑ/-/ɑ/ Pillai scores, /ɔ/-/ɑ/ Euclidean distances) and various predictors (following environment, gender, age, residency area, religion, Korean proficiency). The third section reports the statistical results for the quantitative sociolinguistic analysis of /æ/. Results examining the variable patterning of /æ/ by following linguistic environments will provide insight into what type of /æ/ raising patterns (NYCE split, Philadelphia split, nasal raising, or something else) the participants are involved in. Once it is determined that /æ/ indeed splits into two classes among Bergen County Korean Americans, speaker Pillai scores and Euclidean distances of the two /æ/ classes, tense /æ/ and lax /æ/, which indicate the degree of tensing, will be examined with various factors by running another regression analysis with Rbrul.
5.1. Acoustic Phonetic Analysis Results

Five vowels (the target vowels /æ/ and /ɔ/, as well as three anchor vowels /i, u, ɑ/) were annotated to a Praat textgrid, and were automatically extracted using a Praat script following the steps specified in the previous chapter. The total number of extracted vowel tokens (including tokens of the three anchor vowels) from 23 sociolinguistic interviews, conducted with 24 participants, was approximately 12,000. After excluding and sorting out invalid or unusable tokens by hand, based on token eligibility conditions (for detailed eligibility conditions, see chapter 4), a total number of 5,193 tokens were chosen for this study. Of the 5,193 tokens, the number of /æ/ and /ɔ/ tokens were 2,107 and 458, respectively (about 84 and 19 per speaker on average). (The other tokens are all anchor vowel tokens.). Table 5.1 summarizes the total number of tokens per vowel.

Table 5.1. Total Number of Tokens per Vowel

<table>
<thead>
<tr>
<th>Vowel</th>
<th>/i/</th>
<th>/u/</th>
<th>/ɑ/</th>
<th>/ɔ/</th>
<th>/æ/</th>
<th>Total Counts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counts</td>
<td>1,002</td>
<td>197</td>
<td>1,429</td>
<td>458</td>
<td>2,107</td>
<td>5,193</td>
</tr>
</tbody>
</table>

To conduct the acoustic analysis, vowel formants for all tokens meeting the inclusion criteria were first converted to BARK values (Traunmuller 1997) using the BARK transformation algorithm \(Z_f=26.81/(1+1960/F_i)-0.53\)\(^{39}\). They were then normalized using the Lobanov algorithm (Lobanov 1971) by utilizing the online

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\(^{39}\) The letter \(F\) stands for the formant value that is entered into the formula, and the letter \(Z\) in the formula represents the calculated BARK value from the target formant (\(Z\) score).

NORM was then used to produce vowel plots of mean values for the total participant pool.

The vowel plot above (see figure 5.1) provides a rough overview of the status of the two target variables /ɔ/ and /æ/ in vowel space. The position of the round mid back vowel /ɔ/ is higher than in F1 dimension, and backer in the F2 dimension than the position of /ɑ/, which suggests an absence of the low-back (/ɔ/-/ɑ/) merger, which involves fronting and lowering of /ɔ/, and raising and backing of /ɑ/, thus showing an overlap of two vowel spaces.

To visually plot the patterning of /æ/ by following linguistic environment, /æ/ tokens were coded by following linguistic environment, in terms of following sound and syllable type\(^40\) (coding format: ‘syllable type -following sound’), and the BARK converted and normalized F1 and F2 values again fed into NORM to produce vowel plots. Figure 5.2 shows the vowel plots and values from NORM. Anchor vowels are included as well.

Plotting /æ/ tokens by following linguistic environment provides an overview of the variability of the vowel. Figure 5.2 and table 5.3 illustrate that /æ/ is mostly fronted (in F1 dimension) and raised (in F2 dimension) in pre-nasal environments (regardless of the syllable type).

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\(^{40}\) ‘Syllable type’ refers to whether the syllable possesses a coda (closed by inflectional boundaries) or not (open). The recoding of following environment in /æ/ tokens contains information of both syllable type (open versus closed) and following sound.
The normalization and plotting results of extracted vowel tokens in this section provided a rough overview on the status of two target variables, /ɔ/ and /æ/ in the context of visual representation of vowel plots. In the next section, detailed results of examining the phonological status of /ɔ/ and /æ/ of Korean American speakers are provided with statistical analyses.

Wells’s (1982) General American vowel class notation is used only for coding purpose and processing data through the online normalization suite NORM, because directly putting International Phonetic Alphabet (IPA) symbols into the online normalization form showed some distortions of symbols in its outputs. Although Wells’s vowel classes are reflective of historic word classes and not simple phonetic values, for my purposes FLEECE, GOOSE, TRAP, THOUGHT, and LOT represent /i/, /u/, /æ/, /ɔ/ and /ɑ/ respectively. Throughout the dissertation, I use IPA in referring to English phonemes and phones, but vowel plot outputs from NORM will mostly use Wells’s vowel class notation.
5.2. Statistical Results

5.2.1. Results of /ɔ/

This section provides more detailed reports on the status of the round mid back vowel /ɔ/ based on sociolinguistic variation analyses. In addition to the general overview from the previous section, /ɔ/ is examined in terms of linguistic and extra-linguistic conditioning on its variability by utilizing the statistics platform ‘R’ (http://www.r-project.org/) and the multivariate regression R package ‘Rbrul’ (Johnson 2014). In the previous section, the nuclei of two vowels /ɔ/ and /ɑ/ seemed visually distinct, and not showing a visual merger in normalized vowel plots (see figure 5.1 and table 5.2).

The first statistical result reports the examination of the height (normalized F1 values) of /ɔ/ tokens by linguistic and extra-linguistic factors: following sound, speaker...
### Table 5.3. Normalized Mean Formant Values of Total Speakers (/æ/ by following syllable types and following sounds)

<table>
<thead>
<tr>
<th>Speaker</th>
<th>Vowel</th>
<th>N</th>
<th>F.1</th>
<th>F.2</th>
<th>F.1.gl</th>
<th>F.2.gl</th>
</tr>
</thead>
<tbody>
<tr>
<td>/i/</td>
<td></td>
<td>1023</td>
<td>-1.583</td>
<td>1.437</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>/u/</td>
<td></td>
<td>206</td>
<td>-1.493</td>
<td>-1.095</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>/a/</td>
<td></td>
<td>1464</td>
<td>0.63</td>
<td>-0.76</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>/ɔ/</td>
<td></td>
<td>475</td>
<td>0.193</td>
<td>-1.446</td>
<td>0.207</td>
<td>-1.133</td>
</tr>
<tr>
<td>/æ</td>
<td>closed-m</td>
<td>47</td>
<td>-0.134</td>
<td>0.642</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>/æ</td>
<td>closed-ng</td>
<td>99</td>
<td>-0.11</td>
<td>0.865</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>/æ</td>
<td>open-dh</td>
<td>2</td>
<td>-0.061</td>
<td>0.13</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>/æ</td>
<td>open-m</td>
<td>59</td>
<td>-0.046</td>
<td>0.644</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>/æ</td>
<td>closed-n</td>
<td>246</td>
<td>-0.023</td>
<td>0.7</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>/æ</td>
<td>closed-b</td>
<td>15</td>
<td>0.322</td>
<td>0.03</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>/æ</td>
<td>open-n</td>
<td>58</td>
<td>0.348</td>
<td>0.501</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>/æ</td>
<td>closed-z</td>
<td>15</td>
<td>0.357</td>
<td>0.364</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>/æ</td>
<td>open-v</td>
<td>13</td>
<td>0.478</td>
<td>0.347</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>/æ</td>
<td>closed-t</td>
<td>128</td>
<td>0.503</td>
<td>0.12</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>/æ</td>
<td>open-p</td>
<td>91</td>
<td>0.54</td>
<td>-0.033</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>/æ</td>
<td>closed-d</td>
<td>230</td>
<td>0.542</td>
<td>0.133</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>/æ</td>
<td>closed-p</td>
<td>19</td>
<td>0.543</td>
<td>-0.039</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>/æ</td>
<td>closed-k</td>
<td>497</td>
<td>0.545</td>
<td>0.156</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>/æ</td>
<td>closed-v</td>
<td>61</td>
<td>0.546</td>
<td>-0.12</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>/æ</td>
<td>open-t</td>
<td>77</td>
<td>0.551</td>
<td>0.093</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>/æ</td>
<td>open-s</td>
<td>10</td>
<td>0.553</td>
<td>-0.433</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>/æ</td>
<td>closed-sh</td>
<td>6</td>
<td>0.565</td>
<td>-0.363</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>/æ</td>
<td>open-sh</td>
<td>14</td>
<td>0.578</td>
<td>0.147</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>/æ</td>
<td>closed-j</td>
<td>3</td>
<td>0.586</td>
<td>0.32</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>/æ</td>
<td>open-k</td>
<td>23</td>
<td>0.608</td>
<td>0.094</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>/æ</td>
<td>closed-th</td>
<td>18</td>
<td>0.642</td>
<td>-0.248</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>/æ</td>
<td>closed-s</td>
<td>193</td>
<td>0.645</td>
<td>-0.069</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>/æ</td>
<td>open-d</td>
<td>7</td>
<td>0.652</td>
<td>0.203</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>/æ</td>
<td>open-th</td>
<td>14</td>
<td>0.657</td>
<td>-0.03</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>/æ</td>
<td>closed-g</td>
<td>4</td>
<td>0.689</td>
<td>0.347</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>/æ</td>
<td>open-j</td>
<td>1</td>
<td>0.692</td>
<td>0.053</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>/æ</td>
<td>closed-f</td>
<td>121</td>
<td>0.727</td>
<td>-0.046</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>/æ</td>
<td>open-b</td>
<td>10</td>
<td>0.751</td>
<td>0.072</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>/æ</td>
<td>open-ch</td>
<td>8</td>
<td>0.753</td>
<td>0.118</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>/æ</td>
<td>closed-ch</td>
<td>3</td>
<td>0.933</td>
<td>0.032</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>/æ</td>
<td>open-g</td>
<td>1</td>
<td>1.027</td>
<td>0.663</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

gender, speaker age, speaker immigrant generation, speaker residency area, speaker religion, and speaker’s proficiency of the heritage language (Korean). Following sound was coded to look into the possible linguistic conditioning of linguistic environments on the behavior of /ɔ/. Speaker gender was categorical, female or male, which was based on

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42 Speakers and lexical items were also put into the regression models as random intercepts to eliminate the possibility of certain speakers and lexical items skewing the results.
self-identification of participants. Speaker age, which is considered as continuous variable, was derived from participants’ self-reports of their date of birth. Speaker immigrant generation was determined based on their place of birth and the speaker’s age of immigration to the United States (see chapter 4 for details). Because of the relatively short history of Korean American community in Bergen County, only second generation Korean Americans and 1.5 generation Korean Americans (with limitations) were included in this study. Speaker residency area was determined based on participants’ self-reports on where they have spent at least one third of their lifetime. Speaker religion was also based on participants’ self-reports on their religion (based on the question “Are you religious?”). Speaker’s proficiency of heritage language was determined based on speaker’s self-reported proficiency and conversations in the Korean language between participants and me (binary choice between ‘English dominant’ and ‘English dominant high Korean proficiency’). Among those predictors, speaker gender (p = 0.0314*) and speaker religion (p = 0.000743**) were statistically significant factors affecting the height of /ɔ/, while other predictors (following sounds, age, immigrant generation, and speaker residency area) were not statistically significant (all p values over 0.05) in affecting the F1 of the vowel nucleus. Tables 5.4 and 5.5 summarize the results from the regression analysis.

43 No participants in this study self-identified themselves as other categories than female or male.
44 This was effective especially for participants who recently moved out from the community.
45 No participants reported any religion other than four religions in the table.
46 After each sociolinguistic interview, I initiated conversations in Korean with participants.
47 The greater absolute values of coefficients indicate the factor’s greater effect on the dependent variable, the F1 of /ɔ/ and /ɑ/ in tables below. The positive and negative coefficients indicate the directionality of the variation. For example, the male in table 5.4 shows a positive coefficient for higher F1 of /ɔ/ (thus lowering), while female shows negative effects on greater /ɔ/ F1 (thus raising).
Table 5.4. Regression Analysis Results on /ɔ/ height (F1 dimension)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Significance</th>
<th>Coefficients</th>
<th>N</th>
<th>Raw Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>p = 0.0314*</td>
<td>Male</td>
<td>249</td>
<td>0.199</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>209</td>
<td>0.171</td>
</tr>
<tr>
<td>Religion</td>
<td>p = 0.000743***</td>
<td>Catholic</td>
<td>16</td>
<td>0.329</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Buddhist</td>
<td>98</td>
<td>0.262</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Protestant</td>
<td>260</td>
<td>0.224</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Not Religious</td>
<td>84</td>
<td>-0.045</td>
</tr>
</tbody>
</table>

Table 5.5. Regression Analysis Results on /ɑ/ height (F1 dimension)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Significance</th>
<th>Coefficients</th>
<th>N</th>
<th>Raw Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>p = 0.000579**</td>
<td>Male</td>
<td>694</td>
<td>0.698</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>735</td>
<td>0.562</td>
</tr>
</tbody>
</table>

The results of regression analyses on F1 of /ɔ/ nucleus can be summarized into two points. First, female speakers produce higher (lower F1) /ɔ/ than male speakers do. Second, Catholic Korean Americans produced the lowest (highest F1) /ɔ/ nucleus, while Not Religious Korean Americans produced the highest (lowest F1) nucleus position of /ɔ/ (in Catholic-Buddhist-Protestant-Not Religious order). To look into the /ɔ/ nucleus height by gender and religion more closely, the patterning of /ɑ/ should be also considered, since the height of /ɔ/ is defined relative to the height of /ɑ/. /ɑ/ vowel tokens were put into another regression analysis with the same predictors used in examining /ɔ/, and gender was statistically significant, affecting the height of the /ɑ/ vowel (p = 0.000579***) (see table 5.5). Considering the significant difference in height of /ɑ/ by gender (higher position of /ɑ/ among female speakers than that of male speakers), one cannot simply conclude that female speakers’ /ɔ/ is absolutely higher than those of male speakers. Religion was not a significant factor in /ɑ/ height (p = 0.11). Thus, the effect of speaker religion seems relatively clearer than gender as a significant factor in /ɔ/ height.
To scrutinize the presence of the low-back merger (or distinction), Pillai scores of two vowels, /ɔ/ and /ɑ/, are useful, in addition to measuring Euclidean distances between the means of the two vowels’ nuclei. The calculation of Euclidean distances represents the direct distance of mean values of two nuclei, and it can be only calculated between means of two vowels’ nuclei. Therefore, measuring the direct distances between two mean points does not provide representation of the degree of variance in two vowels, nor does it indicate whether the distance between the two mean points is statistically significant or not, each of which are useful, respectively, in revealing the degree of overlap in tokens of the two vowels as well as degree of distinction between them. While Euclidean distance reveals direct measurements between two average points of two vowel nuclei, Pillai scores, which are produced from Multivariate Analysis of Variance (MANOVA), represents the degree of merger or distinction between two vowels, taking into account of all occurrences of vowel tokens. Higher Pillai scores indicate greater distance between the two vowels, and lower Pillai scores indicate more advancement of merger between two vowels (see, e.g. Hay, et al. 2006: 467). Taking account of both speaker Pillai scores and speaker Euclidean distances, thus is effective in examining the variation of two or more variables from multiple angles. However, similar to Euclidean distance, Pillai scores do not contain any information indicating the directionality of vowel distributions. Because of this issue, Hall-Lew (2009) converted Pillai scores into negative values for those showing flip-flop distributions (ones that showed mean F2 of /ɔ/ higher than mean F2 of /ɑ/). However, none of the participants in the current project showed a flip-flop distribution, since all speakers showed higher and backer distribution of the mean /ɔ/ nucleus compared to the mean /ɑ/ nucleus. Thus, there were no
directionality issues in /ɔ/-/ɑ/ distributions requiring negative conversion of any speaker’s Pillai score. Statistical analyses on the status of /ɔ/-/ɑ/ relation were done based on each speaker’s Pillai score and Euclidean distance. Mixed effect multivariate regression model was used to examine the Pillai score (representing the degree of overlap/distinction between /ɔ/ and /ɑ/) and Euclidean distance (representing the direct measurement of distance between /ɔ/ and /ɑ/), and the possible effect of various factors: speaker gender, speaker age, speaker immigrant generation, speaker residency area, speaker religion, and speakers’ proficiency of the Korean language. Table 5.6 illustrates the participants’ Pillai scores, Euclidean distances, and various social factors.

Table 5.6. Degree of /ɔ/-/ɑ/ overlap/distinction (Pillai score), direct measurement of distance (Euclidean distance), and social factors by speakers. Statistical Significance column represents the significance level of /ɔ/-/ɑ/ distinction.

<table>
<thead>
<tr>
<th>Speaker</th>
<th>Pillai Score</th>
<th>Statistical Significance</th>
<th>Euclidean Distance</th>
<th>Speaker Gender</th>
<th>Age</th>
<th>Immigrant Generation</th>
<th>Speaker Residency</th>
<th>Speaker Religion</th>
<th>Korean Proficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smith</td>
<td>0.16389</td>
<td>**</td>
<td>0.514315079</td>
<td>Male</td>
<td>25</td>
<td>2nd G</td>
<td>Fort Lee</td>
<td>Protestant</td>
<td>High</td>
</tr>
<tr>
<td>Julie</td>
<td>0.18308</td>
<td>*</td>
<td>0.587450423</td>
<td>Female</td>
<td>28</td>
<td>2nd G</td>
<td>Paramus</td>
<td>Protestant</td>
<td>High</td>
</tr>
<tr>
<td>Heather</td>
<td>0.21804</td>
<td>***</td>
<td>0.584811081</td>
<td>Female</td>
<td>19</td>
<td>2nd G</td>
<td>Fort Lee</td>
<td>Protestant</td>
<td>High</td>
</tr>
<tr>
<td>Diana</td>
<td>0.23197</td>
<td>***</td>
<td>0.436592487</td>
<td>Female</td>
<td>34</td>
<td>2nd G</td>
<td>Fort Lee</td>
<td>Catholic</td>
<td>High</td>
</tr>
<tr>
<td>Grace</td>
<td>0.25107</td>
<td>*</td>
<td>0.488357451</td>
<td>Female</td>
<td>27</td>
<td>2nd G</td>
<td>Palisades Park</td>
<td>Protestant</td>
<td>High</td>
</tr>
<tr>
<td>Alice</td>
<td>0.25485</td>
<td>*</td>
<td>0.42518349</td>
<td>Female</td>
<td>26</td>
<td>2nd G</td>
<td>Fort Lee</td>
<td>Protestant</td>
<td>High</td>
</tr>
<tr>
<td>Stacy</td>
<td>0.26969</td>
<td></td>
<td>0.804229445</td>
<td>Female</td>
<td>28</td>
<td>2nd G</td>
<td>Paramus</td>
<td>Not Religious</td>
<td>High</td>
</tr>
<tr>
<td>Elle</td>
<td>0.30614</td>
<td>***</td>
<td>0.702808651</td>
<td>Female</td>
<td>34</td>
<td>2nd G</td>
<td>Fort Lee</td>
<td>Protestant</td>
<td>High</td>
</tr>
<tr>
<td>Janice</td>
<td>0.34667</td>
<td>***</td>
<td>0.714629974</td>
<td>Female</td>
<td>25</td>
<td>2nd G</td>
<td>Palisades Park</td>
<td>Protestant</td>
<td>High</td>
</tr>
<tr>
<td>Tim</td>
<td>0.47753</td>
<td>**</td>
<td>0.788447842</td>
<td>Male</td>
<td>31</td>
<td>2nd G</td>
<td>Palisades Park</td>
<td>Protestant</td>
<td>High</td>
</tr>
<tr>
<td>Ben</td>
<td>0.47947</td>
<td>***</td>
<td>0.791784061</td>
<td>Male</td>
<td>28</td>
<td>1.5th G</td>
<td>Palisades Park</td>
<td>Protestant</td>
<td>High</td>
</tr>
<tr>
<td>Brook</td>
<td>0.48452</td>
<td>***</td>
<td>0.770413525</td>
<td>Female</td>
<td>24</td>
<td>2nd G</td>
<td>Fort Lee</td>
<td>Protestant</td>
<td>Low</td>
</tr>
<tr>
<td>Rob</td>
<td>0.4873</td>
<td>***</td>
<td>0.899213549</td>
<td>Male</td>
<td>23</td>
<td>2nd G</td>
<td>Cliffside Park</td>
<td>Protestant</td>
<td>High</td>
</tr>
<tr>
<td>Natalie</td>
<td>0.49331</td>
<td>***</td>
<td>0.704724769</td>
<td>Female</td>
<td>34</td>
<td>1.5th G</td>
<td>Fort Lee</td>
<td>Protestant</td>
<td>High</td>
</tr>
<tr>
<td>Becky</td>
<td>0.51152</td>
<td>***</td>
<td>0.983115965</td>
<td>Female</td>
<td>34</td>
<td>1.5th G</td>
<td>Fort Lee</td>
<td>Protestant</td>
<td>Low</td>
</tr>
<tr>
<td>Hank</td>
<td>0.51631</td>
<td>***</td>
<td>0.95588493</td>
<td>Male</td>
<td>34</td>
<td>2nd G</td>
<td>Fort Lee</td>
<td>Buddhist</td>
<td>Low</td>
</tr>
<tr>
<td>Sarah</td>
<td>0.54338</td>
<td>***</td>
<td>0.74684001</td>
<td>Female</td>
<td>29</td>
<td>2nd G</td>
<td>Fort Lee</td>
<td>Buddhist</td>
<td>High</td>
</tr>
<tr>
<td>Byron</td>
<td>0.61113</td>
<td>***</td>
<td>0.94555645</td>
<td>Male</td>
<td>31</td>
<td>1.5th G</td>
<td>Palisades Park</td>
<td>Protestant</td>
<td>High</td>
</tr>
<tr>
<td>Jeff</td>
<td>0.68958</td>
<td>***</td>
<td>1.218533955</td>
<td>Male</td>
<td>49</td>
<td>1.5th G</td>
<td>Fort Lee</td>
<td>Not Religious</td>
<td>Low</td>
</tr>
<tr>
<td>Ron</td>
<td>0.77917</td>
<td>***</td>
<td>1.022753636</td>
<td>Male</td>
<td>31</td>
<td>1.5th G</td>
<td>Palisades Park</td>
<td>Protestant</td>
<td>High</td>
</tr>
<tr>
<td>John</td>
<td>0.80243</td>
<td>***</td>
<td>1.257665297</td>
<td>Male</td>
<td>31</td>
<td>2nd G</td>
<td>Palisades Park</td>
<td>Protestant</td>
<td>High</td>
</tr>
<tr>
<td>Frank</td>
<td>0.80898</td>
<td>***</td>
<td>0.841832525</td>
<td>Male</td>
<td>26</td>
<td>2nd G</td>
<td>Paramus</td>
<td>Protestant</td>
<td>High</td>
</tr>
<tr>
<td>Jay</td>
<td>0.8351</td>
<td>***</td>
<td>1.32746563</td>
<td>Male</td>
<td>31</td>
<td>2nd G</td>
<td>Palisades Park</td>
<td>Protestant</td>
<td>High</td>
</tr>
<tr>
<td>Jack</td>
<td>0.90262</td>
<td>***</td>
<td>1.123007124</td>
<td>Male</td>
<td>31</td>
<td>1.5th G</td>
<td>Palisades Park</td>
<td>Not Religious</td>
<td>High</td>
</tr>
</tbody>
</table>

Significance level: ***: p < 0.001    **: p < 0.01    *: p < 0.05
The Pillai score column in table 5.6 represents the degree of /ɔ/-/ɑ/ distinction of each speaker. The greater the value of Pillai score is, the greater distinction there is between /ɔ/ and /ɑ/ of the speaker (i.e. the degree of /ɔ/-/ɑ/ distinction of Ben is greater than that of Alice). The third column of table 5.6 provides the statistical significance level of difference between two vowels. Significance levels for all speakers report that all participants’ /ɔ/ and /ɑ/ are statistically distinct (p-value lower than 0.05), thus showing no evidence of merger across all speakers. The fourth column provides the direct distance measurements between mean nuclei of /ɔ/ and /ɑ/ calculated by Euclidean algorithm.

Columns from Speaker Gender to Korean Proficiency are predictors that were put into statistical models with Pillai scores and Euclidean distances.

Rbrul results on Pillai score report that only speaker gender (p = 6.56 x 10^{-5}) had a significant effect on the degree of /ɔ/-/ɑ/ distinction (see table 5.7), while other factors did not show any statistical significance (all p values over 0.05). According to the results, male Korean American speakers showed greater distinction between /ɔ/ and /ɑ/ nuclei than female speakers did. This states that the degree of /ɔ/-/ɑ/ distinction of male speakers is greater than that of female speakers, even though female speakers showed lower mean F1 value (0.171) (thus higher position) than that of male speakers (0.199) (see table 5.4). Regression analyses on speaker Euclidean distances report that speaker gender (p = 0.000149**) and speaker age (p = 0.0303*) were significant factors in direct distance measurements between mean nuclei of /ɔ/ and /ɑ/ (see table 5.8 and figure 5.3). Male speakers showed greater distance between mean nuclei of /ɔ/ and /ɑ/ than that of female speakers. There was a significant positive correlation between the speaker age and /ɔ/-/ɑ/ Euclidean distance, where older speakers showed the greater distance between /ɔ/ and /ɑ/
Table 5.7. The Best Fit Model from a Regression Analysis on Speaker Pillai Score and Extralinguistic Factors

<table>
<thead>
<tr>
<th>Factor</th>
<th>Significance</th>
<th>Coefficients</th>
<th>N</th>
<th>Raw Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>p = 6.56 x 10^{-5}***</td>
<td>Male 0.144</td>
<td>12</td>
<td>0.629</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female -0.144</td>
<td></td>
<td>0.341</td>
</tr>
</tbody>
</table>

Table 5.8. The Best Fit Model from a Regression Analysis on Speaker Euclidean Distance and Extralinguistic Factors

<table>
<thead>
<tr>
<th>Factor</th>
<th>Significance</th>
<th>Coefficients</th>
<th>N</th>
<th>Raw Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>p = 0.000149***</td>
<td>Male 0.138</td>
<td>12</td>
<td>0.974</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female -0.138</td>
<td></td>
<td>0.662</td>
</tr>
<tr>
<td>Age</td>
<td>p = 0.0303*</td>
<td>+1</td>
<td>12</td>
<td>0.015</td>
</tr>
</tbody>
</table>

Figure 5.3. /ɔ/-/ɑ/ Euclidean Distances (left) and /ɔ/-/ɑ/ Pillai Scores (right) by Speaker Age

than younger speakers did. No interactions between factors were statistically significant.

The next section reports the results from statistical analysis on /æ/ patterning.

5.2.2. Results of /æ/

This section reports the results of mixed effect multivariate regression analysis of /æ/ production patterns of the study participants. The vowel plots in section 5.1 (see figure 5.2, and table 5.3) provided visual insight on the behavior of /æ/ tokens by following linguistic environment (syllable type + following sound). The linguistic
behavior of /æ/ tokens by following linguistic environment is further examined by conducting a mixed effect multivariate regression analysis with Rbrul. The statistical results of /æ/ by following linguistic environment are provided in table 5.9 (F1) and 5.10 (F2)\(^48\).

The factor of following linguistic environment was significant in affecting the variation in both height (F1 dimension) and frontness (F2 dimension) of /æ/. According to the results in table 5.9 and 5.10, the nucleus of /æ/ is raised and fronted mostly when preceding nasal stops and a couple of non-nasal sounds (regardless of syllable type). To look at whether this variation pattern fits with any of the systematic variation around the area (NYCE /æ/-split, Philadelphia /æ/-split, or nasal tensing), the linguistic environments were collapsed into the categories of velar-nasal, closed-front nasal, open-front nasal, NYCE-lax, NYCE-tense, mad-bad-glad, and voiceless fricatives (see figure 5.4 below)\(^49\). The results of regression analyses on /æ/ and recoded following environments can be found in tables 5.11 (F1 dimension) and 5.12 (F2 dimension). The results are also presented in vowel plot format in figure 5.5.

\(^{48}\) The normalized F1 values show an inverse proportion to the vowel height in the vowel space, where greater F1 indicates lower position and lower F1 indicates higher position. The normalized F2 show a direct proportion to the vowel frontness, where greater F2 value indicates fronter position and lower F2 indicates backer position.

\(^{49}\) By examining /æ/ variation by recoded following environments, the results will provide insight into which /æ/ variation pattern the participants are involved in.
Table 5.9. Regression Analysis Results on /æ/ height (F1 dimension) by Following Linguistic Environments

<table>
<thead>
<tr>
<th>Following Environment</th>
<th>Significance</th>
<th>Coefficients</th>
<th>N</th>
<th>Raw Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>og</td>
<td>p = 3.47 x 10^{-4}***</td>
<td>0.48</td>
<td>1</td>
<td>1.027</td>
</tr>
<tr>
<td>xch</td>
<td></td>
<td>0.434</td>
<td>3</td>
<td>0.933</td>
</tr>
<tr>
<td>ob</td>
<td></td>
<td>0.308</td>
<td>10</td>
<td>0.751</td>
</tr>
<tr>
<td>oj</td>
<td></td>
<td>0.262</td>
<td>1</td>
<td>0.692</td>
</tr>
<tr>
<td>och</td>
<td></td>
<td>0.223</td>
<td>8</td>
<td>0.753</td>
</tr>
<tr>
<td>oth</td>
<td></td>
<td>0.199</td>
<td>14</td>
<td>0.657</td>
</tr>
<tr>
<td>xg</td>
<td></td>
<td>0.174</td>
<td>4</td>
<td>0.689</td>
</tr>
<tr>
<td>xth</td>
<td></td>
<td>0.168</td>
<td>18</td>
<td>0.642</td>
</tr>
<tr>
<td>od</td>
<td></td>
<td>0.16</td>
<td>7</td>
<td>0.652</td>
</tr>
<tr>
<td>ok</td>
<td></td>
<td>0.155</td>
<td>23</td>
<td>0.608</td>
</tr>
<tr>
<td>xt</td>
<td></td>
<td>0.127</td>
<td>128</td>
<td>0.503</td>
</tr>
<tr>
<td>xf</td>
<td></td>
<td>0.124</td>
<td>121</td>
<td>0.727</td>
</tr>
<tr>
<td>xs</td>
<td></td>
<td>0.124</td>
<td>193</td>
<td>0.645</td>
</tr>
<tr>
<td>op</td>
<td></td>
<td>0.102</td>
<td>91</td>
<td>0.54</td>
</tr>
<tr>
<td>ot</td>
<td></td>
<td>0.099</td>
<td>77</td>
<td>0.551</td>
</tr>
<tr>
<td>xk</td>
<td></td>
<td>0.085</td>
<td>497</td>
<td>0.545</td>
</tr>
<tr>
<td>xj</td>
<td></td>
<td>0.041</td>
<td>3</td>
<td>0.586</td>
</tr>
<tr>
<td>os</td>
<td></td>
<td>0.04</td>
<td>10</td>
<td>0.553</td>
</tr>
<tr>
<td>osh</td>
<td></td>
<td>0.038</td>
<td>14</td>
<td>0.578</td>
</tr>
<tr>
<td>xp</td>
<td></td>
<td>0.035</td>
<td>19</td>
<td>0.543</td>
</tr>
<tr>
<td>ov</td>
<td></td>
<td>0.022</td>
<td>13</td>
<td>0.478</td>
</tr>
<tr>
<td>xd</td>
<td></td>
<td>0.018</td>
<td>230</td>
<td>0.542</td>
</tr>
<tr>
<td>xv</td>
<td>-0.018</td>
<td>61</td>
<td>0.546</td>
<td></td>
</tr>
<tr>
<td>xsh</td>
<td>-0.05</td>
<td>6</td>
<td>0.565</td>
<td></td>
</tr>
<tr>
<td>xz</td>
<td>-0.107</td>
<td>15</td>
<td>0.357</td>
<td></td>
</tr>
<tr>
<td>xb</td>
<td>-0.13</td>
<td>15</td>
<td>0.322</td>
<td></td>
</tr>
<tr>
<td>on</td>
<td>-0.178</td>
<td>58</td>
<td>0.348</td>
<td></td>
</tr>
<tr>
<td>om</td>
<td>-0.491</td>
<td>59</td>
<td>-0.046</td>
<td></td>
</tr>
<tr>
<td>xn</td>
<td>-0.564</td>
<td>246</td>
<td>-0.023</td>
<td></td>
</tr>
<tr>
<td>odh</td>
<td>-0.581</td>
<td>2</td>
<td>-0.061</td>
<td></td>
</tr>
<tr>
<td>xm</td>
<td>-0.6</td>
<td>47</td>
<td>-0.134</td>
<td></td>
</tr>
<tr>
<td>xng</td>
<td>-0.701</td>
<td>99</td>
<td>-0.11</td>
<td></td>
</tr>
</tbody>
</table>

50 The following environments were coded by combining two environments: syllable type (‘open’ versus ‘closed’) and following sounds. i.e. ‘og’ represents ‘open-syllable + followed by /g/’, and ‘xng’ represents ‘closed-syllable + followed by /g/’
### Table 5.10. Regression Analysis Results on /æ/ Frontness (F2 dimension) by Following Linguistic Environments

<table>
<thead>
<tr>
<th>Factor</th>
<th>Significance</th>
<th>Coefficients</th>
<th>N</th>
<th>Raw Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Following Environment</td>
<td>$p = 6.8 \times 10^{-51}$***</td>
<td>xng 0.77</td>
<td>99</td>
<td>0.865</td>
</tr>
<tr>
<td></td>
<td></td>
<td>og 0.63</td>
<td>1</td>
<td>0.663</td>
</tr>
<tr>
<td></td>
<td></td>
<td>xn 0.567</td>
<td>246</td>
<td>0.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>xm 0.542</td>
<td>47</td>
<td>0.642</td>
</tr>
<tr>
<td></td>
<td></td>
<td>om 0.343</td>
<td>59</td>
<td>0.644</td>
</tr>
<tr>
<td></td>
<td></td>
<td>on 0.339</td>
<td>58</td>
<td>0.501</td>
</tr>
<tr>
<td></td>
<td></td>
<td>xj 0.169</td>
<td>3</td>
<td>0.32</td>
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<td></td>
<td></td>
<td>ov 0.151</td>
<td>13</td>
<td>0.347</td>
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<tr>
<td></td>
<td></td>
<td>xz 0.137</td>
<td>15</td>
<td>0.364</td>
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<td></td>
<td></td>
<td>xg 0.094</td>
<td>4</td>
<td>0.347</td>
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<tr>
<td></td>
<td></td>
<td>odh 0.021</td>
<td>2</td>
<td>0.13</td>
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<tr>
<td></td>
<td></td>
<td>xd 0.02</td>
<td>230</td>
<td>0.133</td>
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<td></td>
<td></td>
<td>osh -0.002</td>
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<td>0.147</td>
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<td></td>
<td></td>
<td>ok -0.004</td>
<td>23</td>
<td>0.094</td>
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<td>xk -0.011</td>
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<td>0.156</td>
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<td></td>
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<td>oc -0.019</td>
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<td></td>
<td></td>
<td>xt -0.027</td>
<td>128</td>
<td>0.12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ot -0.079</td>
<td>77</td>
<td>0.093</td>
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<td></td>
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<td>ob -0.094</td>
<td>10</td>
<td>0.072</td>
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<tr>
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<td></td>
<td>xch -0.105</td>
<td>3</td>
<td>0.032</td>
</tr>
<tr>
<td></td>
<td></td>
<td>od -0.138</td>
<td>7</td>
<td>0.203</td>
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<tr>
<td></td>
<td></td>
<td>xs -0.165</td>
<td>193</td>
<td>-0.069</td>
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<tr>
<td></td>
<td></td>
<td>xb -0.19</td>
<td>15</td>
<td>0.03</td>
</tr>
<tr>
<td></td>
<td></td>
<td>xv -0.19</td>
<td>61</td>
<td>-0.12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>oth -0.227</td>
<td>14</td>
<td>-0.03</td>
</tr>
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<td></td>
<td></td>
<td>xf -0.251</td>
<td>121</td>
<td>-0.046</td>
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<td></td>
<td></td>
<td>xp -0.261</td>
<td>19</td>
<td>-0.039</td>
</tr>
<tr>
<td></td>
<td></td>
<td>op -0.289</td>
<td>91</td>
<td>-0.033</td>
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<td></td>
<td></td>
<td>oj -0.294</td>
<td>1</td>
<td>0.053</td>
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<td></td>
<td></td>
<td>xsh -0.409</td>
<td>6</td>
<td>-0.363</td>
</tr>
<tr>
<td></td>
<td></td>
<td>xth -0.451</td>
<td>18</td>
<td>-0.248</td>
</tr>
<tr>
<td></td>
<td></td>
<td>os -0.578</td>
<td>10</td>
<td>-0.433</td>
</tr>
</tbody>
</table>

### Figure 5.4. Following environments for tense /æ/ class in NYC (inside the outer border) and Philadelphia (inside the inner border and also indicted for mad, bad and glad by the dotted line) (adapted from Labov, et al. 2006: 173)

```plaintext
\[ p \quad t \quad tf \quad k \\
\quad b \quad d \quad ðg \\
m \quad n \quad s \quad ñ \\
\quad f \quad θz \\
v \quad δ \quad z \quad ã \\
l \quad r \\
\]```
Table 5.11. Regression Analysis Results on /æ/ height (F1 dimension) by Recoded Following Linguistic Environments

<table>
<thead>
<tr>
<th>Factor</th>
<th>Significance</th>
<th>Coefficients</th>
<th>N</th>
<th>Raw Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recoded Following</td>
<td>p = 8.78 x 10^{-54}***</td>
<td>Voiceless Fricative</td>
<td>0.356</td>
<td>313</td>
</tr>
<tr>
<td>Environment</td>
<td></td>
<td>NYCE Lax</td>
<td>0.288</td>
<td>1077</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NYCE Tense</td>
<td>0.243</td>
<td>77</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mad-Bad-Glad</td>
<td>0.226</td>
<td>117</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Open Front Nasal</td>
<td>-0.095</td>
<td>117</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Closed Front Nasal</td>
<td>-0.38</td>
<td>293</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Velar Nasal</td>
<td>-0.638</td>
<td>99</td>
</tr>
</tbody>
</table>

Table 5.12. Regression Analysis Results on /æ/ Frontness (F2 dimension) by Recoded Following Linguistic Environments

<table>
<thead>
<tr>
<th>Factor</th>
<th>Significance</th>
<th>Coefficients</th>
<th>N</th>
<th>Raw Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recoded Following</td>
<td>p = 1.8 x 10^{-58}***</td>
<td>Velar Nasal</td>
<td>0.591</td>
<td>99</td>
</tr>
<tr>
<td>Environment</td>
<td></td>
<td>Closed Front Nasal</td>
<td>0.384</td>
<td>293</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Open Front Nasal</td>
<td>0.16</td>
<td>117</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NYCE Tense</td>
<td>-0.124</td>
<td>77</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NYCE Lax</td>
<td>-0.257</td>
<td>1077</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mad-Bad-Glad</td>
<td>-0.333</td>
<td>117</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Voiceless Fricative</td>
<td>-0.42</td>
<td>313</td>
</tr>
</tbody>
</table>

Figure 5.5. Vowel Plot for /æ/ by recoded following environments for All Speakers, based on Normalized Mean Values
Statistical analyses on /æ/ and recoded following environments reveal that recoded following environment had significant effects in both F1 (p = 8.78 x 10^{-54}*** ) and F2 (p = 1.8 x 10^{-58}*** ) of /æ/. The raising and fronting environment of /æ/ nucleus favored the ‘velar nasal environment’ the most, and pre-voiceless fricative the least.

According to the results in tables 5.11 and 5.12, /æ/ in pre-nasal environments (regardless of its place of articulation and syllable type) seems to form a group that is more raised and more fronted than other non-nasal environments (see tables 5.11, 5.12, and figure 5.5). The recoded classes of following environments were recoded again into ‘pre-nasal’ and ‘elsewhere’, and put into another regression model to examine whether the pre-nasal versus elsewhere categorization has a statistically significant effect on the Korean Americans’ production pattern of /æ/^{51}. Tables 5.13 and 5.24 summarizes the results from regression analyses examining the correlations between the F1-F2 of /æ/ and nasality of the following segment.

### Table 5.13. Regression Analysis Results on /æ/ Height (F1 dimension) by Recoded Following Linguistic Environments (Nasality)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Significance</th>
<th>Coefficients</th>
<th>N</th>
<th>Raw Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recoded Following Environment</td>
<td>p = 7.09 x 10^{-52}***</td>
<td>Elsewhere 0.31</td>
<td>1584</td>
<td>0.57</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pre-Nasal -0.31</td>
<td>509</td>
<td>-0.011</td>
</tr>
</tbody>
</table>

### Table 5.14. Regression Analysis Results on /æ/ Frontness (F2 dimension) by Recoded Following Linguistic Environments (Nasality)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Significance</th>
<th>Coefficients</th>
<th>N</th>
<th>Raw Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recoded Following Environment</td>
<td>p = 6.7 x 10^{-55}***</td>
<td>Pre-Nasal 0.328</td>
<td>509</td>
<td>0.698</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elsewhere -0.328</td>
<td>1584</td>
<td>0.07</td>
</tr>
</tbody>
</table>

^{51} Velar nasal, open-front nasal, closed-front nasal classes were recoded to ‘pre-nasal’, and other classes were recoded to ‘elsewhere’.
The nasality of the following sound was statistically significant in both F1 ($p = 7.09 \times 10^{-52}$**) and F2 dimensions ($p = 6.7 \times 10^{-55}$**), revealing that tensing (involving both raising and fronting) of /æ/ is favored in pre-nasal environments (solid emerald square in figure 5.6), while in other non-nasal environment /æ/ tokens remained relatively low and front (purple diamond in figure 5.6). To examine the degree of /æ/ tensing in pre-nasal environments versus non-nasal environments, the degree of distinction (Pillai scores) and the direct measurement of distance (Euclidean distance) between two environments were examined. Similar to the way speakers’ Pillai scores and Euclidean distances between /ɔ/ and /ɑ/ were treated as dependent variables in the previous section, speaker Pillai scores and speaker Euclidean distances between pre-nasal /æ/ and /æ/ in elsewhere were put into statistical models with social factors. Table 5.15 reports both measurements of Pillai scores and Euclidean distances by speakers. Again, the third column, statistical significance, indicates whether each speaker’s distinction of /æ/ in two
environments is statistically significant or not. All speakers’ pre-nasal /æ/ versus /æ/ in elsewhere distinctions were statistically significant, except three speakers: Grace, Jay, and Tim.

According to multivariate regression analyses on speaker Pillai scores and Euclidean distances by following nasality, speaker gender and speaker residency area showed statistically significant correlation with the variation of /æ/ in both its degree of distinction/overlap (Pillai score) and its mean nuclei distance (Euclidean distance). Female participants showed both higher degree of distinction and longer distance between pre-nasal and elsewhere /æ/ classes than the Korean American male participants did. Also, speaker residency area was a statistically significant factor affecting in both degree of distinction and distance between two /æ/ classes. Looking at the /æ/ patterns by speaker residency area, participants from Palisades Park seem to have the least distinction and the shortest distance between pre-nasal /æ/ tokens and /æ/ tokens elsewhere. Three participants who showed no significant distinction between two /æ/ classes are all Palisades Park residents (see table 5.15). Speaker age showed a significant correlation with speaker Pillai scores (but not with Euclidean distance), with a negative correlation between the degree of distinction in two /æ/ classes and the speaker age, which means the degree of /æ/ tensing in pre-nasal environment gets greater among younger speakers (see table 5.16 and figure 5.7).
Table 5.15. Degree of pre-nasal /æ/ and /æ/ elsewhere overlap/distinction (Pillai score), direct measurement of distance (Euclidean distance), and social factors by speakers. Statistical Significance column represents the significance level of distinction between two environment classes.

<table>
<thead>
<tr>
<th>Speaker</th>
<th>Pillai Score</th>
<th>Statistical Significance</th>
<th>Euclidean Distance</th>
<th>Speaker Gender</th>
<th>Age</th>
<th>Immigrant Generation</th>
<th>Speaker Residency</th>
<th>Speaker Religion</th>
<th>Korean Proficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grace</td>
<td>0.016472</td>
<td>0.198829072</td>
<td>Female</td>
<td>27</td>
<td>2nd G</td>
<td>Palisades Park</td>
<td>Protestant</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>Jay</td>
<td>0.073189</td>
<td>0.182010989</td>
<td>Male</td>
<td>31</td>
<td>2nd G</td>
<td>Palisades Park</td>
<td>Protestant</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>Ron</td>
<td>0.1503 **</td>
<td>0.374897319</td>
<td>Male</td>
<td>31</td>
<td>1.5th G</td>
<td>Palisades Park</td>
<td>Protesta8nt</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>Byron</td>
<td>0.1803 **</td>
<td>0.238052515</td>
<td>Male</td>
<td>31</td>
<td>1.5th G</td>
<td>Palisades Park</td>
<td>Protestant</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>Ben</td>
<td>0.19128 ***</td>
<td>0.365833295</td>
<td>Male</td>
<td>28</td>
<td>1.5th G</td>
<td>Palisades Park</td>
<td>Protestant</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>Jack</td>
<td>0.25022 *</td>
<td>0.358775696</td>
<td>Male</td>
<td>31</td>
<td>1.5th G</td>
<td>Palisades Park</td>
<td>Religious</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>Jeff</td>
<td>0.26378 ***</td>
<td>0.625347903</td>
<td>Male</td>
<td>49</td>
<td>1.5th G</td>
<td>Fort Lee</td>
<td>Not Religious</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td>Tim</td>
<td>0.28827</td>
<td>0.366885541</td>
<td>Male</td>
<td>31</td>
<td>2nd G</td>
<td>Palisades Park</td>
<td>Protestant</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>Rob</td>
<td>0.40381 ***</td>
<td>0.782373952</td>
<td>Male</td>
<td>23</td>
<td>2nd G</td>
<td>Cliffside Park</td>
<td>Protestant</td>
<td>High</td>
<td></td>
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<tr>
<td>Becky</td>
<td>0.43805 ***</td>
<td>1.275844034</td>
<td>Female</td>
<td>34</td>
<td>1.5th G</td>
<td>Fort Lee</td>
<td>Protestant</td>
<td>Low</td>
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<tr>
<td>Smith</td>
<td>0.4909 ***</td>
<td>0.722482526</td>
<td>Male</td>
<td>25</td>
<td>2nd G</td>
<td>Fort Lee</td>
<td>Protestant</td>
<td>High</td>
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<tr>
<td>Hank</td>
<td>0.51631 ***</td>
<td>0.805046583</td>
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<td>34</td>
<td>2nd G</td>
<td>Fort Lee</td>
<td>Buddhist</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td>Eile</td>
<td>0.52994 ***</td>
<td>1.264355963</td>
<td>Female</td>
<td>34</td>
<td>2nd G</td>
<td>Fort Lee</td>
<td>Protestant</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>Alice</td>
<td>0.54912 ***</td>
<td>0.906550605</td>
<td>Female</td>
<td>26</td>
<td>2nd G</td>
<td>Fort Lee</td>
<td>Protestant</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>Natalie</td>
<td>0.55011 ***</td>
<td>1.034812543</td>
<td>Female</td>
<td>34</td>
<td>1.5th G</td>
<td>Fort Lee</td>
<td>Protestant</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>Brook</td>
<td>0.57811 ***</td>
<td>0.8992002</td>
<td>Female</td>
<td>24</td>
<td>2nd G</td>
<td>Fort Lee</td>
<td>Protestant</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td>Diana</td>
<td>0.6001 ***</td>
<td>1.49291259</td>
<td>Female</td>
<td>34</td>
<td>2nd G</td>
<td>Fort Lee</td>
<td>Catholic</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>Julie</td>
<td>0.61647 ***</td>
<td>1.286773096</td>
<td>Female</td>
<td>28</td>
<td>2nd G</td>
<td>Paramus</td>
<td>Protestant</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>Sarah</td>
<td>0.62759 ***</td>
<td>1.132917031</td>
<td>Female</td>
<td>29</td>
<td>2nd G</td>
<td>Fort Lee</td>
<td>Buddhist</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>Janice</td>
<td>0.64096 ***</td>
<td>1.304495688</td>
<td>Female</td>
<td>25</td>
<td>2nd G</td>
<td>Palisades Park</td>
<td>Protestant</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>John</td>
<td>0.64357 ***</td>
<td>0.896413409</td>
<td>Male</td>
<td>31</td>
<td>2nd G</td>
<td>Palisades Park</td>
<td>Protestant</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>Stacy</td>
<td>0.64755 ***</td>
<td>1.139341038</td>
<td>Female</td>
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<td>2nd G</td>
<td>Paramus</td>
<td>Not Religious</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>Frank</td>
<td>0.70969 ***</td>
<td>1.154715982</td>
<td>Male</td>
<td>26</td>
<td>2nd G</td>
<td>Paramus</td>
<td>Protestant</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>Heather</td>
<td>0.72464 ***</td>
<td>1.624689817</td>
<td>Female</td>
<td>19</td>
<td>2nd G</td>
<td>Fort Lee</td>
<td>Protestant</td>
<td>High</td>
<td></td>
</tr>
</tbody>
</table>

Significance level: ***: p < 0.001  **: p < 0.01  *: p < 0.05

Table 5.16. Results from the Regression Analysis on Speaker Pillai Score, and Gender, and Speaker Residency Area

<table>
<thead>
<tr>
<th>Factor</th>
<th>Significance</th>
<th>Coefficients</th>
<th>N</th>
<th>Raw Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>p = 0.0283*</td>
<td>+1</td>
<td>-0.013</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>p = 0.0125*</td>
<td>Female</td>
<td>0.098</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Male</td>
<td>-0.098</td>
<td>12</td>
</tr>
<tr>
<td>Residency</td>
<td>p = 0.00042**</td>
<td>Paramus</td>
<td>0.186</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fort Lee</td>
<td>0.110</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cliffside Park</td>
<td>-0.124</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Palisades Park</td>
<td>-0.173</td>
<td>9</td>
</tr>
</tbody>
</table>

Table 5.17. Results from the Regression Analysis on Speaker Euclidean Distance, and Gender and Speaker Residency Area

<table>
<thead>
<tr>
<th>Factor</th>
<th>Significance</th>
<th>Coefficients</th>
<th>N</th>
<th>Raw Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>p = 4.32 x 10^-3***</td>
<td>Female</td>
<td>0.168</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Male</td>
<td>-0.168</td>
<td>12</td>
</tr>
<tr>
<td>Residency</td>
<td>p = 0.0106*</td>
<td>Paramus</td>
<td>0.214</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fort Lee</td>
<td>0.069</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cliffside Park</td>
<td>0.053</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Palisades Park</td>
<td>-0.336</td>
<td>9</td>
</tr>
</tbody>
</table>
Figure 5.7. ‘Pre-Nasal /æ/-/æ/ elsewhere’ Euclidean Distances (left) and Pillai Scores (right) by Speaker Age

5.3. Summary of the Chapter

This chapter provided overall results of acoustic phonetic and quantitative variation analyses of the variable production patterns by Korean American participants of target variables according to various linguistic and social factors. The total number of extracted vowel tokens was approximately 12,000, and a total number of 5,193 tokens were used for this project. (See chapter 4 for detailed description on token eligibility conditions.) Normalization of vowel tokens was done by processing the tokens in two steps: (1) BARK transformation (Traumuller 1997) and (2) Normalization with the Lobanov algorithm (Lobanov 1971). The visual representation of vowel spaces with normalized F1-F2 values provided rough insights on the acoustic status of /ɔ/ and /æ/. Examining the vowel plots of /ɔ/ by all speakers, its nucleus showed a higher and backer position compared to the nucleus of /α/.
The /ɔ/-/ɑ/ Pillai score for all speakers indicated that the nucleus of /ɔ/ is significantly different from that of /ɑ/ for all participants in this dissertation. Plus, the height of the /ɔ/ nucleus showed a significant correlation with speaker religion (F1 ascending order: Not Religious-Protestant-Buddhist-Catholic). Pillai scores of /ɔ/-/ɑ/ by individual speakers indicated that each individual showed statistically significant distinction between the nuclei of two vowels. A multivariate regression analysis of /ɔ/-/ɑ/ Pillai scores and /ɔ/-/ɑ/ Euclidean distances and the various social factors revealed that the correlation between degree of /ɔ/-/ɑ/ distinction (Pillai score), and speaker gender was statistically significant, where female speakers showed less distinction than male speakers did. Euclidean distances showed statistically significant correlation with gender and speaker age. Similar to the results of /ɔ/-/ɑ/ Pillai score, female speakers showed shorter distance (Euclidean distance) between the two nuclei than that of male speakers. Also, the Euclidean distance showed a positive correlation with speaker age, showing less distance between the nuclei of /ɔ/ and /ɑ/ among younger speakers.

Statistical analyses of /æ/ by the following linguistic environment indicated that the most likely tensing environment for /æ/ is pre-nasal, regardless of syllable type (both open without coda or closed with coda). That is, /æ/ tokens in the pre-nasal environment showed raised and fronted nuclei compared to /æ/ tokens in elsewhere environment. The degree of split into two classes, tense and lax, is, again, represented with speaker Pillai scores and Euclidean distances between pre-nasal /æ/ and /æ/ in elsewhere. Mixed effect multivariate regression analyses on speaker /æ/ Pillai scores and Euclidean distances by various possible predictors reported that speaker age, gender, and residency area showed statistically significant correlation with speaker Pillai scores, and speaker gender and
residency area showed statistically significant correlation with speaker Euclidean distances. The female speaker group showed a greater degree of /æ/ tensing (greater Pillai score) and greater distance (greater Euclidean distance) between two environments of /æ/ tokens. By speaker residency areas, Palisades Park residents showed the least distinction and distance between the two /æ/ environments, while Paramus residents showed the greatest distinction and distance. Speaker age showed a negative correlation with the degree of tensing, where degree of /æ/ tensing increased as the speaker age decreased.

The results from vowel extractions, vowel normalizations, and statistical analyses reported in this chapter provided a detailed overview on the status of two target features, /ɔ/ and /æ/. Based on the results provided in this chapter, the next chapter provides thorough discussion of and explanation for the sociolinguistic patterns of Korean Americans in this research project.
Chapter 6.

Discussion

This chapter provides in-depth discussions of the Korean American participants’ English production patterns of /ɔ/ and /æ/, based on earlier studies, the ethnographic fieldwork in the research site, and the results presented in previous chapters. The first part of this chapter provides discussions of the participants’ production pattern of the rounded mid back vowel /ɔ/ and the low front vowel /æ/ in the scope of regional variation and change in the United States. The second part of the chapter focuses on the various social factors with statistically significant correlation with the variation of /ɔ/ and /æ/, including possible explanations for these correlations and what these correlations have to tell us about the social meanings connected to variation in the target features. The third part of this chapter focuses on the individual level of linguistic variation, focusing on each speaker’s production patterns for the two target variables, and examining each speaker’s intra-speaker variation by topic in the sociolinguistic interview.

6.1. The Linguistic Patterning of /ɔ/ and /æ/: In the Scope of Regional Variation in the United States

This section focuses on the two target variables, /ɔ/ and /æ/, and discusses the linguistic status of the two target phonemes produced by the Korean American
participants in this dissertation. The main scope of this section is to situate Bergen County Korean Americans within regional patterns of variation and change in /ɔ/ and /æ/ in the United States and in the New York City Metropolitan Area. Defining Bergen County Korean American English by focusing on the two American English vowels /ɔ/ and /æ/ provides various helpful insights in understanding language variation and change in the United States. First, examining the production patterns of regional features by Korean American participants will reveal whether ethnic minorities show any participation in regional change and variation, which has been reported to be White-centered in many cases. Second, the close examination of Korean American English production patterns may attest the possible existence of a Korean American ethnic English variety. Third, comparing the patterns of language variation and change of Bergen County Korean Americans with those of other ethnic groups reported in earlier studies may reveal the position of Korean Americans in the picture of non-White language variation and change in the United States. The first subsection will focus on the linguistic status of the mid back round vowel /ɔ/ produced by Korean American participants in this dissertation.

6.1.1. The Status of Raised /ɔ/

As detailed in Chapter 2, the general linguistic status of the rounded mid back vowel /ɔ/ in the scope of regional variation and change in American English roughly falls into two types: whether the vowel is involved in an unconditioned merger with the low-back vowel /ɑ/ or not\textsuperscript{52}. The spread of the unconditioned merger between two back

\textsuperscript{52} There are also several subtypes of distinguishing /ɔ/ and /ɑ/ (i.e. raised /ɔ/ in New York City and fronting and up/back-gliding /ɔ/ in the South).
vowels /ɔ/ and /ɑ/ currently shows its dominance in a number of regions in the United States, while several regions are characterized as showing resistance to the merger (or still distinguishing two vowels, at least). The research site of this dissertation, Bergen County, is located in Northeastern New Jersey, bordering Manhattan, New York City, and is included in the New York City Metropolitan Area, where the merger between /ɔ/ and /ɑ/ is resisted by raising the nucleus of /ɔ/ with a falling inglide. The NYCE /ɔ/ has been reported by a number of scholars since the late 1890s such as Babbitt (1896) who described the NYCE /ɔ/ as a long vowel with a raised nucleus accompanied by inward falling glidal movement (see also Thomas 1942, Hubbell 1950, Westmore 1959, etc. for other early descriptions). The raised nucleus of /ɔ/ was reported in Labov (1966) as a feature that is associated with New Yorkers with Jewish heritage, and it is characterized in Labov, Ash and Boberg (2006) as showing its F1 value lower than 700 Hz (thus higher position than 700 Hz).

However, the recent status of the raised /ɔ/ nucleus of NYCE is put to a question by various sociolinguists who reported the recent status of the /ɔ/ nucleus as lower than before, based on recent spoken data of participants from the New York City Metropolitan Area (e.g. see Becker 2010, Coggshall and Becker 2010, Wong 2012, etc.). Cogshall and Becker (2010) and Becker (2010) reported a statistically significant correlation between the lowering of /ɔ/ nucleus and age group and ethnic group. More specifically, the White American speakers in Lower East Side of the New York City showed a correlation between the height of /ɔ/ and speaker age, showing the lowering of the /ɔ/ nucleus among the younger speaker group, indicating a change in apparent time. Asian Americans and Latino Americans also showed a slight tendency of /ɔ/ nucleus lowering (but not
statistically significant), which was not as great as that of the White Americans. However, the African American group showed a slight raising tendency (but still almost close to no raising), among younger speakers. Wong’s (2012) study of Chinese American New Yorkers also reported that the Chinese American New Yorkers also showed a similar tendency to the Asian Americans in Becker’s (2010) study, where the younger the age of the speaker, the lower the /ɔ/ nucleus they produced (while still maintaining the distinction between the /ɔ/ nucleus and the /ɑ/ nucleus, thus not showing evidence of merger). In sum, the linguistic status of NYCE raised /ɔ/ can be defined with several following points:

(1) NYCE /ɔ/ shows resistance to the merger with the low-back vowel /ɑ/, thus showing no evidence of the low-back merger.

(2) Traditionally, the nucleus of NYCE /ɔ/ is characterized by its F1 value under 700Hz (thus higher position than 700Hz) with a falling inglide.

(3) White New York speakers are showing a lowering tendency of the /ɔ/ nucleus in apparent time, and several other ethnic minority groups (excluding African Americans) are also showing a tendency of lowering the raised /ɔ/ nucleus in apparent time.

The features of the NYCE raised /ɔ/ summarized above provide the necessary basis for defining the linguistic status and position of Korean Americans’ production of the rounded mid back vowel /ɔ/. First, examining the vowel plot of total speakers’ mean normalized vowel values, and speaker Pillai scores are useful in attesting the status of
Korean Americans’ production of /ɔ/ in connection to the low-back vowel /ɑ/ in Bergen County (a greater Pillai score indicates ‘more distinction’, while a lower Pillai score indicates ‘more overlap’ between the two vowels). Looking into figure 6.1, the /ɔ/ nucleus is further back and raised compared to that of /ɑ/. As opposed to the typical sign of a low-back merger, where merger between /ɔ/ and /ɑ/ happens by lowering/fronting of /ɔ/ and raising/backing of /ɑ/, Bergen County Korean American participants seems to be distinguishing /ɔ/ from /ɑ/, which is one of the characteristics of NYCE /ɔ/ (see figure 6.1). Additionally, Pillai scores of each speaker and its statistical significance levels indicate that no individual speaker is showing any evidence of being involved in the low-back merger across all speakers (all p values under 0.05) (see table 6.1).

Once the /ɔ/-/ɑ/ distinction of Korean American participants is identified, the raised /ɔ/ nucleus is attested among Korean American participants. In order to compare the /ɔ/ F1 of Korean Americans to the standard of Labov et al. (2006), all raw F1 and F2 measurements of five vowels used in this study are normalized with the Labov ANAE Telsur G algorithm (Labov et al. 2006) through the online normalization and plotting suite NORM (Thomas and Kendall 2012). The normalization results according to the Labov Telsur G method are presented in figure 6.2 and table 6.2.

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53 The purpose of using the Labov ANAE Telsur G normalization algorithm was only for directly comparing the F1 values of /ɔ/ to the standards of Labov et al. (2006) and other studies that are using the same standards.
Figure 6.1. Vowel Plot for All Speakers for F1 and F2 of /ɔ/ and /ɑ/, based on Normalized Mean Values

/ɑ/
F1: 0.628
F2: -0.759

/ɔ/
F1: 0.186
F2: -1.447
Table 6.1. Speaker Pillai Scores and Significance Levels of /ɔ/-/a/ Distinction (the light blue color shaded row indicates the Pillai score for all /ɔ/-/a/ tokens of speakers, and the light yellow color shaded row indicates the average Pillai scores of all speakers)

<table>
<thead>
<tr>
<th>Speaker</th>
<th>Pillai Score</th>
<th>Statistical Significance</th>
<th>Distinct/Merged</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>0.37447</td>
<td>***</td>
<td>Distinct</td>
</tr>
<tr>
<td>Alice</td>
<td>0.25485</td>
<td>*</td>
<td>Distinct</td>
</tr>
<tr>
<td>Becky</td>
<td>0.51152</td>
<td>***</td>
<td>Distinct</td>
</tr>
<tr>
<td>Ben</td>
<td>0.47947</td>
<td>***</td>
<td>Distinct</td>
</tr>
<tr>
<td>Brook</td>
<td>0.48452</td>
<td>***</td>
<td>Distinct</td>
</tr>
<tr>
<td>Byron</td>
<td>0.61113</td>
<td>***</td>
<td>Distinct</td>
</tr>
<tr>
<td>Diana</td>
<td>0.23197</td>
<td>***</td>
<td>Distinct</td>
</tr>
<tr>
<td>Elle</td>
<td>0.30614</td>
<td>***</td>
<td>Distinct</td>
</tr>
<tr>
<td>Frank</td>
<td>0.80898</td>
<td>***</td>
<td>Distinct</td>
</tr>
<tr>
<td>Grace</td>
<td>0.25107</td>
<td>*</td>
<td>Distinct</td>
</tr>
<tr>
<td>Hank</td>
<td>0.51631</td>
<td>***</td>
<td>Distinct</td>
</tr>
<tr>
<td>Heather</td>
<td>0.21804</td>
<td>***</td>
<td>Distinct</td>
</tr>
<tr>
<td>Jack</td>
<td>0.90262</td>
<td>***</td>
<td>Distinct</td>
</tr>
<tr>
<td>Janice</td>
<td>0.34667</td>
<td>***</td>
<td>Distinct</td>
</tr>
<tr>
<td>Jay</td>
<td>0.8351</td>
<td>***</td>
<td>Distinct</td>
</tr>
<tr>
<td>Jeff</td>
<td>0.68958</td>
<td>***</td>
<td>Distinct</td>
</tr>
<tr>
<td>John</td>
<td>0.80243</td>
<td>***</td>
<td>Distinct</td>
</tr>
<tr>
<td>Julie</td>
<td>0.18308</td>
<td>*</td>
<td>Distinct</td>
</tr>
<tr>
<td>Natalie</td>
<td>0.49331</td>
<td>***</td>
<td>Distinct</td>
</tr>
<tr>
<td>Rob</td>
<td>0.4873</td>
<td>***</td>
<td>Distinct</td>
</tr>
<tr>
<td>Ron</td>
<td>0.77917</td>
<td>***</td>
<td>Distinct</td>
</tr>
<tr>
<td>Sarah</td>
<td>0.54338</td>
<td>***</td>
<td>Distinct</td>
</tr>
<tr>
<td>Smith</td>
<td>0.16389</td>
<td>**</td>
<td>Distinct</td>
</tr>
<tr>
<td>Stacy</td>
<td>0.26969</td>
<td>***</td>
<td>Distinct</td>
</tr>
<tr>
<td>Tim</td>
<td>0.47753</td>
<td>**</td>
<td>Distinct</td>
</tr>
<tr>
<td>Average</td>
<td>0.48566</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Significance level: ***: p < 0.001  **: p < 0.01  *: p < 0.05
The mean F1 value of Korean American participants (684.342 Hz) is slightly lower than 700 Hz, thus satisfying the ANAE’s standard for NYCE raised /ɔ/ with higher position than 700 Hz. Also, the glidal movement of /ɔ/ (measurement from the 80% inside the vowel) shows an inward trajectory (although the degree of falling is very slight in the F1 dimension). Based on these results (no evidence of low-back merger and lower /ɔ/ nucleus F1 value than 700 Hz (i.e. raised /ɔ/) with an inward glidal movement), the
Bergen County Korean American speakers can be considered to be participating in producing the regional feature, the raised /ɔ/ with an inglide. Additionally, the correlation between the /ɔ/ nucleus height and the speaker age is examined to reveal the possible presence of change in apparent time, and draw a comparison with results from Becker (2010) on Lower East side New Yorkers and Wong (2012) on Chinese American New Yorkers, since their studies attesting the recent status of NYCE raised /ɔ/ raises a question on the stability of the feature by presenting evidence of /ɔ/ nucleus lowering in the New York Metropolitan Area. Although it is stated in the chapter 4 that the research design of this dissertation may not be sufficient to capture linguistic changes over time since the age range of speakers is fairly limited due to the relatively short history of Korean immigrants in the area, age and the normalized F1 values were put into a multivariate regression model (‘speaker’ and ‘lexical items’ were also put into the model as random intercepts) to uncover, if possible, a mere indication of a correlation between them. However, regression results from Rbrul indicated that the speaker age did not show any statistically significant correlation with the /ɔ/ F1 (p = 0.228) (see figure 6.3). Although the correlation is not statistically significant, this result from the regression analysis resembles Becker’s (2010) Asian Americans’ weak correlation between speaker age and /ɔ/ height, since the Korean American speakers in this study also showed a slight tendency of lowering of /ɔ/ nucleus among younger speakers. Due to the lack of statistical significance and the limited range of speaker age, I do not want to make too much of this finding; however, this may be a tentative indication of the possibility of Korean Americans’ participation in the regional linguistic change over time.

54 Other social factors were also put into the regression model with speaker age. However, speaker age is only presented in this section, and discussions on other social factors are provided in the following section on the social factors of affecting variation.
This subsection on the status of /ɔ/ production patterns by Korean Americans in Bergen County in the scope of regional variation and change can be summarized into a couple of following points. First, Bergen County Korean Americans do seem to be participating in producing the regional feature, with the F1 of /ɔ/ lower than 700 Hz (thus in higher position than 700 Hz, Labov Telsur G normalized value) and with an inward glide trajectory, and also not showing any evidence of a merger with the low-back vowel /ɑ/. Second, the weak correlation between speaker age and the height of /ɔ/ resembles the patterns for Asian Americans reported in Becker (2010), who also did not show a strong correlation between age and /ɔ/ height but did show a tendency of lowering the /ɔ/ nucleus over time. However, it cannot be a clear evidence of any change over time due to its lack of statistical significance and the limited range of speaker age, and the change
over time towards the /ɔ/ nucleus lowering among Bergen County Korean Americans is only suggestive. The next subsection discusses on the linguistic status of the low front vowel /æ/ of Bergen County Korean Americans in the scope of regional variation and change.

6.1.2. The Status of /æ/

As discussed in detail in Chapter 2, the regional variation patterns of the low front vowel /æ/ in the New York Metropolitan Area is more complex than that of /ɔ/, due to the complex linguistic conditions governing /æ/ variation in this region. The picture is further complicated by the existence of the slightly less complex Philadelphia pattern, which may also make inroads into New Jersey. The NYC and Philadelphia split /æ/ patterns are outlined below for ease of reference:

- **NYCE /æ/ split**
  
  (1) NYCE Tense /æ/ environments
  
  - /æ/ is tense before voiced stops, front nasals, and voiceless fricatives, only in closed syllables where syllables are closed by inflectional boundaries, and lax elsewhere. Example: tense *tab* vs. lax *tap*; tense *planning* vs. lax *planet*; tense *laugh*
  
  - /æ/ is frequently tense before voiced fricatives or affricates. Example: tense *magic*
  
  - /æ/ in word initial position in common words is tense. Example: tense *ask*, *after*
(2) Lax NYCE /æ/ environments

- /æ/ is lax in all auxiliaries and function words. Example: lax can, have, had
- /æ/ is lax in word initial position in less common words. Example: lax address
- /æ/ is lax in learned words. Example: lax alas
- /æ/ is lax in less common words. Example: lax asterisk

- Philadelphia /æ/ split

(1) Tense Philadelphia /æ/ environments

- /æ/ is tense when the vowel is followed by front nasal stop codas, /m/ and /n/, voiceless fricative codas. Example: tense stand
- /æ/ is tense in three common adjectives ending with /d/ (only mad, bad, and glad)

(2) Lax Philadelphia /æ/ environment

- /æ/ is lax elsewhere

The traditional NYCE /æ/ split was first reported by Babbitt (1896) and has been consistently discussed by various linguists (i.e. see Trager 1930; 1934; 1940, Labov 1966, Cohen 1970, etc.). Labov (1966) reports the split system to be associated to New York City Speakers with Italian heritage, and the (partial) diffusion of the NYCE /æ/ split system to neighboring regions is known to be limited to only four areas: Northern New Jersey, Albany, Cincinnati, and New Orleans (Labov 2007). However, among the Northern New Jersey regions that are defined as counties involved in the traditional
NYCE split system (Weehawken, Hoboken, Jersey City, and Newark) (Labov 2007: 356), Bergen County is omitted, indicating that Bergen County is not involved in producing the traditional NYCE split system (not even partially). Looking into a map provided in ANAE on the /æ/ patterns of NYC and the neighboring regions (Labov et al. 2006: 233), Bergen County seems to be involved in the nasal tensing system (/æ/ is raised and fronted in a pre-nasal environment), if not involved in the NYCE system (see figure 6.4). The non-participation in NYCE /æ/ split system by many parts of Northern New Jersey is also stated in Ash (2002: 13), who notes that “as for the New York City area, in North Jersey we find the same general results as in South Jersey: away from the biggest cities, there is just a nasal system”.

Similar to the unstable status of NYCE raised /ɔ/ due to the recent development of its nucleus lowering, studies on the recent status of the low front vowel /æ/ in the New York City Metropolitan Area also question the stability of maintaining the traditional complex NYCE /æ/ split system (e.g. see Coggshall and Becker 2009, Becker and Wong 2009, Becker 2010, etc.). Coggshall and Becker’s (2009) study on White and African American New Yorkers indicates that African American New Yorkers are not involved in the complex NYCE /æ/ split system, but rather are involved in a simple nasal tensing pattern. Moreover, interestingly, White New Yorkers showed a change towards the nasal tensing and the traditional system fading out in an apparent time. Becker and Wong (2010) focused on the /æ/ production patterns of White, African, Puerto Rican, and Chinese American New Yorkers, and also found out that White New Yorkers are moving away from the traditional NYCE /æ/ split, and moving towards the simple nasal raising pattern. Other NYC ethnic groups (Puerto Rican, Chinese, and African Americans) were
involved in a nasal tensing pattern, which is similar to what African Americans were producing reported in Coggshall and Becker (2009). Becker (2010) also found all young speakers of all ethnic groups studied (White, Latino, Asian, and African Americans) tensing /æ/ in the pre-nasal environment. Additionally, White New Yorkers showed a change from the traditional split system to nasal tensing system in apparent time. Based on Labov (1966, 2006), Ash (2002), Coggshall and Becker (2009), Becker and Wong (2010), and Becker (2010), the linguistic status of the low front vowel /æ/ in the New York Metropolitan Area can be defined by several following points:

(1) The diffusion of the traditional complex NYCE /æ/ split system to other regions is very conservative, and the partial diffusion to other regions is limited to only four

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55 The nasal tensing system can be, again, classified into more specific subcategories (such as nasal split, continuous system, etc.). However, subcategories of nasal tensing will be discussed more in the later sections of this chapter.
areas: Northern New Jersey (excluding Bergen County), Albany, Cincinnati, and New Orleans (Labov 2007).

(2) White New Yorkers are currently moving away from the traditional split system and moving towards tensing /æ/ only in pre-nasal environments.

(3) Non-White ethnic minority American groups are involved in a nasal tensing pattern, while not showing an evidence of involvement in the traditional system.

To determine what kind of /æ/ patterns Bergen County Korean Americans are producing, the height (F1 dimension) and frontness (F2 dimension) of normalized /æ/ vowel tokens were put into a mixed effect regression model considering the effects of following linguistic environment, along with the significant social factors presented in Chapter 5 and discussed in Section 6.2 below. The results show that fronted (higher F2) and raised (lower F1) /æ/ tokens of Bergen County Korean Americans occur mostly in pre-nasal environments (figure 6.5 and table 6.3). This strongly suggests that Bergen County Korean Americans have the nasal tensing patterning rather than the traditional NYCE pattern. By examining the /æ/ pattern by following environment through vowel plots of /æ/ tokens and regression analyses, it seems reasonable to say the Bergen County Korean Americans favor pre-nasal environments for tensing the /æ/ vowel. Now, the following environments of /æ/ tokens are recoded into different categories: Voiceless Fricative, NYCE Tense, NYCE Lax, Mad-Bad-Glad, Open Front Nasal, Closed Front Nasal, and Velar Nasal to scrutinize the production pattern, whether it shows any of the influence (or at least partial diffusion) of the regional split systems of neighboring regions (e.g. NYCE /æ/ split, Philadelphia /æ/ split) or not.
According to the mixed effect regression analysis and ANOVA results (F1: $F(6, 2087) = 23.3282 \ p < 0.0001^{***}$, F2: $F(6, 2087) = 27.8904 \ p < 0.0001^{***)}$ on /æ/ by recoded environments (figure 6.7 and table 6.4), the Bergen County Korean Americans’ production pattern of /æ/ doesn't seem to show any influence from either the NYCE /æ/ split system or the Philadelphia /æ/ split system, since all tokens in the tensing environments of the two regional systems remain in the lower/backer position (except the closed front nasals, which is also a tensing condition for the nasal tensing), as opposed to the raised and fronted tokens in pre-nasal environments. The results in table 6.4 and figure 6.7 reassure that Bergen County Korean Americans’ are producing a simple /æ/ nasal tensing pattern. The post-hoc individual t-test results (using Tuckey-Kramer HSD) on both normalized F1 and F2 are also indicated in figure 6.7 by putting statistically non-different groups inside the same oval (or circle). According to the results from post-hoc t-tests, the pre-nasal /æ/ and /æ/ in elsewhere environments are never grouped together (some of the categories in pre-nasal and elsewhere groupings also show statistical differences with each other, but they never show distinction in both F1 and F2 dimensions at the same time). The interaction between recoded environments and speaker age was not statistically significant.

Based on the results of the examination of /æ/ in the scope of regional variation and change, the /æ/ production pattern of Bergen County Korean Americans can be summarized into a couple of points. First, Korean Americans are involved in an /æ/ pattern in which tensing (raising and fronting) is highly affected by the nasality of the following sound. This matches Labov’s (2007) report, which does not list Bergen County as one of the Northern New Jersey boroughs that shows participations in the traditional
Figure 6.5. Vowel Plot for /æ/ by Following Environment (yellow dotted line: pre-nasal; light green dotted line: elsewhere), based on Normalized Mean Values

Table 6.3. Mean F1 and F2 of /æ/ by Following Environments (yellow cells: NYCE tense environment, green cells: NYCE and Philadelphia tense environment)

<table>
<thead>
<tr>
<th>Following Environment</th>
<th>coef</th>
<th>mean</th>
<th>F1</th>
<th>coef</th>
<th>mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>velar nasal</td>
<td>-0.631</td>
<td>-0.11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>closed-front nasal</td>
<td>-0.504</td>
<td>-0.048</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>initial-closed-front nasal</td>
<td>-0.472</td>
<td>0.035</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>open-voiced fricative</td>
<td>-0.231</td>
<td>0.19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>open-front nasal</td>
<td>-0.204</td>
<td>0.133</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>initial-open-front nasal</td>
<td>-0.178</td>
<td>0.294</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>initial-closed-voiced fricative</td>
<td>-0.023</td>
<td>0.409</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>initial-closed-voiced stop</td>
<td>0.019</td>
<td>0.392</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>closed-voiced fricative</td>
<td>0.045</td>
<td>0.525</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>initial-open-voiced fricative</td>
<td>0.09</td>
<td>0.478</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>closed-voiced stop</td>
<td>0.092</td>
<td>0.549</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>closed-voiceless stop</td>
<td>0.125</td>
<td>0.52</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>initial-closed-voiceless fricative</td>
<td>0.127</td>
<td>0.65</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>open-voiceless stop</td>
<td>0.165</td>
<td>0.538</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>open-voiced fricative</td>
<td>0.178</td>
<td>0.627</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>closed-voiceless fricative</td>
<td>0.231</td>
<td>0.695</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>initial-open-voiceless stop</td>
<td>0.254</td>
<td>0.676</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>initial-closed-voiceless stop</td>
<td>0.286</td>
<td>0.565</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>initial-open-voiced stop</td>
<td>0.303</td>
<td>0.585</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>open-voiced stop</td>
<td>0.328</td>
<td>0.736</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

By combining height and frontness by tense environments of both NYCE and Philadelphia split system, one can get an insight of what kind of /æ/ raising condition is present among the participants. In other words, NYCE system will show all green and yellow cells in top rows which indicates /æ/ are higher and fronter in those environments, and Philadelphia system will show only green cells in top rows. If speakers are involved in nasal raising pattern (which seems to be the case here), pre-nasal environments will be present in top rows.
NYCE split /æ/ system. Results of multivariate regression analysis and one-way analysis of variance (ANOVA) on recoded /æ/ tokens and their F1/F2 indicates that the pre-nasal tensing pattern does not seem to show any evidence of influence of other regional split /æ/ systems, such as the NYCE split /æ/ system or the Philadelphia split /æ/ system.

Figure 6.6. Vowel Plot for /æ/ by Recoded Following Environment, based on Normalized Mean Values

![Vowel Plot](image)

Table 6.4. Mean F1 and F2 of /æ/ by Recoded Following Environments

<table>
<thead>
<tr>
<th>Following Environment</th>
<th>coef</th>
<th>mean</th>
<th>Following Environment</th>
<th>coef</th>
<th>mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Velar Nasal</td>
<td>-0.638</td>
<td>-0.11</td>
<td>Velar Nasal</td>
<td>0.591</td>
<td>0.865</td>
</tr>
<tr>
<td>Closed Front Nasal</td>
<td>-0.38</td>
<td>-0.04</td>
<td>Closed Front Nasal</td>
<td>0.384</td>
<td>0.691</td>
</tr>
<tr>
<td>Open Front Nasal</td>
<td>-0.095</td>
<td>0.149</td>
<td>Open Front Nasal</td>
<td>0.16</td>
<td>0.573</td>
</tr>
<tr>
<td>Mad-Bad-Glad</td>
<td>0.226</td>
<td>0.593</td>
<td>NYCE Tense</td>
<td>-0.124</td>
<td>0.186</td>
</tr>
<tr>
<td>NYCE Tense</td>
<td>0.243</td>
<td>0.506</td>
<td>NYCE Lax</td>
<td>-0.257</td>
<td>0.11</td>
</tr>
<tr>
<td>NYCE Lax</td>
<td>0.288</td>
<td>0.538</td>
<td>Mad-Bad-Glad</td>
<td>-0.335</td>
<td>0.049</td>
</tr>
<tr>
<td>Voiceless Fricative</td>
<td>0.356</td>
<td>0.689</td>
<td>Voiceless Fricative</td>
<td>-0.42</td>
<td>-0.089</td>
</tr>
</tbody>
</table>
Comparing them to the results from earlier studies of NYC speakers (Coggshall and Becker 2009, Becker and Wong 2009, Becker 2010), the /æ/ production pattern of Korean American participants in this study is also very similar to that of non-White NYC speakers. However, it is still not clear whether Bergen County Korean Americans’ /æ/ pre-nasal tensing pattern represents participation in the Bergen County (White) regional pattern or participation in the non-White (and younger White) NYC pattern (or both). In other words, the /æ/ patterning of Bergen County Korean Americans can be either a participation in the established Bergen County regional /æ/ pattern or a participation in the /æ/ patterning of non-White (and younger White) New Yorkers in the NYC metropolitan area (or maybe both) since both groups share the same /æ/ tensing system.
where the vowel is tense in pre-nasal environments. One thing that is clear, however, is that Bergen County Korean Americans are neither involved in the traditional NYCE split nor the Philadelphia split systems, but rather produce nasal tensing. The next section on the social correlates of language variation among Bergen County Korean Americans will provide insight into whether the production of the pre-nasal /æ/ tensing of the study participants is best characterized as participation in the established regional Bergen County pattern or the non-White (and younger White) NYCE pattern. Also, examining the Bergen County Korean Americans’ production patterns of two regional features by various social factors will provide more in-depth understanding of the social meanings attached to variation in the two target variables, /ɔ/ and /æ/.

6.2. The Linguistic Patterning of /ɔ/ and /æ/: Social Factors

Earlier studies on variation patterns of regional features among various ethnic groups provided useful discussions and understandings on the social meanings associated with the variation patterns, in addition to attesting non-White speakers’ participation in the regional features. Slosman and Newman (2004) examined the NYC Latino American speakers’ (only males) adoption of raised /ɔ/ with falling inglide along with other linguistic features from Spanish and African American English, and Slosman and Newman argue that the NYC Latino participants’ involvement in producing the regional feature is associated with creating regional/local identity. Wong’s (2007, 2010) studies on Chinese Americans in New York City examined the correlation between speakers’ orientation to their ethnicity/ethnic identity and raised /ɔ/, which is one of the regional
features of NYCE. Based on the results of her study, which reported a significant correlation between the regional feature and speakers’ orientation, she argues that speakers who orients more to a Chinese dominant lifestyle and networks show a lesser degree of adopting the regional vowel feature.

The former section discussed the variation patterns of two target variables in the scope of regional variation and change in the United States, and it was revealed that Bergen County Korean Americans do participate in producing regional features reported in previous sociolinguistic literature, such as raised /ɔ/ with a falling inglide (although the degree of falling was slight) and tensing /æ/ in pre-nasal environments. Those findings suggest the possibility of ethnic minority groups’ participation in NYC Metropolitan area/Bergen County regional linguistic patterns (at least for /ɔ/), dispelling the well-known idea of non-participation of ethnic minorities in regional change and variation. Now, the scope of discussion is narrowed down to the community level, focusing mainly on the social factors affecting linguistic variation. Based on sociolinguistic interviews and my ethnographic fieldwork in Bergen County, this section provides discussions of correlations between various external (social) factors and the variation of /ɔ/ and /æ/ of Bergen County Korean Americans and explores the social meanings associated with their variation patterns.

### 6.2.1. Speaker Gender

There was a statistically significant correlation between the height (the inverse of the normalized F1 value) of the rounded mid back vowel /ɔ/ and speaker gender (p = 0.0314*), revealing that female speakers showed lower F1 (thus higher position)
(Coefficient: -0.036 Mean: 0.171) than that of male speakers (Coefficient: 0.036 Mean: 0.199). However, the normalized F1 value of /ɑ/ also showed similar results by gender, showing /ɑ/ height of female (Coefficient: -0.09 Mean: 0.562) being statistically higher (lower F1 value) than that of male speakers (Coefficient: 0.09 Mean: 0.698) (p = 0.000579***). Since the degree of /ɔ/ tongue height is defined relative to the tongue height of the low-back vowel /ɑ/, this gender effect on the vowel /ɔ/ cannot be simply interpreted as an evidence of female speakers producing more raised /ɔ/ nucleus than male speakers, since female speakers’ /ɑ/ height was also significantly higher than that of male speakers. The calculation of the distance in the F1 dimension between mean F1 of /ɔ/ and /ɑ/ by speaker gender shows that the male speaker group shows greater F1 distance (Mean: male speakers’ /ɑ/ F1 - /ɔ/ F1 = 0.513) than female group does (Mean: female speakers’ /ɑ/ F1 - /ɔ/ F1 = 0.391). The difference in F1 between /ɑ/ and /ɔ/ for each speaker were calculated and treated as another dependent variable and put into another mixed effect regression model with all social factors and the regression analyses result reported that the correlation between the speaker mean height difference for each speaker (between /ɑ/ and /ɔ/) and speaker gender was statistically significant (p = 0.0293*), where the male group showed stronger correlation with greater /ɑ/ – /ɔ/ F1 difference (Coefficient: 0.061) than the female group did (Coefficient: -0.061). Moreover, gender was also a significant factor affecting the variation on the degree of overlap/distinction between /ɔ/ and /ɑ/ (measured with Pillai scores by each speaker) (p = 6.56 x 10^{-5}***), and the direct measurement of distance between /ɔ/ and /ɑ/ (measured with Euclidean distances by each speaker) (p = 0.000149***). The regression analyses on gender and the /ɔ/-/ɑ/ Pillai scores and Euclidean distances reported that female speakers
show greater /ɔ/-/ɑ/ overlap (Coefficient: -0.134 Mean: 0.341) than male speakers do (Coefficient: 0.134 Mean: 0.629). Also, female speakers show shorter /ɔ/-/ɑ/ distance (Coefficient: -0.138 Mean: 0.662) than male speakers do (Coefficient: 0.138 Mean: 0.974). Results from those three regression analyses on correlations between gender and speaker /ɔ/-/ɑ/ F1 differences, gender and speaker /ɔ/-/ɑ/ Pillai scores, and gender and speaker /ɔ/-/ɑ/ Euclidean distances are summarized in table 6.5.

Table 6.5. Summary of /ɔ/-/ɑ/ Relations by Gender Groups

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Group</th>
<th>Coefficients</th>
<th>Mean</th>
<th>Statistical significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement of /ɔ/ nucleus raising</td>
<td>Female Group</td>
<td>-0.061</td>
<td>0.391</td>
<td>p = 0.0293*</td>
</tr>
<tr>
<td></td>
<td>Male Group</td>
<td>0.061</td>
<td>0.513</td>
<td></td>
</tr>
<tr>
<td>Measurement of Distinction between /ɔ/ and /ɑ/</td>
<td>Female Group</td>
<td>-0.134</td>
<td>0.341</td>
<td>p = 6.56 x 10^-5***</td>
</tr>
<tr>
<td></td>
<td>Male Group</td>
<td>0.134</td>
<td>0.629</td>
<td></td>
</tr>
<tr>
<td>Speaker Euclidean distance</td>
<td>Female Group</td>
<td>-0.138</td>
<td>0.662</td>
<td>p = 0.000149***</td>
</tr>
<tr>
<td></td>
<td>Male Group</td>
<td>0.138</td>
<td>0.974</td>
<td></td>
</tr>
</tbody>
</table>

Based on the results, it is now revealed that (1) the Bergen County Korean American male speaker group produces higher /ɔ/ nuclei than the female speaker group does (relative to their /ɑ/ height); (2) the female speaker group shows less distinction between /ɔ/ and /ɑ/ by showing greater degree of overlap and shorter distance between the two vowels than the male speaker group does (however, there were no speaker showing any evidence of low-back merger). In sum, Bergen County female Korean American speakers produce lower /ɔ/, and less distinction between /ɔ/ and /ɑ/ in both the degree of overlap and nuclei distance than the male speaker group. Now, the next question is on the directionality of the pattern: is the male speaker group raising their /ɔ/ nucleus, or is the female speaker group lowering their /ɔ/ nucleus? (or maybe a combination of both). The first possibility, in which male speakers show greater distinction and distance between the two vowels than female speakers can be seen as
male speakers raising the nucleus of /ɔ/ to a greater degree than females. The opposite case, the second scenario, in which female speakers are producing the two vowels with more degree of overlap and shorter distance between two back vowels than male speakers are producing, can be understood as female speakers producing a lowered /ɔ/ nucleus (maybe towards the low-back merger). The third possibility would be the combination of the first and second scenarios, where the male group is raising and the female group is lowering their /ɔ/ nuclei at the same time, moving in the opposite directions. However, according to a number of participant responses to the questions on ‘language’ during the sociolinguistic interviews, the first possible scenario of male speakers’ greater degree of /ɔ/ raising does not seem to be the case here (and so neither is the third possibility). The following excerpts from four sociolinguistic interviews (conducted with Brook, Frank, Hank, Tim, and Jack) provide Korean American participants’ impressions of raised /ɔ/.

(1) Brook’s sociolinguistic interview (00:31:44 – 00:32:46)

(Brook is a 24-year-old female English-dominant speaker who lives in Fort Lee)

817 Me: So, have you ever been told that you sound different from the other…
818 Brook: hm…
819 no, I think um,
820 when I went to elementary school, I grew up with a lot of non-Koreans
821 even thought my friends were Koreans, so…
822 I had perfected the English…
accent? no…
I don’t know…
Me: Your speech style, maybe?
Brook: Yeah, my speech style,
so, I don’t- I-
if I was on the phone, I don’t, people would be able to…
Me: Recognize your ethnicity or anything like that?
Brook: Yeah.

... 
Brook: Yeah,
like my coworkers,
they have a very strong New Jersey accent.
Me: Such as…?
Brook: I don’t know if it’s New Jersey or Long Island?
But…
instead of water [wɔrə], they say wa-[wɔ],
water[wɔrə]?
New York[jɔk]?,
coffee[kɔfi]…yeah…
Me: oh, like
oh[ɔ] thing?...
Brook: Yeah the…
Brook: yeah (laughter),
I don’t know if that’s New Jersey or New York,

Me: oh, I see.

Brook: but I went to North Carolina with my coworkers for business and,

they were able to point her out, **but I didn't say that way**, so…yeah…

(2) Hank’s sociolinguistic interview (01:27:44 – 01:28:59)

(Hank is a 34-year-old male English-dominant speaker living in Fort Lee)

Me: has anyone uh…

has anyone told you about like New Jersey accent or anything like that?

Hank: they… expected me to have what they thought was a New Jersey accent.

when they met me…

Me: can you specify anything?

Hank: so like, they’re like, oh you’re from New Jersey? They’re like, How come

you don’t say New Jersey [dʒɔɪzi]?

and stuff like that, right? And I’m like, uh, because **I was hooked on to phonics**, when I was a kid?

So like, **I actually know how to pronounce words**?

Right? But yeah, **they- they expected it to be like um…**

(pause)

**like a little, like more accented** I guess…
Hank: we didn't have any kids from New York that have like, the thick-like what you would consider of New York slash New Jersey Accent, like coffee [kəfi],

Hank: and stuff like that, we didn’t have anyone, like that, um…

(3) Frank’s sociolinguistic interview (00:32:51 – 00:35:36)

(Frank is a 26-year-old male English/Korean near balanced bilingual speaker living in Paramus)

Me: Have you ever- uh, have you ever been…

Frank: Yeah.

Me: can you… can you specify...

Frank: uh… I guess,

if I go to different,

areas in the country,

they'll be like, where're you from, I'll be like, Jersey, and then,

they'd be like oh!

Then, say this word, this word…
Me: What- what were those words?

Frank: ah… like water[wɔɾə]?

or coffee[kəfi]?

…

Frank: like, when they ask me to say water[wɔɾə],

like, people are usually like, oh, you’re supposed to say like water[wɔɾə],
or something…

…

Frank: yeah, or like coffee[kəfi]?

They’ll like, say coffee[kəfi], and I’m like coffee[kəfi],

like, oh, it should be coffee[kəfi]

…

Frank: or like, even here, peo- like, a lot of people say coffee[kəfi], yeah yeah…

Me: (laughter) but they don’t say

coffee[kəfi] (in a very exaggerated way)
or like, this…like, this, you know…

way…exaggerated…

Frank: Some people do.

yeah.

Me: Wow, do Korean Americans do that?

Frank: No, I don’t think so.
(4) Tim and Jack’s sociolinguistic interview (00:30:44 – 00:31:04)

(Tim and Jack are 30-year-old male English/Korean near balanced speakers living in Palisades Park)

745 Me: you- you might have that,
746 you know, coffee[çfi] coffee[çfi]…
747 Tim: coffee[çfi]? You want coffee[çfi]? (laughter) You want a cup of coffee[çfi]? (laughter)
748 coffee[çfi] (laughter) (mimicking)
749 Me: I used to have that
750 Jack: Boston[çstn]?
751 Me: yeah, Boston[çstn], coffee[çfi]?

Comments from the five participants extracted from four sociolinguistic interviews provide their general impression on raised /ɔ/, which are very important in understanding how Bergen County Korean Americans perceive the feature. The five speakers in the excerpts above show, at least to some degree, disalignment from raised /ɔ/. In Excerpt (1), lines 841-844, Brook tries to mimic or mock the accent by pronouncing three words, ‘water’, ‘New York’, and ‘coffee’ with [ç] (raised ɔ), and comments that she does not use the feature (line 852: “but I didn’t say that way”). Moreover, in Excerpt (1), line 822, Brook indicated that she does not have any flaws in her English by stating that she “had perfected my English,” which, combined with her later mocking of raised /ɔ/,
indirectly indicates that raised /ɔ/ is not part of perfect English for her, and thus she is disaligning from the use of raised /ɔ/\(^{57}\). Hank, in excerpt (2), also shows similar disalignment from raised /ɔ/, by saying “I was hooked on to phonics…I actually know how to pronounce words (lines 2269 and 2271)” and considers the feature as “accented” (lines 2274 and 2293). Moreover, in excerpt (3), Frank shows his disalignment from raised /ɔ/ in a more excessive way by pronouncing the word ‘coffee’ with [ɑ] (lines 1216 and 1217). Considering his degree of /ɔ/-/ɑ/ overlap (Pillai score: 0.80898), which is one of the highest scores among all speaker Pillai scores, his employment of /ɑ/ for /ɔ/ can be seen as strategic and intentional, indicating that associating himself with the raised /ɔ/ is highly disfavored. In the sociolinguistic interview with Tim and Jack, in excerpt (4), Tim bursts into laughter and mocks the feature (lines 747 and 748) in reaction to my initiation of the topic of raised /ɔ/ (line 746). Other participants in sociolinguistic interviews for this project also commented, at least, that they are not accented and not involved in New York/New Jersey accent. Additionally, they also made negative comments about New York City people and their accents, such as describing the New York City accent as “harsh” and “very impatient” (Jay’s interview). Interestingly, in considering the effect of formality (the interview context versus the word list context) on the variation of /ɔ/, only the male group showed a significant correlation between formality and the /ɔ/ height (\(p = 0.00822^{**}\), with /ɔ/ height in the word list context (Coefficient: -0.161 Mean: -0.073) actually greater than in the conversational interview context (Coefficient: 0.161 Mean: 0.199). It is not immediately clear why this would be the case, consider the negative

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\(^{57}\) The negative ‘no’ following her comment ‘I have perfected the English…accent’ in line 1 does not seem to be used for negating this utterance but rather seems to be used by the speaker to repair her usage of the word ‘accent’, since she indicates say throughout the excerpt is that she does not employ any of the strong regional accent, and that this lack of accent is the right way to speak.
comments about raised /ɔ/ in the interview excerpts above. It may be that the male speakers are subconsciously retaining more distinction between /ɔ/ and /ɑ/ while the heavy raising of /ɔ/ is still consciously disfavored. Females, on the other hand, show lower /ɔ/ in both formality contexts and may be leading a change toward the low back merger. The statistical results by gender and Korean American participants’ comments on the vowel /ɔ/ can be summarized into several points: (1) the female speaker group shows a lower /ɔ/ nucleus and less distinction/distance between /ɔ/ and /ɑ/ than those of the male group; (2) the male group produces higher /ɔ/ in the higher formality context (word list) than in lower formality context (sociolinguistic interview), while the female group does not show any significant difference between the two contexts; (3) Korean American speakers consciously disfavor producing /ɔ/ with a raised nucleus, while at the same time retaining the distinction between /ɔ/ and /ɑ/, at least for the most part (though see below for the suggestion of possible movement toward merger). Revisiting the three possibilities of the directionality of /ɔ/ variation proposed above (‘male speakers raising the /ɔ/ nucleus’ versus ‘female speakers lowering the /ɔ/ nucleus’ versus ‘both combined’), the second scenario, /ɔ/ lowering by female speakers, seems to be the most plausible case. Additionally, considering the male speakers’ comments on raised /ɔ/, male speakers may also start lowering their nucleus, and the female group can be seen as leading in nucleus lowering. Additionally, although the height of /ɔ/ did not show any significant correlation with age (while the slope of tendency indicates slight lowering among younger speakers), a statistically significant correlation was found between speaker age and /ɔ/-/ɑ/ Euclidean distance (p = 0.0303*), indicating that the younger the speaker, the shorter the distance between /ɔ/ and /ɑ/. (There was no significant interaction
of speaker age and gender on the speaker Euclidean distances.) This suggests that Korean Americans are moving towards shortening the distance between the nuclei of /ɔ/ and /æ/ in apparent time, and this may indicate that the Korean Americans are showing evidence of moving towards the low-back merger.

The preceding subsection discussed the social factor of gender and its correlation with production patterns of /ɔ/ among Bergen County Korean Americans. We now turn to the production pattern of /æ/ by gender. Based on the section 6.1.2 in this chapter, Bergen County Korean Americans seem to be involved in the simple pre-nasal tensing pattern, rather than being involved in any of the traditional complex split patterns from the neighboring areas (such as NYCE split or Philadelphia split patterns). Therefore, the linguistic conditioning of /æ/ tensing is by the nasality of the following segment, where tense /æ/ occurs in pre-nasal environment while the lax /æ/ occurs in elsewhere. To look at the variation in the degree of /æ/ raising in pre-nasal environment, speaker Pillai scores and speaker Euclidean distances (between the pre-nasal environment tokens and tokens elsewhere) were put into a mixed effect multivariate regression model, and similar to the significant role of speaker gender on the variation of /ɔ/ among Bergen County Korean Americans (see section 6.2.1), the effect of speaker gender was also significant in the variation of /æ/ among Korean American participants. Specifically, speaker gender showed statistically significant correlations with both ‘speaker Pillai score (p = 0.0125*)’ and ‘speaker Euclidean distance (p = 4.32 x 10^{-05}***’) between pre-nasal /æ/ and /æ/ elsewhere. On the speaker Pillai scores between two types of /æ/, the Bergen County Korean American female speaker group showed greater degree of distinction (Coefficient: 0.098 Mean: 0.543) than the male speaker group (Coefficient: -0.098 Mean: 0.347). On
the degree of distance between the two linguistic environments, the female group also showed a greater distance between the two environments (Coefficient: 0.187 Mean: 1.13) than the male group (Coefficient: -0.187 Mean: 0.573). Figure 6.8 provides a visual representation in the form of a vowel plot for /æ/ in tense (pre-nasal) and lax (elsewhere) environments in the full vowel spaces of each gender.

The vowel plots of /æ/ by two linguistic environments in figures 6.8 and 6.9 show differences between pre-nasal and elsewhere in both the F1 and F2 dimensions of female and male speakers, and the differences between the two gender groups seems to be big enough to be recognized instantly. The female group’s /æ/ tokens in two different environments are separated further from each other than the male groups’ (the female group’s mean elsewhere position is lower/backer and mean pre-nasal position is higher/fronter than those of the male group). However, the difference in the degree of distinction and distance between two /æ/ environments by gender groups may indicate more information than just female groups’ greater degree of distinction of /æ/ by linguistic environments. Considering the fact that the position of /æ/ in the elsewhere environment by the male group is higher and fronter (F1: 0.527 F2: 0.129) than that of the female group (F1: 0.618 F2: 0.004), there are roughly two possibilities: (1) the elsewhere environment tokens of the male group are clustered in the fronter and higher position than that of the female group, or (2) the deviation of elsewhere tokens of the male group shows a wider spread, thus showing a continuous distribution rather than a concentrated clustering of distribution. In other words, the gender difference in the positions of /æ/ in the two environments indicates that female and male groups might be involved in producing different subtypes of /æ/ tensing in pre-nasal environments. Labov
Figure 6.8. Vowel Plot of /æ/ in Two Linguistic Environments (pre-nasal vs. elsewhere) of Female Speakers

Female Group
Mean Pillai: 0.543
Mean Euclidean: 1.130

Figure 6.9. Vowel Plot of /æ/ in Two Linguistic Environments (pre-nasal vs. elsewhere) of Male Speakers

Male Group
Mean Pillai: 0.347
Mean Euclidean: 0.573
et al. (2006) and Labov (2007) specify the two major subtypes.

- Subtypes of pre-nasal tensing

  1. The Continuous System: /æ/ tokens are the most tense before nasal stops, but there are no extreme gaps present in the distribution of tokens (Labov et al. 2006, Labov 2007).

  2. The Nasal Split System: /æ/ tokens are tense before nasal stops and in all other environment are lax, with a noticeable space between tense and lax /æ/ tokens (Labov et al. 2006, Labov 2007).

Figures 6.10 through 6.13 are the vowel plots of /æ/ tokens by two different coding criteria (syllable type + following sound and environment recoded, respectively) for each gender group. In addition to the fact that the distribution of /æ/ tokens in figure 6.10 and 6.11 do not show any evidence for the regional split patterns of neighboring areas (NYCE or Philadelphia /æ/ split), the /æ/ tokens of the male group indeed do show a continuous distribution between the pre-nasal and elsewhere environments, while the female group’s distribution of /æ/ tokens seem to show a split between the pre-nasal and elsewhere environments, with a noticeable space in between. Plus, the F1 and F2 values of /æ/ by recoded environments were put into Analysis of Variance (ANOVA) in order to compare the mean F1/F2 of each category of /æ/ tokens to find out whether which category is statistically distinct from which category or not. Figure 6.14 reports the
Figure 6.10. /æ/ Plot by Following Sound (female)

Figure 6.11. /æ/ Plot by Following Sound (male)
Figure 6.12. /æ/ Plot by Following Recoded Category (female)

Figure 6.13. /æ/ Plot by Following Recoded Category (male)
results of ANOVA and post hoc t-tests on the F1/F2 by recoded categories for each gender.

According to the ANOVA and individual post hoc t-test results (figure 6.14), the female group’s pre-nasal tokens are statistically different from the tokens in elsewhere environments with a noticeable gap in between, while the male group’s /æ/ distribution in both F1 and F2 dimensions show no noticeable gap between pre-nasal environments and others. Based on vowel plots (figures 6.10 through 6.13) and ANOVA and post hoc t-test results (figure 6.14), it is not groundless to say both female and male groups are tensing /æ/ in pre-nasal environments, but both groups are involved in different subtypes: the female group is producing a nasal split pattern, while the male group is producing a continuous system.

Now, that it is revealed that both gender groups’ linguistic conditioning of tensing the /æ/ vowel is pre-nasal environments, the directionality of change and variation is in question: is there any evidence of change of patterns? Revisiting the statistical results on the significant correlation between the speaker gender group and the degree of distinction between /æ/ in pre-nasal and elsewhere, measured by both speaker Pillai scores (measurement of degree of overlap/distinction between two linguistic environments) and Euclidean distances (measurement of direct distance between means of two linguistic environments), speaker age was also statistically significant, showing a negative correlation with the speaker Pillai score (representing the degree of overlap/distinction between two linguistic environments) (p = 0.0283*), but not with speaker Euclidean distances (representing the direct distance between two linguistic environments) (p = 0.371), indicating that the degree of distinction between two linguistic environments
Figure 6.14. One-Way ANOVA and Post-hoc t-test Results on /æ/ by Gender Group (Categories inside the same colored circle or oval indicates no statistical difference between groups, and the red line divides pre-nasal and elsewhere environments)

**Female Group**

- **F1**: $F(6, 968) = 87.98, p < 0.0001$
- **F2**: $F(6, 968) = 141.99, p < 0.0001$

**Male Group**

- **F1**: $F(6, 1120) = 55.08, p < 0.0001$
- **F2**: $F(6, 1120) = 67.89, p < 0.0001$

increased among younger speakers. However, as stated in chapter 4, the research design of this project is not perfectly suitable for examining any linguistic change over time due
to the small range of participants (mostly concentrated in 20s and 30s), and it is somewhat difficult to strongly assert any change over time based on the results for age. Therefore, I take this significant correlation between age and speaker Pillai scores only as a mere suggestion of the linguistic change of /æ/ tensing in pre-nasal environments from a continuous system towards a nasal split system. This possibility of change towards a nasal split system might be another case of female led change (similar to the discussion of the lowering of /ɔ/). Also, considering the variation in combination with the discussions of /ɔ/ and gender, this is very interesting, because the female group seems to be more involved in producing the regional variation patterns of NYC Metropolitan area or Bergen County (the lowering of /ɔ/ nucleus, and pre-nasal raising of /æ/ rather than in traditional raising environments) than the male group are. The next question would be, then, why is the female group showing more involvement in producing the recent regional variation patterns than male speakers? If that the change is indeed taking place among the Bergen County Korean Americans, showing participation in the regional trend of change and variation, and the female group is more involved in the regional trend of linguistic change and variation, this might be one of the cases where female speakers are leading the linguistic change (in this case, participating more significantly in the regional trend).

The subsection on gender and two regional features, raised /ɔ/ and tense /æ/, indicates that Bergen County Korean American speakers seem to be involved in producing the regional patterns, with female speakers leading the participation in regional trends by showing more involvement in the lowering of the /ɔ/ nucleus (but maintaining the distinction between /a/) and the /æ/ nasal split system. More specifically, on the
gender difference in raised /ɔ/, Korean American female speakers produce lower nuclei of /ɔ/ than male speakers did regardless of formality level, while male speakers’ /ɔ/ nucleus was higher than that of female speakers, and even higher in the context of higher formality (word list). The patterning according to formality is puzzling but might be indicative of the different position of female and male speakers in the course of change towards the lowering of the /ɔ/ nucleus (and possibly towards the low-back merger). On the gender difference in /æ/ patterning, female speakers showed a nasal split, where there is a noticeable gap between the position of /æ/ in pre-nasal environments versus elsewhere, while male speakers showed a continuous system. Due to the limited range of speaker age of the participant pool in this research project, it is somewhat difficult to strongly assert that any linguistic changes are taking place. However, the correlations between age and the two target features among Korean Americans suggest that younger speakers moving towards lowering the /ɔ/ nucleus and towards the /æ/ nasal split. If this is indeed a case of incipient change over time, female speakers can be seen as leading the change among Korean Americans in the community, an unsurprising finding given the many cases of female-led linguistic changes reported in the literature (e.g. Labov 1990, 2001).

However, we can still delve more deeply into the social meanings associated with the various /ɔ/ productions and /æ/ production patterns. Bergen County Korean Americans associate raised /ɔ/ with a strong (White) New York/New Jersey regional accent, which is often perceived as negative (associated with harshness and impatience) by Korean Americans. Thus, also, considering Wong (2007, 2010) and Becker and Wong’s (2010) arguments regarding the use or non-use of NYC regional features in
connection to ethnic minority groups’ regional and ethnic identity, the lowering of /ɔ/ may seen as being connected to the assertion of local non-White ethnic identity of Bergen County Korean Americans, as opposed to the disfavored stereotypical (White) New York/New Jersey identity. Although Korean American participants do not seem to be consciously aware of variation in /æ/, nasal tensing might also be positively associated with local ethnic identity, since they trend toward increased participation in the nasal tensing pattern that is characteristic of non-Whites (and also younger White speakers) in NYC. The next sections on social factors other than speaker gender will provide more useful discussion on exploring the social meanings associated to the target features.

6.2.2. Speaker Residency

The social factor of speaker residency showed significant correlations with the degree of /æ/ tensing in pre-nasal environments, in both speaker Pillai scores (p = 0.00042**) and Euclidean distances (p = 0.0106*), while no significant correlations between speaker residency and /ɔ/ were reported. The residency area of each speaker was based on interviewees’ self-report on where they have spent most of their life in Bergen County, and the speaker residency had four boroughs in Bergen County as its responses: Palisades Park, Cliffside Park, Fort Lee, and Paramus58. There is only one speaker, Rob, who reported Cliffside Park as his residency area, and it was included in Fort Lee, thus resulting in three responses (Palisades Park, Fort Lee, and Paramus), for another mixed effect multivariate regression analysis (which also included all other factors as well as the

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58 Becky and Natalie are the only two participants in this study who are currently living outside Bergen County (Becky: Newark, Natalie: Manhattan), but their speaker residency is coded as ‘Fort Lee’ since they spent most of their lives in Fort Lee borough, and only recently moved out to their new community. Except for these two participants, all other participants are still living in the place where they self-reported that they spent most of their lives.
recoded speaker residency). The reason for collapsing Fort Lee and Cliffside Park is based on the geographical adjacency (between the two boroughs) and my personal observation. Cliffside Park and Fort Lee directly neighbor each other, sharing two major streets (Palisades Avenue and Anderson Avenue), and many Cliffside Park Koreans often go to Fort Lee for their needs, since Fort Lee provides bigger Korean businesses and amenities. Combining two categories, ‘Fort Lee’ and ‘Cliffside Park’, as was expected, did not change the overall picture, and speaker residency still showed significant correlations with speaker Pillai scores (p = 0.000129***) and Euclidean distances (p = 0.00275**) between /æ/ in two following environments. Figure 6.14 summarizes the mean speaker Pillai score and Euclidean distances between two environments of /æ/ of each speaker residency.

The correlations between the speaker residency and speaker Pillai score of /æ/ showed Paramus with a positive coefficient (Coefficient: 0.174 Mean: 0.658) indicating Paramus speakers showed a greater degree of correlation with tensing pre-nasal /æ/, and Palisades Park a negative correlation with tensing pre-nasal /æ/ (Coefficient: -0.213 Mean: 0.271) indicating the least degree of pre-nasal /æ/ tensing, and Fort Lee in the middle (Coefficient: 0.039 Mean: 0.523). The correlation between speaker Euclidean distance of /æ/ with the speaker residency showed the identical ordering of coefficients, in the descending order of Paramus (Coefficient: 0.232 Mean: 1.194), Fort Lee (Coefficient: 0.086 mean: 1.047), and Palisades Park (Coefficient: -0.318 Mean: 0.476). Figure 6.16 reports on the one way analysis of variance and individual post hoc t-test results on the F1 and F2 of /æ/ by the recoded following environments to verify whether the variation in the degree of nasal tensing is indicating different patterns by three speaker residency.
Results from the ANOVA and individual post hoc t-test revealed that speaker groups from three boroughs all showed pattern of tensing /æ/ in pre-nasal environments regardless of the variation in the degree of tensing, each differing in its degree of tensing. Interestingly, the coefficients of two regression runs on speaker Pillai scores and speaker Euclidean distances in ascending order reveal a very intriguing picture: as one moves outward from Palisades Park, which is considered the heart of the Korean American community in Bergen County (see figure 6.15), the nasal tensing pattern changes from a continuous system to a nasal split (see Figure 6.16). Considering the general information...
Figure 6.16. One-Way ANOVA and Post-hoc t-test Results on /æ/ by Speaker Residency (Categories inside the same colored circle or oval indicates no statistical difference, and the red line divides pre-nasal and elsewhere environments)

**Paramus**

\[ F_1 (F(6, 178) = 16.09, p < 0.0001) \]

\[ F_2 (F(6, 178) = 42.54, p < 0.0001) \]

**Fort Lee**

\[ F_1 (F(6, 1427) = 116.21, p < 0.0001) \]

\[ F_2 (F(6, 1427) = 148.36, p < 0.0001) \]
about the borough in chapter 3 based on a number of resources including United States Census Data, earlier studies, and my own ethnographic fieldwork, Palisades Park Borough can be seen as a special place in the Bergen County Korean enclave society in general: the heart of Korea Town in Bergen County. Even though other streets in neighboring counties are emerging as the next Broad Avenue (such as Lemoine Avenue, Main Street, and Palisades Avenue in Fort Lee), none of them show any degree of occupation of Korean businesses close to the dominance of Korean American businesses in Broad Avenue, Pal Park. Despite the fact that Fort Lee is known to be the first place of Korean settlement in Bergen County, the development of Korean enclave in Palisades Park was faster and is now primary; Fort Lee is one of the second major Korean American Communities (along with Ridgefield, Leonia, and Cliffside Park). On the other hand, Paramus is a newly introduced Korean enclave in Bergen County showing a rapid growth in Korean population, from 1,238 (The United States Census Bureau 2000) to
1,813 (The United States Census Bureau 2010). Comments of Korean American interviewees on Pal Park and other boroughs (following interview excerpts 5 to 9) also reflect how they differently perceive Pal Park and other boroughs.

(5) Ben’s sociolinguistic interview (00:43:05 – 00:43:23)

(Ben is a 28-year-old male Palisades Park resident)

633 Me: You don’t need to go to the Army?

634 Ben: No, I’m a, green card holder.

635 but, uh… the Army,

636 I never needed to go ‘cause uh…

637 if you live with your parents here,

638 and then you have green cards?

639 and you never went back to Korea?

640 myenceysikyecwe (you’re exempt)

641 until like two-thousand something, so I’ll be- by the time that’s over, I’ll be like thirty seven…

642 no, actually, I was here about what- twenty years now,

643 twenty-something years?

644 I only went back once.

645 ‘cause there was a death in the family,

646 other than that, I mean…

647 always for me, I would rather go to Europe than Korea

648 I- yeah, I…
Korea’s Korea, it’s like…

honestly, when people come over, all they say is like, you know you look
at **Pal Park, it's really not so different**...

that's what they say, it looks like uh...

if you take a photo of this Broad Avenue, and then take a photo in like
uh...

**rural Korean community, it's about the same so**, you know what...

---

(6) **Janice’s sociolinguistic interview (00:15:50 – 00:16:13)**

(Janice is a 24-year-old female Palisades Park resident)

Me: Can you tell me any good thing?...

Janice: any good thing? Um, there’s Korean food everywhere (laughter)

uh…

yeah, basically it’s pretty accessible, um…

…

Me: So… compared to your former community (Ridgewood)…

Janice: it's really different.

I lived in, so, **Ridgewood is um, basically like a really rich white town...**

and so like, all the Koreans knew each other, **but, compared to**

**everybody else, we're really different...**

**um, here, it's like everyone's Korean, so, in that sense it's so different**

like...
it's like going from Georgetown (District of Columbia, US) to here, like it's... Georgetown, everyone's really like white and rich and like, yeah

(7) John’s sociolinguistic interview (00:10:38 – 00:11:06)

(John is a 30-year-old male Palisades Park resident)

269  Me: what would you say... like as a difference? Between...

270  John:  oh yeah, huge, I mean, I’ve lived primarily- we- uh, with you know a lot

271  of just,

272  uh, Americans, White Americans, uh,

273  you know, so...

274  um...

275  yeah, you’re not gonna find,

276  Broad Avenue,

277  you know,

278  in Morris County, I mean, the streets are wide and number one,

279  um...

280  and there’s not,

281  like, there’s no packets of...

282  uh... different cultural,

283  you know uh...

284  you know, um,

285  I guess, concentrations, like,

286  in Pal Park, it's- it's all about Koreans or whatever, right? A lot of
Koreans…

you go, like Cliffside Park, there's a- a concentration of you know, um,

Turkish, uh, you know, uh, Arabic,

uh, there's a predominant,

you know, uh,

visibility there, um…

(8) Ron’s sociolinguistic interview (00:09:51 – 00:10:21)

(Ron is a 30-year-old male Palisades Park resident)

Me: Is there anything special which only residents will know, about… in Pal Park?

Ron: that’s a good question I don’t know…

Me: can you think of any?

Ron: anything that’s…

different?

special…

Me: Good or bad, whatever…

(silence)

Ron: well, living in Pal Park, you have easy access to New York.

uh… which I don’t think a lot of people do have.

which is good.

‘cause we do live right by the George Washington Bridge, so…

we have New York, like…
in the back yard, I guess, which is,
very- I guess, it’s just special in its own way.

um…
other than that, um, again,

This town itself is so Koreanized and you know,
sometimes it feels like,
you're not in America.

(9) Jeff’s sociolinguistic interview (00:19:16 – 00:19:24 and 01:08:23 – 01:08:29)
(Jeff is a 49-year-old male Fort Lee resident)

Jeff: well, the Indian folks, they have a lot of power in New Jersey, ‘cause they
concentrated in the South Jersey

in that central Jersey area

and now, ‘cause there are four big Asian groups
in New Jersey and they’re all about the same in number.

Chinese, Korean, Jap- uh, uh, Indian, and Filipino

they compose like ninety eight percent of all the Asians in- in this uh, state

Me: and Koreans are concentrated in the Northern New Jersey…

Jeff: exactly, and that’s like all the Koreans are concentrated here, all the
Indians are concentrated-

so we actually have some political power

the Chinese have spread all over, and they got no political power in the
state, even though they’ve been here longer
Filipinos are kind of split two ways so, like in Bergenfield and Jersey City, in Jersey City, they finally have something a little bit of power um, so…

Koreans, we’re- we’re actually quite well situated, you know because that’s the- one advantage is that, we’re concentrated around here. so, we have that opportunity to try and you know, political strength um, and I’ve- feel like a personal mission, because again, growing up the way I did where…

I was an outsider, I wasn’t rather doing anything Well, now we can turn it around and, we can you know, like Palisades Park, it's like, it's Korea town, well, eh, maybe little too much.

... I'm sure I like Fort Lee very much.

Because, I don't actually want to live in Palisades Park, it's too Korean.

The comments of Korean American participants regarding Pal Park and other boroughs from the sociolinguistic interviews, indicate Korean Americans’ general
perceptions of different areas in Bergen County, regardless of the participant’s likes and dislikes towards the areas. Lines 650-653 (Ben: Excerpt 5), 291-293 (Ron: Excerpt 8), 384-386 (Jeff: Excerpt 9), and 1438-1440 (Jeff: Excerpt 9) describe Palisades Park as a community that is very much Koreanized, and thus the community itself is very similar to Korea. Lines 167-171 (Janice: Excerpt 6), 283-290 (John: Excerpt 7) and 1438-1440 (Jeff: Excerpt 9) describe how Pal Park is different from other areas. Janice comments (Excerpt 6) on the difference between Ridgewood and Pal Park (lines 167-171) by stating that Pal Park is far more Korean than Ridgewood (Ridgewood is one of the newly emerging Korean American enclaves, along with Paramus). John’s comments (Excerpt 7) on Cliffside Park and Pal Park indicate that the community identity of Cliffside Park is not solely Korean but also includes other ethnic groups, while Pal Park is mainly Korean. Moreover, interestingly, Jeff states that he prefers living in Fort Lee to Pal Park, because Pal Park is too Korean for him.

Based on the demographic information and the Korean American interviewees’ comments on Korean American boroughs, the descending order of the /æ/ Pillai scores and Euclidean distances, Paramus è Fort Lee è Palisades Park, can be described as an ascending order of the degree of Koreanness embedded in each community. In this sense, the variation in the degree of the distinction between two /æ/ environments (in both Pillai scores and Euclidean distances) can be associated with each community’s degree of Koreanness. Therefore, I suggest that the tensing of /æ/ in pre-nasal environment to a lesser extent can be seen as a manifestation of more Koreanness. In other words, along with the local ethnic identity of ‘Bergen County Korean American’ connected to the /æ/ nasal tensing pattern, the identity of ‘Koreanness’ is manifested among Pal Park Korean
Americans by minimizing the degree of /æ/ tensing in pre-nasal environments, thereby decreasing the degree of ‘localness’ while retaining the element of ‘Koreanness’. This act of minimizing the degree of pre-nasal /æ/ tensing is intriguing, since this minimization can be understood as an attempt to disalign from White /æ/ patterns, as well as from ‘American’ patterns and an American identity, since pre-nasal /æ/ tensing is a widespread pattern among U.S. White speakers. In a sense, then, the minimization of pre-nasal /æ/ tensing seems to be a process of leniting ‘localness’, which indispensably includes ‘American’ since Bergen County inherently is an American region, in the ‘local Korean American’ identity, thus indirectly leaving the ‘Koreanness’ to be solely promoted as a result.

6.2.3. Speaker Religion

Speaker religion showed a significant correlation with the height of /ɔ/ (normalized F1 value) (p = 0.000743***), while the variable patterning of /æ/ did not show any significant correlation with the predictor. The mixed effect multivariate regression analysis results reported that the /ɔ/ was lowest, thus the highest normalized F1 value, among the Catholic speakers (Coefficient: 0.159 Mean: 0.329), followed by Buddhists (Coefficient: 0.061 Mean: 0.262), Protestants (Coefficient: 0.033 Mean: 0.224), and Not Religious (Coefficient: -0.253 Mean: -0.045) in descending order of coefficients. This regression result indicates that the speaker religion Catholic showed the biggest effect in lowering the nucleus of /ɔ/, and Not Religious showed the biggest effect in not lowering the /ɔ/ nucleus (with the highest /ɔ/ nucleus). However, since the social characteristics of Korean American ethnic Protestant churches differ by type of
congregation (see chapter 3 for detailed information), the Protestant group was divided into three subgroups: ‘the Korean immigrant church’ (1G), ‘the younger generation church’ (2G), and ‘the parallel congregation’ (1.5G). Additionally, the participation degree in the church or temple of each speaker was also included in the recoded subgroups: ‘involved’ versus ‘less involved’. The newly coded speaker religion (including congregation types and the intensity of participation in the organization) produced a very intriguing picture, which maintains the overall patterns of the simpler coding scheme but nonetheless does show an interesting difference in terms of speaker religion. Table 6.6 summarizes the results.

### Table 6.6. Results of Multivariate Regression Analysis on /ɔ/ height by Recoded Speaker Religion and Intensity

<table>
<thead>
<tr>
<th>Factor</th>
<th>Significance</th>
<th>Coefficients</th>
<th>N</th>
<th>Raw Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speaker Religion (Recoded)</td>
<td>p = 0.0023**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protestant 1G-Involved</td>
<td></td>
<td>0.209</td>
<td>11</td>
<td>0.413</td>
</tr>
<tr>
<td>Catholic-Less Involved</td>
<td></td>
<td>0.120</td>
<td>18</td>
<td>0.296</td>
</tr>
<tr>
<td>Buddhist-Less Involved</td>
<td></td>
<td>0.039</td>
<td>101</td>
<td>0.263</td>
</tr>
<tr>
<td>Protestant 1G-Less Involved</td>
<td></td>
<td>0.024</td>
<td>50</td>
<td>0.198</td>
</tr>
<tr>
<td>Protestant 2G-Involved</td>
<td></td>
<td>-0.009</td>
<td>99</td>
<td>0.222</td>
</tr>
<tr>
<td>Protestant 1.5G-Less Involved</td>
<td></td>
<td>-0.012</td>
<td>54</td>
<td>0.200</td>
</tr>
<tr>
<td>Protestant 2G-Less Involved</td>
<td></td>
<td>-0.072</td>
<td>70</td>
<td>0.168</td>
</tr>
<tr>
<td>Not Religious</td>
<td></td>
<td>-0.300</td>
<td>88</td>
<td>-0.062</td>
</tr>
</tbody>
</table>

Interestingly, the protestant groups showed a clear deviation by its subtypes, and the Korean immigrant Protestant church involved group showed a stronger correlation with lowering the /ɔ/ nucleus (Coefficient: 0.209 Mean: 0.413) than less-involved

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59 This was determined based on interviewees’ self reports, and my personal weekly observation of participants in the church (when possible). People attending weekly services almost every time are coded as ‘involved’, while the others are coded as ‘less involved’.

60 Other social factors were also put into the regression model as well, and the new run did not change the overall picture of choosing speaker gender and recoded speaker religion as significant factors in the best run, which is same with the previous regression results (see chapter 5).

61 Unfortunately, there were no participants eligible for ‘Catholic-Involved’ and ‘Buddhist-Involved’.

62 Two Buddhist participants, Hank and Sarah, are coded as ‘Less Involved’, but their degree of participation in Buddhist temples is almost none, since they do not participate in organized services.
Protestant church groups. The second generation Protestant church group and the parallel congregation church group showed a weak correlation where its coefficients were very close to zero. The Catholic group still showed a strong correlation with lowering the /ɔ/ nucleus (Coefficient: 0.120 Mean: 0.296), while the Not Religious group showed a strong correlation with raising the /ɔ/ nucleus (Coefficient: -0.300 Mean: -0.062). To interpret this result, it is necessary to revisit the characteristics of each Korean American religious organization in Bergen County. Table 6.7 summarizes important characteristics of each religious organization (see chapter 3 for detailed information).

Considering each religion’s association to culture, the traditional Korean cultures and values are retained in Buddhism the most, with Catholicism being second, and Protestantism being the least. Moreover, while Korean American Buddhist temples and Catholic churches can promote the Korean identity (or Koreanness) during both the religious services and non-religious events, Korean immigrant churches are the only Protestant congregation that can promote Korean identity mostly during events other than religious services, especially fellowship group events which are strongly supported and promoted by Korean protestant churches (Korean American Protestantism stresses the importance of fellowships both inside and outside the church more than any other religions.) However, Korean Americans Protestants who are attending English ministry services (both the English services in parallel congregations and younger generation churches) shows lack of practicing Korean values and cultural elements not only during the services, but also during their fellowships, since they are mostly younger generations who are more Americanized than the Korean Americans who attend the Korean ministry services. In addition to the degree of Koreanness in each Korean American religious
organization, the degree of participation in the organization of each participant will also affect each speaker’s orientation to Koreanness. In this sense, the degree of retaining Koreanness can be diagrammed as in figure 6.16 below.

Going back to table 6.6, the expected degree of retaining Koreanness by religion and degree of involvement is very similar to the /ɔ/ height coefficient ordering on the correlation with ‘speaker religion + speaker intensity of involvement’, with Buddhist and Catholic groups showing stronger correlation with /ɔ/ lowering than those of most of the Protestant groups (the ‘first generation immigrant Protestant church – Involved’ group showed the highest coefficient in /ɔ/ nucleus lowering - Coefficient: 0.209 Mean: 0.413). Moreover, the group that showed the greatest negative correlation with lowering the /ɔ/ was the ‘Not Religious’ group. Interestingly, speakers who reported themselves as ‘Not Religious’ (Jack, Stacy, and Jeff) all showed negative attitudes towards Korea or Koreanness (in the community or in general) by stating comments that they disalign

**Figure 6.17. Expected Degree of Retaining Koreanness by Speaker Religion and Degree of Involvement**
<table>
<thead>
<tr>
<th>Organization Type</th>
<th>Congregation Type</th>
<th>Ministry Provided</th>
<th>Association to Korean Culture</th>
<th>Service Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buddhist Temple</td>
<td>N/A</td>
<td>Korean services provided. English services are mostly for non-Korean Americans only, if any.</td>
<td>Due to its early nativization (since the 4th century), Buddhism has a very high association to the traditional Korean culture.</td>
<td>Every Sunday - This weekly basis service has been devised only in Korean Buddhist temples in the United States for competing purpose with Korean American Churches. However, not many Korean American Buddhists attend this service every week, since the weekly service does not have any religious enforcement based on any doctrine.</td>
</tr>
<tr>
<td>Catholic Church</td>
<td>N/A</td>
<td>Korean services and English services provided</td>
<td>Due to the Korean people's voluntary acceptance of the religion, and Vatican II, Korean Catholicism includes elements of traditional Korean culture to certain extent (such as ancestor worshiping).</td>
<td>Every Sunday - The weekly basis service is based on the Christian doctrine, and it is enforced frequently.</td>
</tr>
<tr>
<td>Protestant Church</td>
<td>Immigrant Church</td>
<td>Korean services provided only.</td>
<td>The Korean cultural elements are not embedded in Protestantism. The Korean traditional values can be found during the fellowships, and sometimes during the religious events (especially during the Korean traditional holidays such as 'Seinal' Lunar New Year’s day, or 'Chwusek' Harvest Moon), if any (still, certain Korean cultures, such as ancestor worshiping is strictly banned).</td>
<td>Every Sunday - The weekly basis service is based on the Christian doctrine, and it is strictly and strongly enforced.</td>
</tr>
<tr>
<td>Parallel Congregation</td>
<td>Korean services and English services provided separately.</td>
<td>The Korean cultural elements are not embedded in Protestantism. The Korean traditional values only can be found during the fellowships, if any (certain Korean cultures, such as ancestor worshiping is strictly banned). However, English services do not include Korean traditional culture and values, which show similar aspects of the 2nd G churches.</td>
<td>Every Sunday - The weekly basis service is based on the Christian doctrine, and it is strictly and strongly enforced.</td>
<td></td>
</tr>
<tr>
<td>2nd G</td>
<td>English services provided only.</td>
<td>The traditional Korean values are explicitly erased during the services. 2nd G Protestant churches often refuse any association to the Korean ethnic identity.</td>
<td>Every Sunday - The weekly basis service is based on the Christian doctrine, and it is strictly and strongly enforced.</td>
<td></td>
</tr>
</tbody>
</table>
themselves from Koreanness or Korea. The following excerpts, 10-12, show how non-religions speakers talk about this disalignment.

(10) Jack and Tim’s sociolinguistic interview (00:14:55 – 00:15:40 and 00:31:26 – 00:32:20)

(Tim and Jack are 30-year-old male Palisades Park residents)

382 Me: So, uh, will you do the same thing to your children? (asking them whether they will raise their kids in the same strict Korean way they were brought up)

383 Tim: Hell yeah!

384 I- I mean, I wouldn't be like everything they do…

385 Me: that you’re gonna…

386 you want to uh…

387 Tim: like, give 'em some discipline.

388 Jack: no, definitely not.

389 Me: Definitely not?

390 Jack: I would do it until a point,

391 but,

392 um…not to the level where it gets excessive.

393 Especially like after you enter high school.

394 I was still disciplined then, but,

395 you have to give them, certain amount of freedom too.

396 Where else kids can't develop socially.
Well, you got to develop academically and socially…

Tim: That’s true…

Jack: I'm not really that social.

…

Jack: oh, you know like, one funny thing is a…

when I was in Korea,

um, I was speaking- I-I speak English with my brother ‘cause,

I'm not comfortable with- like its kind of awkward when I speak uh...

Korean to him because I'm not good at really…?

So in the subways I was speaking English to him,

and like, these uh... acwumma (middle aged woman) is-

were talking really loud themselves in Korean,

they'd be like shhhhhhh!

Me: Really?

Jack: Yeah, ‘cause they don't want to hear English.

Jack: but if you-

Me: They’re spending a lot of money for English.

Tim: Oh, Really?

Me: for their sons and daughters and…

Jack: no they use- I just they found it disrespectful like we're trying to show off.

Me: You guys were not… talking too loud right?

Jack: yeah.
so they, they do that but then they’re talking louder than us so…

(11) Jeff’s sociolinguistic interview (00:41:04 – 00:41:18, 00:56:48 – 00:57:14, and 01:05:14 – 01:06:29)

(Jeff is a 49-year-old male Fort Lee resident)

Jeff: and... one thing I also noticed, like, I never want to work for Korean

Korean.

because, you see how- how they treat their employees really bad.

I mean, they even physically beat them and stuff,

you know, um...

…

that's unfortunately, is a...

Korean American.

The only way we're ever gonna get to be,

CEO of a,

company,

or to be,

overly powerful politician

is to do it ourselves,

right?

If you s- the only way Koreans are gonna be the CEO of a company, if he
starts his own, and it becomes big,

'cause you'll never get hired and be-
be promoted to it,

um…

…

Jeff: where that...

they take advantage of you and they’re not gonna give you the reward,

and partly is our fault,

‘cause,

our traditional Korean culture,

is designed,

for the old world, not for the new world, the new world, that culture,

will get you too a certain point, and is actually advantageous to that point

but after that, it actually gets in your way,

you know, where now you got to be more like

try to forget that and

I still get (inaudible)

to caught myself out, in fact, I was just faxing somebody my uh resume,

and I had to even, like, on the email, say,

‘you know, I- I don't mean to be boastful’ and, I was like, why am I saying that.

it's America, you're supposed to boast.

In fact, you even say something like uh, I don't need to boast.

It's what I used to do when I first got advertising

that's when people are gonna go, ‘uh, he’s not right’.
'Cause they actually want to see you coming in saying, ‘yeah, I'm the greatest thing in the world.’

and even if you're not, right?

You look at American (inaudible), like how many people actually go on American (inaudible),

uh, I'm not so good, but hopefully you'll like it, every,

single- even the worst thing in the world comes out ‘yeah, I'm the greatest thing on earth, yeah!’,

and they- they suck but still,

they have that attitude, yeah…

(12) Stacy’s sociolinguistic interview (00:43:06 – 00:43:50)

(Stacy is a 27-year-old female Paramus resident)

Me: What if you marry a Korean Korean guy?

Stacy: I- that would not happen.

No.

I can't, we're too different.

Me: Oh… I see.

Stacy: yeah

I- I like to talk,

and I like to like,

converse?
I can't do that with a Korean,
for like an actual Korean.

Me: Things have changed.

Stacy: wait what?
...

Stacy: I can't because, I- I actually have a very deliberate way of speaking and if
1- if I can't express myself that way, I get you know, it's very
frustrating, so I don't think I can,
marry a guy, like spend the rest of my life with someone like that...

In lines 388, 392, 396-397, and 399 (Excerpt 10) Jack explicitly criticizes the
Korean way of raising children as too strict, which eventually makes children become
anti-social. Jack also shows his hostility toward Korean middle-aged women from his
experience in Korea by criticizing their hypocritical attitudes (lines 772-775, 782, and
784-785). Jeff (Excerpt 11) shows his disalignment from working with a Korean boss
(lines 845-847) and traditional Korean values (such as emphasizing humbleness) (lines
1365-1369, 1379-1380, and 1385). He considers Korean traditional values to be the
biggest barrier to becoming successful in the United States, indicating that being Korean
is a barrier and penalty for people in the United States. Stacy (Excerpt 12) states that she
will never be able to marry a Korean because she is too different from Korean people.
Considering those ‘not religious’ participants’ disalignment from Koreanness, it seems to
be clear enough to see their strongest negative correlation with the /ɒ/ lowering
(Coefficient: -0.300 Mean: -0.062) even more than younger generation church groups.
Even though the younger generation churches do show their attempt to erase Koreanness in their church identity, they do not, at least, criticize the Korean values or refuse to marry someone directly from Korea (many of the younger generation church members who participated in this study actually got married to or are currently dating Koreans).

According to the discussions above, the correlation between /ɔ/ height and speaker religion (including the participation intensity) can be understood as the height of the vowel /ɔ/ showing a correlation with participants’ degree of speakers’ Korean identity. More specifically, Korean Americans in Bergen County who are intensively involved in the religious organization with high retention of Korean values and promotion of Korean identity will produce more lowered nucleus of /ɔ/ (thus higher F1), whereas Bergen County Korean Americans who do not have affiliations to any Korean American religious organization will not produce lowered /ɔ/ nucleus. The correlation between the height of /ɔ/ and speaker religion, where Korean identity is associated with lowering the /ɔ/ nucleus, is very interesting. Since minimizing the degree of pre-nasal /æ/ tensing was discussed to be associated with minimizing localness, the greater lowering of /ɔ/ can be also seen as an attempt at reinforcing the Korean identity. However, as has already been stated in the comments of participants on raised /ɔ/ (see interview excerpts 1 to 4 presented above), participants associate the raised nucleus with the stereotypical heavy (White) New York/New Jersey accent, which is also asserted as not a ‘Korean American’ thing. This also supports the idea that stronger Korean ethnic identity is associated with /ɔ/ lowering, since the raised /ɔ/ is already associated with a highly disfavored identity.

The exploration of social meanings associated with /ɔ/ and /æ/ among Bergen County Korean Americans in the previous three subsection on speaker gender, speaker
residency area, and speaker religion has proved useful in interpreting the statistical correlations between the variation patterns of the target features and three social factors, and has suggested that the degree of pre-nasal /æ/ tensing is associated with ‘localness’ in the ‘Bergen County Korean American’ identity, and the degree of /ɔ/ lowering is associated to the ‘Korean ethnic identity’ in the ‘Bergen County Korean American’ identity. The next section discusses variation of two target variables, /ɔ/ and /æ/, examining those features at the level of the individual speaker.

6.3. Variation at the Individual Level

The two former sections focusing on the two target variables, /ɔ/ and /æ/, in the scope of regional variation, and correlations between the variation patterns and various social factors have provided a number of useful insights. Discussions on the production patterns of /ɔ/ and /æ/ of Bergen County Korean Americans in section 6.1 revealed that Korean Americans are indeed showing participations in regional NYC Metropolitan English trends of lowering of /ɔ/ and tensing /æ/ in pre-nasal environments, following the regional patterns reported in earlier studies. By narrowing the scope down to the social factors affecting the variation in the Bergen County Korean American community, section 6.2 enables us to explore the social meanings associated with variation. Now, the scope of variation is narrowed down again, focusing on the variations at the individual speaker level. By looking into individual patterns of variation (in this case, within sociolinguistic interviews), we gain an enhanced understanding of what it means to employ (or not employ) certain features. More precisely, speakers may utilize certain
linguistic features (phonological, in this study) in order to construct, shape and project desired identities or personae, or stay away from undesired identities, as evidenced in the variable patterning of features in unfolding discourse according to such matters as interlocutor, topic\textsuperscript{63}, and stance\textsuperscript{64} toward the interlocutor and topic. In this section, I focus on intra-speaker variation in the interviews of those speakers who showed a statistical correlation is found between the realization of the target variables and interview topics, as well as those individuals whose overall patterns differed from those revealed in the quantitative analysis above. Then, the correlations are further explored by looking into speakers’ stances and attitudes towards certain topics, as derived from their utterances and commentaries. Three speakers (Alice, Natalie, and Hank) showed significant correlation between their /ɔ/ height (F1) and interview topics, and Ben showed significant correlations between his F2 of pre-nasal /æ/ and interview topics. Additionally, the variation patterns of John, Ron, and Frank are also discussed because they showed somewhat different pictures than those revealed in the quantitative findings. Table 6.8 summarizes the general social characteristics of the speakers focused on in this section.

While many of the same topics were discussed across interviews (mostly from the interview schedule that I used throughout the interaction – see appendix for the interview schedule used in all interviews), some topics only occur in certain interviews (mostly initiated by interviewees). The set of interview topics in the results tables are not

\textsuperscript{63} Divisions among interview topics were mainly based on the interviewer’s initiation of topics by asking interviewees certain questions following the interview schedule. There were also some topics that were initiated by interviewees, based on my intuitions of what constituted a continuing versus new topic, and these interviewee-initiated topics were also taken into consideration. However, delineating topics is a quite complex matter (Fond 2013), and topic identifications in this dissertation are rather rough.

\textsuperscript{64} ‘Stance’ (e.g. Schiffrin 2006, Du Bois 2007, Jaffe 2009 and more) can be more precisely analyzed and identified through detailed discourse analysis that is beyond the scope of this dissertation.
exhaustive, since some topics did not have any occurrence sites for the target variable.

Topics discussed in this section will be briefly described for each speaker.

Table 6.8. Speakers Discussed in this Section and social Characteristics of each speaker

<table>
<thead>
<tr>
<th>Speaker</th>
<th>Gender</th>
<th>Age</th>
<th>Generation</th>
<th>Age of Immigration</th>
<th>Residency Area</th>
<th>Religion-Ministry</th>
<th>Intensity of Participation</th>
<th>Korean Proficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alice</td>
<td>Female</td>
<td>26</td>
<td>2nd G</td>
<td>N/A</td>
<td>Fort Lee</td>
<td>Protestant-Immigrant</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Natalie</td>
<td>Female</td>
<td>34</td>
<td>1.5 G</td>
<td>5</td>
<td>Fort Lee</td>
<td>Protestant-Immigrant</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Hank</td>
<td>Male</td>
<td>34</td>
<td>2nd G</td>
<td>1</td>
<td>Fort Lee</td>
<td>Buddhist</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Ben</td>
<td>Male</td>
<td>28</td>
<td>1.5 G</td>
<td>7</td>
<td>Palisades Park</td>
<td>Protestant-2nd Generation</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>John</td>
<td>Male</td>
<td>31</td>
<td>2nd G</td>
<td>N/A</td>
<td>Palisades Park</td>
<td>Protestant-2nd Generation</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Ron</td>
<td>Male</td>
<td>31</td>
<td>1.5 G</td>
<td>5</td>
<td>Palisades Park</td>
<td>Protestant-2nd Generation</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Frank</td>
<td>Male</td>
<td>26</td>
<td>2nd G</td>
<td>1</td>
<td>Paramus</td>
<td>Protestant-2nd Generation</td>
<td>Low</td>
<td>High</td>
</tr>
</tbody>
</table>

First, starting from Alice, the three speakers who showed intra-speaker variation of the mid back vowel /ɔ/ by interview topic are discussed. Tables 6.9 through 6.11 and figures 6.18 through 6.19 summarize Alice’s overall results for /ɔ/ and /æ/.

Alice is a 26-year-old female second generation Korean American living in Fort Lee. She is Protestant, and she goes to a Korean immigrant church in Fort Lee almost every weekend, because she is also a voluntary worker in her church. Alice shows a clear distinction between the /ɔ/ and /ɑ/ nuclei (low-back Pillai score: 0.25485) (also, see figure 6.18). Also, the position of her /ɔ/ nucleus is higher and backer than the position of her /ɑ/. Her F1 value of /ɔ/ (692.887 Hz) (normalized with Labov Telsur G algorithm) is slightly lower than Labov et al.’s (2006) standard of NYCE raised /ɔ/ (lower than 700 Hz), which indicates that she qualifies as a NYCE raised /ɔ/ speaker. Her distribution of /æ/ by following environment shows pre-nasal environments are tense while others remain in the lower back position (there were no eligible open front nasal tokens in her
Table 6.9. Speaker Pillai Score, Euclidean Distance, and /a/-/ɔ/ Difference: Alice

<table>
<thead>
<tr>
<th>/a/-/ɔ/ F1 Difference</th>
<th>/a/-/ɔ/ Pillai Score</th>
<th>/a/-/ɔ/ Euclidean Distance</th>
<th>/æ/ Nasal Pillai Score</th>
<th>/æ/ Nasal Euclidean Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.291</td>
<td>0.25485*</td>
<td>0.42518349</td>
<td>0.54912***</td>
<td>0.906550605</td>
</tr>
</tbody>
</table>

Figure 6.18. Speaker Vowel Space: Alice (/æ/ by recoded following environment)

Table 6.10. Speaker Mean Normalized F1 and F2: Alice

<table>
<thead>
<tr>
<th>Speaker</th>
<th>Vowel</th>
<th>N</th>
<th>F1</th>
<th>F2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alice</td>
<td>/æ/</td>
<td>23</td>
<td>0.704</td>
<td>-0.89</td>
</tr>
<tr>
<td>Alice</td>
<td>/i/</td>
<td>31</td>
<td>-1.349</td>
<td>1.294</td>
</tr>
<tr>
<td>Alice</td>
<td>/ɔ/</td>
<td>11</td>
<td>0.413</td>
<td>-1.2</td>
</tr>
<tr>
<td>Alice</td>
<td>/u/</td>
<td>6</td>
<td>-1.159</td>
<td>-1.629</td>
</tr>
<tr>
<td>Alice</td>
<td>Front Nasal-Closed</td>
<td>8</td>
<td>0.174</td>
<td>0.349</td>
</tr>
<tr>
<td>Alice</td>
<td>Mad Bad Glad</td>
<td>6</td>
<td>0.797</td>
<td>-0.23</td>
</tr>
<tr>
<td>Alice</td>
<td>NYC lax</td>
<td>21</td>
<td>0.746</td>
<td>-0.053</td>
</tr>
<tr>
<td>Alice</td>
<td>NYC tense</td>
<td>4</td>
<td>0.657</td>
<td>0.041</td>
</tr>
<tr>
<td>Alice</td>
<td>Velar Nasal</td>
<td>2</td>
<td>-0.182</td>
<td>1.292</td>
</tr>
<tr>
<td>Alice</td>
<td>Voiceless Fricative</td>
<td>4</td>
<td>0.688</td>
<td>-0.376</td>
</tr>
</tbody>
</table>
Figure 6.19. One-Way ANOVA and Post-hoc t-test Results on /æ/: Alice (Categories inside the same colored circle or oval indicates no statistical difference, and the red line divides pre-nasal and elsewhere environments)

![Graph showing vowel positions](image)

F1 \((F(5, 39) = 6.504, p = 0.0002)\)

/æ/ by Recoded Environment: Alice

F2 \((F(5, 39) = 17.48, p < 0.0001)\)

Regarding her vowel plot (figure 6.18) and ANOVA results (figure 6.19), Alice seems to be involved in producing a nasal-split system with the clustering of non pre-nasal /æ/ in the lower/backer position. Alice’s overall patterns seem to correspond to general patterns of /æ/ (pre-nasal tensing) and /ɔ/ as outlined in the previous sections by showing a degree of pre-nasal /æ/ tensing and showing /ɔ/ as distinct from /a/. To examine whether Alice’s /ɔ/ height and /æ/ pre-nasal tensing show intra-speaker variation during the sociolinguistic interview, the F1 values of /ɔ/ tokens and F1 and F2 values of pre-nasal /æ/ tokens were subjected to an additional regression analysis to see the effect of the factor, ‘interview topic’ using Rbrul\(^65\). The results on /ɔ/ by interview topic indicates that /ɔ/ height showed significant correlation with the interview topic (see table

---

\(^65\) The factor ‘lexical items’ was also put into the model as a random intercept also for examinations on all intra-speaker variations of other speakers as well.
6.11 for detailed results), while the F1 and F2 of pre-nasal /æ/ did not show any significant correlation with the interview topic (all p values over 0.05)\textsuperscript{66}. Also, a brief description of Alice’s interview topics follows table 6.11.

**Table 6.11. Results of Multivariate Regression Analysis on /ɔ/ height by Interview Topic: Alice\textsuperscript{67}**

<table>
<thead>
<tr>
<th>Interview Topics</th>
<th>Significance</th>
<th>Korean Pop Culture</th>
<th>Community</th>
<th>Work</th>
<th>Interviewer</th>
<th>Family</th>
<th>Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>(p = 0.00061) ***</td>
<td>67.444</td>
<td>44.321</td>
<td>41.142</td>
<td>10.327</td>
<td>-34.857</td>
<td>-128.377</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Raw Mean</td>
<td>773.423</td>
<td>760.791</td>
<td>752.029</td>
<td>741.860</td>
<td>671.122</td>
<td>577.602</td>
<td></td>
</tr>
</tbody>
</table>

- Topics in Table 6.11
  - Korean Pop Culture: Alice talks about Korean pop cultures and her passion towards it (Korean pop music, television shows, and etc.).
  - Community: Alice talks about her former and current community (Palisades Park and Fort Lee).
  - Work: Alice talks about her work experience throughout her life.
  - Interviewer: Alice talks about the interviewer (me). This occurred in beginning and concluding the interview.
  - Family: Alice talks about her family members, her father, grandmother, and younger brother.

\textsuperscript{66} Throughout section 6.3, linguistic environments are not considered, since there was no significant effect of following environment found for the variation of /ɔ/ (see Chapter 5). However, there is still the possibility that linguistic factors may have some effect on the patterning of /ɔ/ within interviews; this will be addressed in future research.

\textsuperscript{67} All regression analyses on intra-speaker variations of each speaker use non-normalized raw measurements, since I consider each individual separately.
- Language: Alice talks about language (both Korean and English) of Korean Americans in the community and herself.

The result on /ɔ/ height by interview topic indicates that her /ɔ/ showed positive correlations between her lowering of the nucleus and the topics ‘Korean Pop culture’ (Coefficient: 67.444 Mean: 773.423 Hz), ‘Community’ (Coefficient: 44.321 Mean: 760.791 Hz), ‘Work’ (Coefficient: 41.142 Mean: 752.029 Hz), and ‘Interviewer’ (Coefficient: 10.327 Mean: 711.704 Hz), while topics ‘Family’ (Coefficient: -34.857 Mean: 671.122 Hz) and ‘Language’ (Coefficient: -128.377 Mean: 577.602) showed negative correlations with her lowering of the nucleus (even though the number of tokens is fairly limited across topics). Considering the discussion of the lowering of /ɔ/ height and its association with Koreanness in previous subsections in this chapter, interestingly, this result also seems to be showing the feature’s association to Koreanness, because the topics where Alice showed her positive attitude or stance towards ‘Korea’, ‘Korean Community’, or ‘Koreanness’ were those topics (‘Korean pop culture’ and ‘Community’) that correlated with lower /ɔ/, while /ɔ/ raising occurred during topics ‘Family’ and ‘Language’ where she shows her negative stance towards ‘Koreanness’ or ‘Korean people in the community’. The following excerpts from Alice’s sociolinguistic interview indicate her stance toward various topics and her F1 of /ɔ/ in words containing the vowel.

(13) Alice’s sociolinguistic interview

(During the topic ‘Community’)

228 Alice: I-I know for example like, I was driving to work and my dad's like oh my
friend saw you on the highway route four.

229  Me:  Yeah.

230  Alice:  I was like, oh, this is a little creepy but ok… so, that’s uncomfortable but it’s very like…

pyenhay (comfortable) to live here…

…

(During the topic ‘Korean Pop Culture’)

520  Alice:  so, when I was really into like you know like Korean singers,

521  H.O.T (one of the most popular boy bands in the 1990s).

522  Me:  Yeah, yeah…

523  Alice:  I was really into it so, I was like ‘oh my god, I have to go into the company (the management company of the boy band).’

524  the only way is to become (inaudible)…

525  I didn’t want to like, audition? Except audition, I did everything and after that all ended, I was like, ok, I really want to be a teacher.

527  That was like the other thing I really liked…

528  I used to like um… make worksheets for my sister and…

529  make like chalk board and…

…

534  Alice:  um...I've...you- do you know I Minho (a popular Korean actor)?

535  Me:  yeah.

536  Alice:  Kkospota Namca (‘Boys over flowers’ – A popular Korean drama show)

537  Me:  Yeah.
Alice: **he's my favorite.**

Me: yeah…

Alice: yeah.

Me: How about singers?

Alice: Singers, um…

**2NE1** (a popular Korean female hip hop group)?

…

Alice: because my boyfriend he's actually very Koreanized so...

**he-he and I watch a lot of like Korean...**

*Mwuhantocen* (‘The Infinite Challenge’ – one of the most popular television shows in Korea), **I love that show.**

**my favorite.**

‘Cause, *Ceng Hyeng Ton* (a famous Korean comedian in the show) looks like him,

my boyfriend, I like that kind of,

I don't know how to say in English but,

*hai kayku* (a kind of an extraordinary sense of humor)? like that kind of stuff.

I really like...

I watch that.

…

(during the topic ‘family’)

Me: **So, so-** you um… basically grew up with your brother and sister?
Alice: Yes.

Me: and did you enjoy it?

Alice: No.

Me: you didn’t enjoy it?

Alice: no, I was like, little child so…

Me: yeah.

Alice: and my brother is um… cangson (the oldest son who carries the family name)?

Me: he’s cangson?

Alice: yeah.

Me: Oh my god.

Alice: So I was- and my grandmother, you know how she’s very old fashioned I… wasn’t confortable… (laughter)

that with the cangson thing…

in Korea…

you can’t do that ‘cause you’re a girl, but your brother’s a boy and,

you can’t do that but your sister is young so she can…(laughter)

Me: what?

Alice: it’s like stuff- but- but, it’s like that with all Korean like you know…

I- I think…

I guess um…
well, there’s pros and cons like my brother and I were,
the age gap wasn't that much, it was like we were like friends.
but my sister, it was
fun because we can actually talk about girl stuff.
…
Me: were your parents strict when you were growing up?
Alice: not my dad, my dad was very different from like most Korean parents,
didn’t really like…
um… I don’t know about like kansephay (meddling in everything)…
he didn’t really care…
but my grandmother was harsh, she’s like, she didn’t allow us to speak,
English in the house… we had to do kacengyeybay (home Protestant
worship service) like everyday…
it was very like, intense…

During the topic ‘community’ (excerpt 13, lines 228-231), Alice answers my
question regarding negative aspects of the Bergen Korean American community by
indicating that everyone knowing everyone is uncomfortable to her (line 228). However,
she immediately reverses this by stating that it is very comfortable living in the
community, and that the positive aspects (‘being comfortable’ in line 231) cancel out the
negatives (‘a little creepy’ in line 230 and ‘that’s uncomfortable’ in line 231). When
talking about the topic ‘Korean pop culture’, Alice states her strong passion towards
recent Korean popular culture by showing her interest in Korean pop singers from the
past to nowadays, and also an actor from a recent Korean drama (lines 520-559).

However, during the topic ‘family’ (lines 392-463), she projects her negative stance towards Korean traditional values by stating that she was uncomfortable with the traditional *cangson* (the oldest son carrying the family name) and the preference of sons over daughters (lines 404-405, 410-413). In addition, Alice describes her grandmother as harsh and old fashioned for having forced the traditional Korean ideology on Alice and her siblings. Although the number of tokens is limited, Alice’s employment of lower /ɔ/ in the interview topics where she displays a positive stance toward Koreanness aligns with the interpretation of the social meaning of /ɔ/ based on the quantitative analysis of its correlations with various social factors, namely, that lower /ɔ/ is associated with stronger Korean identity. Thus, Alice seems to be interactively constructing various types of desired identity by utilizing the vowel /ɔ/ differently when talking about different topics toward which she has different stances.

The next speaker to be examined is Natalie. Natalie is a female 1.5 generation Korean American Protestant who used to live in Fort Lee until she moved out to Manhattan after she got married to a White American. Natalie reports that she seldom goes to her Korean immigrant church, whereas she visits her old community, Fort Lee, very often (at least once a week) to see her friends. Tables 6.12 through 6.13 and figures 6.20 through 6.21 summarize Natalie’s production pattern results on her /ɔ/ and /æ/.

Natalie’s /ɔ/ shows a significant distinction from /a/, and her /ɔ/ F1 is 704.491 Hz, in which its nucleus position is slightly lower than the standard for the raised /ɔ/. Although she does not have any eligible pre-velar nasal /æ/ tokens, the overall distribution of her /æ/ tokens indicate that she is producing a /æ/ nasal split system,
Table 6.12. Speaker Pillai Score, Euclidean Distance, and /æ/-/ɔ/ Difference: Natalie

<table>
<thead>
<tr>
<th>/æ/-/ɔ/ F1 Difference</th>
<th>/æ/-/ɔ/ Pillai Score</th>
<th>/æ/-/ɔ/ Euclidean Distance</th>
<th>/æ/ Nasal Pillai Score</th>
<th>/æ/ Nasal Euclidean Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.469</td>
<td>0.49331***</td>
<td>0.704724769</td>
<td>0.55011***</td>
<td>1.034812543</td>
</tr>
</tbody>
</table>

Figure 6.20. Speaker Vowel Space: Natalie (/æ/ by recoded following environment)

Table 6.13. Speaker Mean Normalized F1 and F2: Natalie

<table>
<thead>
<tr>
<th>Speaker</th>
<th>Vowel</th>
<th>N</th>
<th>F1</th>
<th>F2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natalie</td>
<td>/ɑ/</td>
<td>70</td>
<td>0.707</td>
<td>-0.691</td>
</tr>
<tr>
<td>Natalie</td>
<td>/i/</td>
<td>64</td>
<td>-1.536</td>
<td>1.461</td>
</tr>
<tr>
<td>Natalie</td>
<td>/ɔ/</td>
<td>31</td>
<td>0.238</td>
<td>-1.217</td>
</tr>
<tr>
<td>Natalie</td>
<td>/u/</td>
<td>12</td>
<td>-1.237</td>
<td>-1.229</td>
</tr>
<tr>
<td>Natalie</td>
<td>Front Nasal-Closed</td>
<td>18</td>
<td>0.031</td>
<td>0.609</td>
</tr>
<tr>
<td>Natalie</td>
<td>Front Nasal-Open</td>
<td>4</td>
<td>-0.19</td>
<td>0.782</td>
</tr>
<tr>
<td>Natalie</td>
<td>Mad Bad Glad</td>
<td>9</td>
<td>0.624</td>
<td>-0.186</td>
</tr>
<tr>
<td>Natalie</td>
<td>NYC lax</td>
<td>60</td>
<td>0.584</td>
<td>-0.133</td>
</tr>
<tr>
<td>Natalie</td>
<td>NYC tense</td>
<td>5</td>
<td>0.918</td>
<td>-0.02</td>
</tr>
<tr>
<td>Natalie</td>
<td>Voiceless Fricative</td>
<td>15</td>
<td>0.777</td>
<td>-0.337</td>
</tr>
</tbody>
</table>
Figure 6.21. One-Way ANOVA and Post-hoc t-test Results on /æ/: Natalie
(Categories inside the same colored circle or oval indicates no statistical difference,
and the red line divides pre-nasal and elsewhere environments)

![Graph showing F1 and F2 results for /æ/ by Recoded Environment: Natalie]

F1 ($F(5, 105) = 11.7038, p < 0.0001$) F2 ($F(5, 105) = 21.5457, p < 0.0001$)

/æ/ by Recoded Environment: Natalie

showing a clear distinction between the distribution of pre-nasal /æ/ and others (see
figures 6.20 and 6.21). Natalie’s overall patterns of /ɔ/ and /æ/ corresponds to the findings
in previous sections. Regarding intra-speaker variation by topic, Natalie’s /ɔ/ height
showed a significant correlation with interview topic\(^{68}\). Table 6.14 summarizes the results
and the following list briefly describes each of Natalie’s topics.

Table 6.14. Results of Multivariate Regression Analyses on /ɔ/ Height by Interview
Topic: Natalie

<table>
<thead>
<tr>
<th>Factor</th>
<th>Significance</th>
<th>Coefficients</th>
<th>N</th>
<th>Raw Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interview Topics</td>
<td>p = 0.0474*</td>
<td>Community</td>
<td>2</td>
<td>967.261</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Language</td>
<td>1</td>
<td>955.383</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Family</td>
<td>12</td>
<td>842.366</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Growing up</td>
<td>4</td>
<td>827.859</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Interviewer</td>
<td>5</td>
<td>816.377</td>
</tr>
</tbody>
</table>

\(^{68}\) Topic ‘Introduction’ is where the interviewee introduces herself/himself at the starting of the interview,
generally upon the interviewer’s request, such as “can you introduce yourself?”
• Topics in table 6.14

- Community: Natalie talks about her former community, ‘Fort Lee’.
- Language: Natalie talks about languages (both Korean and English) of Korean Americans in Bergen County and herself.
- Family: Natalie talks about her family members (her mother, father, and older sister).
- Growing up: Natalie talks about her experience while growing up with her sister.
- Interviewer: Natalie talks about the interviewer mostly concentrated in the starting and ending of the interview. During this topic, she asks a number of questions of the interviewer because she was planning to put a posting on her video blog about this interview (which she never did).

Natalie’s /ɔ/ height shows a strong lowering correlation with the topics ‘community’ and ‘language’, while most of the other topics (‘family’, ‘growing up’, and ‘interviewer’) are correlated with raising of the /ɔ/ nucleus. Interestingly, ‘growing up’ and ‘family’ were the topics where Natalie showed her negative stance towards Korean ideologies or Korean Americans in the community. The following excerpt (14) provides excerpts from Natalie’s sociolinguistic interview by various topics.

(14) Natalie’s sociolinguistic interview
(during the topic ‘Community’)

712 Natalie: when there was um, a whole article, or there was some newspaper
stuff, because they were trying to hire a…

713 a Korean police officer.

714 for Palisades Park.

715 do you remember that?

716 yeah, but they didn’t have any at that time.

717 but they were specifically looking for a Korean one

…

718 well, that's the- I just- I- I really like it, I- I'm very,

719 proud that there's like a huge,

720 Korean population and it's growing

721 like, I missed the Korea town.

722 For example in N- in New York, it's so small, but then you would go to

723 China town, it's like humongous, so

724 Me: Yeah.

725 Natalie: in a way I wish,

726 there were more Palisades Park

727 you know, around the country, because

728 you know the Korean culture should be more prominent,

729 here.

730 It's like food, people know Chinese food,

731 Japanese food and it's so popular and

732 it's getting there, the Korean food I think,

733 but it's not as
accessible and you know
so,
I mean that's definitely a pro.
Now people can go there and
go see the…
H marts or whatever, and try different foods and stuff…

(during the topic ‘language’)

Natalie: I cannot go without eating kimchi or like foods
I love my Korean dramas, I love everything in Korean
Me: So you feel more attached to Korean…
Natalie: oh yeah,
oh for sure, yeah
Me: Do you speak Korean fluently?
Natalie: I speak, yeah I speak fluently
mhm, I can write too.
Me: you can write!
Natalie: yeah! My handwriting is pretty bad, but I can thi- I- I can do it
Me: still, that’s pretty impressive.
Natalie: well because my parents taught me before we came here?
and then,
when we moved here, they-
we spoke Korean at home, always.

'taught' /ə/ F1: 955.383 Hz
Me: oh, I see… I see I see…

wow, that’s- that’s pretty impressive.

Natalie: yeah, I’m really glad that I remember that’s…

I know like my cousins, they don’t remember, and they wish that they know how to speak it…

yeah…

…

people can be proud of their ethnicity ‘cause that’s who they are, like my mom always says like, your elkwal (face) is Korean

no matter what,

so you should just,

be proud of that

(during the topic ‘growing up’)

Natalie: when I was in school,

I- you know, I didn’t really look favorly- favorably on the Korean students who didn’t want to, mingle with other students, I don’t know if you saw that, but,

…

they wanted to just speak Korean
and I just didn’t think that was-

it didn’t look good, you know what I mean?

…

and it’s that like they were like segregating themselves

and I was like, well, what I was concerned about, because

if Palisades Park, for example is so Koreanized like that

it’s- you’re almost like just,

(silence)

setting yourself apart from everybody else, you know what I mean?

(during the topic ‘family’)

Me: Are you aware of the expression sacca (occupations ending with the

syllable –sa: occupations that are considered as highly prestigious in

Korean ideology)?

Natalie: No.

Me: maybe, maybe you weren’t actually forced to do anything-

those kind of like…

special jobs like, you know…doctors, lawyers…

Natalie: oh…

what does that mean?

…

ah… uysa (a medical doctor), ah, I see I see I see…

I see, that’s so funny
1225  Me:  so sacca is…

1226  Natalie:  that you have to be a sacca

…

1234  well, we were um, encouraged to marry one, though

1235  that’s… (laughter)

1236  Me:  (laughter) okay!

1237  Natalie:  maybe if you were a boy

1238  they would’ve thought that, I don’t know, yeah

1239  did you succeed?

1240  Natalie:  no I did not, I never wanted to marry one of those

1241  well, no, that’s not true.

1242  I didn’t want to marry someone for their,

1243  Me:  right…

1244  Natalie:  occupation…

In her comments on the Korean community in Bergen County, Natalie states that the presence of a huge Korean American community in Palisades Park and Fort Lee is a very good thing (line 946) and she is also proud of it (line 947). She even says that there should be more large Korean American communities like Palisades Park across the United States (lines 953-954). During the topic ‘language’ she states that she is really glad that she did not forget how to write in Korean (line 1462) and her utterances in lines 1464-1473 indicate that her ability to speak and write in Korean gives her ethnic pride, which all Korean Americans should have. While the words containing /a/ vowel in topics
‘community’ and ‘language’ show relatively low /ɔ/ nucleus, /ɔ/ tokens in topics ‘growing up’, ‘family’, and ‘interviewer’ showed relatively high /ɔ/ nucleus (lower /ɔ/ F1). During the topic ‘growing up’, she criticizes Koreans in Bergen County for their Korean-only attitude (lines 728-752). Also, during the topic ‘family’, she shows her opposing opinion on the ‘Korean ideology of occupation being one of the major factor in choosing spouses’ (lines 1242 and 1244). Similar to the case of Alice discussed above, it is interesting to see her negotiation of her /ɔ/ height by interview topics that it seems to be the case where Natalie is also utilizing the feature to construct desired identities by lowering the nucleus in topics where she aligns to Korean elements and ideologies, while raising the nucleus when she wants to disalign from Korean ideologies. This suggests that the lowering of her /ɔ/ nucleus is a way for her to portray desired identities or distance herself from undesired identities. However, her /ɔ/ raising during the topic ‘interviewer’ remains somewhat mysterious, since she does not overtly express her stances towards or away from Koreanness when talking about this topic. One possible explanation is that, as noted above, when she is talking about and to the interviewer, she is herself taking the role of interviewer who is creating a blog post for a worldwide audience that extends beyond the local Korean American community and usually does not include or promote any Korean American elements. Hence, she may be downplaying this aspect of her identity when talking to/about me.

The next speaker is Hank, who is a male second generation Korean American Buddhist living in Fort Lee. Tables 6.15 through 6.16, and figures 6.22 through 6.23 summarize Hank’s production pattern results on his /ɔ/ and /æ/.
Table 6.15. Speaker Pillai Score, Euclidean Distance, and /æ/-/ɔ/ Difference: Hank

<table>
<thead>
<tr>
<th>/æ/-/ɔ/ F1 Difference</th>
<th>/æ/-/ɔ/ Pillai Score</th>
<th>/æ/-/ɔ/ Euclidean Distance</th>
<th>/æ/ Nasal Pillai Score</th>
<th>/æ/ Nasal Euclidean Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.396</td>
<td>0.51631***</td>
<td>0.95588493</td>
<td>0.51631***</td>
<td>0.805046583</td>
</tr>
</tbody>
</table>

Figure 6.22. Speaker Vowel Space: Hank (/æ/ by recoded following environment)

Table 6.16. Speaker Mean Normalized F1 and F2: Hank

<table>
<thead>
<tr>
<th>Speaker</th>
<th>Vowel</th>
<th>N</th>
<th>F1</th>
<th>F2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hank</td>
<td>/ɑ/</td>
<td>146</td>
<td>0.703</td>
<td>-0.897</td>
</tr>
<tr>
<td>Hank</td>
<td>/i/</td>
<td>130</td>
<td>-1.621</td>
<td>1.322</td>
</tr>
<tr>
<td>Hank</td>
<td>/ɔ/</td>
<td>62</td>
<td>0.307</td>
<td>-1.767</td>
</tr>
<tr>
<td>Hank</td>
<td>/u/</td>
<td>29</td>
<td>-1.488</td>
<td>-0.794</td>
</tr>
<tr>
<td>Hank</td>
<td>Front Nasal-Closed</td>
<td>49</td>
<td>-0.055</td>
<td>0.724</td>
</tr>
<tr>
<td>Hank</td>
<td>Front Nasal-Open</td>
<td>16</td>
<td>0.247</td>
<td>0.543</td>
</tr>
<tr>
<td>Hank</td>
<td>Mad Bad Glad</td>
<td>16</td>
<td>0.346</td>
<td>0.171</td>
</tr>
<tr>
<td>Hank</td>
<td>NYC lax</td>
<td>156</td>
<td>0.569</td>
<td>0.144</td>
</tr>
<tr>
<td>Hank</td>
<td>NYC tense</td>
<td>7</td>
<td>0.313</td>
<td>0.072</td>
</tr>
<tr>
<td>Hank</td>
<td>Velar Nasal</td>
<td>17</td>
<td>0.016</td>
<td>0.758</td>
</tr>
<tr>
<td>Hank</td>
<td>Voiceless Fricative</td>
<td>46</td>
<td>0.694</td>
<td>-0.019</td>
</tr>
</tbody>
</table>
Hank’s /ɔ/ is statistically distinct from /ɑ/, and his /ɔ/ qualifies as a raised /ɔ/ (Labov Telsur G normalized F1: 677.604 Hz). Hank’s /æ/ pattern is a continuous system, where there is no noticeable space between the distribution of pre-nasal environments and others. Overall, his /ɔ/ and /æ/ patterns correspond to the findings in previous sections by

Table 6.17. Results of Multivariate Regression Analysis on /ɔ/ Height by Interview Topic: Hank

<table>
<thead>
<tr>
<th>Factor</th>
<th>Significance</th>
<th>Coefficients</th>
<th>N</th>
<th>Raw Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interview Topics</td>
<td>p = 0.000385***</td>
<td>Language</td>
<td>12</td>
<td>667.358</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Days in Korea</td>
<td>7</td>
<td>654.944</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Anime</td>
<td>4</td>
<td>646.517</td>
</tr>
<tr>
<td></td>
<td></td>
<td>College</td>
<td>6</td>
<td>652.094</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Family</td>
<td>13</td>
<td>644.128</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Work</td>
<td>14</td>
<td>629.484</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Army days</td>
<td>5</td>
<td>614.199</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diet</td>
<td>4</td>
<td>528.555</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Religion</td>
<td>2</td>
<td>534.979</td>
</tr>
</tbody>
</table>
showing a continuous /æ/ system and /ɔ/ distinct from /ɑ/. His /ɔ/ height showed a significant correlation with the interview topic. Table 6.17 summarizes the results with a following list describing his topics.

- Topics in table 6.17
  - Language: Hank talks about languages (both Korean and English) of Korean Americans in Bergen County and himself.
  - Days in Korea: Hank talks about his visits to Korea when he was little.
  - Anime: Hank talks about a Japanese animation series that he currently enjoys watching.
  - College: Hank talks about the difference between his life in college before and after his Army career.
  - Family: Hank talks about his family members (his mother, father, brother and sister) and his parents’ story of their settlement in the US.
  - Work: Hanks talks about his company that he is working for, and its work environment.
  - Army days: Hank talks about his experience during his service in the US Army.
  - Diet: Hank talks about his own diet and the way people should eat and should not eat.
  - Religion: Hank talks about his religion and criticizes Korean American Protestants in the community.
According to the results in table 6.17, Hank’s higher /ɔ/ (thus lower F1) shows significant correlation with the topics ‘Army days’, ‘Diet’, and ‘Religion’, while other topics show correlations with lower /ɔ/ (thus higher F1). During most of the topics, he remains fairly neutral towards the Korean community and his experiences in Korea (during the topics ‘days in Korea’, ‘Anime’, ‘college’, ‘family’, and ‘work’, showing neither overtly negative nor overtly positive stances, nor does not talk about Korean-related issues at all (during the topics ‘army days’ and ‘diet’). Interestingly, Hank shows the strongest correlation between higher /ɔ/ and topic religion (Coefficient: -94.025 Mean: 534.979), a surprising result given that his religion, Buddhism, was discussed to be associated with lowering the /ɔ/ nucleus. Also considering that he also considers raised /ɔ/ to be a disfavored stereotypical feature (see lines 2269-2296 during the topic ‘Language’ in excerpt 15 below), his employment of raised /ɔ/ is performative (line 2294). The following excerpt shows his criticism of Protestant people in the community and his comments on raised /ɔ/.

(during the topic ‘religion’)

1967   Hank: I've been to church, like we're-
1968   when we were younger, we went to church.
...
2005   Hank: I- I feel like too, like growing up, we had a lot of,
2006   kids, 'cause there are a lot of Koreans kids that were Christians,
2007   um,
go to church and stuff like that, and they use it as a,
forum to hook up
instead of actually
do what you're supposed to be at church for, right, so,
because of that, I saw that as very hypocritical,
of…
the whole tenet of why you go to a religious service…

…

Hank: right? and even if I don't go
to- to,
to church,
right? even though they say it
if their, if the god is compassionate or whatever right?
Like,
they sh- you should be judged for your actions, and I think the pope just
came out and said like people who do not go to church,
as long as they live- live good lives
can go to heaven.
Yeah,
you know, but I just feel like there's a lot of
really fanatical hypocritical,
people in the church, and I just don't want to be around them
and I feel like every church has
some people like that they're like

that push religion on you a lot more, than you're comfortable with

and you just don't want it.

...

Hank: like I said, I grew up very American.

...

Hank: …and stuff like that, right? And I’m like, uh, because I was hooked on to phonics,

when I was a kid?

So like, I actually know how to pronounce words?

Right? But yeah, they- they expected it to be like um…

(pause)

like a little, like more accented I guess…

...

Hank: we didn’t have any kids from New York that have like, the thick- like

what you would consider of New York slash New Jersey Accent,

like coffee [kɔˈfi],

and stuff like that, we didn’t have anyone,

like that, um…

In his case, it seems that Hank is associating the lowering of /ɔ/ with Korean American Protestants, which he excessively criticizes during topics ‘Religion’ (excerpt 15 lines 1967-2134) and ‘Language’ (lines 2269-2296). Hank harshly criticizes Korean American
Protestants in the community by describing them as ‘fanatical and hypocritical’ (lines 1967-2065). Additionally, after he makes these negative comments, he states that he feels that way because he ‘grew up very American’ (line 2134). During this discussion, then, he disaligns from general Korean American society (which is predominantly Protestant); this alignment is indicated in (and partly constructed by) his use of raised /ɔ/, which has been shown to be associated with alignment away from the general Korean American society, which he considers as predominantly Protestant.

Now, we turn to the speaker, Ben, who shows topic-based correlations with /æ/. Tables 6.18 through 6.19 and figures 6.23 through 6.24 summarize Ben’s production pattern results on his /ɔ/ and /æ/.

Ben is a 1.5 generation male Korean American who lives in Palisades Park. He is a Protestant and he goes to a younger generation church every weekend. Ben’s low-back Pillai score indicates that his /ɔ/ is statistically distinct from /ɑ/, and the mean F1 of his /ɔ/ is 694 Hz (Labov Telsur G normalized value), indicating that his /ɔ/ can be categorized as a raised /ɔ/. Ben’s tensing pattern of /æ/ is a continuous system in both F1 and F2 dimensions (see figures 6.24 and 6.25), which does not have a noticeable empty space between the distributions of pre-nasal tokens and tokens elsewhere. Moreover, the ANOVA and individual post-hoc t test results (figure 6.25) also show several overlaps between the following environments, thus not showing a clear-cut distinction between the pre-nasal and other environments. Overall, Ben’s production patterns of /ɔ/ and /æ/ correspond to the findings from previous sections by showing a continuous system of /æ/ and /ɔ/ distinct from /ɑ/. Ben’s intra-speaker variation by interview topic showed a significant correlation between the frontness (F2) of pre-nasal /æ/ tokens (p = 0.00446**)
Table 6.18. Speaker Pillai Score, Euclidean Distance, and /α/-/ɔ/ Difference: Ben

<table>
<thead>
<tr>
<th>/α/-/ɔ/ F1 Difference</th>
<th>/α/-/ɔ/ Pillai Score</th>
<th>/α/-/ɔ/ Euclidean Distance</th>
<th>/æ/ Nasal Pillai Score</th>
<th>/æ/ Nasal Euclidean Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.309</td>
<td>0.47947***</td>
<td>0.791784061</td>
<td>0.19128***</td>
<td>0.365833295</td>
</tr>
</tbody>
</table>

Figure 6.24. Speaker Vowel Space: Ben (/æ/ by recoded following environment)

Table 6.19. Speaker Mean Normalized F1 and F2: Ben

<table>
<thead>
<tr>
<th>Speaker</th>
<th>Vowel</th>
<th>N</th>
<th>F1</th>
<th>F2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ben</td>
<td>/α/</td>
<td>72</td>
<td>0.59</td>
<td>-0.7</td>
</tr>
<tr>
<td>Ben</td>
<td>/i/</td>
<td>47</td>
<td>-1.783</td>
<td>1.616</td>
</tr>
<tr>
<td>Ben</td>
<td>/ɔ/</td>
<td>25</td>
<td>0.281</td>
<td>-1.429</td>
</tr>
<tr>
<td>Ben</td>
<td>/u/</td>
<td>5</td>
<td>-1.343</td>
<td>-1.529</td>
</tr>
<tr>
<td>Ben</td>
<td>Front Nasal-Closed</td>
<td>13</td>
<td>0.246</td>
<td>0.44</td>
</tr>
<tr>
<td>Ben</td>
<td>Front Nasal-Open</td>
<td>6</td>
<td>0.368</td>
<td>0.132</td>
</tr>
<tr>
<td>Ben</td>
<td>Mad Bad Glad</td>
<td>7</td>
<td>0.655</td>
<td>0.037</td>
</tr>
<tr>
<td>Ben</td>
<td>NYC lax</td>
<td>62</td>
<td>0.382</td>
<td>0.103</td>
</tr>
<tr>
<td>Ben</td>
<td>Velar Nasal</td>
<td>2</td>
<td>0.328</td>
<td>1.019</td>
</tr>
<tr>
<td>Ben</td>
<td>Voiceless Fricative</td>
<td>12</td>
<td>0.589</td>
<td>-0.072</td>
</tr>
</tbody>
</table>
One-Way ANOVA and Post-hoc t-test Results on /æ/: Ben (Categories inside the same colored circle or oval indicates no statistical difference, and the red line divides pre-nasal and elsewhere environments)

F1 \( (F(5, 96) = 2.9479, p = 0.0161) \)

by Recoded Environment: Ben

while pre-nasal /æ/ F1 and /ɔ/ F1 did not show any significant correlation with topic (all p values over 0.05). Table 6.20 summarizes the results with a following description of Ben’s topics.

Table 6.20. Results of Multivariate Regression Analysis on Pre-nasal /æ/ Frontness by Interview Topic: Ben

<table>
<thead>
<tr>
<th>Factor</th>
<th>Significance</th>
<th>Coefficients</th>
<th>N</th>
<th>Raw Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interview Topics</td>
<td>p = 0.00944**</td>
<td>Growing up</td>
<td>1</td>
<td>1824.260</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Religion</td>
<td>2</td>
<td>1734.809</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Language</td>
<td>1</td>
<td>1581.759</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Community</td>
<td>10</td>
<td>1608.171</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Family</td>
<td>6</td>
<td>1548.097</td>
</tr>
</tbody>
</table>

- Topics in table 6.20
  - Growing up: Ben talks about his experience growing up in the community and describes the reason why he and his family had to move out from Palisades
Park to Closter (another Bergen County municipality, in which there were no Koreans back then) in order to stay away from school violence caused by new Korean immigrant students.

- Religion: Ben talks about his religion and his church.
- Language: Ben talks about the language of Korean Americans in the community and himself.
- Community: Ben talks about his community, Palisades Park.
- Family: Ben talks about his family members (his mother, father, younger brother, and cousins in the US).

The results show that Ben’s F2 value of /æ/ correlate with the interview topic, where his fronting of /æ/ shows positive correlation with the topics ‘Growing up’ and ‘Religion’, while showing negative correlations with other topics. Revisiting the discussion on the association between the degree of pre-nasal /æ/ tensing and local identity, we have seen that the local Bergen County identity seems to be associated with tense pre-nasal /æ/ while ‘localness’ is erased by reducing the degree of pre-nasal /æ/ tensing. In addition, more tensing of pre-nasal /æ/ can be seen as an act of minimizing ethnic identity relative to local identity. Excerpt (16) is from Ben’s interview during the topic ‘Growing up’.

**Excerpt (16)**

**Ben’s sociolinguistic interview**

*(during the topic ‘growing up’)*

257 Ben: I basically left, because um...
school violence was getting crazy?
Yeah,
yeah…
like, all these like Korean kids started coming in.

Well, in middle school,
which is like the same thing as high school.

So, I think that's the bad thing. You have- you mix thirteen years olds with eighteen years old, seventeen years olds,

and that is straight from Korea,

and they have that Korean thing, where you have to like, insa (bowing to seniors) and everything?

and I think that's bad, 'cause I grew up here and like I'm looking at like,

kids that are five years older than me,

and,
yeah,

they're like, beating kids up and like that are like you know,
in middle school, seventh graders, yeah, yeah…
yeah, yeah

the gangs are getting bad too…
yeah, so like…
it was in the news and everything, like kids from like,
it’s like…
Ben shows a negative attitude towards Palisades Park and Korean people who have just come into the community when he talks about his past school days when he was growing up in the community. In fact, Ben states that he actually had to leave Palisades Park during his middle school years because of the school violence, and he considers this to be related to Korean hierarchical values being forced on students by other students who just came from Korea (lines 264-267), and interestingly, he fronts pre-nasal /æ/ more during his growing up in Palisades Park story. This intra-speaker variation in pre-nasal /æ/ frontness (represented by F2 value) associated with topic suggests that Ben is trying to erase the Palisades Park identity by tensing pre-nasal /æ/ more, which fortifies the local Korean ‘American’ identity. On the other hand, the strongest correlation with not fronting the pre-nasal /æ/ was with the topic ‘family’. However, in this case, the variability may seem to be due to linguistic rather than stylistic factors, since all lexical items in the ‘family’ topic with /æ/ followed by nasal are in open syllables, while those in the other topics were in closed syllables, with the former type being backer and lower than the
latter. Further, in the ‘family’ topic, Ben does not talk about anything that is related to projecting his stance or identity towards the community or Koreanness.

Now we turn to the speakers who show noteworthy patterns. John and Ron show patterns different from the group patterns reported in previous sections, while Frank show intentional employment of \( /\sigma/ \) lowering when talking about the stereotypical New Jersey accent. Tables 6.21 through 6.22 and figures 6.26 through 6.27 summarize John’s production pattern results on his \( /\sigma/ \) and \( /\alpha/ \).

John is a male second generation Korean American who lived in Palisades Park until recently, and moved to Weehawken, which is located in Hudson County, New Jersey. He still goes to a younger generation church in Bergen county, and visit Palisades Park very often. John shows a statistically significant distinction between \( /\alpha/ \) and \( /\alpha/ \), and his F1 of \( /\sigma/ \) is 696.177 Hz (Labov Telsur G normalized value), which is in a slightly higher position than the standard of the raised \( /\sigma/ \), thus qualifying as one. John’s distributions of \( /\alpha/ \) by following environments show that he is involved in producing a nasal split system, rather than a continuous system. Additionally, his Pillai score for pre-nasal \( /\alpha/ \) tensing shows the highest score (0.64357) among all Palisades Park speakers (it is also the fourth highest Pillai score among all speakers), indicating that he is the speaker with the least correspondence to the finding that Palisades Park speakers showed significant correlation with minimizing the degree of pre-nasal \( /\alpha/ \) tensing. This relatively high degree of pre-nasal \( /\alpha/ \) tensing for a Palisades Park resident can be understood by considering his comments on his personal background. Although he has lived in Palisades Park for about ten years (roughly a third of his life), he lived in Montville Township in Morris County (where 83% of the population is White and only 0.02% of
Table 6.21. Speaker Pillai Score, Euclidean Distance, and /ɑ/-/ɔ/ Difference: John

<table>
<thead>
<tr>
<th>/ɑ/-/ɔ/ F1 Difference</th>
<th>/ɑ/-/ɔ/ Pillai Score</th>
<th>/ɑ/-/ɔ/ Euclidean Distance</th>
<th>/æ/ Nasal Pillai Score</th>
<th>/æ/ Nasal Euclidean Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.529</td>
<td>0.80243***</td>
<td>1.257665297</td>
<td>0.64357***</td>
<td>0.896413409</td>
</tr>
</tbody>
</table>

Figure 6.26. Speaker Vowel Space: John (/æ/ by recoded following environment)

Table 6.22. Speaker Mean Normalized F1 and F2: John

<table>
<thead>
<tr>
<th>Speaker</th>
<th>Vowel</th>
<th>N</th>
<th>F1</th>
<th>F2</th>
</tr>
</thead>
<tbody>
<tr>
<td>John</td>
<td>/ɑ/</td>
<td>28</td>
<td>0.794</td>
<td>-0.725</td>
</tr>
<tr>
<td>John</td>
<td>/i/</td>
<td>25</td>
<td>-1.514</td>
<td>1.475</td>
</tr>
<tr>
<td>John</td>
<td>/ɔ/</td>
<td>12</td>
<td>0.265</td>
<td>-1.866</td>
</tr>
<tr>
<td>John</td>
<td>/u/</td>
<td>11</td>
<td>-1.306</td>
<td>-0.895</td>
</tr>
<tr>
<td>John</td>
<td>Front Nasal-Closed</td>
<td>9</td>
<td>0.068</td>
<td>0.643</td>
</tr>
<tr>
<td>John</td>
<td>Mad Bad Glad</td>
<td>2</td>
<td>0.311</td>
<td>-0.096</td>
</tr>
<tr>
<td>John</td>
<td>NYC lax</td>
<td>27</td>
<td>0.631</td>
<td>0.186</td>
</tr>
<tr>
<td>John</td>
<td>Velar Nasal</td>
<td>4</td>
<td>-0.153</td>
<td>0.8</td>
</tr>
<tr>
<td>John</td>
<td>Voiceless Fricative</td>
<td>10</td>
<td>0.862</td>
<td>-0.092</td>
</tr>
</tbody>
</table>
Figure 6.27. One-Way ANOVA and Post-hoc t-test Results on /æ/: John (Categories inside the same colored circle or oval indicates no statistical difference, and the red line divides pre-nasal and elsewhere environments)

![Figure 6.27](image)

the population is Asian, according to the US Census Bureau, 2010), which is not far away from Bergen County, before he moved to Palisades Park. Also, even though he lived in Palisades Park for about 10 years, his comments on Palisades Park and the Korean community in Bergen County indicate that he does not possess a strong connection to the Bergen County Korean American community compared to other interviewees in this study. Although he visited Bergen County very often before he moved to Palisades Park, he states that his formative years were very different from Korean Americans in Bergen County, since where he grew up, Morris County, is predominantly a White Area. The following excerpt (17) shows John’s comments on his former community.

(17) John’s sociolinguistic interview

(during topics ‘growing up’ and ‘community’)

229
John: yeah yeah, my parents live actually down the street…

Yeah.

Me: oh, I see…

John: uh, I lived in… Montville.

yeah, that’s um, out west,

like maybe like, thirty- thirty minutes,

west from here?

yeah,

still Jersey, um…

but my- so, my,

probably like experience growing up

is probably much different than

people that’s grown up here, like Jay for instance

um, he’s grown up here

since, yeah, like since, you know,

since, he came from Korea, so,

you know, he’s

grown up,

here, but I didn’t grow up here

…

Me: So, have you- have you ever heard of this like, growing Korean

community when you were living in uh…

John: uh, yeah, I mean, um,
I’ve always,
came out here like on the weekends?
‘cause,
yeah, um…
‘cause you know, get- to get my hair cut, like you know,
like, groceries, you know, my mom,
go take us groceries, um,
you know, it was just,
there was a vibrant Korean community,
even you know
in the early nineties…

Me: so you already have- had uh…a lot of friends here when you were uh,
living in Morris County?

John: uh, I had a few- I had a couple, you know, uh, I had a couple friends
but, um… mostly I met them in college, yeah
so…
I mean, I come out here when I was in high school, things like that you
know,
PCbangs (Korean online computer game cafes) and…
you know, pool halls, whatever with people but,
um…
but for the most part, I think like,
close net friends, um…

yeah, I- you know, in college…

Me: So, uh, compared to Morris County…

what would you say… like, as a difference between-

John: oh yeah, huge, I mean, I’ve lived primarily we- uh, with you know a
lot of just,

uh, Americans, White Americans, uh…

you know, so…

um…

yeah, you’re not gonna find,

Broad Avenue,

you know,

in Morris County, I mean the streets are wide and number one,

um…

and there’s not,

like there’s no packets of…

uh… different cultural-

you know, um…

…

Me: uh… what kind of, uh, friends- uh what kind of gang…

should I say, or groups…?

group of friends you uh…

usually hung out with?
John: outside of school?

or, at school?

Me: at school… outside…

John: I mean, at school, I was friends with everybody.

um…

like…

yeah, it was a White school, I mean, there was a few Asians here and there… uh, Indians, uh…

you know um,

whatever whatever, but,

um, yeah, I mean,

you know, uh,

I- I was friendly with,

the jocks, I was friendly with,

theater people, I was,

friendly with…

kids in bands,

I was friendly with, you know, um,

the- the burnouts,

um…

yeah,

yeah yeah potheads or whatever you want to call it…

(silence)
(silence)

Me: So uh… and
you didn’t…
you didn’t- so outside the school, you had a lot of Korean friends then?

John: uh, not necessarily, um, I mean,
there was a few Chinese people that I hung out with,
um, but I mostly hung out with,
um…
I didn’t really hang out much after school, um,
but if I did, I’d hang out with, like, you know, um,
like- like…
a few friends that I rode bikes- bikes with?
like, you know, BMX bikes?
um,
yeah, that was,
I used to- I used to-
uh, my friends were really good, I wasn’t that good, but my friends were really good
...
I mean, once I moved to- once I moved away to here,
like, to Bergen, like, it’s just been
I’ve-
there was really no reason for me to go back, you know, so
John states that his formative years were very different from other Korean Americans who mostly grew up in Bergen County (excerpt 17: lines 34 – 73) because where he grew up (Montville, Morris County) is very different from Bergen County. Even though John reports that he visited Palisades Park often when he was living in Montville (lines 65 - 75), he states that he did not socialize much with people who shared the same ethnic background with him (lines 265 – 272, 664 - 672). Therefore, even though he does seem to be satisfied and pleased with Bergen County (lines 687 - 690), based on his comments and his background, he seems to be a little bit different from other interviewees who show stronger connection to Bergen County and mainly socialize with other Korean Americans. Therefore, I suggest that John can be considered as the speaker with the least connection to Palisades Park among the participants who are from Palisades Park. Regarding intra-speaker variation patterns by interview topics, there were no significant correlations between interview topics and the two variables.

Ron is a male 1.5 generation Korean American Protestant living in Palisades Park. He first migrated to Hawai‘i at the age of five, and moved to Bergen County during his middle school years. He goes to a younger generation church in Bergen County almost every week. Tables 6.23 through 6.24 and figures 6.28 through 6.29 summarize Ron’s production pattern results on his /ɔ/ and /æ/.

As we can see in table 6.23, Ron’s significance level of /ɔ/-/ɑ/ Pillai score indicates that his /ɔ/ is statistically distinct from /ɑ/, with the /ɔ/ F1 of 645.9 Hz (Labov Telsur G normalized value), which meets the standard for a raised /ɔ/. His /æ/ distribution show a
Table 6.23. Speaker Pillai Score, Euclidean Distance, and /æ/-/ɔ/ Difference: Ron

<table>
<thead>
<tr>
<th>/æ/-/ɔ/ F1 Difference</th>
<th>/æ/-/ɔ/ Pillai Score</th>
<th>/æ/-/ɔ/ Euclidean Distance</th>
<th>/æ/ Nasal Pillai Score</th>
<th>/æ/ Nasal Euclidean Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.672</td>
<td>0.77917***</td>
<td>1.022753636</td>
<td>0.1503**</td>
<td>0.374897319</td>
</tr>
</tbody>
</table>

Figure 6.28. Speaker Vowel Space: Ron (/æ/ by recoded following environment)

Table 6.24. Speaker Mean Normalized F1 and F2: Ron

<table>
<thead>
<tr>
<th>Speaker</th>
<th>Vowel</th>
<th>N</th>
<th>F1</th>
<th>F2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ron</td>
<td>/ɑ/</td>
<td>51</td>
<td>0.801</td>
<td>-0.686</td>
</tr>
<tr>
<td>Ron</td>
<td>/i/</td>
<td>45</td>
<td>-1.451</td>
<td>1.436</td>
</tr>
<tr>
<td>Ron</td>
<td>/ɔ/</td>
<td>21</td>
<td>0.129</td>
<td>-1.457</td>
</tr>
<tr>
<td>Ron</td>
<td>/u/</td>
<td>12</td>
<td>-1.343</td>
<td>-1.001</td>
</tr>
<tr>
<td>Ron</td>
<td>Front Nasal-Closed</td>
<td>12</td>
<td>0.179</td>
<td>0.348</td>
</tr>
<tr>
<td>Ron</td>
<td>Front Nasal-Open</td>
<td>2</td>
<td>0.686</td>
<td>0.11</td>
</tr>
<tr>
<td>Ron</td>
<td>Mad Bad Glad</td>
<td>1</td>
<td>0.155</td>
<td>0.567</td>
</tr>
<tr>
<td>Ron</td>
<td>NYC lax</td>
<td>34</td>
<td>0.466</td>
<td>0.179</td>
</tr>
<tr>
<td>Ron</td>
<td>NYC tense</td>
<td>3</td>
<td>0.592</td>
<td>0.409</td>
</tr>
<tr>
<td>Ron</td>
<td>Velar Nasal</td>
<td>10</td>
<td>0.364</td>
<td>0.318</td>
</tr>
<tr>
<td>Ron</td>
<td>Voiceless Fricative</td>
<td>17</td>
<td>0.799</td>
<td>-0.275</td>
</tr>
</tbody>
</table>
pattern that does not seem to be close to any of the patterns of Bergen Korean Americans in this study (neither the continuous pre-nasal /æ/ tensing pattern nor the nasal split pattern) (figures 6.28 and 6.29). Moreover, Ron’s /æ/ pattern cannot be fully understood when compared with the findings regarding the Palisades Park speakers and their reduced degree of /æ/ in pre-nasal environments, since other Palisades Park residents at least have pre-nasal /æ/s in a relatively high front position, even though less so than residents of other areas in this study. Rather than tensing /æ/ in the pre-nasal environment, Ron seems to be maintaining the /æ/ features of Hawai‘ian English, where /æ/ remains in low position regardless of the following environment (Drager 2012). In this case, then, Ron should be also producing the low-back merger, since, as reported in Drager, Clifford, and Hay (2011), young speakers in Hawai‘i show a completed low-back merger. However, considering the higher social salience of the regional /ɔ/ than that of /æ/, Ron may have
adopted the regional /ɔ/-/ɑ/ distinction after he moved to Bergen County, while the /æ/ nasal tensing was not adopted. It is beyond the scope of this dissertation to ascertain whether one of these acquisition processes may be more complex than the other – that is, acquiring a new phoneme (in this case, acquisition of /ɔ/) or a new phonological rule (in this case, tensing /æ/ in pre-nasal environment). Theoretically, phonemic distinctions should be quite difficult to acquire when one has natively learned a merged system (i.e. of /ɔ/ and /ɑ/); however, /æ/ tensing may be difficult to learn as well, since it is conditioned by an at least somewhat complex phonological rule. (See Chambers 1992, for a now-classic discussion of the various factors affecting second dialect acquisition, including features governed by simple vs. complex rules.) Interestingly, during the interview topic ‘language’, he actually states that his pronunciation is now different from the Hawai‘ian English. The following excerpt shows his comments on the Hawai‘ian accent.

(18) Ron’s sociolinguistic interview
(during the topic ‘language’)

921 Ron: um, in Hawai‘i, they have their own accent.
922 they call it-
923 they call it pidgin.
924 it's just that,
925 different form of talking?
926 i- if you go over to the south,
927 you know they have their own way of talking.
if you go to the west coast, and they have the-
if you go to the west coast,
you know they have their own form of talking.

...um, I forgot how to do it

In lines 921-925, Ron states that Hawai‘ian people use their own accent, and he forgot how to do it (line 937), indicating that he considers himself to be no longer a speaker of Hawai‘ian English. However, his adoption of regional patterns seems to not be perfect, since his /æ/ seems to be showing a pattern that is similar to that of the Hawai‘ian /æ/ pattern. In this sense, his general patterns for /ɔ/ can be seen as a feature that he adopted after coming to Bergen County due to the relatively high salience of variants of /ɔ/ in the area, while his adoption of pre-nasal /æ/ tensing is imperfect due to its relatively low social salience. However, Ron’s /ɔ/ height and pre-nasal /æ/ did not show any significant variation between interview topics.

Frank is a male second generation Korean American Protestant but he seldom goes to his younger generation church. Tables 6.25 through 6.26 and figures 6.30 through 6.31 summarize Frank’s production pattern results on his /ɔ/ and /æ/.

Table 6.25. Speaker Pillai Score, Euclidean Distance, and /ɑ/-/ɔ/ Difference: Frank

<table>
<thead>
<tr>
<th>/ɑ/-/ɔ/ F1 Difference</th>
<th>/ɑ/-/ɔ/ Pillai Score</th>
<th>/ɑ/-/ɔ/ Euclidean Distance</th>
<th>/æ/ Nasal Pillai Score</th>
<th>/æ/ Nasal Euclidean Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.511</td>
<td>0.80898***</td>
<td>0.841832525</td>
<td>0.70969***</td>
<td>1.154715982</td>
</tr>
</tbody>
</table>
Figure 6.30. Speaker Vowel Space: Frank (/æ/ by recoded following environment)

Table 6.26. Speaker Mean Normalized F1 and F2: Frank

<table>
<thead>
<tr>
<th>Speaker</th>
<th>Vowel</th>
<th>N</th>
<th>F1</th>
<th>F2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frank</td>
<td>/a/</td>
<td>15</td>
<td>0.67</td>
<td>-0.686</td>
</tr>
<tr>
<td>Frank</td>
<td>/i/</td>
<td>9</td>
<td>-2.141</td>
<td>1.753</td>
</tr>
<tr>
<td>Frank</td>
<td>/ɔ/</td>
<td>15</td>
<td>0.159</td>
<td>-1.355</td>
</tr>
<tr>
<td>Frank</td>
<td>/u/</td>
<td>2</td>
<td>-1.63</td>
<td>-1.066</td>
</tr>
<tr>
<td>Frank</td>
<td>Front Nasal-Closed</td>
<td>2</td>
<td>-0.074</td>
<td>1.203</td>
</tr>
<tr>
<td>Frank</td>
<td>Front Nasal-Open</td>
<td>1</td>
<td>-0.123</td>
<td>0.912</td>
</tr>
<tr>
<td>Frank</td>
<td>NYC lax</td>
<td>16</td>
<td>0.242</td>
<td>0.222</td>
</tr>
<tr>
<td>Frank</td>
<td>NYC tense</td>
<td>2</td>
<td>0.45</td>
<td>0.494</td>
</tr>
<tr>
<td>Frank</td>
<td>Velar Nasal</td>
<td>4</td>
<td>-0.116</td>
<td>1.33</td>
</tr>
<tr>
<td>Frank</td>
<td>Voiceless Fricative</td>
<td>10</td>
<td>0.664</td>
<td>0.104</td>
</tr>
</tbody>
</table>
Frank shows clear distinction between /ɔ/ and /a/ (see table 6.25), and his /ɔ/ F1 is 709 Hz (Labov Telsur G normalized value), which is slightly greater than the standard for NYCE raised /ɔ/ (700 Hz). His /æ/ pattern seems to be involved in a nasal split where one can see an empty space between the pre-nasal environment and other environments (see figure 6.29). However, ANOVA and post-hoc t test results in figure 6.31 show that his tense pre-nasal /æ/ tokens are not perfectly distinct from other environments (especially in the F1 dimension). Therefore, I suggest that it is better to identify his pre-nasal /æ/ nasal system as a weak nasal split system, which is close to a continuous system. Overall, his production patterns of /ɔ/ and /æ/ correspond to the findings from previous sections by showing a continuous pre-nasal /æ/ tensing and /ɔ/ distinct from /a/. There was no significant correlation between his intra-speaker variation in /ɔ/ and /æ/ and interview
topic. However, when he talked about the topic ‘language’, he showed an intentional lowering of /ɔ/, during his comments on the stereotypical New Jersey accents.

(19) Frank’s sociolinguistic interview

(during the topic ‘language’)

1140 Frank: uh… I guess,
1141 if I go to different,
1142 areas in the country,
1143 they'll be like, where're you from, I'll be like, Jersey, and then,
1144 they'd be like oh!
1145 Then, say this word, this word…
1146 Me: What-
1147 what were those words?
1148 Frank: ah… like water[wɔɾə]?
1149 or coffee[kɔfi]?
1150 …
1151 like, when they ask me to say water[wɔɾə],
1152 like, people are usually like, oh, you’re supposed to say like water[wɔɾə],
1153 or something…
1154 …
1155 Frank: yeah, or like coffee[kafɪ]?
1156 They’ll like, say coffee[kafɪ], and I’m like coffee[kafɪ],
1157 like, oh, it should be coffee[kafɪ]
1158

‘coffee’ (1) /ɔ/ F1: 653.154 Hz
‘coffee’ (2) /ɔ/ F1: 743.176 Hz
‘coffee’ (3) /ɔ/ F1: 772.223 Hz
‘coffee’ (4) /ɔ/ F1: 532.09 Hz
In lines 1216-1218, when he is talking about other people’s pronunciations of raised /ɔ/, he instantly lowers his /ɔ/ to sound close to /ɑ/. He pronounces the word ‘coffee’ four times in lines 1216-1218, where ‘coffee’ (1) seems to be the closest to his own speech; (2) voicing his colleagues; (3) voicing his response to his colleagues; and (4) voicing people’s expectation. It is evident that his performance of /ɔ/ is getting lower towards the end of his voicing himself in the constructed dialogue (Tannen 1986) oppose to his voicing of his colleagues’ expectation in (4). This is a very clear evidence that the raised /ɔ/ is highly undesired, and the intentional employment of lower /ɔ/ by Frank can be considered as strategic, since his /ɔ/ throughout the whole interview shows clear distinction with /ɑ/.

6.4. Summary of the Chapter

This chapter provided discussion of the results in the previous chapter, focusing on the /ɔ/ and /æ/ production patterns of Bergen County Korean Americans. The scope of discussion of the results and findings started from the general linguistic status of Bergen County Korean Americans in the big picture of regional variation and change in the U.S. and the NYC Metropolitan Area. According to the findings and discussion provided in this chapter, Bergen County Korean Americans indeed show patterns that correspond to recent trends of regional variation in the NYC Metropolitan area and Bergen County, NJ reported in earlier studies (lowering of /ɔ/ with no evidence of low-back merger, and pre-nasal tensing of /æ/). More specifically, as with established norms for regional White speech, the /ɔ/ of Bergen County Korean Americans showed no evidence of a low-back
merger, and the height of /ɔ/ nucleus showed slightly higher position than the standard of NYCE raised /ɔ/ (700 Hz). At the same time, speaker age showed a significant correlation with speaker Euclidean distance between the /ɔ/ and /ɑ/ nucleus, suggesting a possible change in apparent time towards the low-back merger, again in parallel with a similar change that may be taking place among younger White NYC residents. The general pattern of /æ/ reveals that Bergen County Korean Americans are involved in producing pre-nasal tensing, the same system used by non-White NYCE speakers, and indirectly matches the earlier reports on Bergen County that Bergen County is not affected by the NYCE traditional /æ/ system (Labov 2007), and the area is rather involved in producing nasal tensing (Ash 2002, Labov et al. 2006). Speaker age showed a significant correlation with speaker Pillai scores measured between pre-nasal /æ/ and elsewhere, suggesting a change in apparent time towards the nasal split from a continuous system. However, since the speaker age range is fairly limited due to the relatively short history of Korean American settlement in Bergen County, linguistic changes in apparent time indicated by correlations with speaker age only can be seen as suggestive. The second part of the chapter, where the scope is narrowed down to the social factors affecting variation, focused on the social factors that were found to have significant correlations with the variation patterns of /ɔ/ and /æ/. Speaker gender, speaker residency area, and speaker religion showed significant effects on the variations of /ɔ/ and /æ/. On the effect of speaker gender, female speakers showed stronger correlation with lowering the /ɔ/ nucleus and more tensing of /æ/ in pre-nasal environments than male speakers did. Considering the suggested idea of change in apparent time towards /ɔ/ nucleus lowering and development of the /æ/ nasal split system, female speakers were discussed to be
leading the change, if the change is indeed present. Moreover, based on metalinguistic commentaries from participants, the lowered /ɔ/ nucleus and pre-nasal /æ/ tensing were discussed to be associated with local Bergen ethnic identity of Bergen County Korean Americans. Speaker residency area showed a significant correlation with the degree of /æ/ tensing in pre-nasal environments, where tensing got weaker as speaker residency area got closer to Palisades Park, which is considered as the heart of the Korean American community in Bergen County. The lesser extent of pre-nasal tensing was discussed to have an effect of weakening the local (Bergen County) identity by showing less correspondence to the regional pattern of pre-nasal /æ/ tensing, and thus, reducing the ‘Americanness’ to fortify ‘Koreanness’ indirectly. Speaker religion showed a significant correlation with /ɔ/ height, where speakers affiliated to a religion that retains more Koreanness showed stronger correlation with lowering the /ɔ/ height. Thus, it is suggested that the /ɔ/ height can be seen as a manifestation of speaker’s Korean ethnic identity. The third part of the chapter examined the variable patterning of /ɔ/ and /æ/ for each speaker, and also looked into their intra-speaker variation by interview topic. Although not all speakers showed significant correlations between intra-speaker variation and topic, four speakers showed significant intra-speaker variation by topic, showing utilization of /ɔ/ and /æ/ variation to create and display their stances towards and alignment with, or disalignment from, certain topics, as well as groups and identity types/characteristics associated with these topics. Three speakers (Alice, Natalie, and Hank) showed correlations between their /ɔ/ height and interview topic, with Alice and Natalie showing lowering of /ɔ/ when projecting their positive stance towards Korean culture or the Korean community, and Hank showing a significant raising of /ɔ/ height.
while he was showing his hostility toward Korean Protestants. Ben showed significant correlation between pre-nasal /æ/ tensing and interview topic. He showed significant fronting of pre-nasal /æ/ when he was talking about his growing-up days in Palisades Park, which he did not like at all, because he considered the incoming Korean students were the main factor for the school violence back then. Thus, his greater extent of pre-nasal /æ/ fronting during his recollection of school days is discussed as an action of distancing himself from Palisades Park. John’s production of pre-nasal /æ/ tensing was relatively greater than other Palisades Park speakers, and this was explained by the fact that he actually was the Pal Park speaker who has the least physical and psychological connection to his community. On the other hand, Ron’s /æ/ were mostly lax (clustering in the lower back position), which was understood as a dialectal feature of his former residence, Hawai‘i. Additionally, Frank’s instant employment of /a/ for his /ɔ/ when discussing the stereotypical New Jersey accent revealed an important insight on how he perceives the stereotypical raised /ɔ/.

The next chapter provides an overall summary of the previous chapters in connection to the findings and discussions. The summary will be followed by limitations of this dissertation and possible future directions to conclude this study.
In this dissertation, I have presented results of an in-depth quantitative sociolinguistic study, grounded in detailed ethnographic analysis and supplemented by qualitative investigation of intra-speaker variation and speaker metacommentary, on the patterning of language variation and change in two target sociolinguistic variables: /ɔ/ and /æ/ in the English spoken by Bergen County Korean Americans. Chapter 1 provided a brief introduction to the transformation of Bergen County over the last 20 years by illustrating my personal experience in the community, a brief overview of this dissertation research, and brief summaries of a couple of topics (such as Asian American sociolinguistics) relevant to this dissertation. Chapter 2 provided thorough review and synthesis of earlier studies in various relevant fields (the sociolinguistics of /ɔ/ and /æ/ in various scopes of variation, language and ethnicity of Asian Americans, and Christianity and Korean American immigrants), which established a solid base for conducting this research. Chapter 3 provided a thorough illustration of the community based on earlier studies of the community, United States Census data, and my five-month long ethnographic fieldwork in the community. Chapter 4 presented in detail the data used in the research (providing information on research participants, interviews, recording equipment and settings), as well as the research design and methodologies of the study (providing information on transcription, vowel extraction, acoustic measurements, vowel
normalization, coding, variables, and statistical modeling). The first part of chapter 5 presented the results of the acoustic phonetic analysis. The second part of the chapter provided results of the quantitative sociolinguistic study, providing statistical outcomes on the effects of various linguistic and social factors (gender, age, immigrant generation, religion, residency, and Korean proficiency) affecting variation in /ɔ/ and /æ/. Grounded in background information, results from earlier studies, and my fieldwork in the community, as discussed in chapters 1 through 3, chapter 6 provided discussion and interpretations of the outcomes of chapter 5, as well as discussion of the possible meanings of the quantitative patterns, including meanings gleaned from analysis of individual variation by topic and related matters (e.g. stance), as well as speaker metacommentary about these and other features of the New York City dialect, language and ethnicity, and other related matters.

This chapter provides a wrap-up of this dissertation by providing summaries of the findings, followed by limitations of the study, possible future directions, and closing remarks. The first section (7.1) provides the summaries of the findings from chapter 5 and 6.

### 7.1. Summary of Findings

Examination of the patterning of variation in the two target variables, /ɔ/ and /æ/ among Bergen County Korean Americans, from chapter 5 and 6, has provided a thorough investigation of the two target variables. This section summarizes the findings, starting from the status of /ɔ/ and /æ/ among Bergen County Korean Americans in the scope of
regional linguistic variation and change, followed by summaries of the effects of the social factors examined on group and individual patterns of variation.

Results and findings from sections 5.2 and 6.1 report that Korean Americans in Bergen County are indeed participating in producing regional (white) patterns for /ɔ/ and /æ/. Results of /ɔ/ patterns among Bergen County Korean Americans showed their participation in producing raised /ɔ/ with a F1 value lower than 700 Hz (Labov Telsur G normalized F1: 684.34 Hz; Labov, Ash and Boberg 2006), with an ingliding trajectory of the vowel (measured from the 80% inside the vowel). Speaker age showed a significant correlation with the speaker Euclidean distance between /ɔ/ and /ɑ/ (p = 0.0303*), indirectly indicating /ɔ/ nucleus lowering (possibly towards the low-back merger). This trend of change over time, although only suggestive due to the limited range of speaker age in this study, corresponds to the findings regarding /ɔ/ nucleus lowering among younger speakers of the New York Metropolitan Area (except for African American speakers), based on recent studies.

The /æ/ production pattern of Bergen County Korean Americans show that /æ/ is tense (in higher and fronter position) in pre-nasal environments regardless of syllable type (while NYCE and Philadelphia tense /æ/ always occur in closed syllables at morpheme boundaries and in addition are subject to other complex conditioning environments), indicating that Bergen County Korean Americans produce a pre-nasal /æ/ tensing system with evidence of influence from neither the traditional NYCE /æ/ split system nor the Philadelphia /æ/ split system. The participation of Bergen County Korean Americans in pre-nasal /æ/ tensing also indicates that Bergen County Korean Americans are participating in regional trends in which non-white NYC speakers are involved and
which are emerging among younger NYC White speakers, showing correspondences to findings from earlier studies on the recent status of /æ/ tensing systems in the region. Speaker age showed a significant correlation with speaker Pillai scores between pre-nasal /æ/ and /æ/ elsewhere (p = 0.0283*), where younger speakers showed more distinction (thus a higher degree of pre-nasal tensing) between tense and lax classes of /æ/. This correlation between speaker age and /æ/ Pillai scores indicates that Bergen County Korean Americans’ /æ/ pattern is moving from a continuous system to a nasal split system. However, this also is only suggestive due to the limited range of speaker age of this research participant pool. Also, the question regarding what kind of /æ/ production patterns Bergen County speakers were previously involved in still remains, since the subject pool is limited in terms of the age range due to the short history of Korean American settlement in the community, and this dissertation did not look into other ethnic groups in the community. Discussion of the findings from examining the general production patterns of Bergen County Korean Americans can be summarized into two major points. First, the general production patterns of /ɔ/ and /æ/ of Bergen County Korean Americans reveal that non-White ethnic minorities also show participation in regional language variation and change (at least in those two variables). Second, the linguistic changes towards /ɔ/ nucleus lowering and /æ/ nasal split seem to be led by female speakers.

Among all the social factors examined for their significance in affecting the variation patterns of two variables, speaker age, speaker gender, speaker residency area, and speaker religion were significant (speaker generation and speaker Korean proficiency did not show any significant correlation). Speaker gender showed significant effects on
the variation of /ɔ/ and /æ/, specifically with /ɔ/ height (p = 0.0293*), speaker /ɔ/-/ɑ/ Pillai scores (p = 6.56 x 10^{-5}***), speaker /ɔ/-/ɑ/ Euclidean distances (p = 0.000149***), speaker tense /æ/-lax /æ/ Pillai scores (pre-nasal versus elsewhere environments) (p = 0.0125**), and speaker tense /æ/-lax /æ/ Euclidean distances (pre-nasal versus elsewhere environments) (p = 4.32 x 10^{-5}***). More specifically, female speakers showed a lower /ɔ/ nucleus and less distinction between /ɔ/ and /ɑ/ in terms of both Pillai scores and Euclidean distances than male speakers. Also, female speakers showed a greater degree of tensing of /æ/ in pre-nasal environments by showing greater Pillai scores (p = 0.0283*) and greater distance (p = 4.32 x 10^{-5}*** between tense and lax /æ/. Considering the possibility of change towards /ɔ/ nucleus lowering and /æ/ nasal split among Bergen County Korean Americans, female speakers are discussed as leading the change.

In addition, participants’ comments on the variables from sociolinguistic interviews suggest that the two variation patterns, /ɔ/ nucleus lowering and /æ/ pre-nasal tensing, are associated with Bergen County Korean American local ethnic identities. The social factor ‘speaker residency area’ had a significant effect on the degree of pre-nasal /æ/ tensing, as shown by significant correlations to both speaker Pillai scores (p = 0.00042*** and speaker Euclidean distances (p = 0.0106*). Interestingly, following the ascending order of coefficients of residency areas, it shows an intriguing picture, where Palisades Park residents show the least correlation with pre-nasal /æ/ tensing while Paramus speakers show the strongest correlation with tensing /æ/ in the pre-nasal environment. Based on participants’ comments on Bergen County and the Korean American community, community reports from various sources (such as United States Census data), and my personal ethnographic fieldwork in Bergen County, the Palisades
Park borough is considered as the heart of Korean American community in the county, thus the most Koreanized area in the Korean community in Bergen County, whereas Paramus is less Koreanized compared to Palisades Park (and also the least Koreanized area among the three residency areas: Palisades Park, Fort Lee, and Paramus). Therefore, I argued that the degree of pre-nasal /æ/ tensing might show an association with the local identity of Bergen Korean Americans. More specifically, speakers from the area embedded with higher Koreanness decrease their Bergen local identity by tensing pre-nasal /æ/ to a lesser extent. This has the effect of showing disalignment from any of the regional /æ/ variation patterns around the community, thus decreasing the affiliation with any of the American regional patterns. In other words, Palisades Park speakers’ Korean ethnic identity is indirectly promoted by decreasing local identity, which is manifested by showing lesser alignment to the trending regional (and national) feature, pre-nasal /æ/ tensing.

The social factor ‘speaker religion’ (including the intensity of speaker participation in their institution) showed a significant effect on the variation of /ɔ/ height ($p = 0.0023^{**}$). More specifically, Bergen County Korean American speakers affiliated with Korean ethnic religious institutions retaining more Koreanness and higher level of Korean ethnic identity (Korean Buddhist temples, Catholic Churches, and Korean Immigrant Protestant Churches) are associated with lowering the /ɔ/ nucleus to a greater extent, while speakers who are affiliated with Korean ethnic religious institutions retaining lower level of Koreanness and Korean ethnic identity (English ministries in parallel congregation Protestant Churches and second generation Protestant Churches) are associated with not lowering the /ɔ/ nucleus. Moreover, speakers who showed heavy
involvement in the religious institutions showed significantly lower /ɔ/ height than that of speakers with less involvement. Korean Americans who were not affiliated to any religious institution showed the most raised /ɔ/ nucleus. Based on a number of sociological studies on the crucial roles of Korean American ethnic religious institutions in retaining the Korean Americans’ ethnic identity (e.g. see Min 1992, 2010; Chong 1998; Park 2001; Suh 2003), and my ethnographic fieldwork in the community, /ɔ/ height seems to be associated with speakers’ degree of Korean ethnicity, with lower height indicating greater affiliation with Korean ethnicity. Further evidence of this association is found in the fact that participants’ have very negative attitudes toward raised /ɔ/ and associate this feature with the stereotypical heavy, and White, New York/New Jersey accent. In sum, the findings from the examination of the social factors affecting variation in /ɔ/ and /æ/ indicate that both /ɔ/ height and the degree of pre-nasal /æ/ tensing are associated with local ethnic identities of Bergen County Korean Americans, where the /ɔ/ nucleus height is closely associated to the degree of speaker’s Korean ethnic identity and the pre-nasal /æ/ tensing is associated to the local identity of Bergen County Korean Americans.

Examination of the variable patterning of /ɔ/ and /æ/ at the individual level showed that most of the speakers’ production patterns correspond to the quantitative findings. Interestingly, examination of Ron’s variation patterns of /ɔ/ and /æ/ suggests that his less tense /æ/ in pre-nasal environment is not so much a Palisades Park feature but rather a feature associated with his former dialect community, which is Hawai’ian English (where no tensing of /æ/ occurs regardless of its linguistic environment), while his /ɔ/ showed a pattern that is close to the feature of his current community, Bergen County. This was understood in terms of the different levels of social saliency of
linguistic features, where speakers are more aware of the distinction between /ɔ/ and /a/, while people are less aware of the linguistic conditioning of /æ/ tensing. In the examination of intra-speaker variation by interview topics, five speakers (Alice, Natalie, Julie, Hank, and Ben) showed significant variation according to different topics, which seemed indicative of their utilization of /ɔ/ and /æ/ variation to align with (or disalign from) certain topics and associated groups and identity/character types, such as the employment of /ɔ/ lowering when projecting a positive stance towards Korean cultures (Alice) or the Bergen County Korean enclave (Natalie), or greater extent of pre-nasal /æ/ tensing when projecting hostility against Palisades Park (Ben). Discussions of the findings on intra-speaker variation by topic provided more evidence of the associations between the variable patterning of the two variables and social meanings pertaining to local identity and Korean ethnic identity. Moreover, they also suggest that speakers’ interactively utilize linguistic features to shape their desired identities and refrain from disfavored identities through topic- and stance-based linguistic variation.

7.2. Limitations and Future Directions

As is frequently mentioned throughout the dissertation, there are several limitations in this dissertation. Thus there are several future directions to take in order to extend the scope of the current study, including examination not only of language variation and change among Korean Americans in Bergen County, but also Korean Americans in other regions. Subsections under the current section outline the limitations of the current dissertation and possible future directions.
7.2.1. Limitations of this Study

In this subsection, I list several major limitations of this dissertation. However, I am not trying to state that this subsection provides an exhaustive set of limitations, and I do understand that there are more limitations than I can think of. The major limitations of this study are as follows: The biggest limitation of this study is in the limited range of speaker age, where most of the speakers’ ages are mostly 20s and 30s. The limited age range of participants is due to the relatively short history of the Korean American community in Bergen County, which is about 20 years long, and this has led to the result of having most of the eligible participants not older than the age of 40. Because of this, the language change in apparent time indicated by the correlations found between speaker age and variation patterns cannot be considered as a definitive indication of change over time, but rather as simply suggestive of language change over time. However, it is still important to study the community now while it is still young, and thereby capture the possible incipient formation of an ethnic dialect. Another major limitation of this study is the lack of White participants in the participant pool. Due to the limited time of stay in the community, I chose to focus mainly on the Korean American participants. The inclusion of White speakers in the participant pool would have been more effective in providing direct comparison between the two ethnic groups. Fortunately, however, I believe that I still do have a solid grounding of previous studies of White speech in the area. Another major limitation is the relatively small number of non-Protestant Korean Americans in this study. Even though the relatively small number of non-Protestant participants reflects the dominance of the Protestant population among Korean
Americans, more participants who are Catholic, Buddhist, or not religious would provide better understandings of the community. Another limitation stems from the research design, which only looks at two regional features, because including other variables (such as other vowel patterns besides those of /ɔ/ and /æ/) might reveal other important features of English of Korean Americans in the community. The focusing of the two features I have chosen in this dissertation is very important in terms of situating Bergen County in terms of the regional and national US dialect variation, which can be an ideal initial study of Bergen County Korean Americans. Based on these limitations and possible extension of this research, the following subsection suggests some directions for future study.

7.2.2. Future Directions

First of all, in order to provide more in-depth understanding of language variation and change, as well as language and identity, among Korean Americans, it will be important to include more participants and more linguistic variables. The second possible future direction is in expanding the focused community by examining the linguistic patterns of Korean Americans in another major Korean American community in Queens, New York. Considering that many Korean American participants in this study commented on the Korean Americans in Queens to be very different from them, the comparison between Korean Americans in Bergen County and Queens may provide useful discussions on the connection between their variation patterns and identity. The third possible future direction of this study is examining bilingual and monolingual signs in the Bergen County area to explore the linguistic landscape of the community. The fourth possible direction to expand this dissertation is to include other ethnic groups in
Bergen County (such as Japanese Americans, Chinese Americans, Latino Americans, and African Americans). Another possible future research direction would be to focus even more on the individual level by conducting detailed discourse analysis of sociolinguistic interviews, and perhaps other types of speech data as well, including more detailed investigation of stance.

7.3. Closing Remarks

Going back to the community where I spent about two years of my childhood was a somewhat daunting but also very exciting experience, since the community was not nearly the same as the one that I remember from 20 years ago. Fortunately, however, my excitement as both a linguist and a former member of the community was much greater than my nervousness. During my stay in the community, I was constantly touched by the kindness of a number of community members who did not hesitate to help me out in solving various issues. As the final day of my stay in the community was approaching, I strongly felt that I should give something back to them. What I could do as a linguist, I thought, was to introduce the presence of Korean Americans in many parts of the United States to other linguists and draw their attention to an unfamiliar ethnic group. Therefore, because this dissertation is the first community level variationist study of a major Korean American community, I hope this dissertation will be the one that draws attention from many linguists to become more interested in Korean Americans. And, for now, I believe that this is the greatest contribution I can give back to the community. I look forward in
future studies to giving even more to the linguistic community and to Korean Americans throughout the U.S.
Appendix 1

Sociolinguistic Interview Consent Form

GEORGETOWN UNIVERSITY
CONSENT TO PARTICIPATE IN RESEARCH INVOLVING TREATMENT

PROJECT TITLE

• Language and Ethnicity in a New Jersey Korean-American Community

PROJECT DIRECTOR

• Natalie Schilling

PRINCIPAL INVESTIGATOR

• Jinsok Lee

TELEPHONE

• 1-202-213-5581

SPONSOR

• Department of Linguistics, Georgetown University.

The Georgetown University Institutional Review Board (IRB) has approved this research project.

INTRODUCTION

You are invited to consider participating in a research study to investigate language and ethnicity in Palisades Park, New Jersey. The purpose of this study is to look at how people in east coast perceive and produce language in connection to their ethnicity and identity. This study does not have any possible risk to participants and you may stop or quit participating in this study whenever you want to. This interview will take approximately an hour. The decision to participate, or not to participate, is yours. If you decide to participate, please be sure to sign and date the last page of this form.

WHY IS THIS RESEARCH STUDY BEING DONE?

In this research study, we are interested in people’s stories of community and language. The procedure of this study consists of an interview.

HOW MANY PEOPLE WILL TAKE PART IN THE STUDY?

About 60 people will take part in this study. Participants in the study are referred to as “subjects.”
WHAT IS INVOLVED IN THE STUDY?

In this study, you are asked to participate in an interview. The interview will take approximately an hour.

HOW LONG WILL I BE IN THE STUDY?

We expect that you will be in the study for an hour.

The investigators or sponsors may stop the study or take you out of the study at any time they judge it is in your best interest (e.g., if you experience an injury, if you need additional or different interventions, or if you do not comply with the study plan). They may also remove you from the study for various other reasons. They can do this without your consent.

You can stop participating at any time. However, if you decide to stop participating in the study, we encourage you to talk to the researcher first.

WHO CAN PARTICIPATE IN THE STUDY?

This study is designed for native English speakers living in Palisades Park, New Jersey. Your suitability for this study will be determined by your nationality, native language, and ethnic background.

WHAT ABOUT CONFIDENTIALITY?

Your name will not be used when data from this study are published.

Every effort will be made to keep your research records, and other personal information confidential. However, we cannot guarantee absolute confidentiality.

Individuals from the Georgetown University IRB, other Georgetown University offices, Federal regulatory agencies, and Dr. Natalie Schilling, the responsible faculty member of this study, may look at records related to this study, both to assure quality control and to analyze data. Your name and any material that could identify you will remain confidential except as may be required by law.

We will take the following steps to keep information about you confidential, and to protect it from unauthorized disclosure, tampering, or damage: The file with informant information will be kept in a password protected file saved in the researcher’s personal computer.

WHAT ARE MY RIGHTS AS A RESEARCH PARTICIPANT?

Participation in this study is entirely voluntary at all times. You have the right not to participate at all or to leave the study at any time. Deciding not to participate or choosing
to leave the study will not result in any penalty or loss of benefits to which you are entitled, and it will not harm your relationship with Georgetown University or any of its employees.

If you decide to leave the study, the procedure can be stopped at any time.

**WHOM DO I CONTACT IF I HAVE QUESTIONS OR PROBLEMS?**

Call Dr. Natalie Schilling at 1-202-687-6211 or Jinsok Lee at 1-202-213-5581 day or night if you have questions about the study, any problems, unexpected physical or psychological discomforts, any injuries, or think that something unusual or unexpected is happening.

Call the Georgetown University IRB Office at 202-687-1506 with any questions about your rights as a research participant.

**Statement of Person Obtaining Informed Consent**

I have fully explained this study to the subject. I have discussed the study’s purpose, its experimental and non-experimental procedures and interventions, the possible risks and benefits, the standard and research aspects of the study, the alternatives to participation, and the voluntary nature of participation. I have invited the subject to ask questions and have answered any questions that the subject has asked.

__________________________  __________________________
Signature of Person Obtaining Informed Consent   Date

**Consent of Subject (or Legally Authorized Representative)**

I have read the information provided in this Informed Consent Document (or it was read to me by ________________________________).

My questions were answered to my satisfaction.

I voluntarily agree to participate in this study.

__________________________  __________________________
Signature of Subject   Date
Appendix 2

Sociolinguistic Interview Module

1. Demographic information

Ok, your name is…?

And what year were you born in?

Were you born in this community?
   (If so) Are your parents from this area?
   Do they still live in this community?

   (If not) How long have you been living here?

Where do you live?
   Is it one of the houses/apartments around here?
   Can you tell me how your place is laid out?

Are you working now?
   What do you do?
   Can you tell me what your family does?

How many years of school did you get a chance to finish?
   Did you go to a school near your place?
   What did you do after leaving school?

What was your first job?
   Can you tell me how long you were in that position?
   So what were your jobs after that?

Do you speak any language besides English?
   (If so) When do you usually use those languages?
   Do you consider yourself as a fluent speaker of those languages?

2. Neighborhood/Community

Do you like living in this community?
   Can you tell me about good things?
   How are the neighbors? Do you like them?
   (If the interviewee is not from the area) Compared to your former community,
   what do you think about this community?

Was there any major change in this community since you have been living here?
What were those changes? Were there any critical changes affecting everyone’s living?

Is there anything special which only residents know about Pal Park? Can you tell me about it?

Where do you buy your groceries around here? Is there any reason you chose to go there?

What are any disadvantages living here? Do you think it’s a big issue among residents? What do you think you can do to change those?

Do you participate in any activities with your neighbors? What do you usually do?

3. Family

How many brothers/sisters do you have? How old are they? Do you keep in touch with them often?

Who did you grow up with? Did you like growing up with them? Which one did you prefer to live with when you were growing up?

Do you get along with your family members often? What do you usually do with them?

Were your parents strict when you were growing up? Did you have any regulations or specific rules you had to follow? What happened when you violated them? Will you do the same thing to your children (in future)?

What kind of kid were you when you were growing up?

Did your parents have any idea about who they wanted you to be? Were they forcing you to become what they wanted you to be?

What kind of topic do you usually talk about with your parents? How about with your brothers/sisters? Is there any particular topic that you usually discuss with them recently? If so, tell me about it.

4. School and young life
What’s the name of the school?

How big was the school?
    Which do you prefer? Big or small?

Was it close to your place?
    How did you get there?

Did you enjoy going to school?
    What was your favorite thing in the school?
    Can you tell me what you did not like about the school?

What kind of students were you?
    Have you ever gotten into trouble?
    Have you ever gotten blamed for something that you did not do?

How were the teachers?
    Were there any weird/creepy ones?
    How did you deal with them?

What kinds of groups did they have in your school?
    Were there any rules for each group?
    How do they characterize their own group?

Did you hang out with any crowd in particular?
    Were you proud to be in that group?
    Where did you usually hang out with them?
    Did you/they have any name for the group?

Do you keep in touch with them still?
    Which ones?
    Can you tell me about them?

What did you do with your friends usually?

What kinds of music did you enjoy listening to?
    Did you go to any concert or live show?
    What was the best show you ever saw?

5. Hobby

What do you do when you have spare time?
    Is it something you do regularly?

Do you have any hobby that you have been doing for a very long time?
When did you start doing it?
Do you still enjoy it?
What was the first motivation to start doing it?

Do you share your hobby with other people?
Did you become a member of any clubs?

How would you describe your hobby in your living?
Can you tell me more specifically?

Did anyone become inspired by your hobby and started it?
How did you feel?

Have you ever think about having your hobby as your profession?
Why did you end up with it just as a hobby?

What do you do if you are not doing anything related to it and have spare time?
Is it also your hobby?

Do you travel around if you have a long break?
Where have you been?
Do you enjoy traveling?

Where do you want to live besides the USA?
Is there any special reason for that?

6. Religion

Are you religious?
What is your religious affiliation?

Do you go to any church around here?
Can you tell me about your church?

Is there any special thing in this community related to any religion?
Is it getting stronger or weaker?

Did your family members have a specific religion?
How do you think of it?
Do you think it is necessary for one to have a religion?

7. Language

Is there anything different/remarkable about the way people speak in Pal Park?
Do you think you also speak that way?
Have you ever told you that you sound different?
Has anything change over time?
Can you tell if someone came from other community by the way they talk?

Have you ever tried to modify your style?
Like what? Why?

Do you have any particular way of speaking that you want to learn?
If so, tell me about it.
How about among foreign languages?
Which languages do you want to learn?

Do you sound different from your parents do?
Can you describe how they speak?

What do you think of others would think of your speaking style?

What would you like to change about the way people speak in this community?
Do you have that in your way of speaking also?
Appendix 3
Wordlist Reading

Please read the following sentences.

Please say heed for me
Please say hawed for me
Please say bet for me
Please say hayed for me
Please say hood for me
Please say hoed for me
Please say but for me
Please say hide for me
Please say beat for me
Please say boat for me
Please say bite for me
Please say had for me
Please say how for me
Please say bought for me
Please say ahoy for me
Please say head for me
Please say boy for me
Please say HUD for me
Please say bot for me
Please say hued for me
Please say bout for me
Please say hid for me
Please say book for me
Please say hod for me
Please say who’d for me
Please say boot for me
Please say bat for me
Please say bit for me
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