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Accent and Ideology among Bilingual Korean Americans

by

Andrew Cheng

A dissertation submitted in partial satisfaction of the

requirements for the degree of

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in

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in the

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of the

University of California, Berkeley

Committee in charge:

Professor Keith Johnson, Chair
Professor Sharon Inkelas
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Accent and Ideology among Bilingual Korean Americans

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Abstract

Accent and Ideology among Bilingual Korean Americans

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Doctor of Philosophy in Linguistics

University of California, Berkeley

Professor Keith Johnson, Chair

This dissertation documents a collection of sociolinguistic and sociophonetic studies of the speech of bilingual Korean Americans in California. Korean Americans are an ethnic minority in the United States whose speech patterns in Korean and English remain understudied. The goal of the studies is to begin sketching out the acoustic traits that characterize Korean American speech, insofar as the demographic can be considered to have a unified accent, or ethnolect, as well as to connect ideologies drawn from Korean Americans' own metalinguistic commentary to the patterns that emerge.

A portion of the data is drawn from a series of laboratory experiments which sampled and tested read speech in Korean and English by Korean Americans. The majority of the data comes from spontaneous bilingual speech collected in sociolinguistic interviews with forty Korean Americans residing in California. The acoustic data measured in the speech includes overall fundamental frequency (f_0), formants of high back vowels, and voice onset time (VOT) of Korean consonants and affricates.

Results indicate that, on many different levels, bilingual Korean Americans are a unique speech community unto themselves. Unlike their same-age monolingual counterparts in Korea (native Koreans), they are not participating in a sound change marked by a merger of VOT in lenis and aspirated consonants and increased contrast in f_0 . Like many bilingual speech communities, they maintain phonological and prosodic distance between their two languages: bilingual Korean Americans speak in Korean with a higher f_0 than they do in English, and they maintain cross-linguistic contrast in the articulation of their back vowels, avoiding overlap. However, Korean Americans demonstrate a unique cultural connection to the Korean language. In their own words, Korean Americans stress the importance of knowing Korean and remaining connected to their heritage, while at the same time, traditional or previously-cited definitions of what it means to be a Korean immigrant or the descendent of Korean immigrants appear to be shifting. Furthermore, most Korean Americans are in

agreement that a particular way of speaking – the Korean American ethnolect – certainly exists, though its exact parameters remain elusive.

These studies fill in a gap in our understanding of how to situate bilingual and bicultural ethnic minorities in the United States within ongoing issues in the literature on sound change, heritage language acquisition and maintenance, and ethnolect formation. In addition, this is the broadest collection of sociolinguistic and sociophonetic studies of Korean Americans in California to date. Yet in its breadth, it becomes clear that there are many stones left unturned; it is intended that the findings of this dissertation sow the seeds for many future studies of other heritage language and minority communities.

KEY WORDS: bilingualism, heritage speaker, Korean, California English, California Vowel Shift, sound change, ethnolect, Korean American, sociophonetics, sociocultural linguistics, sociolinguistic interview

to my parents

E

to all immigrants

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And as I look at you, reader, I'd like to say thanks for reading, and may your pursuit of knowledge take you far.

Kyopho (Prologue)

I moved to South Korea from the United States in 2012, excited about my very first post-college job: teaching English as a foreign language under the Fulbright Program. With only a few months of intensive language training in Korean under my belt before I started, I knew that I would encounter some communication challenges as I adjusted to life in South Korea. I expected to stick out: a loud American, fumbling with his words, misunderstanding the culture, nothing Koreans haven't seen before. To my surprise, I actually blended in. My features were read as East Asian, and as soon as I adapted to the local fashion and learned my way around the city, no one ever gave me a second glance.

Until I opened my mouth.

Then, whichever stranger I had been talking to would give a start. The older they were, the more taken aback they always seemed to be. “*Wuli nala salam-i anieyyo?*”

“Wait, are you not *our-country-people?*”

My usual reply: “No, I’m an American.”

And then, “Ah... *Kyopho yeyyo?*”

Are you a *kyopho*? No, I am not an “overseas Korean”, or a member of the Korean diaspora. I understand the confusion. The societal expectation for ethnic East Asian faces in South Korea is that the Korean language will fall effortlessly from their mouths. When it doesn't, and the mouth instead says, “I am American,” the next assumption made is that this must be a Korean person living in America. A *kyopho*.

My Korean American friends and colleagues have many similar stories to tell, anecdotes from encounters in South Korea that out them as being different from the majority, but mostly in an invisible way. Of course, for my part, as soon as I would confirm to the taxi drivers and the shopkeepers that I was a Taiwanese American who happened to be living in South Korea, the interest tended to drop off. For Korean Americans in the same situation, however, they may find themselves subject to a grilling of their background, and the conversation might lead in numerous directions. “Where is your family from?”

“Is this your first time back in Korea?”

“Your Korean is pretty good for a *kyopho*.”

“Why can't you speak Korean?”

“What's it like in America? Have you been to Los Angeles? Do you know UCLA?”

“Now that you're here, you should learn how to speak Korean.”

Korean Americans have no obligation to answer any of these questions, some of which are not even questions, but challenges to their identity and sense of belonging in a country whose modern history is nearly inextricable from the history of the United States.

This dissertation is about Korean Americans, their language experiences, and the elements of their speech which they use to identify themselves as Korean Americans, ethnic Koreans, or bilingual and bicultural individuals. Although my interest in Korean American identity began to take shape while I was living in South Korea, all of the ideas represented here are very much rooted in the context of the United States and the Korean people who now call it home.

Chapter 1

Introduction

I have some scores to settle first
– with this country, with how
we have been scripted.

Minor Feelings, Cathy Park
Hong

In this introductory chapter, I will discuss the literature on sound change, heritage bilingualism, and ethnic identity in sociolinguistics and anthropological linguistics. Then I will delve into what the experiences and linguistic behaviors of bilingual Korean Americans can bring to bear on ongoing theoretical concerns. Finally, I will review the history of Korean immigration to America and the literature on Korean American identity.

1.1 Central ideas of this dissertation

The goal of this dissertation is to explore phonetic evidence of sound change within the population of Korean heritage speakers in California. It will look at patterns of speech in spoken Korean as well as spoken English, using data from two sources: controlled laboratory settings and casual sociolinguistic interviews. It will also examine the use of Korean and English from a sociocultural standpoint, by analyzing metalinguistic commentary from the heritage speakers themselves.

Among the questions I seek to answer are:

- In what ways does an individual's sense of ethnic identity support their participation in an ongoing regional sound change?
- Beyond participation (or not) in sound change, what new innovations are Korean Americans bringing to English and Korean?

- In sociolinguistic analysis, how should ethnic identity be quantified as a potential factor in usage of certain linguistic variables?
- Do Korean Americans have speech patterns in common with one another in English that are distinguishable from those of their non-Korean peers? Do they have common speech patterns in Korean that are distinguishable from those of their non-American peers?
- Besides ethnicity, what other social and linguistic factors affect the ethnolects of Korean American English or Korean American Korean?
- How do Korean Americans evaluate the relationship between their ethnic identity and their language use? Do they believe that Koreans and/or Korean Americans speak a certain way due to their ethnic identity?

My dissertation attempts an intervention in the field of heritage language studies that will bring thousands of data points from acoustic phonetic experimentation to bear on questions of sound change, language use, and identity. To begin, I will outline the theoretical foundations of sound change, (heritage) language use, and (ethnic) identity in linguistics. After that, I will discuss the Korean American speech community, specifically their history and their relevance in answering some of the outstanding theoretical questions that I've raised.

1.2 Sound change

Languages are always changing. Sound change, in particular, is a universal and endless process that affects all languages (Weinreich et al. 1968). In early sociolinguistic theory, Labov (1963) posited that social pressures were an integral part of the process of sound change: "One cannot understand the development of a language change apart from the social life of the community in which it occurs" (1963:275). The production of certain vowel patterns among the English speakers of the Martha's Vineyard community could be mapped onto patterns of the speakers' social lives and social stratification, such as the rural-versus-urban divide, occupation, age, and orientation toward the "culture" of the island itself, or the "outsider-versus-insider" dichotomy.

Labov's landmark study describes how the unique vowel pattern of Martha's Vineyard may have spread throughout the island community. In the same way, sound changes can spread throughout much larger geographic territories. One common example is the Northern Cities Shift – detailed in Labov (1972b, 1994) – which is, of course, not limited to northern cities (Gordon 1997). Though it is unclear exactly when and where the Northern Cities Shift began, evidence of its spread has continued to surface for almost fifty years and from locations way beyond the inland North: urban Chicago, suburban Michigan, eastern New York, and even St. Louis, Missouri (Gordon 1997; Murray 2002; McCarthy 2011; Dinkin 2013).

However, much of the research on sound changes in American English such as the Northern Cities Shift has historically focused on phenomena that occur in white speech communities. Treatment of ethnic minorities in dialectology is scant, and when it exists, it is usually rooted in a framework of comparison to the white majority. Even from the beginning, when Labov studied the residents of Martha’s Vineyard, both ethnic minority groups, the Portuguese and the indigenous Wampanoag, were concluded to be practically linguistically indistinguishable from the “traditional” Yankee line. The Portuguese immigrants were said to have assimilated to the Anglo-Saxon norm in order to assert their identities as resident islanders. As for the indigenous Wampanoag of the island, Labov writes, “they no longer have linguistic resources for [marking their indigenous identity], and whether they like it or not, they will follow the Chilmark¹ lead” (Labov 1963:306). My point here is not to contest Labov’s conclusion about the Portuguese and the Wampanoag’s linguistic behavior, but to point out that their inclusion in the research is used as a comparison to the majority white population, rather than as part of a framework for understanding minority speech on its own terms.

As research in sociolinguistics and sound change has progressed, it has used the “white standard” framework so unquestioningly, that the seminal *Atlas of North American English* (Labov et al. 2006) dedicates only one chapter to the speech patterns of African American English in a monolithic South, employs one paragraph to discuss the lack of representation from the Latino community, and has not a single mention of Asian Americans at all. Certainly, the field has developed such that research programs in sociolinguistics today nearly always consider race and ethnicity as an important factor (see Rickford (1985) and Reyes (2010) for a review). Yet work that specifically puts the spotlight on minorities still lags behind in the successive waves of sociolinguistic research. Specifically on Asian Americans, Reyes writes: “Since efforts to identify an Asian American English have generally been inconclusive, most sociolinguistic research on Asian Americans focuses on issues of English language learning and heritage language maintenance, although more recent scholarship explores the ways in which English is the main medium through which ethnic identity is produced” (2010:410).

To be clear, ethnic minority American speakers of English are not necessarily different in the way they relate to geographically-bound sound changes, but too little is known about the overall effects of ethnic identity on the progress of sound change through America’s multiethnic communities. Labov (2006) first argued in 1966 (the first edition of *The Social Stratification of English in New York City*) that the African Americans in his study did not participate in regional sound changes such as /aɪ/-fronting. To be fair, Labov probably did not intend that observation to be taken as a kind of sociolinguistic rule; or if he did (Labov 1994:157), then he has the pleasure of being an early observer of a linguistic phenomenon and therefore wrong (Labov 1972b:98)².

¹This term refers to the “old-time typical Yankee” who constitutes an ethnic majority in the rural up-island.

²See Labov (2011) for an updated discussion of diffusion of sound change from group to group, but note that he continues to frame variation and change as an *a priori* given of the white speech communities which constitute a majority of the United States, while ethnic minorities’ participation (or lack thereof) in changes

In the decades since, we have seen that many ethnic minorities do participate in regional sound changes of the majority, including Chicano English speakers (Fought 1999), ethnic Chinese Canadians (Hoffman and Walker 2010) and Chinese Americans (Hall-Lew 2011), and African American speakers (Thomas and Wassink 2009; Becker 2014). In California, one of the prominent sound changes under investigation is the California Vowel Shift (Kennedy and Grama 2012; Podesva et al. 2015; Cheng et al. 2016), sometimes called the Elsewhere Vowel Shift (Nesbitt and Mason 2016) due to its observation in many disparate regions of North America. It is also described technically as the Short Front Vowel Lowering Shift (Hickey 2018) or the Low Back Merger Shift (Boberg 2019). This vowel shift is the focus of much dialectal research, with a small but growing number of studies analyzing dialectal development through the lens of race and ethnicity.

Rather than generalizing that ethnic minorities are exceptions to the “rule” of community-level regional sound change, or that ethnic minorities “follow the lead” of white norms, without critiquing the use of white speech patterns as a baseline, I seek to understand the unique position of Korean Americans with respect to the California Vowel Shift.

Of course, sound change doesn’t only occur in Anglophone populations of the United States. The Korean language is also undergoing sound change, from the slow but sure mergers of front vowels (Eycheune and Jang 2015) to the highly salient and richly indexed *aegyo*, a “cutesy” speech persona attributed to young women (Puzar and Hong 2018). Another of these sound changes currently undergoing broad investigation is the collapse of a phonetic cue that contrasts certain types of consonants in Seoul Korean. Younger speakers, especially female speakers, have been found to lead this change, which affects the VOT of the consonants in question as well as the fundamental frequency of the subsequent vowels (Kang 2014). Kang and Nagy (2016) analyzed whether this sound change occurs in the speech of diasporic Koreans in Toronto, Canada, hypothesizing that contact between English and Korean in this bilingual heritage speech community restrained its spread. To date, however, no one has analyzed the speech of Korean Americans in the same way.

1.3 Bilingualism and heritage bilingualism

The struggle of many young Korean Americans to maintain their skill in spoken and written Korean has been long documented (Cho et al. 1997). Their situation has parallels with many other immigrant communities in the United States and Canada (Portes and Hao 1998), and in the past twenty-five years³, a new field of research has emerged with this phenomenon in sharp focus: heritage language studies (Wiley and Valdés 2000; Peyton et al. 2001). In the United States, heritage language research focuses on the non-English languages spoken by new immigrants and indigenous people, from Spanish to Mandarin to Russian to Diné bizaad (Navajo). Usually, the research is in the context of language pedagogy and second

must follow, adapt, or resist; this is arguably not a position that is free from bias.

³At least twenty-five years in the United States, while the term “heritage language” has been used in Canada for at least twenty years longer (García 2005).

language acquisition, as students with a heritage connection to a language may have different educational needs than students with no heritage connection.

What exactly constitutes a heritage language and a heritage language speaker (or simply “heritage speaker”) has varied, which is understandable given the short history of the field. Polinsky and Kagan (2007) define “broad” and “narrow” views, the former of which emphasizes the cultural connection an individual of a certain background has to a language, while de-emphasizing language ability or proficiency. The latter, narrower view, is what they deem the “true” heritage speaker: an individual raised in a home where the majority language is not spoken, who is bilingual in the home language and in English to some degree, but who eventually grows up to become more dominant in the majority language. This definition was established first in Valdés (2001) in a collection on language pedagogy research (Peyton et al. 2001), and the bulk of heritage language research continues to operate in the realm of bilingualism research with an applied focus (Valdés 2005).

Of course, heritage speakers are also of interest to theoretical linguists who focus not on learning outcomes, but on more abstract ideas such as bilingual phonological acquisition, language and cognitive development, community-level diachronic language change, and language and identity. Unfortunately, the use of the heritage speaker label continues to vary across disciplines and contexts. In second language acquisition and language processing research, Valdés’ narrow definition is most appropriate for analyzing and understanding the heritage speaker’s internal grammar (Montrul 2010; Polinsky and Scontras 2020). In the research on language and identity, however, any framework for heritage language development necessitates a discussion of identity, which will include heritage speakers whose family connection to a language exerts more influence on their language experiences than their own proficiency (He 2006). Similarly, Van Deusen-Scholl (2003) argues that historical and sociopolitical considerations – for example, the stark differences between the history and status of endangered Ohlone languages compared to the billions-strong speaker population of Mandarin – need to be balanced against the pedagogical ones when discussing heritage speakers and who “gets” to be one.

García (2005) is another cautious critic of the term. To describe a language as being part of an individual or community’s “heritage”, García writes, is to be rear-facing, implicitly raising the status of English by framing the language in question as old and archaic, or valuable in an “historical artifact” kind of way. From a strict chronological standpoint, to consider Spanish a heritage language in the United States today, when Spanish has been present on the continent much longer than English has been, is ironic at the very least. Van Deusen-Scholl (2003) discusses many possible alternatives, from “immigrant language” to “home language” to the aggressively neutral “LOTE (Language Other Than English)”.

Terminology aside, heritage language studies is clearly here to stay, and there have arisen at least two theoretical camps within the field, distinguishable by their approach to conceptualizing heritage language acquisition. Montrul (2008) maintains that heritage speakers tend to have experienced incomplete acquisition. A large body of heritage language research has used this lens, investigating the causes and consequences of incomplete acquisition and language attrition in heritage speakers. However, this is not without criticism. Cabo and

Rothman (2012) call the term “incomplete acquisition” illogical, and Otheguy (2016) writes that the theorizing of “incomplete grammars” is flawed and stems from a misunderstanding of the natural differences in grammar that arise from parent-to-child language transmission, regardless of the sociocultural context.

More recently, Polinsky and Scontras (2020) have written a compelling overview of research on heritage speakers and language processing and cognition, arguing that while heritage language users are “unbalanced” bilinguals, not having equal fluency in their two languages, they do not actually suffer from any sort of cognitive deficiency in their less fluent language. Rather, heritage languages have coherent grammars and structural organization that is unique to their specific linguistic experience. Valdés (2001) also wrote about this in her framing of the linguistic output of heritage speakers as like two differently-sized systems, with features developed from language contact within the individual as well as stigmatized features of the heritage language popping up frequently. But the idea that heritage grammars may be systematic even down to the levels of grammar that are often overlooked in heritage language research, such as phonetics, as well as the idea that heritage speakers may not operate simply from a language deficiency model in their cognitive processing, is only recently gaining ground.

As the field of heritage language studies grows, the knowledge that we have been able to obtain about heritage language users as a categorizable and researchable group, rather than an impossibly complex set of exceptions to previously-established rules, is demonstrably increasing. It is now possible to identify a group of heritage speakers and ask whether their status as heritage speakers is a useful metric for understanding differences in language production and even language change (Rothman 2007). Of the few studies of heritage language users and their participation in a phonetic sound change, one of the best known happens to be on heritage speakers of Korean in Toronto (Kang and Nagy 2016). The Toronto case is interesting because it investigates sound change in a bilingual and multigenerational population. This dissertation borrows some of the techniques and analytical framework from Kang and Nagy (2016), with one chapter replicating their study with a different diasporic Korean population, although overall, I place more focus on the ideologies that connect language behavior to ethnic identity.

1.4 Ethnic identity and ethnolects

In his research on *linguæ francæ* and ethnolects in Europe, Clyne (2000) defines “ethnolect” as a variant of a language that marks its speakers as belonging to an ethnic group “who originally used another language or distinctive variety” (2000:86), which can be characterized by morphosyntactic, phonological, and prosodic features. In the United States, African American English (AAE) has long been recognized as a distinct variant from the regional dialects of the white majority (Rickford 1999; Green 2002). Similarly, Fought (2002) identified the patterns associated with Chicano English and argued for the differentiation between Chicano English and the L2 English of native Spanish speakers. In Fought’s work, we can

see the development of the idea of an ethnolect, if not the development of the ethnolect itself (Fought 2006).

It is important to recognize ethnicity, as Brubaker et al. (2004) write, as another way of “understanding, interpreting, and framing experience” (2004:52) akin to the conceptualization of nation or other social groups. That is to say, ethnicity only exists because people continue to think and talk about it. Thus, like all other traits that may be cognitively linked to speech and thought, ethnic identities from all over the continuum (Pieterse 1997) enter the indexical field (Eckert 2008b). The field of what we may call “ethnolinguistics” (Riley 2007), or “raciolinguistics”⁴, is concerned with the linguistic resources that speakers marshal in order to project, create, and negotiate an ethnic identity.

These resources can be identified in speech production and speech accommodation (Bourhis and Giles 1977; Giles and Johnson 1987), but their effects can also be measured in perception and cognition studies. We know that listeners can identify some speakers’ ethnicities (Purnell et al. 1999; Thomas and Reaser 2004), listeners’ knowledge of speaker ethnicity affects their perception of other speech characteristics (McGowan 2015; D’Onofrio 2018), and listeners’ own experience with ethnic varieties plays an important role in their identification accuracy (Wong and Babel 2017). There is also some evidence that language and self-reported cultural background affects cognitive performance, although the effect of ethnicity alone is difficult to tease apart from structural forces that impact members of an ethnic group (Flores et al. 2017).

Naturally, then, ethnicity must also be intertwined with all aspects of language and cognition. Ethnicity, as discussed previously, must play a role in the propagation and/or inhibition of regional sound change. Ethnic identity is also important as a factor in heritage language acquisition and maintenance. We are gradually increasing our understanding of ethnolects, and the search for ethnolects in communities where previously we may have dismissed stable patterns of variation as the mere absence of sound change (Hoffman and Walker 2010) continues.

As Reyes (2010) discusses, sociolinguistic research in Asian American communities has not uncovered much evidence for a pan-Asian American ethnolect, although sociolinguistic research has covered specific communities, such as Chinese Americans in San Francisco and New York (Hall-Lew 2009; Wong and Hall-Lew 2014), Japanese Americans in the San Francisco Bay Area (Mendoza-Denton and Iwai 1993), Hmong Americans in the Twin Cities (Ito 2010), and Southeast Asian (Cambodian, Vietnamese, and Laotian) Americans in Philadelphia (Reyes 2005).

The hyper-localized nature of each of these research projects highlights the understanding that linguists who work on ethnicity have about locating all the linguistic patterns they observe within specific communities of practice (Eckert 2006a), whether that is a school or church environment or a social group comprised of co-ethnics. Although a community-based study of Korean Americans is not the basis for this dissertation, I am always aware that the

⁴See Rickford (2016) for a collection of studies on “how language shapes our ideas about race”, which places raciolinguistics more on the “socio-” side of sociolinguistics.

conclusions I draw from this research ought to be kept in the immediate social context of those I have studied.

1.5 What does this have to do with Korean Americans?

1.5.1 Korean Americans and sound change

Given the historical overrepresentation of the majority white perspective in sociolinguistics and sociophonetics, it is important to frame the linguistic patterns of ethnic minorities more substantially than simply in contrast to whatever has been observed in the white majority of a regional speech community. One of the research questions is to identify whether Korean Americans are taking part in ongoing sound changes that have been observed in both English (e.g., the California Vowel Shift (Kennedy and Grama 2012)) and Korean (e.g., the VOT-f₀ tradeoff in AP-initial consonants (Kang 2014)). In addition to looking for evidence of shifted vowels and consonant mergers, I also aim to look for innovations within these ongoing documented sound changes that may arise from multiethnic and multilingual contact situations (Milroy and Milroy 1985; Wiese 2009), as has been documented at various times for other Asian immigrant communities (Wong and Hall-Lew 2014; Kang et al. 2016).

1.5.2 Korean Americans and heritage bilingualism

Given the sharp increase in the past twenty-five years in research on heritage bilingualism, scholars have already developed work on the maintenance and acquisition of Korean as a heritage language into a rich and fruitful field of study. One of the research questions of this dissertation extends the discussion of Korean as a heritage language to ask how identity as a Korean American affects the way Korean Americans speak English and Korean, and whether being a heritage language user is a social identifier that affects speech differently from ethnicity as a social identifier.

He (2012) writes that the heritage bilinguals who maintain the greatest proficiency in their heritage language tend to be those who identify strongly as bicultural in addition to being bilingual. By “bicultural”, she means that their sense of belonging to two cultures (e.g., American and Korean) must be strong and not undermined by any sense of competition or division. This motivates the bilingual speaker to maintain their heritage language in the face of long odds. Young adult Korean Americans today consider heritage bilingualism – that is, proficiency in their heritage language of Korean in addition to proficiency in the dominant language, English – to be a major characteristic of a bicultural identity (Jo 2001; You 2005; Jeon 2008). Their experiences as heritage language users is tied to language ideology (parental, communal, and authoritative perspectives on the value of mastering the Korean language), the disconnect between home and school registers of Korean, and highly variable home language policies (Jo 2001; Kim 2001a; Park and Sarkar 2007; Jeon 2008; Kang 2015).

Children who are born and raised in the United States generally learn English to a high degree of proficiency, but this sometimes comes with consequences for the child's proficiency in Korean. Their acquisition and maintenance of Korean grammar has many influencing factors, including age of learning (Kang and Guion 2006) and quality of input and output in childhood (Oh et al. 2003). As adults, once capable of reflecting metalinguistically on language behavior and its valuation, the importance of their own ethnic identity continues to affect language performance (Lee 2002; Kim and Duff 2012). This creates a kind of feedback loop whereby biculturalism is dependent on bilingualism, which is dependent on biculturalism, so on and so forth.

But the context for this biculturalism is different today from what it might have been a generation or two in the past (as I will discuss in Section 1.6). For one thing, today's US-born Korean Americans live in a society that is more aware, generally speaking, that they exist: that a Korean face in the United States will not necessarily belong to an immigrant or be able to speak the Korean language. South Korea, for its part, is more aware that a Korean face within its borders will also not speak the language, as the existence of *kyopho* and their varied linguistic experiences is now more widely known (Cho 2012). We therefore maintain the necessary distinction between bilingualism and biculturalism.

Parents of second generation Korean Americans who grow up with anything less than complete "native-like" fluency in the Korean language often lament the perceived failure of intergenerational transmission, though I would argue that no one party is explicitly "at fault" for this. The children, in turn, grow up feeling some or all of a wide variety of emotions connected to the lack of ability that their parents perceive: shame at not upholding some dimension of their heritage culture; sadness at the loss of communication between generations, in particular between grandparents and grandchildren; frustration that they may have to use limited linguistic skills in order to translate and interpret for monolingual speakers; or, on the other hand, delight and good humor from being privy to linguistic jokes that only they and other second generation Korean language users understand; a carefree attitude toward learning and using Korean since English is a "more useful" language anyway; or a sense of pride in having elements of two cultures and two languages instead of just one in their lives.

On the other hand, many parents also take very seriously every possible factor that might affect their children's success in the United States, and this often includes erroneous information from educators about the "dangers" of bilingualism. Parents are told that their children will not acquire English proficiently if they continue to use and hear Korean in the home, so some parents stop speaking to their children in Korean, fearful that this impedes their linguistic and cognitive development in English. Their fears are unfounded: many studies in bilingual child language acquisition show that bilingual input does not interfere substantially with fully proficient acquisition of either language⁵. But the consequences of diminished input in the heritage language are clear. In a 1996 study of immigrant language

⁵See Genesee (2006) for a review of the bilingual first language acquisition literature and Kroll and Bialystok (2013) for a review of the bilingual language processing literature.

use in Los Angeles, only 22% of second generation Korean Americans reported speaking Korean in the home, compared to 41% of US-born Asian Americans overall, and 68% of US-born Latinos (Lopez 1996). Korean is, in fact, a “highly endangered” heritage language (Au and Oh 2009:269), threatened by dominant ideologies of monolingualism in the United States as well as complex interactions between acculturation and assimilation for ethnic minorities who are racialized as Korean or Asian (Choi 2015).

Korean Americans who do not maintain bilingualism may still identify as bicultural and demonstrate this quality through other means (such as cooking Korean foods or participating in cultural events). But biculturality may still be indexed linguistically even in the absence of bilingualism, through the development and use of a Korean American ethnolect of English.

1.5.3 Korean Americans and ethnolects

Given the clear dearth of theoretical approaches to ethnically-bounded language varieties in Asian American speech communities, it is important to shed light on Korean American English. Among the goals of this dissertation is the evaluation of the way Korean Americans speak English (as a native language, not as a second language with influence from first language transfer), with particular attention paid to the sound patterns of their ethnolect. Although there are at present very few references to a Korean American ethnolect in the sociolinguistic literature, I will demonstrate not just its existence, but its pervasiveness in the community. Speakers of Korean American English know what they sound like.

To provide a kind of “appetizer” of anecdotal evidence, when asking peers about the way Korean Americans speak English, I have personally heard responses ranging from, “Yes, there is most definitely a ‘K-town accent’” – a way of speaking that Korean Americans associate with their peers who grew up in Koreatown, Los Angeles, or other large Korean enclaves – to, “Well, they just sound normal,” with little clarification of what it means to “sound normal”. Most Korean Americans are aware that when they speak in Korean, there’s something in their voice that tips off born-and-raised South Koreans that they are *kyopho*. Usually, it’s because their parents have explicitly told them so.

When *kyopho* speak in English, a similar “something” sometimes alerts the listener that they are Korean American, but instances of this occurring are much more variable and less common than the previously described “tell” for Korean speech. The extent to which this is an identifiable set of acoustic traits, or the product of stereotypes held by the listener, or a mix of both, remains unknown. The question, then, is what these traits are for Korean Americans, how Korean Americans may or may not adopt them, and how this affects the progress of regional sound changes that should otherwise exert a pull on the speech patterns of individuals. After all, as Jeon (2010) discusses, ethnicity and language are linked in the cultural mind of the Korean community, but on an individual level, the mileage varies considerably. Because ethnicity is a continuum, any given Korean American may construct their Korean American identity in a slightly different way, with consequently differing linguistic manifestations of the Korean American ethnolect.

From the purview of sociocultural and anthropological linguistics, a few of the chapters of Reyes and Lo (2008)'s *Beyond Yellow English* analyze discourse patterns and negotiation of ethnic identity among Korean Americans, specifically Lo (2009), Kang (2009), Song (2009), and Park (2009). These studies investigate speakers' stance-taking, metalinguistic commentary, and overall patterns of language use in different social contexts. With respect to ethnolects, Chun (2001) examines the ways in which a young Korean American man appropriates the ethnolect of African American English to build an identity, but she makes it clear that the case study makes no claims about Asian American speech styles or the existence of a Korean American ethnolect.

To date, very little research has addressed fine-grained acoustic patterns in speech and the role they play in the development of ethnolects. Only one article with a sociophonetic perspective on the English of ethnic Koreans in the United States exists. Jeon (2017) analyzed speech data from fifteen sociolinguistic interviews of Koreans living in Houston, Texas, and found that overall, the Koreans in this community demonstrated in their vowels characteristics that can be attributed to both the white (Anglo) and Black (African American) communities that constitute the major ethnic groups of the region. While this study is small in scope, it is one step closer to the potential identification of the acoustic characteristics that mark a speaker's voice as being a "Korean American voice", not just "Korean" (which is both ambiguous and laden with the baggage of foreign identity), and certainly different from unmarked "American", which usually implies whiteness⁶.

A slightly larger body of research has tackled the problem from the opposite bank, using speech perception and accent perception tasks to determine the existence or awareness of Asian American "accents" (Hanna 1997; Newman and Wu 2011). The findings have been simultaneously groundbreaking and inconclusive, in that they disprove myths about native-English-speaking Asian Americans assimilating completely to the white majority, while also not finding much evidence in favor of any kind of "pan-Asian" ethnolect. Unsurprisingly, some Asian Americans are perceived as sounding "more Asian" in their native English than others, but the variation inherent in the groups that have been studied makes it difficult to come to any conclusions about any particular Asian ethnic group, let alone Asian Americans as a whole. As of now, a perception study that specifically addresses the Korean American style of speaking English that so many Southern Californians and Asian Americans are aware of has yet to be done.

In this dissertation, I add to the sparse sociophonetic literature on speech in Asian American communities, toward a better understanding of the social influences on sound change, the effects of ethnic identity on language contact phenomena in the individual and in a community, and the emergence of a Korean American ethnolect.

Many strands of current research in sound change and in heritage bilingualism are laser-focused on identifying the "silver bullet" answer for why individuals use language (i.e., speak) the way they do. Does it depend on the circumstances of their acquisition? Quantity or

⁶See Chapter 6 of Carmen Fought's *Language and Ethnicity* (2006) for an excellent critique of whiteness as the baseline for comparison in ethnic studies.

quality of input? Early childhood socialization and networks of peers? Does it all come down to class? How big can the systems that govern variation get: as large as a family, neighborhood, city, region, country, continent? How much can be accounted for simply by idiolectal variation or personal identity?

My ambition is not to answer all of these questions nor to find a silver bullet, but to offer novel insights about language use from an understudied population: the *kyophos* of California. It is one of many such populations in the world that deserve more attention in the literature, for we will never truly see the big picture until all the margins are filled in.

1.6 A brief history and anthropological survey of Korean Americans

Now, let's talk history.

1.6.1 Korean immigration to the United States

Korean immigration to the United States is generally categorized into three⁷ time periods: the early 20th century (1903-1949), the post-Korean war, or “intermediate” (Min and Noh 2014:4) period (1950-1964), and the contemporary period (post-1965).

The first wave of Koreans consisted primarily of migrant workers and their families who arrived in Hawai'i in 1903 (recently forcibly annexed by the United States) to work on pineapple and sugar plantations. Several thousand Koreans continued to land in Hawai'i and California over the next two decades, until xenophobic pressures moved Congress to pass the Immigration Act of 1924 (or the “Asian Exclusion Act”), banning nearly all immigration from Asian nations, with some exceptions for international students.

In 1910, Japan annexed Korea, and in response, members of the Korean diaspora in the United States and elsewhere rallied to support Korean independence from afar. Liberation was achieved when Japan lost the Second World War, but Korea immediately became a site of political struggle which ended in the division of the peninsula into North and South and the onset of the Korean War. From 1950 to 1953, tens of thousands of Korean refugees left the peninsula, and about 15,000 immigrated to the United States. Tens of thousands more Koreans, including wives of American GIs, orphans or children adopted by American families, and members of the intellectual class, joined in the years to follow. Although an armistice agreement was signed in 1953, the Korean War has technically never ceased.

The United States government lifted the ban in 1965 by passing the Immigration and Nationality Act, partly out of a need for skilled professionals, and immigration from what was now South Korea increased steadily over the next three decades (Lee 2018). The political and economic situation in South Korea was unstable, but the recent wave of immigrants

⁷Hong (2018) notes that some scholars consider the small trickle of diplomats, exiles, students, and merchants in the pre-1900s era as a fourth time period, though this was not officially considered emigration.

consisted not of refugees or migrant laborers, but increasingly of working class and middle class families. Korean orphans adopted transnationally by (usually white) American families also accounted for a significant proportion of the thirty thousand or so annual immigrants from South Korea per year between 1960 and 1980 (Min 2011).

It was in the mid-1960s when well-known Korean ethnic enclaves such as Koreatown in Los Angeles began to take shape. South Central LA has been associated with Korean Americans since the 1930s, but the neighborhood was developed quickly by an economically and politically heterogeneous mix of Korean business owners and recent immigrants to the region who kept their ties to South Korea. Light and Bonacich (1988) document the work of immigrant entrepreneurs who used both ethnic and class resources at their disposal, including cheap labor and three levels of solidarity, including co-ethnic solidarity, to meticulously plan and enact the economic establishment of Koreatown between 1965 and 1982. The cultural establishment soon followed: in 1980, the city of Los Angeles officially designated the area as “Koreatown”. It continues to be the cultural epicenter of the Korean diaspora in the United States (Park and Kim 2008).

However, after a peak in immigration between 1985 to 1987, during which over thirty-five thousand Koreans arrived annually in the United States (Abelmann and Lie 1995:67), South Korea’s economy and political situation stabilized and grew. Then, the Los Angeles riots of 1992 marked a shift in the cultural consciousness of Korean Americans and, for many Koreans both in the United States and in South Korea, popped the bubble of the American Dream. The riots happened to coincide with the beginning of a sharp decades-long decrease in immigration from South Korea to the United States, with numbers as low as twenty thousand each year during the 90s (Min and Noh 2014). International students and extended family members outpaced economic migrants without previous ties to the United States. From 1991 to 1992, South Korea’s 25,720 students represented the fifth-largest group in the United States, behind China, Japan, Taiwan, and India (Abelmann and Lie 1995:60). Educational migrants and immigrants from wealthier class backgrounds have been overrepresented in the numbers since the 1970s, though more recently the ratio has been balancing out. Chain migration, or immigration motivated by joining family already in the United States, was the primary motivation for 74% of immigrants surveyed in 1990 (Park et al. 1990).

Between 1992 and 1998, investments from South Korea into Koreatown helped with recovery and redevelopment (as well as causing gentrification and the displacement of low-income residents), up until the next major upheaval. The International Monetary Fund (IMF) crisis of 1998 marked another shift, this time a severe crippling of the South Korean economy and a subsequent rise in immigrants to the United States in the new century. This included increases in Korean college graduates migrating for employment but also in Korean international students who changed their resident status from temporary to permanent after graduating with an American degree, as well as in transnational families (called *kileki*, or “goose” families) in which one parent remains in South Korea to support the family financially, while another parent accompanies the child or children to the United States or Canada for their education (Finch and Kim 2012).

According to Min and Kim (2013), the Korean population in the United States has increased from less than 70,000 in 1970 to more than 1.7 million in 2010. Although immigration from South Korea is now slowing once again, the growth in US-born Koreans continues to contribute to a steady increase in the Korean population.

1.6.2 Korean Americans in California

In this section, I discuss the modern demographics of Koreans in California, focusing on two regions of high Korean concentration: Koreatown, Los Angeles, and the Bay Area in Northern California, from which most of the interviewees for my dissertation project hail. In common parlance, Northern California (or “NorCal” for short) just refers to the San Francisco Bay Area rather than the entirety of the latitudinal northern half of the state. “SoCal”, on the other hand, usually refers to the Los Angeles and San Diego metropolitan areas, plus the highly populated urban and suburban counties in between and adjacent to them. It sometimes also includes the southern counties of the Central Coast, San Luis Obispo and Santa Barbara. I use Northern California to mean the San Francisco Bay Area, with a focus on the counties that have the greatest numbers of Koreans (Santa Clara and Alameda, or the “South Bay⁸” and “East Bay”, respectively), and I use Southern California to mean the Los Angeles metropolitan area, with a focus on LA County and Orange County. I compare and contrast the relationships between Northern and Southern California to their surrounding regions and to other ethnic communities that they interact with.

According to the 2010 Census, approximately 451,900 people of Korean descent reside in California, making up 1.2% of the total population⁹. This is up from 345,900 in 2000, and 259,900 in 1990 (see Table 1.1). California has the largest Korean population of all fifty states by number, and its concentration of Koreans is among the highest in the country.

1.6.2.1 Southern California and Los Angeles

Most of the consultants interviewed for this project were born in the 1990s. According to the United States Census, there were approximately 200,800 Korean Americans living in Southern California counties in 1990. They comprised 20% of the total Korean American population in the United States (Yu 1990). Today, there are about 355,000 Korean Americans in Southern California, over 60% of whom live in Los Angeles County. The cities that rank among the largest in the country in terms of Korean American population that are in Southern California include Los Angeles (108,300), Torrance (10,900), and Glendale (10,700) in LA County; and Fullerton (15,500), Irvine (13,100), and Anaheim (6,600) in Orange County.

⁸Not to be confused with the “South Bay” of Los Angeles County, which encompasses the cities southwest of Santa Monica Bay, including Torrance, Inglewood, and Gardena.

⁹Unfortunately, I cannot find a breakdown of these numbers by generational status, but assume that the proportion of these half million Koreans in terms of first, 1.5, and second generation or higher is roughly similar to the national proportion, as discussed in Section 1.6.3.

Table 1.1: Residents of California of Korean descent in 1990, 2000, and 2010, according to the United States Census, with figures rounded to the nearest 100. “Korean descent” here does not include multi-racial Koreans (people who indicated Korean and at least one other race in the census). “Bay Area” here is defined as the counties surrounding the urban metropolises of San Francisco and San Jose, including Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma. “Southern California” here is defined as the counties surrounding the urban metropolises of Los Angeles and San Diego, including Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura, but not including San Luis Obispo, Santa Barbara, Kern, or Imperial.

County	1990	2000	2010
Alameda	9,700	14,200	17,500
Contra Costa	4,000	5,100	8,200
Marin	600	1,100	1,300
Napa	200	300	400
San Francisco	6,500	7,700	9,700
San Mateo	3,300	4,600	5,500
Santa Clara	15,200	21,600	27,900
Solano	1,000	1,100	1,200
Sonoma	600	1,000	1,000
Total Bay Area	41,100	56,700	72,700
Los Angeles	143,700	186,400	216,500
Orange	37,500	55,600	87,700
Riverside	3,900	5,300	12,200
San Bernardino	6,000	7,400	13,700
San Diego	6,700	12,000	20,700
Ventura	3,000	3,300	4,200
Total Southern California	200,800	270,000	355,000
Total California (incl. unlisted counties)	259,900	345,900	451,900
California pop. (incl. unlisted counties)	29,760,000	33,871,600	37,254,000
Percentage of Total California	0.87%	1.02%	1.21%

In Los Angeles County during the early twentieth century, the middle-class white majority’s desire for racial and class homogeneity in their neighborhoods did not allow Koreans and other immigrant and minority groups to buy homes and settle evenly throughout the growing metropolis. Instead, they were funneled into ethnic enclaves such as Koreatown (Park and Kim 2008). Over time, those families who could afford to move elsewhere usually did. Koreatown has never been just Koreans; it has always had a large Latino population, as well. Today, while Koreatown is bustling with Asian faces from morning until evening, the actual residents of those three square miles are 68% Hispanic or Latino, while only 26%

are Asian (Yu 2019). On the north end of the neighborhood, Little Bangladesh is growing in size, and first generation South Asian immigrants can be seen more and more often on the streets of Koreatown. Many of the Korean Americans who do their business, shopping, and entertaining in Koreatown actually live in suburban cities outside of Los Angeles such as Glendale and Torrance, after what Park and Kim calls “the suburbanization of the Korean population” (2008:130), orchestrated in the 1990s by community leaders and housing developers with an eye on upward mobility. These days, class is a better predictor of where one lives in the county than race alone.

Another influencer of Korean Americans’ housing patterns was the LA riots of 1992. Nancy Abelmann and John Lie’s *Blue Dreams* (1995) studies the Korean American diaspora through the lens of this vivid national catastrophe. They argue that Korean Americans as a whole are more heterogeneous than what could be seen in popular imagination or media representations of the time. They also highlight the many ways in which this conflict came to define Korean Americans not just to the nation, but to themselves, as well. The LA riots can be considered a point of “awakening” for Korean Americans, who had to come to terms with the reality that they lived in America, but were not seen as American, and were also not seen as Korean by South Koreans at the time (Abelmann and Lie 1995:24). Citing the dangers of the urban center and devastating economic losses, many Korean families fled to the suburbs of LA County and Orange County. South Central LA remained the epicenter of Korean culture in America, but those who remained needed to rebuild not just burned shops and restaurants, but a sense of belonging in this country. “A fundamental lesson of the LA riots for many Korean Americans,” write Abelmann and Lie, “was the need to shift their focus from South Korea to the United States [...] not only a generational transfer of power but new articulations of the South Korean-US relationship – from the first generation with its irrevocable ties to the homeland to the second generation with its firm footing in the United States” (1995:185).

Of course, young Korean Americans today were born and/or immigrated to the United States *after* this pivotal moment in Korean American history. The conflict occurred in April 1992, twenty-eight years ago. Koreatown changed drastically in the post-riot era, or what Park and Kim call “the Wilshire era” (2008:131), after Wilshire Boulevard, home now to a financial district full of high-rise office buildings. As South Korea funneled resources into Koreatown, it became transformed, and quite unlike the gritty landscape that had been set ablaze in a week of riots. “Koreatown was once the place that immigrants arrived, but aspired to leave,” they write. “Now, focused on a shiny strip of Wilshire, some consider it ‘a mecca for suburbanites and wealthy immigrants’” (Park and Kim 2008:133).

Most college-aged Korean Americans today have no memory of the Koreatown of the past. Their childhood and upbringing is most likely to have been shaped by factors much more local than events that showed up on national evening news, such as whether they lived in a city or neighborhood with a large Korean population, and whether or not they attended one of about five hundred Korean American Christian churches in Los Angeles alone (Yu 1990:2). But Southern California Koreans are all very aware that they live in or near the epicenter of Korean America, whether they have spent much time in Koreatown

and understand its history or not. This is a fact about which they may sometimes playfully boast, especially when talking to their peers from Northern California.

1.6.2.2 Northern California and The Bay Area

In the 1990s, there were approximately 41,100 Korean Americans in Bay Area counties, including Alameda, Contra Costa, San Francisco, San Mateo, and Santa Clara. (The “North Bay” counties of Marin, Napa, Solano, and Sonoma are also included in this count, though their numbers of Koreans were and are quite small in comparison to the rest of the Bay Area.) In the 2010 Census, this number had increased to 72,700. The cities that rank among the largest in the country in terms of Korean American population that are in the Bay Area include San Jose (12,400), San Francisco (8,700), Santa Clara (3,500), Fremont (3,000), and Berkeley (2,000).

The astonishingly fast growth and diversification of the population of Northern California matches the trends found in Southern California, but with the added boost of the 1990s tech boom in Silicon Valley¹⁰ creating even greater opportunities for Asian immigrants, particularly in suburban cities such as Fremont, rather than large cities like Oakland or San Francisco (Lung-Amam 2017). Park and Li (2006) have designated the kinds of modern, sprawling, suburban neighborhoods with high concentrations of Korean and other Asian immigrants that grew and spread in the 1990s as “ethnoburbs” (see also Li (2019)).

One might further differentiate between “techno-ethnoburbs” such as those found in Silicon Valley, driven by high-tech economies and filled with educated, upwardly mobile immigrants, and “LA-type ethnoburbs” (Lung-Amam 2017:5) which, while themselves not the same as Koreatown, are still culturally distinguishable from their northern counterparts, in particular with respect to class. Hypermobile global cosmopolitans with flexible citizenship (Ong 1999), who regularly make business trips back and forth between California and their home countries of India, China, and Taiwan, have helped bring wealth to the Asian American ethnoburbs of Silicon Valley, while Los Angeles’ ethnoburbs, as well as Koreatown itself, have remained beholden to foreign (i.e., South Korean) investment and bear its fingerprints.

With many fewer Koreans living in the Bay Area compared to Southern California, both in number and in relative proportion to the general population, their presence is less felt compared to Koreans in the LA area. There are small neighborhoods considered to be Koreatowns in north Oakland as well as in the cities of Santa Clara and San Jose in Santa Clara County. But no neighborhood or city in the Bay Area has the kind of magnetic pull that LA’s Koreatown exerts on the Korean diaspora.

Southern California is what Park and Kim (2008) call a (contested) “ethnic nexus”: with its dense concentration of Korean food, culture, political organizations, and people in

¹⁰Silicon Valley is a famous region in Northern California that comprises cities in Alameda, Santa Clara, and San Mateo counties such as San Jose, Fremont, Mountain View, and Cupertino. It has historically been and continues to be wealthy due to its embrace of the tech and startup economy, and with continued immigration and recruitment of the highly-educated from around the world, it grows more diverse and cosmopolitan every year.

the middle of metropolitan LA, it links urban to suburban communities and the United States to South Korea. On the other hand, the Bay Area, with a more geographically de-centered Korean community, hosts Korean communities in ethnoburbs and lacks the status of “mecca” for the Korean diaspora. To be sure, community organizations and church networks for Koreans still exist in the hundreds throughout the Bay Area, but to grow up Korean in this region makes for a markedly different upbringing than being in or near the nexus of Korean America found 350 miles to the south.

Many of my consultants reported feeling that it was easier to maintain a sense of Korean identity in Southern California, where the language can be seen (on building signs) and heard (in the Korean supermarkets) much more often. But Korean Americans in all geographic locations face the same difficult circumstance regarding their language maintenance and feel the same tension between generational groups, as I discuss in the following sections.

1.6.3 Generational status

The concept of generational status is important for Korean Americans, as is the case for many immigrant communities in the United States. But generational status for Korean Americans today is important in a strikingly different way than it is for other groups of immigrants: namely, European immigrant communities and pre-1965 Asian communities.

European immigrants who arrived during the bulk of the 18th, 19th, and 20th centuries from Ireland, Italy, and Eastern Europe faced many hurdles assimilating to mainstream American culture, which had its roots in “Anglo-Saxon” white communities. But as described in Warren and Twine (1997), successive waves of European immigrants continued to be “annexed” (Warren and Twine 1997:204) into an evolving definition of whiteness. Kim (2007) argues that Asian immigrants have never been subsumed into whiteness (or even “honorary whiteness”) in the same way, due to differences in racialization. Phenotypic traits which used to distinguish Irish from Polish from Anglo-Saxon have been rendered nearly invisible, while Asians continue to be “forever foreigners” (Tuan 1998).

What about Asian immigrants who have belonged to established communities in the United States for many generations? Most adult Korean Americans today would identify as first, second, or third generation Korean American. People of Japanese descent, as a point of comparison, have been in the United States in large numbers for at least fifty years longer than Koreans (although they, too, were banned in 1924). Japanese Americans take care to maintain generational terms: *isei* (first generation), *nissei* (second generation), *sansei* (third generation), *yonsei* (fourth generation), and *gosei* (fifth generation). Japanese Americans reference their generational status as an important marker of their ethnic identification (Masuda et al. 1970), even if among higher generational cohorts (e.g., fourth and fifth), the differences between each generation begin to collapse (Wooden et al. 1988). The maintenance of generational status as an identifier does, in a way, both stem from and also feed into their Othering. Japanese Americans, as immigrants and the descendants of immigrants, tend to maintain Bakhtin’s “hybrid identity” (Bakhtin et al. 2010), as do most Asian American

communities and other racially minoritized groups in the United States (see also Lowe (1991); Jo (2001); Kim (2004a); Asher (2008)).

Where Korean Americans differ from Japanese Americans is, among other things, a matter of timing. Most Korean American communities have not been in the United States for a long enough time that their relationship between their generational status and their ethnic identity has begun to collapse. There remain stark differences between first, second, and third generation Korean Americans today, unlike the situation of third, fourth, and fifth generation Japanese Americans today. Contemporary scholarship on Koreans and generational status focuses quite a bit on how to define the various generational cohorts, because Korean Americans themselves still consider it very important.

Min and Noh (2014) designate “first generation” immigrants as those who came to the United States at age thirteen or older, “second-generation” as US-born Koreans, and “1.5 generation” as a third category for youth immigrants who arrived before the age of 13. The latter label appears to have been coined first by Rubén G. Rumbaut in 1976 as the “one-and-a-half generation”, which he used to discuss the experiences of young Cuban immigrants and young Southeast Asian immigrants to the United States (Rumbaut 2005, 1991). As the term caught on both in academia and among the public, the decimal version “1.5 generation” rose to greater use. In all cases, it referred to “foreign-born youths coming of age in the United States in contrast to second-generation native-born youths” (Rumbaut 2004:1166).

Thus, 1.5 generation Korean Americans were born overseas but came to the United States with their families at a young enough age to have experienced a coming of age here. In Korean American communities, the calqued term *ilcem osey* first began to be used in the 1970s (Park 1999). Park argues that although biologically, the notion of being “1.5” makes no sense, the Korean American community has culturally constructed this identity such that it has psychological consequences for those who adopt it or those to whom the label is applied. The ability to define and categorize generational status is very important not just for understanding immigrant communities in the United States, but also for understanding the relationship between race and socioeconomic attainment in this country (Kim 2013a).

As of 2007-2011, approximately 48% of the 1.5 million Korean Americans could be categorized as first generation immigrants, 21% as 1.5 generation, and 31% as second generation (Kim 2013a). Generational differences are manifested in linguistic and cultural divides between parents and children (Kim et al. 1993). First generation immigrants largely tended to own small retail and service businesses (e.g., grocers, liquor stores, nail salons, dry cleaning, and garment manufacturing) regardless of their education level or class background in South Korea, due to the language barrier as well as systemic racism. Their children, however, do not have the same language barrier. Second generation Korean Americans speak English, and their level of fluency in Korean varies widely (Lee 2002), often resulting in communication problems between parents and children. These children then come of age in a society that has fewer structural obstacles to overcome for gainful employment in the mainstream economy (e.g., management, professional jobs, and careers made accessible with American college degrees).

Modern immigration scholars discuss the concept of the “new second generation”, or

second generation immigrants born in the United States after the 1965 immigration boom, who would have been adolescents and young adults during the 1990s. The term first rose to prominence in academic circles during this decade (Portes and Zhou 1993; Portes 1996). Twenty years later, Min and Noh (2014) continue discussing the “new” second generation in a Korean American and Korean Canadian context. There is, of course, not just one timeline of generations, since the second generation children born in the 1970s grew up in a society quite unlike those who were born in the 1990s. In particular, the LA riots of 1992 created a new cultural “dividing line”, differentiating Korean Americans who had memories of the riots or their news coverage from those who grew up with a post-riot Korean American consciousness.

Other scholars, such as Kim and Sakamoto (2010), also identify a “1.25” generation of Korean Americans, referring to those who came to the United States as students pursuing degrees in higher education. In this instance, they are differentiated from first generation Korean Americans who complete all of their education in South Korea, and from 1.5 generation Korean Americans who do not finish high school in South Korea. In my dissertation work, I do not distinguish “1.25” generation from first generation immigrants, as the focus of my work is on 1.5 and second generation Korean Americans and the differences that may be found in comparisons of their linguistic behavior, metalinguistic commentary, and ethnic identification practices.

1.6.4 Transnational Identity

Korean Americans of any generation must forge new identities when making the United States their home. Not long after the start of the most recent wave of Korean immigration (post-1965), Hurh (1980) wrote about the “new ethnicity” created by Korean immigrants, who could hold on to as much Korean traditional culture as they wanted, but could not escape the steady drumbeat of assimilation. At the same time, Korean Americans could let go of as much of their “Koreanism” as they wanted, but racialization would never allow them to be only American. There were always ties to South Korea. In this way, Korean Americans are another example of transnational identity (Basch et al. 2005). Basch et al. write that transnationalism in the modern era is mostly about individual agency: migrants actively maintain connections between two countries for a myriad of reasons which are usually beneficial to themselves or their communities.

Despite the strong differences in social climate between the 1970s, 1990s, and today, Abelman and Lie argue that the general Korean American experience has “the same complexity of diaspora identity and politics” today as twenty years ago and even a hundred years ago. This stems directly from the recognition of having a personal identity with two geographic and cultural loci. Kim (2008) writes about the framework of ethnonationality that exists as an undercurrent for all ethnic Koreans: a sense of belonging to one nation (blood, color, and nationalism), and how it has created tension for second generation Korean Americans who find this model constraining in the American context. To be Korean American is to be transnational, whether one is aware of this and engages with transnational identity or

not. The consequences for born-and-raised Americans are wide-ranging, from struggles with discrimination as described in Kim (2008)'s treatment of the "foreign model minority" (Kim 2008:199), to their ease (or lack thereof) in navigating multicultural and multilingual spaces.

For example, Los Angeles' Koreatown and other Korean enclaves (e.g., in New York City and Atlanta) are represented in mainstream media as little "colonies" of South Korea. But one must consider that many second generation Korean Americans who grew up in Koreatown have never even visited South Korea and do not seek to maintain political or economic ties to it. Does their presence and interaction with Koreatown constitute an act of transnationalism? Does going out with friends for a night of Korean barbecue and karaoke at the *noraebang*¹¹ register cognitively as DuBoisian double consciousness? Does it add or subtract from their sense of biculturality? On the opposite side of the spectrum, more anti-imperialist Koreans hold the pessimistic view that South Korea itself was and continues to be a colony of the United States, creating an ouroboros of hegemonic influence on the identity of Korean Americans. Perhaps both are true.

Given the strong history of American intervention in Korean politics, South Koreans have tended to view the United States with strong opinions (both positive and negative), and these views extend to South Koreans who leave the homeland to seek economic opportunity across the Pacific. Some cultural mainstays get lost on the journey: second generation Korean Americans grow up with two languages but sometimes lose their "mother tongue"; the diverse religious traditions of South Korea are left behind, while Protestant Christians and Christian converts become increasingly concentrated in Korean American communities (Chong 1998); immigrants who return to South Korea find that it has changed too quickly for them to recognize, or that feelings of it being a homeland have been lost (Kim 2009a). All of these experiences contribute to the complex balance that Korean Americans perform with respect to being Korean and being American. "Borderland or hyphenated identities have been alien to many Korean Americans," write Abelmann and Lie of the mostly first generation Korean American immigrants in early 1990s Los Angeles who identify primarily as Korean nationals residing in the United States (1995:13). It wasn't until after the riots that many Korean Americans were forced to reconsider their "natural" identification with South Korea.

The Korean American adults of the 90s had, arguably, less of a sense of biculturality in the framework of Lee (2002) and He (2012). The LA riots emphasized the marginal position that people of Asian descent held in American society, but the disappointing lack of concern from their homeland across the Pacific caused many to realize that their American-ness was highly relevant – more relevant than their Korean heritage, it would seem. When Korean Americans perceived abandonment by both the American and the South Korean governments at the same time, grassroots Korean American political leadership rose to fill in a gap left by the riots, and a stronger sense of Korean American identity appears to have taken shape.

Korean American adults today – those who were born in the 90s – have a different sense of their Korean American identities than generations of Korean Americans before them.

¹¹A Korean-style karaoke bar with private rooms for parties. Yale romanization: *nolayppang*.

This new biculturality is less connected to South Korea, South Korean nationalism, and the cultural sense of oneness (*wuli*). Instead, there is an American flavor of Korean American identity, one that celebrates their uniqueness as Korean American, yet may still carry with it a tinge of guilt for “not knowing enough Korean” or the responsibility of upholding some traditions, while not letting any of this dictate their lives. It is still transnational, but perhaps a different flavor of transnationalism: one that operates more in the growing tension between Korean ethnonationalism and American independence and hegemony (Kim 2008). Korean American identity today is constantly contested transnationalism, the battle of language ideologies between parents and children (Song 2010) and of ethnic labels between Othered minorities and the white majority (Choi 2015; Shin 2016). Such are the growing pains of immigrant communities in a nation such as the United States.

Yet Min and Noh (2014) declare that Korean Americans are “no longer an immigrant community; rather [they are] an ethnic minority community with significant younger-generation Korean adults” (Min and Noh 2014:9). Indeed, they are a minority: even at 1.7 million (in 2010), they are only 0.6% of the total United States population. There are twice as many people of Chinese descent as Korean; Koreans also number fewer than Filipinos, Indians, Japanese, and Vietnamese. Yet Koreans have a large cultural footprint in greater American consciousness for their small size. After bursting onto the scene, so to speak, with dramatic media portrayals as both helpless victims and gun-wielding vigilantes during the 1992 Los Angeles riots, Korean Americans have otherwise been shaped as yet another “model minority”. Second generation Korean Americans have an overall high level of education: 52-70% of first and second generation Korean Americans hold bachelor’s degrees or higher, compared to 33% of white Americans (Kim 2013a). Their socioeconomic attainment is healthy by most standards, with over-representation in professional occupations such as law, medicine, finance, and technology; participation in local politics has increased; and with the more recent international rise of South Korean entertainment exports such as K-dramas and K-pop since the 2010s, Korean visibility in mainstream American culture continues to grow. It would be difficult to find someone living in urban Los Angeles today who has never been to a Korean restaurant, compared to twenty years ago.

None of these statistics are meant to paper over the continuing discrepancies within the Korean American community, especially along class lines, or feed into the myth of the model minority in any way (Chou and Feagin 2015). Rather, I seek to highlight how many Korean Americans have achieved something like an “American Dream”¹², so as to discuss what that means for their identity as “hyphenated” Americans.

As members of a small minority with an outsize cultural footprint, Korean Americans often face the struggle of being Korean and American, internally questioning (or even sometimes externally being questioned about) whether they have to choose one identity over the

¹²And it is important to acknowledge that the fabled “American Dream” has always been and continues to be out of reach for many immigrants, even Korean immigrants, due to the hurdles of race and class. I acknowledge that the majority of my consultants for this project came from the population of highly-educated, middle class Korean Americans who are more likely than their working class counterparts to have found America to be amenable to their personal goals, such as attending a prestigious public university.

other, or somehow split the difference. There are decades of meaning and cultural baggage associated with the hyphen found in terms such as “Korean-American” or “Asian-American”, and minority Americans of every stripe have historically had to come to terms with this presumed dichotomy¹³.

Some Korean Americans may identify primarily as being Korean, citing their phenotype, language background, and heavily-Korean social networks. Others identify primarily as American, recognizing their everyday use of English, adoption of American cultural values, and envisioned futures in the country they were born and raised in. Most feel a sense of conflict between these two pulls, a common feeling among members of a diaspora, and in particular one that resonates with all victims of “the global scattering of peoples of Asian origin” (Wong 1995). To ask Korean Americans to simply be American is to ignore the systems of capitalism and imperialism that drove many millions to uproot themselves and their families over decades. To expect them to be fully representative of South Korea is similar folly. But to have the diaspora live and embody both identities – “Korean-American”, connected by a hyphen – without being played by neoliberal forces that capitalize on transnational identity for various kinds of profit, is easier said than done. Adopting the continuum model of ethnicity as in Jeon (2010) may help. Furthermore, Santa Ana (2004) writes that Asian American identity today emerges with “vacillations” between imagined racial and national homogeneity (e.g., “Korean”), and postmodern neutral hybridity through which assimilation renders historical trauma and upheaval as bygones (e.g., “American”). The multiple layers of Asian Americans’ ethnic identity often generates complex emotions when probed at.

During my fieldwork, I asked Korean Americans how they identified ethnically, allowing most to elaborate on what they meant by identifying as “ethnically Korean” or “ethnically Korean American”. Answers were elicited orally, so I do not know if my consultants would use hyphens when writing their response or not. In this dissertation, I choose not to use hyphens at all, mostly in recognition of the struggle that Korean Americans (and all minoritized Americans throughout time) have with any indication that their Korean identity and their American identity need to be linked or that the two cannot be separated. I allow my consultants and the community I study to inhabit one identity or the other or both. Following Abelmann and Lie (1995), I define “Korean American” as being of Korean descent and living in America (the United States), regardless of citizenship status.

With respect to the Korean terms for diasporic community members, the Korean Americans I talked to generally referred to themselves as *kyopho* (“Koreans living abroad”), rather than *thongpho* (or “brethren”, used in the official Korean title of the Korean American Research Center, or *Micu Thongpho Sahoy Yenguso*). Rarely do they use the term *isa* (“second generation”), although in English, statements such as “I’m second gen” are often used.

¹³See Choi (2010) and, in the non-academic literature, Hong (2020). As another example, Italian Americans were not considered white in the early 20th century and were widely discriminated against (Warren and Twine 1997). Tamburri (1991) has examined the existence of the “hyphenated identity” (i.e., “Italian-American”) as a consequence of the United States’ dominant culture’s opposition to newcomers, as well the role of the hyphen itself in reifying a discourse that pits “Italian” and “American” against one another in a contest of abstractions. See also Giampapa (2001) and Gabaccia (2012).

1.7 Outline of the subsequent chapters

With their rich history and deeply-layered cultural background, Korean Americans are a unique community to use as a lens into processes of language change, heritage language theory, and ethnolect formation. In the subsequent chapters, I aim to show how sociophonetic analysis of the speech of Korean Americans sheds light on the research questions outlined at the beginning of this chapter.

In Chapter 2, I show how young Korean American speakers of Korean in California are not participating in a sound change currently underway in Seoul. The diffusion of this sound change across international borders was first investigated by Kang and Nagy (2016) in the Korean community of Toronto, Canada. They found that some, but not all, aspects of the sound change were preserved across generations and geographic locations, due in part to immigration, and hypothesized that Korean Canadians may be forging a new ethnolinguistic identity. Chapter 2 demonstrates similar results among young Korean Californians.

In Chapters 2 and 3, I locate and question differences between Korean Americans of different generational groups (1.5 generation versus second generation) in speech production. Chapter 2 finds a generational difference in terms of the participation in Korean sound change, but Chapter 3 finds that the two generational groups are equivalent in their use of variable pitches and pitch ranges in bilingual speech. These discussions shed light on the usefulness of the “heritage speaker” label in research at the levels of phonetics and phonology.

Chapter 4 addresses Korean American participation in sound change again, this time in English. I find that for Korean Californians’ English back vowels, which are undergoing fronting and diphthongization in the ongoing California Vowel Shift, the vowel formant trajectory is affected by neither the monophthongal Korean correlates in the bilingual phonological system, nor by age of immigration or generational status of the speaker. This shows how the members of an ethnic minority do participate in a regional sound change, and it also provides further evidence that bilingual speakers have distinct vowel systems and phonological patterns for their two languages.

In Chapter 5, I move from the acoustic phonetic data to a qualitative analysis of Korean Americans’ metalinguistic commentary, seeking to answer questions of how Korean Americans view their own linguistic practices. I ask them how they feel about the connection between their language use and their identities as Koreans and/or Korean Americans. I argue that Korean Americans continue to view language skill as highly important for their personal sense of affinity to Korean culture, corroborating every anthropological study of this in the past. However, many are reluctant to say outright that Koreans must speak Korean, citing understanding of the diversity within the Korean American community (including adoptees) and the need to avoid essentializing any particular framework for social identity.

Chapters 5 and 6 also include different perspectives on what Korean Americans believe the “Korean American accent” to be, or what it sounds like, or who speaks with it. Chapter 5 focuses on the perspective of second generation Korean Americans, while Chapter 6 gives the point of view of 1.5 generation Korean Americans and also includes some case studies with

acoustic analysis. In Chapter 6, I argue that the identity of a 1.5 generation Korean American is built on their understanding of their immigration status and their social networks, but that the community-level understanding of 1.5 generation as culturally distinct from second generation has changed since the term first came into wide use. In their English speech, 1.5 and second generation Korean Americans are too variable within each group and too similar overall to be perceived differently, while in their Korean speech, the 1.5 generation is generally perceived as being more native-sounding.

I conclude in Chapter 7 that there are many ways in which an individual's sense of ethnic identity affects their speech, although the qualitative and quantitative analysis of ethnic identity remains a tricky maneuver in sociolinguistic analysis. I also conclude that the Korean American ethnolect is a real phenomenon, and that Korean Americans who consider themselves to be bilingual and/or heritage speakers of Korean can best be understood as multifaceted language users whose identity influences their speech as much as, if not more than, static demographic properties such as age of arrival. Finally, I suggest that frameworks of proficiency and deficiency (e.g., being "good" or "bad" at speaking Korean or English, or having a complete or incomplete grammar) are not nearly as useful or interesting as a framework of linguistic synthesis: ethnolects, bilingualism, and heritage language use as the ongoing coalescence of innovations within an individual or a speech community in a language contact situation. This framework applies to the bilingual Korean American community, and it may indeed find purchase in bilingual and bicultural communities elsewhere.

Chapter 2

Production and perception of the VOT-f0 tradeoff in heritage speakers of Korean in California

If words are to be uttered, they would be from behind the partition. Unaccountable is distance, time to transport from this present minute. If words are to be sounded, impress through the partition in ever slight measure to the other side the other signature the other hearing the other speech the other grasp.

Dictée, Theresa Hak Kyung Cha

In this chapter¹, I argue that Korean Americans in California speak Korean differently from their same-age counterparts in South Korea. This difference is located in their lack of participation in an ongoing sound change of Seoul Korean, whereby the primary cue for differentiating lenis and aspirated stops in AP-initial position is changing from VOT to f0 of the following vowel. Korean Americans who acquired Korean as children in the United States do not use f0 as a primary cue to differentiate these consonants, while first generation Korean immigrants and childhood immigrants do. For any particular speaker, however, their use of f0 as a cue or lack thereof does not correlate with Korean American listeners' judgments on their perceived proficiency in Korean.

¹This chapter is a revised version of: Cheng, A. (2017). VOT merger and f0 contrast in Heritage Korean in California. *UC Berkeley PhonLab Annual Report*, 13, 281-311.

2.1 Introduction

Korean possesses a typologically unique three-way contrast in manner of articulation that has been described as “laryngeal” or a “phonation contrast” (Cho et al. 2002; Kim-Renaud 2014). The phonemic stops and affricates that demonstrate this contrast are most commonly called lenis, fortis, and aspirated and occur at bilabial, alveolar, and velar places of articulation as stops, and post-alveolar as affricates (see Table 2.1).

Table 2.1: Simplified Korean consonant inventory emphasizing the three-way “laryngeal” stop contrast: lenis, fortis, and aspirated. Standard IPA symbols are indicated between slashes; I have used a single subscript vertical stroke to represent the tense consonants. Korean romanization follows the Yale romanization standard.

	bilabial	alveolar	post-alveolar	velar
nasal	m /m/	n /n/		ng /ŋ/
lenis stop/affricate	p /p/	t /t/	c /tʃ/	k /k/
fortis stop/affricate	pp /p̚/	tt /t̚/	cc /tʃ̚/	kk /k̚/
aspirated stop/affricate	ph /pʰ/	th /tʰ/	ch /tʃʰ/	kh /kʰ/
non-tense fricative		s /s/		
tense fricative		ss /s̚/		

Though phonetic descriptions of each type of consonant are variable in the present literature, it is generally agreed upon that differentiation in acoustic properties is found primarily in voice quality, voice onset time (VOT), and fundamental frequency (f0) of the subsequent vowel (Cho et al. 2002; Han and Weitzman 1970). The current study focuses on VOT and f0 and draws from the evidence for a sound change in progress that affects how these properties are used in production of lenis and aspirated stops and affricates by certain populations of Korean speakers.

When lenis stops and affricates occur utterance-initially or word-initially, they undergo VOT-lengthening, resulting in phonetic aspiration (Silva 2002, 2006b). This makes word-initial lenis stops more similar to aspirated stops, although a phonemic contrast is still maintained. In the past, this has taken the form of a three-way VOT contrast (fortis with the lowest VOT, aspirated with the highest VOT, and lenis in between), as illustrated in Table 2.2.

However, recent studies of the variety of Korean spoken in the capital city, Seoul, and its surrounding region, Gyeonggi-do, have shown that the phonetic difference between lenis and aspirated stops along the dimension of VOT is collapsing in certain prosodic contexts. For lenis and aspirated stops that occur at the beginning of an accentual phrase (AP), speakers are now increasing usage of f0 of the subsequent vowel to distinguish the two, with aspirated stops and affricates having a higher pitch than lenis (Silva 2006a,b; Kang and Guion 2008; Bang et al. 2018). This pitch difference has been accounted for in the earliest studies of

Table 2.2: Mean VOT values for phrase-initial stops, from Silva (2006b); lenis stops’ VOT approaches aspirated stops’ VOT in this phonetic context.

	mean VOT	Word	IPA	Gloss
lenis	65.2 ms	<i>pul</i>	/pul/ [p ^h ul]	‘fire’
fortis	10.2 ms	<i>ppul</i>	/pul/ [pul]	‘horn’
aspirated	73.7 ms	<i>phul</i>	/p ^h ul/ [p ^h ul]	‘grass’

Korean, but according to Silva (2006a), it was intrinsic and even considered “redundant” (2006a:298), as it was not used as the primary cue for contrast.

With the apparent diminishing of the VOT dimension of distinction between aspirated and lenis, then, pitch is rising to take its place; the parallel changes in VOT and f0 are presumed to have happened closely or in tandem (Bang et al. 2018). Importantly, this change is limited to the AP-initial context and disappears in other prosodic contexts, such as in the middle of an utterance or at the end of a word, in which many of the phonemes in question undergo neutralization to an unreleased homorganic lenis stop. It may also be affected by lexical frequency and following vowel height (Bang et al. 2018).

This sound change has been shown to occur in production as well as perception (Kim and Beddor 2002; Kim 2004b). From a sociolinguistic perspective, in addition to age and generational differences (where younger speakers are advancing the change), female speakers lead over male speakers (Oh 2011), Seoul and northern metropolitan speakers lead over southern (regional dialect) speakers (Choi 2002), and, potentially, speakers with L2 proficiency in English lead over those without (Kim 2013b). The emergence of pitch as the primary means of contrast may have begun as recently as two generations ago (Kang and Han 2013); the contrast is found and categorical in most younger speakers of Seoul Korean, therefore signaling sound change near completion. All speakers born later than 1960 in the corpus study of Kang (2014) showed the change in AP-initial f0 distinction, though among speakers born earlier (as early as 1940), only females demonstrated the sound change, possibly indicating that they were the vanguard.

The timing was approximately the same for the change in VOT distinction; all speakers born from 1960 to 1980² show a smaller aspirated-lenis VOT difference, with females again leading in the directionality of change. However, interspeaker variation still exists; it is considered a change in progress (Bang et al. 2018). Some studies refer to this phenomenon as tonogenesis, or a tonogenetic sound change, but it is clear that Korean has not developed phonological or lexical tone in the manner of prototypical tone languages, so I will continue to refer to this as a “VOT merger and f0 contrast” sound change, or as the VOT-f0 tradeoff.

Most of the research on this sound change has been limited to native speakers of Korean who reside in the regions where the sound change is understood to have originated. In one recent study, however, the speech of diasporic Koreans was tested for the presence of pitch

²No speakers in the National Institute of the Korean Language corpus were born after 1984.

contrast between lenis and aspirated stops and affricates. Kang and Nagy (2016) extracted VOT and f0 data from conversational speech in a corpus of Koreans living in Toronto. They analyzed the measurements in relation to demographic factors such as generational cohort (“first generation” or “second generation”) and gender. The result was that Koreans born and raised in Toronto differentiate lenis and aspirated stops and affricates in production with a VOT merger and pitch contrast that resembled “homeland Korean” speakers, but not to the extent of an exact replication. The second generation Korean Canadians are of particular interest, because their ethnicity and common language link them to peninsular South Koreans, yet the unique circumstances of their Korean input, language environment, and multicultural identity could be the basis for an interesting twist on the “transition problem” (Weinreich et al. 1968): namely, these factors may collude to inhibit the generational transmission of the sound change in question.

Korean Americans, like Korean Canadians, tend to grow up with multiple languages, hearing Korean spoken in the home but acquiring English upon entering school. Since American-born Korean Americans, like many second generation immigrant groups, have demonstrated difficulties in maintaining proficiency in their heritage language (Kim 2001a; Au and Oh 2009), many studies in second language learning have focused on the perceived deficiencies in the grammar of heritage Korean speakers and where they might target interventions for improvement. Earlier research theorizes that heritage speakers’ heritage language competence is affected by contact with the dominant language (in this case, English) and by the speaker’s orientation toward the dominant culture.

However, not all heritage speakers should be modeled in the same way; we must take into account interspeaker variability, stemming from differences in the quality of heritage language input to the child (Flege 2007; Domínguez 2009) and the child’s own active use of the language, versus passive “overhearing” (Au et al. 2002; Chang et al. 2011).

But much of the research on heritage language use and proficiency still relies on an implicit assumption that heritage language users operate from some level of deficiency in their heritage language. Whether or not this is true for some heritage language users (and it certainly is not true for all of them), it operates on a perspective that ignores the possible innovations of heritage language users within their language, especially when it comes to contact-induced sound change.

When it comes to sound change, Muysken (2020) argues that language contact within heritage language communities has led to many cases of change, including innovated distinctions in heritage languages borrowed from dominant languages. This has been hypothesized in the cases of heritage Korean and heritage Tagalog in Toronto (Kang et al. 2016; Kang and Nagy 2016). From the perspective of language perception, Chang (2016) argues that heritage language users as a group are more successful than native speakers at perceiving certain cross-linguistic phonetic contrasts due specifically to early exposure to the languages that adult learners would not have.

For Korean specifically, Lee et al. (2006) showed that childhood speakers were as accurate as native speakers in perception and production of the tense-lax-aspirated contrast, and childhood hearers of Korean outperformed novice Korean learners in perception but not pro-

duction. For Korean-English sequential bilinguals, the age of acquisition of English influences the VOT of stops produced in both languages; early sequential bilinguals appeared to have two separate systems for Korean stops and English stops, while late bilinguals demonstrated a merged system (Kang and Guion 2006)³.

This chapter thus addresses three sociolinguistic questions about the bilingual Korean American population. First, do English-Korean bilingual Korean Americans match up with their same-age peers from Seoul with respect to the Korean VOT merger and f₀ contrast? Or do they not show evidence of the sound change in progress, in a manner more similar to the Korean-Canadians of Kang and Nagy (2016)? If they are not participating in this sound change, is this due to never having acquired it (e.g., a “deficiency model” of heritage language acquisition), or due to contact with and influence from English?

While the findings in Kang and Nagy (2016) give precedent for second generation Koreans to mostly adopt the sound changes from Seoul, the current study looks at Korean Californians who belong to a younger cohort. The age difference is important here, because if Kang and Nagy were correct in predicting a reversal in the sound change in the younger generation, then this should be borne out in the Korean Californian heritage speakers. The prediction is that recent immigrants from South Korea (the first generation, or G1) will exhibit a smaller VOT difference between aspirated and lenis consonants, but a greater f₀ difference between them, compared to second generation Korean Californians.

Secondly, does “heritage speaker” constitute a meaningful sociolinguistic category for this sub-population of Korean speakers that reflects actual phonological patterns in production? By “heritage speaker”, I am referring to 1.5 and second generation Korean Americans, who, compared to first generation Korean Americans who immigrated as adults, have much greater periods of immersion in English-dominant environments at earlier ages. While the determination of generational status is fairly clear-cut within the Korean community, we do not know if these labels reflect any measurable patterns of linguistic behavior. Participation (or lack thereof) in an ongoing sound change might be one way in which this linguistic difference emerges.

Lastly, to the Korean American listener, does participation in this sound change affect the way a speaker sounds? Perhaps Korean Americans who have a greater degree of the VOT merger and f₀ contrast in their speech are perceived as sounding more “natively” Korean. If they do, then this could be further evidence that the sound change in progress is normalized and nearing completion. If not, then participation in the ongoing sound change may not yet have reached the requisite level of consciousness for the linguistic marker to become a linguistic stereotype in the Korean American community.

³Note that the speakers in the Kang and Guion (2006) study were not categorized as heritage speakers, though some of the “early sequential bilinguals” may have been, according to the working definition.

2.2 Production Experiment: Methods

The data for this chapter comes from recorded “laboratory” speech from Korean Americans living in California, and this is the only chapter to use this data⁴.

Speakers were divided into three categories by generational status: Koreans who had immigrated to the United States from Seoul at age 15 or later were considered first generation immigrants (G1, n=12); those born in the United States or who had moved permanently with their families from ages 0 to 3 were considered second generation (G2, n=14)⁵.

A number of subjects were born and raised in South Korea but immigrated to the United States between the ages of 2 and 14, or had moved back and forth between the United States and South Korea (and sometimes other countries). These were included in the 1.5 generation category⁶ (G1.5, n=14). The groups categorized as G1.5 and G2 comprise our heritage speakers, who are compared to the non-heritage first generation speakers.

Table 2.3: Participant demographics for the production experiment.

Generation	Female	Male	Total
G1	9	3	12
G1.5	8	6	14
G2	10	4	14
Total	27	13	40

A total of 50 ethnic Koreans participated in the production study, from which 40 (female=27) are included in this analysis (See Table 2.3). Subjects were excluded from analyses due to recording error during either the Korean or English session, or due to other experimental error. All subjects were compensated monetarily for their participation. Subjects were 21 years of age on average (sd=2.93), with G1 subjects an average of 3 years older than

⁴The procedures for recruitment, consent, data collection, and data analysis described in this section were approved by the Institutional Review Board of the University of California, Berkeley on March 18, 2016 (ID: 2016-01-8238; PI: Keith Johnson), and all study personnel completed the ethical training required by the Collaborative Institutional Training Initiative Program.

⁵Though the literature is not consistent with respect to the question of exactly when an infant’s L1 phonology is concretized enough to influence an L2, it has been shown that by two years of age, bilingual children establish separate (though nonautonomous) phonological systems for their languages (Paradis 2001); also see Lleó and Kehoe (2002).

⁶Admittedly, using age of immigration as a way to categorize speakers is a half-way compromise between using age of English acquisition and asking speakers outright how they self-identify, but it is a common quick diagnostic that Korean Americans themselves use to sort the young people in their community (see Park 1999; Kim and Duff 2012). And as a further note, age of immigration as a variable only correlates to date or year of immigration if all subjects, like those in this study, are of a similar age range. Subjects who immigrated at age 18 in 2015 may differ from subjects who immigrated at age 18 in 1980, depending on whether certain phonetic changes take a set amount of time to learn or can only be learned before a certain period in (historical) time.

G2 and G1.5 subjects. All of the speakers were either from the Seoul metropolitan area or were second generation or 1.5 generation Korean Americans who had at least one parent who was from the Seoul metropolitan area.

The participants recorded Korean minimal triplets within the carrier phrase “*Nanun ___(i)lako hayyo* (I am saying/called ___).” This carrier phrase was structured so that the alveolar nasal /n/ ended the accentual phrase prior to accentual phrase containing the target word. Following the target word was either the alveolar liquid /r/ if the target word was vowel-final, or the high front vowel /i/ if the target word was consonant-final, per the morphophonological rules of Korean.

After the block of carrier phrases, participants recorded the same target words in constructed sentences that used them in a natural context. The target words can be found in Table 2.4⁷. All participants also recorded a series of English words in carrier and contextualized sentences for comparison; the Korean stimuli and English stimuli were given in separate blocks in the same experimental session. The full set of reading materials can be found in Appendix A. All of the speech was recorded in a sound-attenuated booth using an AKG C3000 microphone.

Table 2.4: Minimal pairs and triplets for Korean word-initial stops and affricates, selected to provide a variety of vowel contexts and word frequencies.

lenis	fortis	aspirated
<i>pal</i> /pal/ ‘foot’	<i>ppal</i> /p̚al/ ‘to suck’	<i>phal</i> /p ^h al/ ‘arm’ or ‘eight’
<i>pat</i> /pat/ ‘field’		<i>phath</i> /p ^h at/ ‘red bean’
<i>pwul</i> /pul/ ‘fire’	<i>ppwul</i> /p̚ul/ ‘horn’	<i>phwul</i> /p ^h ul/ ‘grass’
<i>tang</i> /taŋ/ ‘political party’	<i>ttang</i> /t̚aŋ/ ‘land’	<i>thang</i> /t ^h aŋ/ ‘soup’
<i>tel</i> /tɛl/ ‘less’	<i>ttel</i> /t̚ɛl/ ‘to shake’	<i>thel</i> /t ^h ɛl/ ‘fur’
<i>tulta</i> /tuɭ.da/ ‘to enter’		<i>thulta</i> /t ^h uɭ.da/ ‘to turn on’
<i>cang</i> /tɕaŋ/ ‘page’	<i>ccang</i> /t̚ɕaŋ/ ‘super’	<i>chang</i> /tɕ ^h aŋ/ ‘window’
<i>cata</i> /tɕa.da/ ‘to sleep’	<i>ccata</i> /t̚ɕa.da/ ‘salty’	<i>chata</i> /tɕ ^h a.da/ ‘to kick’
<i>ceyco</i> /tɕɛ.dzo/ ‘manufacturing’		<i>cheyco</i> /tɕ ^h ɛ.dzo/ ‘gymnast’
<i>cincca</i> /tɕin.tɕa/ ‘really’	<i>ccinppang</i> /t̚ɕin.paŋ/ ‘bun’	<i>chinkwu</i> /tɕ ^h in.gu/ ‘friend’
<i>kan</i> /kan/ ‘liver’	<i>kkan</i> /k̚an/ ‘peeled’	<i>khan</i> /k ^h an/ ‘train car’
<i>ku</i> /ku/ ‘that’	<i>kkeu</i> /k̚u/ ‘to turn off’	<i>khu</i> /k ^h u/ ‘large’
<i>kwul</i> /kul/ ‘oyster’	<i>kkwul</i> /k̚ul/ ‘honey’	<i>khwul</i> /k ^h ul/ ‘cool’

Because the speakers were given a reading task, they had to have basic reading fluency in Korean. The greatest variation in reading fluency was in the G2 group of speakers,

⁷Although most studies of the three-way laryngeal contrast include bilabial, alveolar, and velar stops, this study also included the post-alveolar – or alveolar (see Kim (2001b)) – affricates; see (Chang 2013a) for a discussion of utterance-initial Korean fricatives, which he characterizes as ‘fortis’ and ‘non-fortis’.

some of whom struggled with the less frequent words in the stimuli. On a three-point scale of fluency, all speakers self-rated their speaking, listening, and reading skills. All G1 speakers gave themselves threes across the board, but G2 speakers had an average self-rated speaking proficiency of 2.1 and an even lower reading proficiency of 1.7. Some, but not all, G2 speakers demonstrated a slower speech rate during reading compared to G1 and G1.5 speakers⁸. Speakers also completed a post-task language background and attitudes survey.

Table 2.5: Self-given ratings of proficiency by members of each generational group.

group	speaking	listening	reading
G1	3.0 ± 0	3.0 ± 0	3.0 ± 0
G1.5	2.8 ± 0.45	2.9 ± 0.29	2.9 ± 0.29
G2	2.1 ± 0.7	2.5 ± 0.52	1.7 ± 0.65

Recordings (n=5900 utterances) were manually checked for quality, such that utterances that were disfluent or otherwise unusable were removed from analysis. They were then force-aligned to TextGrids using kp2fa (Yoon and Kang 2014) and the Penn Forced Aligner (Yuan and Liberman 2008), two audio-and-transcript phonetic alignment programs that use the HTK Toolkit (Young et al. 2006). This was followed by automatic VOT measurement (Keshet et al. 2014) and formant tracking using the Inverse Filter Control method (Watanabe 2001). The VOT measuring tool uses a neural network trained on human annotations of VOT to measure VOT based off of a provided TextGrid file. The output TextGrids and some VOT measurements were hand-corrected using Praat. As for f0, the tool extracts raw f0 from the acoustic signal at 10-millisecond intervals throughout the entire recording. After forced-alignment of each vowel, the f0 was taken at five equally-spaced timepoints within each vowel. From these timepoints, the third timepoint, or the vowel midpoint, was used as the measurement of f0 for the vowel. VOT and f0 data were then visualized and run through statistical tests using the relevant packages in R (R Core Team 2020).

2.3 Production Experiment: Results

To reiterate the hypothesis, if the VOT merger is present in one of the generational groups of Korean speakers, then there should be no significant difference between aspirated and lenis consonants in VOT. If the f0 contrast is present, then the vowel following aspirated consonants will have a significantly higher f0 than the vowel following lenis consonants. The VOT-f0 tradeoff exists if a population exhibits both phenomena; I have hypothesized that the G1 group will demonstrate evidence of the tradeoff, while the G1.5 and G2 groups will not.

⁸Unfortunately, a systematic analysis of speech rate in comparison to speaker demographics and self-ratings was not performed.

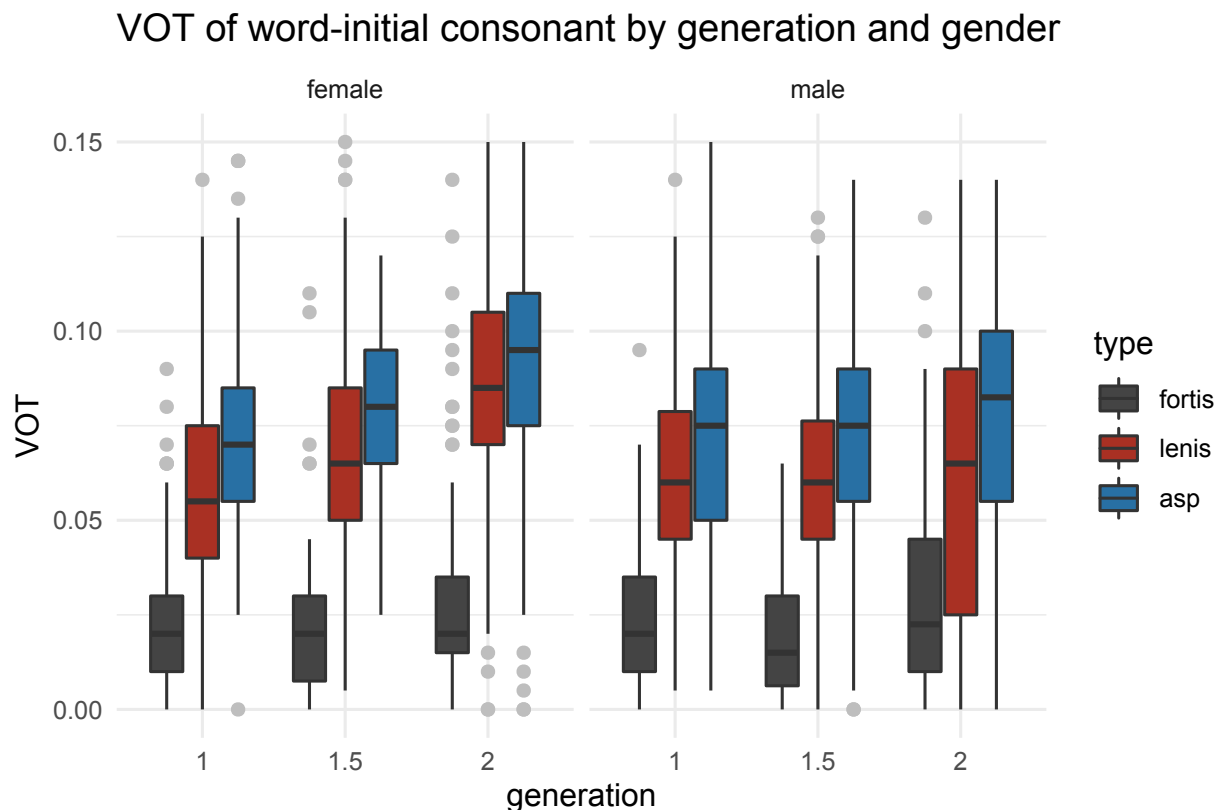


Figure 2.1: VOT of word-initial consonant by generation and gender. G2 females used greater VOT for lenis and aspirated consonants compared to G1 and G1.5. However, the amount of contrast between aspirated and lenis consonants remained the same across all three groups.

2.3.1 Voice Onset Time

The results in this section are taken from measurements of the Korean target words spoken in carrier sentences. A repeated measures mixed ANOVA was run, with VOT as the dependent measure and independent variables of generational group, phonation type, and speaker gender. The model found a significant effect of generational group ($F(2,24)=8.476$, $p=0.0016$) and gender ($F(1,24)=5.947$, $p=0.0225$) on VOT, but not of phonation type ($F(2,24)=0.547$, $p=0.5859$). Post-hoc ANOVAs run on just the aspirated consonants revealed that only generation affected aspirated consonant VOT ($F(2,36)=5.7$, $p=0.007$), but generation ($F(2,36)=7.359$, $p=0.002$), gender ($F(1,36)=10.387$, $p=0.0027$), and an interaction of generation and gender ($F(2,36)=5.140$, $p=0.0109$) affected the lenis consonant VOT.

Figure 2.1 charts the mean VOT of each consonant type for each generational group, split by gender, and it is clear that the G2 females produced word-initial aspirated and

lenis stops and affricates with a greater VOT than G1 and G1.5. Additional post-hoc t-tests corroborated the significant differences between all three generational groups' aspirated VOT and all three groups' lenis VOT.

Because the change in VOT is described as a merger, or a collapse in contrast, the mean difference in VOT between aspirated and lenis stops was calculated for each generation. If the VOT difference is zero or close to zero, this indicates a collapse in contrast. The mean VOT differences of the three groups were 0.0052 (G1), 0.0078 (G1.5), and 0.0122 (G2). Although the difference is objectively greater for the G2 speakers, independent t-tests and an analysis of variance examining VOT difference among generational groups found no significant difference or significant effects of generational group or of age of immigration to the United States. Overall, regardless of raw VOT values, speakers maintained an equal amount of VOT contrast⁹ between lenis and aspirated word-initial stops and affricates.

2.3.2 Fundamental Frequency

Fundamental frequency (f0) data were not normalized for gender, so female-identifying and male-identifying speakers were analyzed separately using one-way ANOVAs. Generation was not found to be significant for aspirated f0 in women ($F(2,789)=3.09$, $p=0.0632$) or men ($F(2,354)=3.405$, $p=0.0706$). Similarly, lenis f0 values were not significantly influenced by generation (see Figure 2.2).

However, an additional analysis compared f0 data in terms of the difference between an individual's aggregated aspirated and lenis consonants' f0 values, resulting in one value (mean aspirated-lenis f0) per speaker. In this analysis, using one-way ANOVAs, generational group was shown to be a significant factor for females ($F(2,25)=4.501$, $p=0.0214$). Age of immigration to the United States was also significant for females ($F(2,26)=6.118$, $p=0.0202$), but neither generational group nor age of immigration was a significant predictor of aspirated-lenis f0 difference for males (see Figure 2.3).

Indeed, the speakers of the G1 group, who correspond to those who immigrated to the United States at a later age, have greater f0-difference values than the speakers of the G2 group, while G1.5 speakers generally fall in the middle. Second-generation female speakers were clearly not following the first-generation females in producing a pitch contrast, and male speakers did not employ a pitch contrast as much as females almost all across the board, regardless of generation or age of immigration ($F(2,11)=2.915$, $p=0.0964$). In fact, even the male speakers of the G1 group showed less of the pitch contrast than the female G1 speakers.

These results suggest that the speakers binned as G2, second generation Korean Americans, are indeed producing these consonants differently from G1 and G1.5, which are fairly similar to one another. The difference is much more significant for aspirated consonants than lenis consonants; the divergence is most clearly seen in how female G2 speakers do not

⁹I did not consider measuring VOT ratios between phonation types as an alternative to measuring the raw VOT values and differences; in future studies, this would be an important point of comparison.

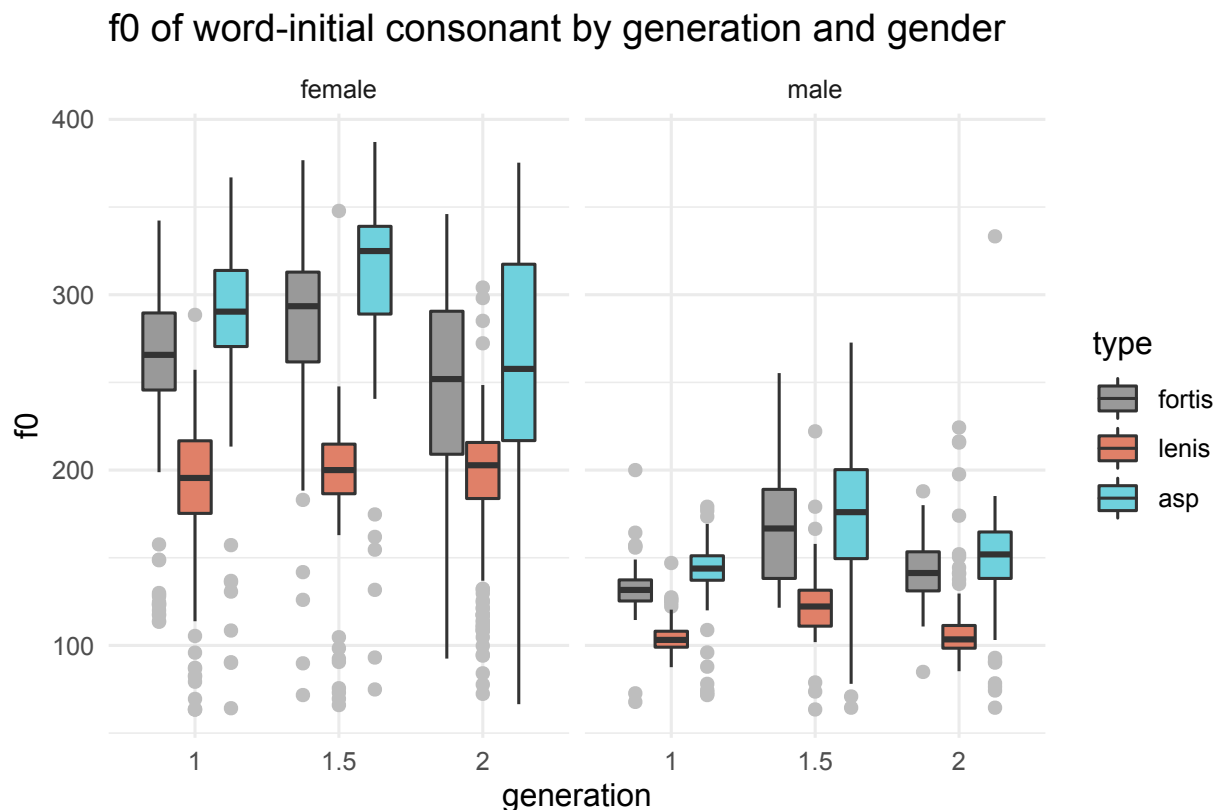


Figure 2.2: f₀ of the vowel following a word-initial consonant by generation and gender. Generation was not a significant predictor of f₀ for either female or male speakers. However, the amount of f₀ contrast between aspirated and lenis stops was predicted by generational group for females, with G2 females using the least contrast.

primarily use pitch to differentiate aspirated consonants, and to a lesser degree in the way female G2 speakers produce both lenis and aspirated stops with higher VOT.

2.3.3 Comparison with English consonants

To see whether the way female G2 speakers produce word-initial Korean consonants might have been influenced by the way they their produce English consonants, I fit a new model that included language (English versus Korean) as a factor. The data for English VOT and f₀ are plotted alongside those for Korean in Figure 2.4. English has “voiced” and “voiceless” consonants at bilabial, alveolar, post-alveolar, and velar places of articulation. Although f₀ of the following vowel can be a secondary cue for voicing, the primary area of contrast between these two phonation types is VOT, with voiceless consonants demonstrating long-lag (higher) VOT and voiced consonants having short-lag (lower) VOT.

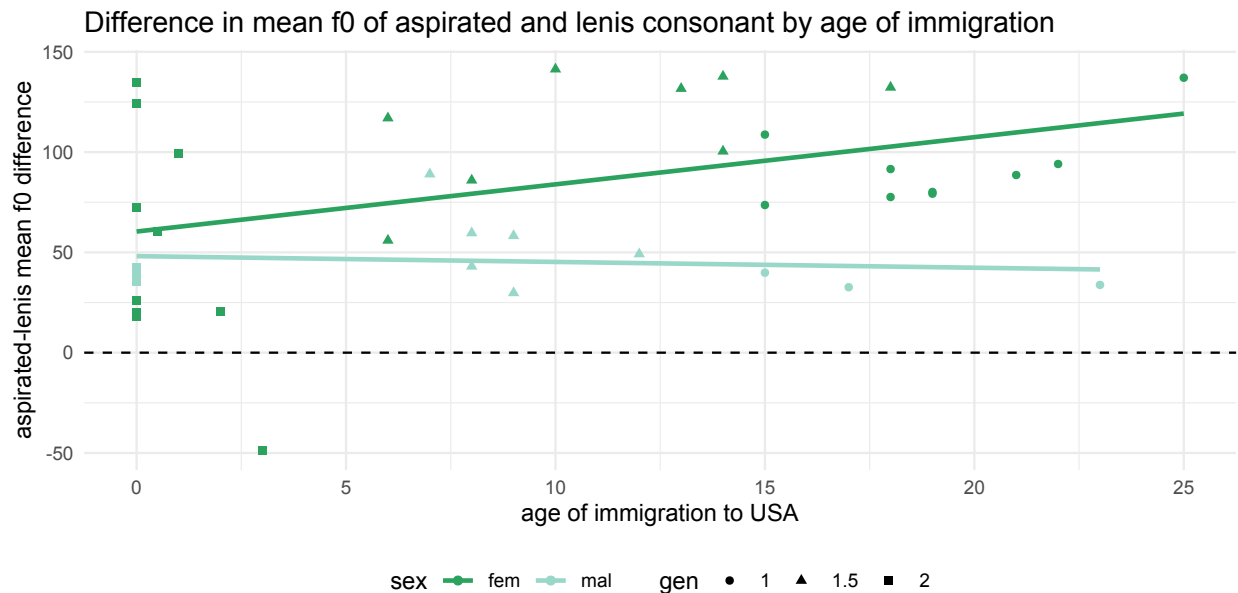


Figure 2.3: Fundamental frequency difference of word-initial aspirated and lenis consonant by age of immigration to the United States.

We might expect speakers with a high degree of influence from English onto Korean to map the English phonation system of voiced versus voiceless onto at least two of the Korean types of consonants. Like English stops, Korean consonants are phonetically voiceless in word-initial position, but the shortest VOT belongs to fortis consonants, which may map onto English voiced consonants. Aspirated and lenis Korean consonants will both have relatively high VOT, so either one could be similar to English voiceless consonants.

As can be seen in Figure 2.4, indeed the voiced and fortis consonants have very similar VOT measurements for all genders and generations. The voiceless English consonants, however, show a slight pattern that appears to be influenced by the speaker’s generational group. G2 and G1.5 demonstrate voiceless consonants with the same median VOT as lenis consonants, whereas G1 female speakers’ voiceless consonants are more similar to their aspirated consonants.

A linear mixed effects regression model was fit on the combined English and Korean VOT data for male speakers, and a separate model was fit for female speakers. In each case, the model had fixed effects of generation and consonant type (out of five: fortis, lenis, aspirated, voiced, and voiceless), and a random effect for subject. Using the library `emmeans`, the significance of pairwise differences in means was calculated for each pairing of consonant types. All comparisons were significantly different, with the exception of Korean lenis and English voiceless stops, for both male speakers ($t(1216)=1.477$, $p=0.578$) and female speakers ($t(2411)=-0.950$, $p=0.877$). In other words, lenis and voiceless stops and affricates had similar

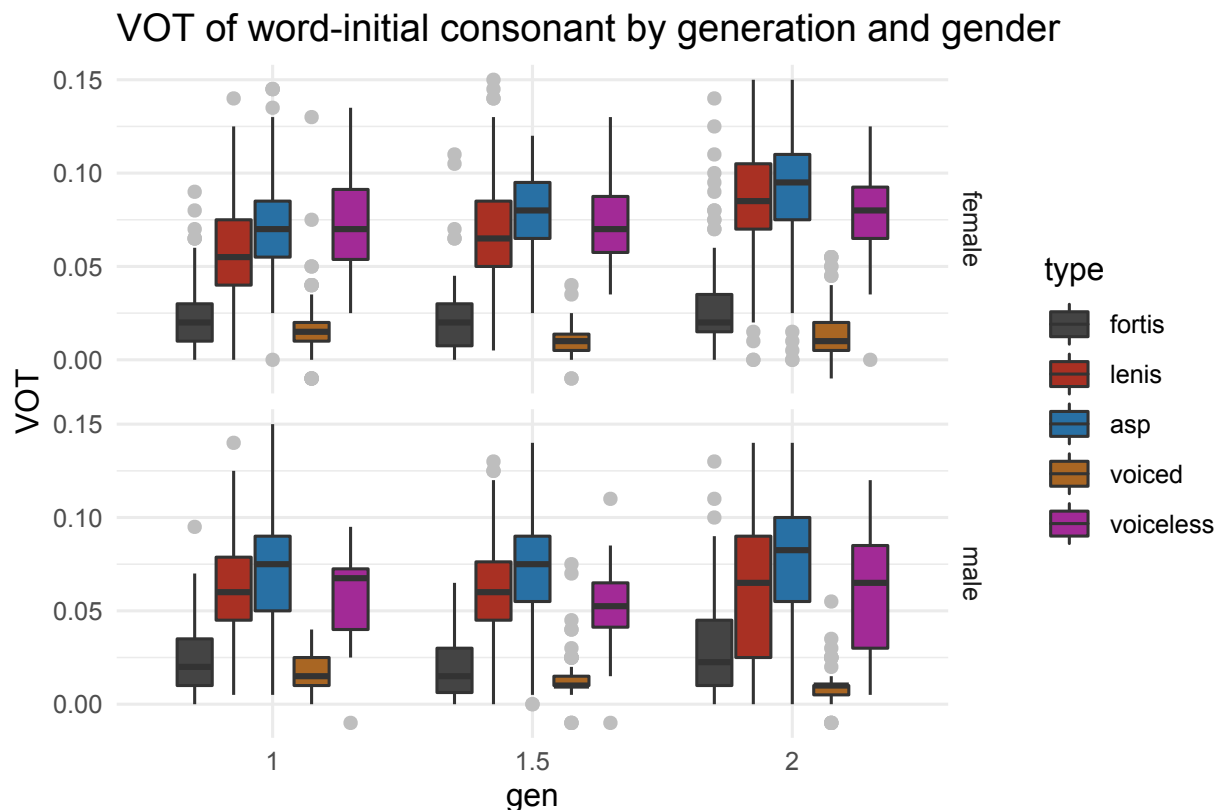


Figure 2.4: VOT measurements for all Korean stops and English voiceless and voiced stops, split by gender and generation.

VOT values, but all other consonants were different.

As for f_0 , Figure 2.5 illustrates that English voiced consonants have relatively lower f_0 in the subsequent vowel, similar to Korean lenis consonants. English voiceless consonants, which produce higher f_0 in the subsequent vowel only as a secondary cue, are also seen here to have a somewhat higher f_0 than voiced and lenis consonants.

The same linear mixed effects regression models were fit on the combined English and Korean f_0 data for male and female speakers. The paired consonant types were evaluated using the `emmeans` function, which resulted in significant differences between every consonant type, with the exception of Korean lenis and English voiced ($t(1358)=2.661$, $p=0.0604$) and Korean lenis and English voiceless ($t(1357)=-2.424$, $p=0.1094$) for male speakers, and Korean lenis and English voiced ($t(2898)=1.856$, $p=0.3415$) and Korean lenis and English voiceless ($t(2898)=-2.310$, $p=0.1419$) for female speakers. In other words, for male and female speakers, lenis stops and affricates had similar f_0 values for following segments when compared to all English stops and affricates.

This is preliminary evidence that Koreans in the G2 and G1.5 groups produce lenis stops

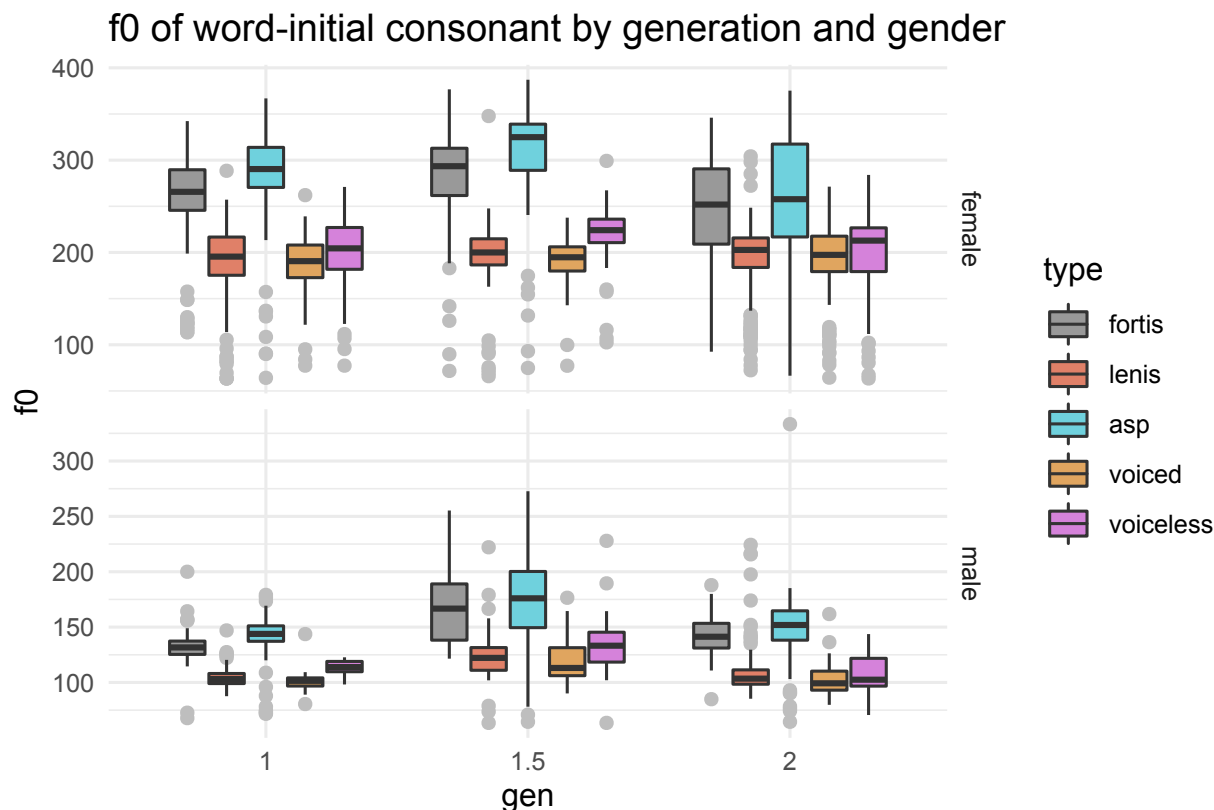


Figure 2.5: f₀ measurements for all Korean stops and English voiceless and voiced stops, split by gender and generation.

in the same way that they produce English voiceless stops, especially in terms of VOT. Aspirated stops reliably have higher f₀ than voiceless stops, though in the G2 group, the size of this difference is much smaller compared to G1 and G1.5. In this way, English voiceless stops are unlikely to affect the production of Korean aspirated stops, but if G2 speakers map word-initial English voiceless stops onto word-initial Korean lenis stops, that could be a mechanism by which the VOT of lenis stops is prevented from rising to merge with the VOT of aspirated stops, which is one step of the sound change.

Bilingualism research explores the idea that bilingual speakers find ways to maximize the acoustic difference between similar phonemes in two languages, including five-way distinctions between stops in early Korean-English bilinguals (Kang and Guion 2006) and distinctions using one cue but not the other depending on age (Lee and Iverson 2012). These data provide more evidence that bilingual Korean Americans differentiate among at least four¹⁰

¹⁰Considering the comparisons of Korean lenis and English voiceless stops in terms of VOT and f₀, there was overall only a four-way distinction; however, in other phonological contexts, such as intervocalic, lenis and voiceless stops would certainly be distinguishable, resulting in a five-way distinction.

consonant types in two languages not just on one axis alone (either f0 or VOT), but use both cues to create cross-linguistic contrast within their bilingual phonological system.

2.4 Perception Experiment: Methods

In the second experiment, the voices collected in the first experiment were played back to listeners in order to see if any correlations could be found between speakers’ acoustic characteristics (i.e., use of the VOT and f0 cues) or demographic information and listener perception of generational status or proficiency. For this experiment, the recordings of target words in contextualized sentences (see Appendix A.3) were used, including both Korean and English sentences¹¹.

Ten Korean-identifying individuals (female=7, average age=20.9) were recruited for the perception experiment and compensated monetarily for their participation. Among these participants, no speaking fluency in Korean was required, only prior exposure to the Korean language from early childhood environment, and some were born and raised in locations other than California or Seoul.

Table 2.6: Participant demographics for the perception experiment.

Generation	Female	Male	Total
G1	1	1	2
G1.5	2	1	3
G2	4	1	5
Total	7	3	10

Participants listened to the speech stimuli from the “natural context” sentences recorded in the production experiment (see Section 2.2) and then made judgments about social attributes of each speaker using Likert scales. The five scales were perceived proficiency, foreign or non-native accent¹², friendliness, current age, and age of arrival to the United States (see Appendix A.4). The order of appearance of the Likert scales and the order of speech stimuli were randomized within language blocks.

In addition to the perception task, participants were asked to complete an in-depth language attitudes survey that elicited thoughts on their relationship with their Korean

¹¹At the time of the study design, I was unaware that the VOT merger and f0 contrast sound change was found only in AP-initial contexts. In this analysis, the target consonants for the production experiment came from the carrier sentences only, which makes them AP-initial as well as word-initial. However, in the perception experiment, the “natural” sentences were used as stimuli, which means that some of the target consonants are word-initial but not AP-initial.

¹²When listening to Korean stimuli, listeners judged each voice on its “American accent”; when listening to English stimuli from the same speakers, listeners judged each voice on its “foreign accent”.

heritage and language use, detailed information about their prior language experience, and metalinguistic judgments of “Korean-accented English”¹³.

2.5 Perception Experiment: Results

The results of the perception study are a series of scores for each characteristic of each speaker. The mean perceptual score can be plotted against other scores (to visualize correlation between similar characteristics) or against actual speaker characteristics (to test listener discernment). For example, Figure 2.6 shows that perceived proficiency was highly negatively correlated with perceived non-native accent.

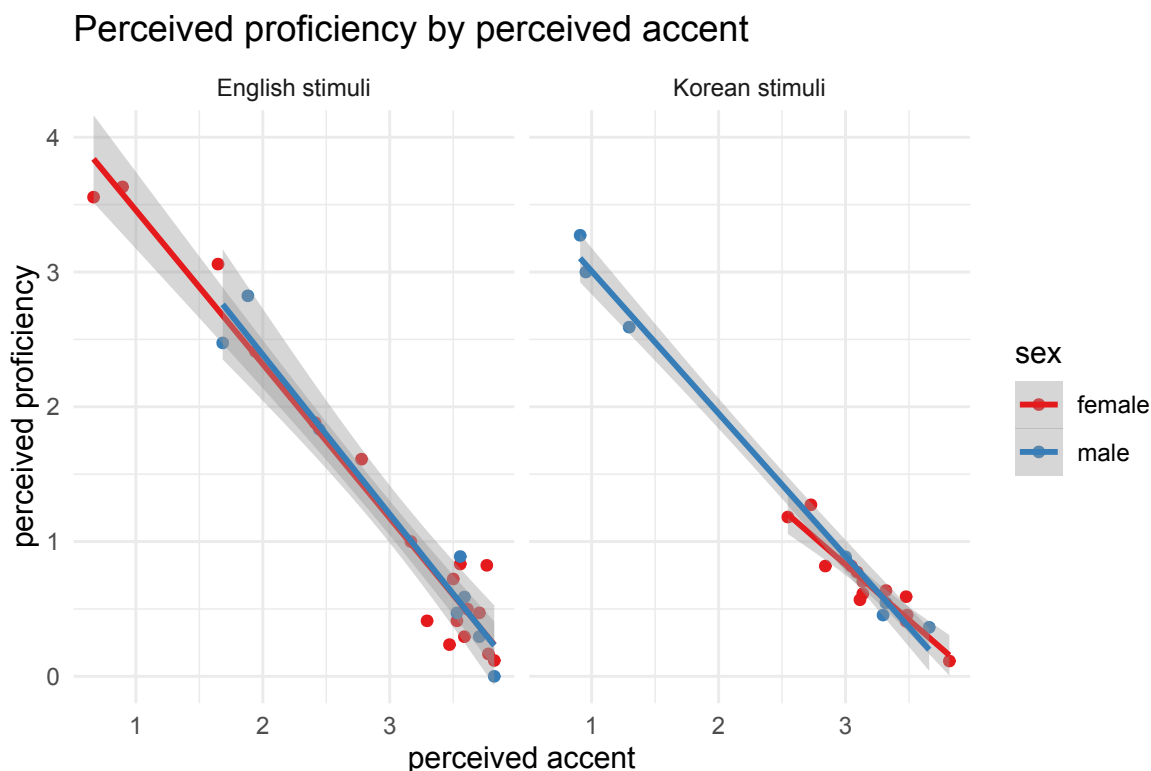


Figure 2.6: Perceived proficiency in English was significantly and strongly negatively correlated with perceived non-native accent ($r=-0.979$, $p<0.001$). Perceived proficiency in Korean was similarly correlated with non-native accent ($r=-0.992$, $p<0.001$). On both axes, 4 indicates most non-native/most proficient, and 0 indicates least non-native/least proficient.

¹³This amount of in-depth ethnographic work should have been performed for the participants in the production portion of this project, but as it is, I will be using the information given from the perception experiment participants to represent what the Korean American community as a whole would say.

In other words, the most proficient English speakers had the least amount of non-native accent. A Pearson’s correlation test confirmed this relationship ($r(19)=0.597$, $p=0.004$). We can conclude that proficiency in either language was not seen as independent of the accent used when speaking it¹⁴. Henceforth “perceived proficiency” will be the primary variable used for judging speaker fluency.

To take another example, we can examine how accurate listeners were in an objective task: determining, from the voice stimuli, when a speaker immigrated to the United States. The question for this characteristic was phrased as, “Since when has this speaker lived in the United States?”, with a ranking of 0 indicating a speaker who was born here, rankings of 1, 2, and 3 indicating speakers who had moved at subsequent points in childhood and adolescence, and a ranking of 4 indicating “just arrived”.

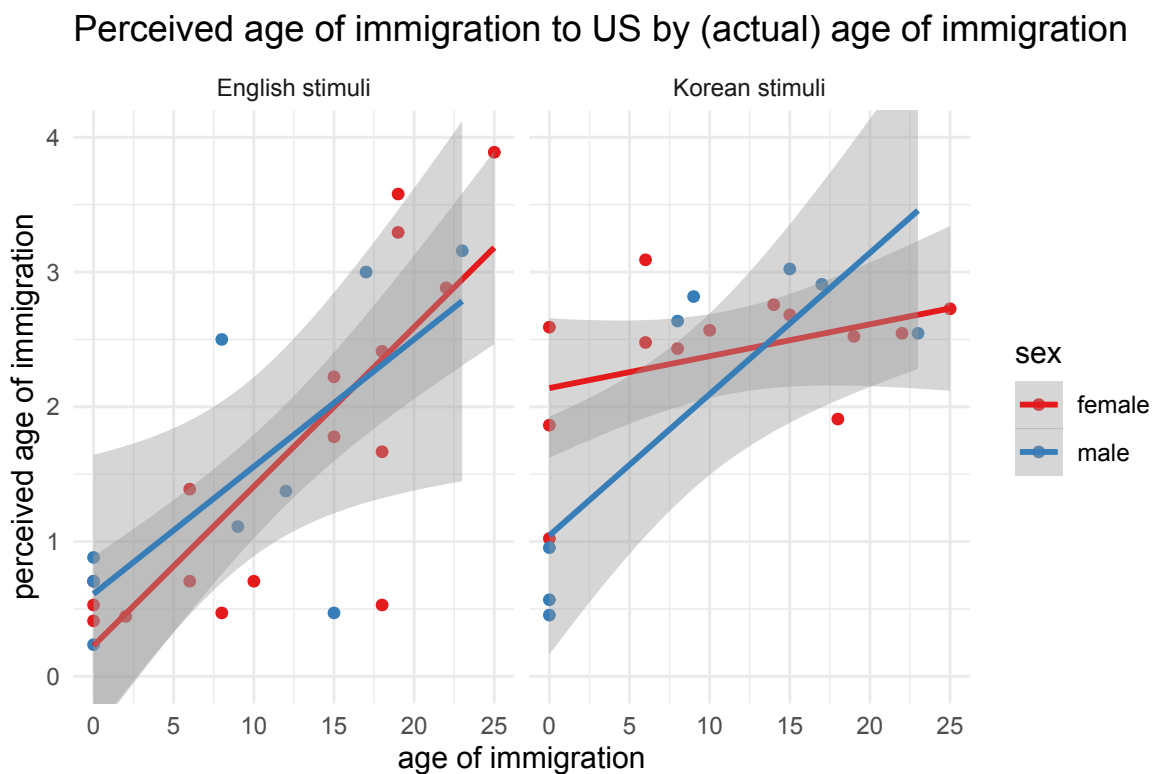


Figure 2.7: Speakers’ perceived age of arrival and actual age of arrival were significantly positively correlated (with genders pooled: for Korean stimuli: $r=0.681$, $p<0.001$; for English stimuli: $r=0.752$, $p<0.001$). The y-axis scale is as follows: 0=born here, 1=early childhood, 2=early teens (10+), 3=late teens (16+), 4=just arrived.

¹⁴This result is unsurprising given the nature of the perception stimuli: all the sentences were grammatical and identical from speaker to speaker within a block, so listeners were likely cuing into pronunciation, speech rate, and other accent-related variables when judging proficiency.

When the average score for perceived age of immigration is plotted against the speakers' actual ages of immigration (where, again, 0 indicates a second generation Korean American), a robust and significant correlation emerges. With an R-value of 0.681 (for the Korean stimuli), the correlation is not indisputable, however, and Figure 2.7 shows that there is a stronger correlation for male speakers than female speakers, and, importantly, that the fitted regression line for the female speakers is highly affected by two or three G2 speakers with quite low scores for perceived age of immigration. That is to say, if they were removed from the analysis as outliers, the result would be almost no correlation between perceived age of immigration and actual age of immigration.

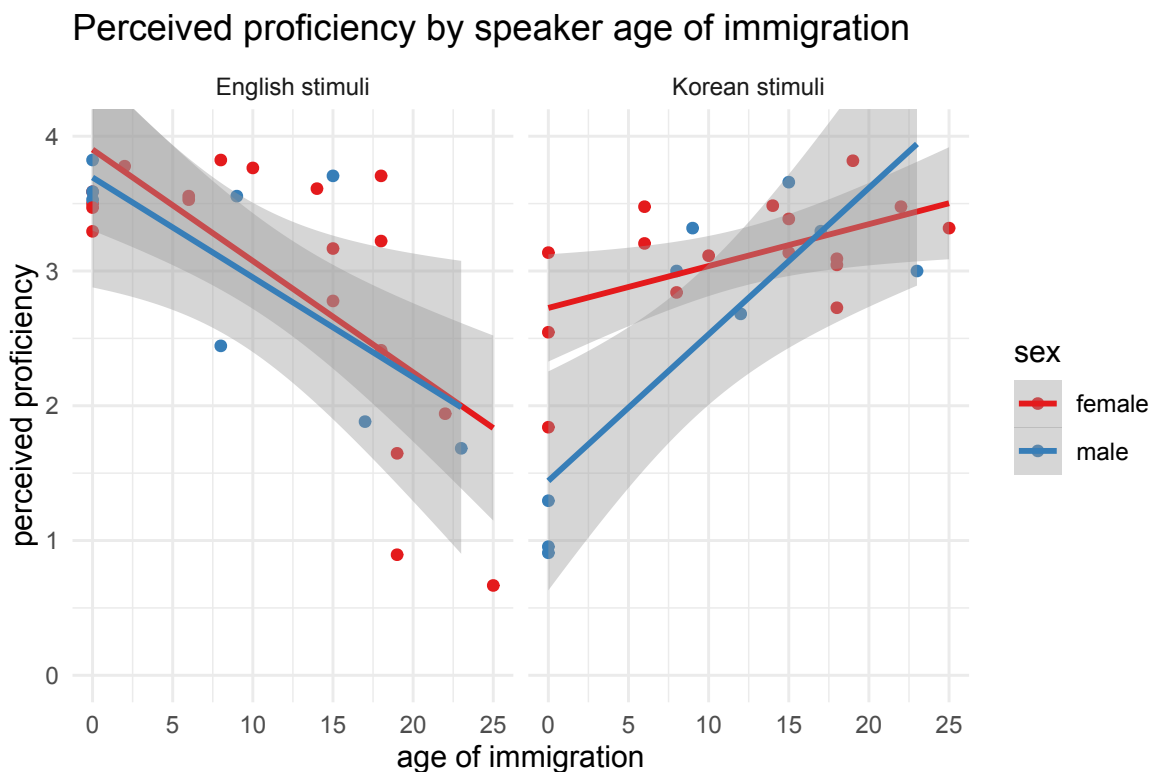


Figure 2.8: With genders pooled, speakers' perceived proficiency in Korean was positively correlated with their age of arrival ($r=0.705$, $p<0.001$); perceived proficiency in English was negatively correlated with their age of arrival ($r=-0.702$, $p<0.001$). On the y-axis, 4 indicates most proficient, and 0 indicates least proficient.

A similar pattern emerges when analyzing perception of proficiency from the Korean stimuli. As seen in Figure 2.8, greater proficiency in Korean is correlated with speakers who were older when they immigrated to the United States. But once again, the four female speakers who were born in the United States (age of immigration=0) find themselves rather

dispersed on the scale of perceived proficiency. Taking out the two lowest scorers would considerably reduce the R-value of the measured correlation.

It stands to reason, therefore, that the female second generation (G2) speakers differ widely from one another. As noted in Section 2.2, there were differences in speech rate due to lower reading proficiency of second generation speakers. However, it is also possible that the use of the f0 contrast cue maps onto perception of proficiency: specifically, if the second generation female speakers rated as more proficient were using f0 cues or not.

Table 2.7 lists the four female speakers in G2 whose recorded Korean stimuli were used in the perception task. It also lists their scores for perceived proficiency and differences in mean aspirated and mean lenis VOT and f0. Below that are the average measurements for each generational group, displayed for comparison.

Table 2.7: G2 speakers' self-rated Korean speaking and reading proficiency scores (scale of 1-3), perceived proficiency scores (scale of 0-4, Korean stimuli), mean aspirated-lenis VOT difference (in seconds), and mean aspirated-lenis f0 difference (in Hertz). Below this are the same measurements, but averaged across generational group.

subj	gen	immigration age	speak/read prof.	perc. prof.	mean asp-len VOT diff.	mean asp-len f0 diff.
140	2	0	2/2	1.10	0.0120	61.65
105	2	0	2/3	1.83	0.0129	1.86
102	2	0	3/2	2.50	0.0174	-25.39
108	2	0	3/2	3.10	0.0019	60.2
<i>avg</i>	<i>2</i>	0	2.1/1.7	1.48	0.0122	19.68
<i>avg</i>	<i>1.5</i>	10	2.8/2.9	3.13	0.0078	85.59
<i>avg</i>	<i>1</i>	19	3/3	3.30	0.0052	75.96

Upon visual analysis, there does not appear to be any correlation between perceived proficiency and either of the acoustic measurements. Speakers 140 and 105 had the lowest proficiency ratings, but speaker 140 clearly differentiated aspirated and lenis stops by pitch (with an aspirated-lenis f0 difference of 61.65 Hz, closer to the range of native speakers). She did not, however, demonstrate the collapse in VOT contrast as evidenced by a small aspirated-lenis VOT difference, with a relatively large difference of 0.012 second. In comparison, speaker 108 had a very low aspirated-lenis VOT difference and a relatively high aspirated-lenis f0 difference, which corresponded to her high proficiency score.

This may indicate that listeners are cuing in to VOT and not to f0 when judging speakers on their proficiency. Recall that the male speakers in the study participated in the VOT merger to varying degrees depending on age of immigration, but did not have any discernible difference in amount of pitch contrast produced depending on age of immigration. These same male speakers also had a very strong correlation between perceived proficiency and age

of immigration, which may indicate that the VOT difference is being used by listeners as a cue to proficiency.

To test this, we can plot perceived proficiency by a number of VOT measurements, including mean aspirated consonant VOT, mean lenis consonant VOT, and the difference between aspirated and lenis consonant VOT. Figure 2.9 demonstrates the relationship between speakers' aspirated and lenis VOT measurements and their perceived proficiency.

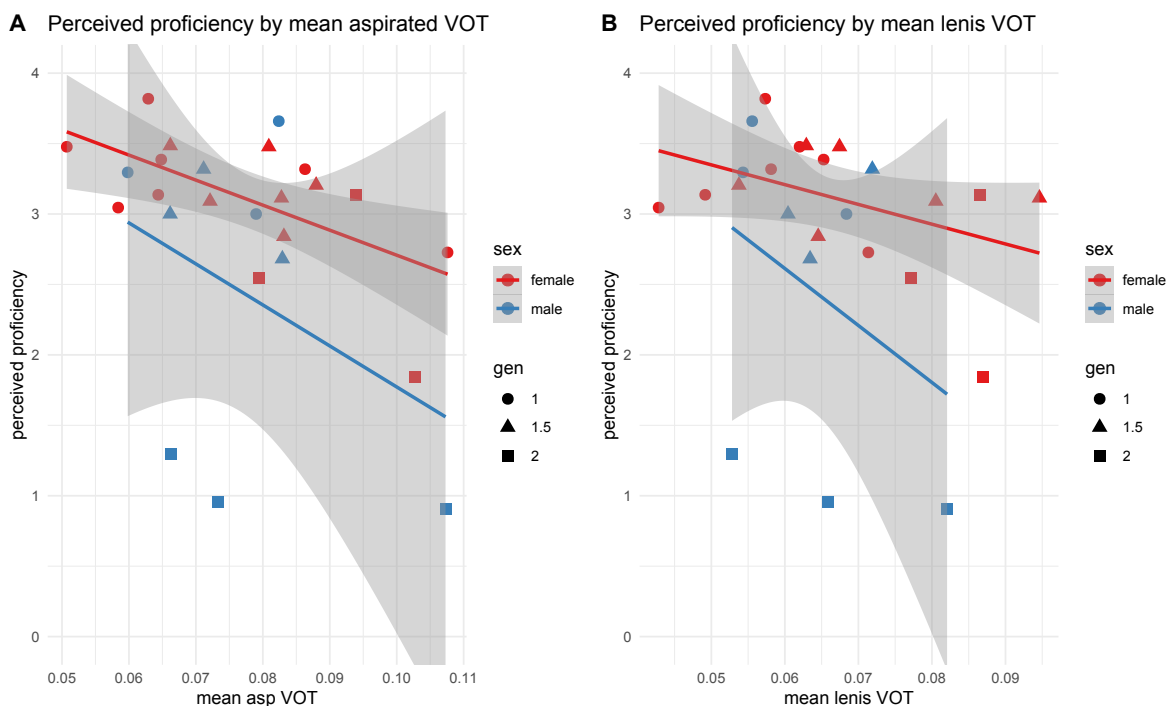


Figure 2.9: Despite a weak trend, there was no significant correlation found between aspirated VOT (A) or lenis VOT (B) and perceived proficiency in Korean.

Although there was a relationship between G2 speakers and higher aspirated and lenis VOT, there only weak trends between VOT and perceived proficiency. Speakers with the highest aspirated and lenis VOT tended to be rated as less proficient, but the correlation is weak. A Pearson's correlation test run on perceived proficiency and lenis VOT was not significant ($r(23)=-0.24$, $p=0.24$), and another test run on perceived proficiency and aspirated VOT was just below the threshold of significance ($r(23)=-0.38$, $p=0.06$).

Recalling that the listeners were rating the speakers' reading of sentences in Korean, rather than individual words or syllables, it is likely that confounding factors such as speech rate and reading fluency are at play here.

Further Pearson's correlation tests reveal that f_0 and VOT are equally and statistically significantly correlated to several factors, although the correlation strengths, once again, are not very high (see Figure 2.10. Difference in aspirated-lenis f_0 , for example, is positively cor-

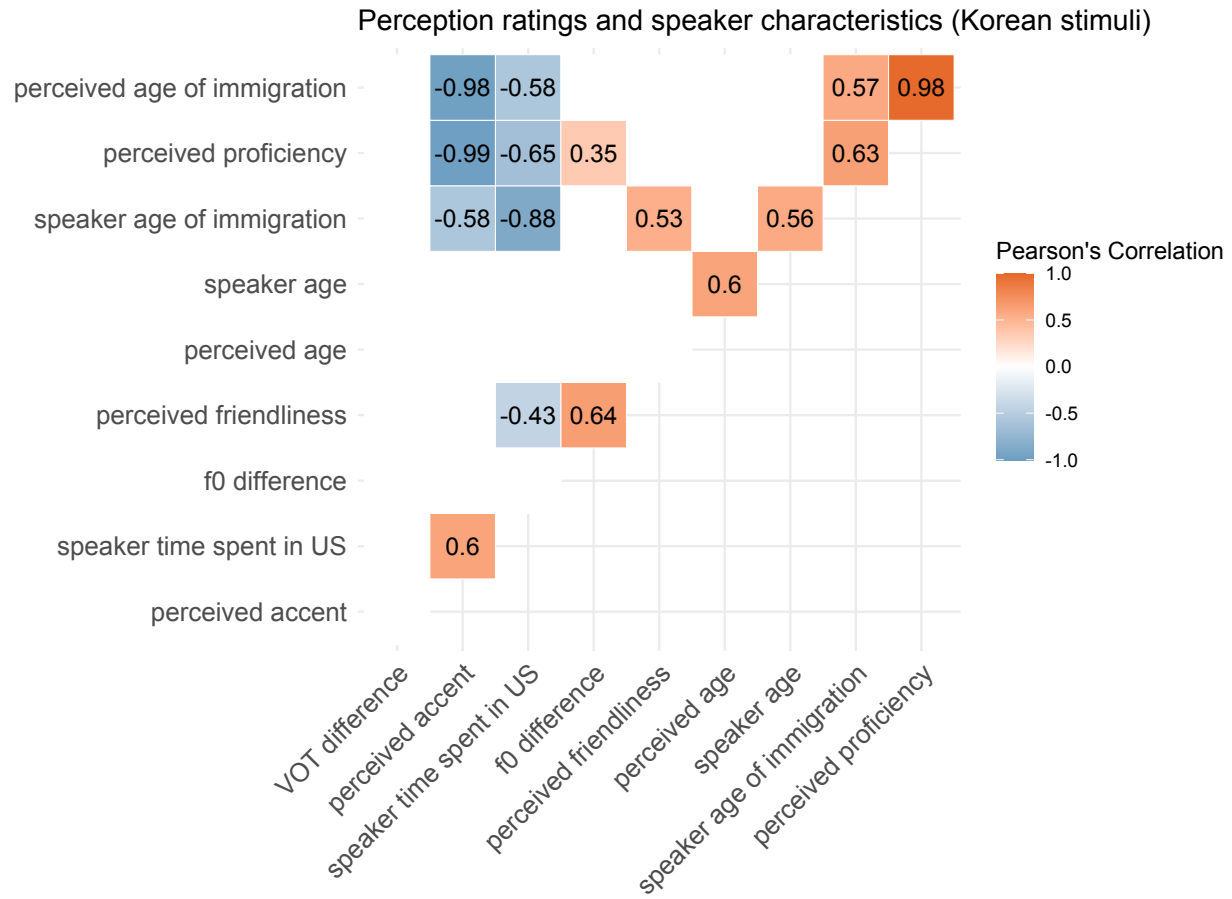


Figure 2.10: Correlation matrix of perception scores for the Korean stimuli and acoustic and demographic measurements of the speakers. Non-significant correlations are not shown. Differences between aspirated and lenis f0 or VOT values did not significantly correlate with any speaker characteristics or ratings.

related with perceived proficiency ($r(23)=0.35$, $p=0.02$). However, it is also correlated with perceived friendliness, an otherwise meaningless result ($r(23)=0.64$, $p=0.003$). Difference in aspirated-lenis VOT was not significantly correlated with any other variable.

Among the stronger correlations, we see that perceived proficiency is positively correlated with speaker age of immigration ($r(23)=0.63$, $p<0.001$) and negatively correlated with amount of time spent in the United States ($r=-0.65$, $p<0.001$).

Finally, the effect of the speakers' own ratings on Korean proficiency were compared to their perceived proficiency scores. Speakers in the production experiment rated themselves on a three-point scale on their speaking, listening, and reading fluency. Of course, speakers may have had different conceptions of what each point on the rating scale represented. Nevertheless, when genders were pooled, the subjects' perceived proficiency was found to be significantly influenced by their rating on all three scales.

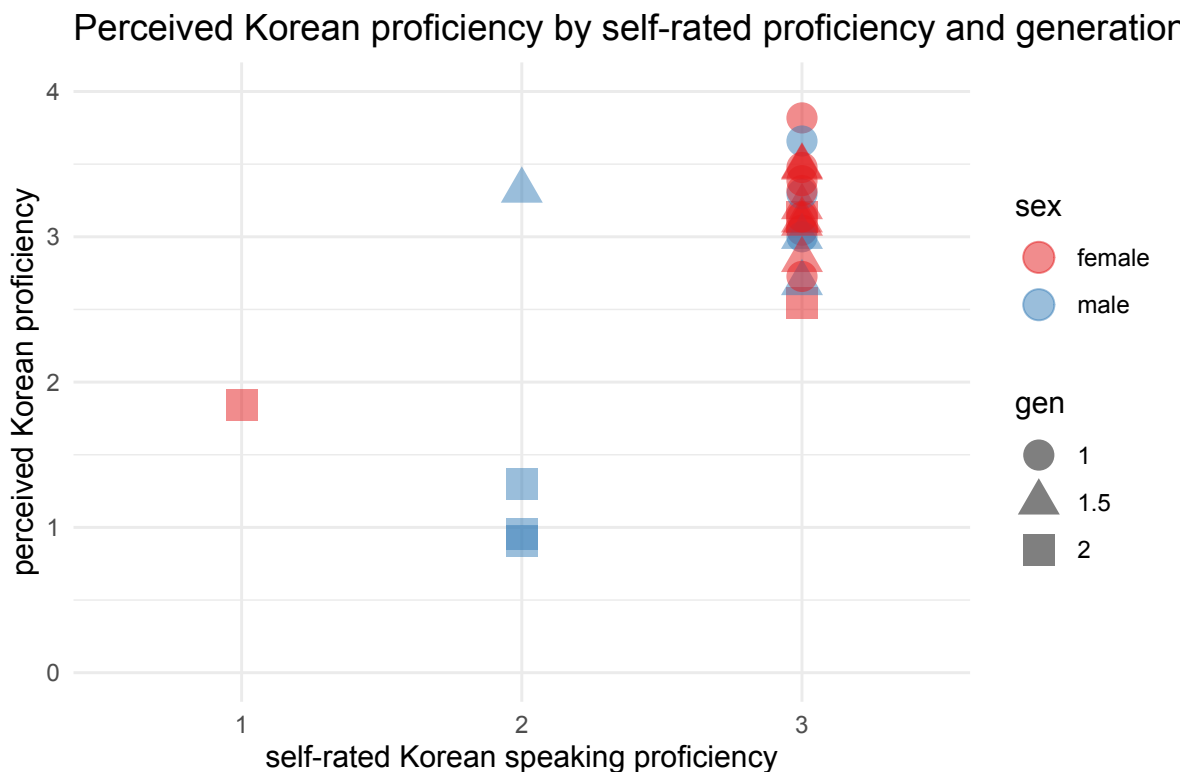


Figure 2.11: Perceived Korean proficiency of speakers by self-reported Korean speaking proficiency, split by gender. Most G1 and G1.5 subjects rated themselves as highly proficient in Korean, and accordingly were perceived to be highly proficient in Korean. G2 subjects who gave themselves lower ratings (“1” or “2”) also tended to receive lower Korean proficiency ratings.

This demonstrates that speakers who rated themselves “1” or “2” on the speaking scale

were usually correspondingly perceived as being less proficient. Figure 2.11, which separates the genders, also illustrates how clearly separated the “proficient” speakers are from the “not proficient” speakers and how generational groups still form visible clusters in the proficiency data.

2.6 Discussion

The data indicates that the second generation female heritage speakers in particular are producing Korean word-initial consonants with greater VOT values and less f0 contrast than the 1.5 generation heritage speakers and first generation speakers. In other words, the collapse of VOT contrast that is part of the ongoing Seoul Korean sound change is not occurring for second generation Korean Americans, which confirms this study’s hypothesis and corroborates the findings of Kang and Nagy (2016). However, the hypothesized “heritage speakers” group that consisted of G2 and G1.5 speakers was not supported, as G1.5 patterned more closely with G1 speakers more often.

One possible explanation for this is that the sound change is still “in progress” among this population of speakers, G1.5 and G2 included. Due to considerable variability among members of each generational group, it is possible that some second generation speakers do possess the VOT merger and f0 contrast, while others do not, resulting in lower rates on average. Indeed, in Figure 2.7, it is possible that a handful of female speakers who immigrated early or were born in the United States are pulling down the average for all female speakers.

Another explanation is that the sound change is not occurring here due to a gap in generational transfer (i.e., the “transition problem”), specifically for the second generation heritage speakers. The speakers in the G2 group are young enough that their Korean-speaking parents presumably will have acquired the variety of Seoul Korean that contains this change. However, growing up in the United States with less immersion in the Korean language may have interfered in their acquisition of stops and affricates. Put another way, acquisition of and subsequent dominance in English may affect the speaker’s Korean phonology. Since English voiced and voiceless stops are primarily contrasted using VOT, second generation Korean speakers may also use VOT to distinguish between lenis and aspirated stops. In addition, Kang and Guion (2006) determined that English voiceless stops had slightly higher VOT than Korean aspirated and lenis stops (which were very similar as a result of the merger). The current study did not find similar results when analyzing the VOT of English and Korean consonants together, instead finding that English voiceless consonants and Korean lenis consonants did not significantly differ in VOT (or f0).

Kang and Guion (2006) also argued that early sequential bilinguals maintained two distinct systems for English and Korean, while the second generation Korean Americans of this study appear to have more of a merged or mixed system, using a combination of VOT and f0 cues to maintain contrast cross-linguistically.

The maintenance of some contrast is important and not unprecedented. Babel (2009) found evidence of English influence in Northern Paiute subphonemic variation. The category boundaries of stops and fricatives in the younger speaker had shifted, presumably due to decreased usage frequency and/or direct contact with English, but crucially, this did not cause a loss of contrast. Although Babel's study was of an indigenous American language and not an immigrant heritage language, the cases are parallel. In another case, Godson (2004) found evidence that English influence in the vowels of Western Armenian heritage speakers depended not just on the age at which speakers became English-dominant, but also on the vowels themselves: only those that had close parallels in English were affected. Phonetic attrition due to the influence of the ambient language is strong, but L2 phonology will never completely override the abstract phonological knowledge the speaker possesses of the L1/heritage language.

To address the individual variation in these data would require going back to the subjects and inquiring after the nature of their heritage language input (Flege 2007), which is unfortunately not within the scope of the original project. That said, it has been shown that for accent perception in Koreans specifically, amount of accent can be modeled as a correlation with age of arrival alone, even when other factors such as amount and quality of English input is corrected for (Flege et al. 1999; Flege 2007). Therefore, when it comes to the production side of this project, it may also be the case that age of acquisition information for the heritage speakers is enough to create a sufficient model.

The language background surveys reveal that there is not nearly as much contact as one might assume between the Seoul variety of Korean and the Korean spoken by immigrant communities in California. Second generation Korean Americans grow up as Americans with exposure to Korean language and culture coming in only through limited channels. The majority of input is through their parents' idiolects and, to a much lesser degree, news and entertainment media. Heritage speakers of Korean must produce Korean differently at least in part due to some amount of isolation from the changes that have been taking place in Seoul, in addition to close and early contact with English. If the sound change in question was carried across the Pacific with the large wave of first-generation Korean immigrants in the 1960s, we would have expected it to have been passed on from parent to child. We would especially expect the parents of the current study's participants to have passed it down to their children, as these parents were almost all born between 1950 and 1973 in Seoul or Gyeonggi-do and immigrated to the United States in adulthood (between 1980 and 2006). Yet despite the (speculative but likely) presence of the sound change in the parents' generation and a relatively high level of exposure to Korean in the children's generation, they did not adopt it.

Participant 211, a second generation 23-year-old, describes his childhood Korean language experience as having overheard it "spoken between parents and amongst relatives at family gatherings", but rarely directed toward him. Another second generation speaker, 19 years old, comments on having had "daily exposure" to Korean through her family and going to Korean restaurants, but she also grew up in majority white neighborhoods in the Midwest.

Korean Americans with high levels of exposure to Korean tended to be those from Califor-

nia, especially Southern California. Participant 209, a 1.5 generation female who immigrated from Seoul at the age of 6, expressed that “being in Koreatown made me get lots of exposure, daily,” and also believes that being ethnically Korean has caused her to use the language often. On the other hand, participant 211 admits that “there is a very minimal relationship” between his Korean identity and his language use, which to him is a point of regret. Both of these participants lived in Southern California, but their experiences are quite different: one comfortably “bicultural”, as Lee (2002) describes, and the other plainly not comfortable with his monocultural tendency.

Additionally, it may be that there is a causative relationship between the lack of sound change in the speakers of this study and their membership in a younger age cohort when compared to past studies. The youngest subject in the Seoul corpus study (Kang 2014) was born in 1984; in comparison, the oldest subject in the current study was born in 1986. However, one cannot conclude that all young speakers of Korean (whether heritage or native) are not participating in the change, since the current study found that young native speakers in the same age cohort as the heritage speakers closely matched those in the Seoul corpus study. Speaker age is an important consideration here, but the generational identity is still the clearest locus of difference¹⁵.

As for the perception of these heritage speakers, it is reasonable to assume that the use of f₀ and tradeoff with VOT are not what the perceivers are listening to. In fact, post-task interviews with the perception task participants revealed that most of them were cuing in on temporal characteristics (i.e., speech or articulation rate) when judging a speaker’s likelihood of being first or second generation. This is, of course, their metalinguistic judgment, not yet corroborated by an acoustic analysis.

2.7 Conclusion

In this chapter, an exploration of Korean Americans in California finds that when second generation Korean Americans speak Korean, they are not participating in the sound change identified in the Seoul variety of Korean whereby VOT of word-initial lenis and aspirated stops is merging, and the f₀ of the subsequent vowel is being used as the primary cue for contrast. However, 1.5 generation Korean Californians and first generation (adult) immigrants from Seoul are participating. In this way, 1.5 and first generation Korean Americans pattern together, whereas second generation Korean Americans vary widely, with most not participating in the sound change. Second and 1.5 generation Korean Americans, though both falling in the “heritage speaker” category, do not show enough similarities in this linguistic variable to be categorized together.

It is significant that young Korean Americans of the second generation are not participating (equally) in a major sound change that all of their age-specific counterparts in South

¹⁵For another, closer comparison: the sample population in the Toronto study (Kang and Nagy 2016) was born between 1926 and 1992 and recorded in 2009-2011, so the youngest Korean Canadian subjects in the Toronto study were of equivalent age to the average Korean Californian subject in this study.

Korea are considered to have completed. However, it is unclear to what extent contact with English has affected the results, if at all. Second generation Korean Americans overall demonstrate a four-way VOT contrast between aspirated, voiceless and lenis, fortis, and voiced word-initial consonants. Both VOT and f0 continue to be used together as primary and secondary cues to contrast the five phonation types in both languages. There is not enough data to conclude whether Korean Americans are innovating within Korean a new way of producing consonant contrast as a result of contact with English, as was hypothesized by Kang and Nagy (2016).

Korean Americans listening to this speech were able to recognize the speech of second generation Korean Americans as being distinct from first generation immigrant Koreans, regardless of perceived fluency. However, this does not hinge on the presence or absence of the VOT merger and f0 contrast in the speaker's Korean consonants.

Future work might expand on this by analyzing the other acoustic characteristics of speech, such as speech rate, prosody, vowel quality, and sibilant quality, that might be affected by contact with English in a heritage language situation. However, in the subsequent chapters, I have decided to focus on taking a deeper ethnographic dive into the lives and language behaviors of Korean heritage speakers, in particular with regard to their English speech.

In the next chapter, I describe the methodology used to collect spontaneous bilingual speech data from Korean Americans and detail a discovery about their pitch differentiation between languages that has only recently been described in the literature.

Chapter 3

Cross-linguistic f0 differences in bilingual speakers of English and Korean

Malpotanun silchenul hala.
“Don’t just say it, do it.”

Korean proverb

In this chapter¹, I argue that bilingual Korean Americans speak Korean and English with significant differences in fundamental frequency (f0). In general, Korean Americans tend to have higher f0 in Korean than in English, and the degree of this difference depends on the measure of pitch level and/or span being analyzed. This corroborates past studies of cross-linguistic pitch differences, but is especially important given that the pattern is observed in bilingual individuals rather than separate monolingual populations.

3.1 Introduction

Studies show that some languages fundamentally differ in average vocal f0 measurements, even when speaker differences are accounted for. Some common measurements include f0 level, which is similar to sustained average f0, and f0 span, which is the range between the high and low ends of a speaker’s f0 range. For example, Mennen et al. (2012) compared female speakers of German and English and found that the English speakers had higher f0 level and wider f0 span. In Andreeva et al. (2014), both English and German were found to have lower f0 levels and narrower spans than either of two Slavic languages (Bulgarian and Polish).

¹This chapter is a revised version of: Cheng, A. (2020). Cross-linguistic f0 differences in bilingual speakers of English and Korean. *Journal of the Acoustical Society of America*, 147, EL67-73.

However, in a comparison of English and Mandarin, Keating and Kuo (2012) found virtually similar f0 ranges for both groups of speakers, while other aspects of the f0 profile (including maximum, minimum, range, standard deviation, and multiple means) differed only insubstantially. They do suggest that “a combination of linguistic and cultural differences” (2012:1060) may influence cross-linguistic f0 differences.

The studies cited above offer evidence that vocal f0 can be a linguistic identity marker for individuals and groups (see Eckert (2008b)) by comparing similar populations of monolingual speakers. However, a more sensitive measure might emerge from an investigation of how bilingual speakers produce their two languages. Bilingual speech controls for speaker-inherent differences (i.e., neutralizing the effect of anatomical differences on fundamental frequency) and places the languages in contrast with one another in the experience of the speaker. For example, Altenberg and Ferrand (2006) found that Russian-English bilingual women spoke Russian with a higher mean f0 than English, but Cantonese-English bilingual women showed no significant difference between languages, and all three groups were comparable across languages.

Another early study, Ohara (1999), found a difference between languages for bilingual Japanese-English speakers, but specifically for women, not men, and attributed the difference to gender performance. These studies only looked at one f0 measurement, essentially treating f0 as one-dimensional. More recent studies have improved on this by looking at more than just f0 level.

For example, Graham (2014) took a second look at Japanese-English bilinguals, analyzing five men and five women. This study measured f0 at relevant points in a standard Japanese or English utterance, given the known patterns of each language’s intonational prosody, and found statistically significant cross-language differences: Japanese has higher level and wider span than English. This partially corroborates Ohara (1999), but finds the same result for women and men, negating the gender socialization hypothesis. Graham still concludes that both sociophonetic and phonological factors (for f0 span) must be at play here, allowing that bilingual speakers of different genders may speak their languages differently. Indeed, a recent study of bilingual range, Ordin and Mennen (2017), found that female speakers of Welsh and English had systematically wider f0 ranges in Welsh compared to English, although male speakers showed no regular patterning.

Finally, Lee and Van Lancker Sidsis (2017) examined Mandarin-English and Korean-English bilingual speakers performing a variety of speech tasks: reading a passage, describing pictures, and giving a spontaneous monologue. They found higher f0 level in Korean compared to English across all tasks, and higher f0 variability in Korean compared to English in the monologue. This study’s participants were all female speakers (mean age=25 years) who had immigrated from South Korea to the United States at variable times (mean age of arrival=13±7 years) and had been living in the United States for an average of 10.5 years (±4). This means that in terms of bilingual acquisition, the participants were most likely all sequential bilinguals, or speakers who had fully acquired proficient Korean prior to immersion in an English-dominant environment.

Simultaneous bilinguals are speakers who acquire two languages at approximately the

same time, either from birth or prior to the age of three (Paradis 2007). For many second generation Korean Americans, their language input from early childhood onward is a mix of Korean and English, and they come to be proficient in both languages natively, rather than being a native speaker of one language and then acquiring another. A comparison of sequential bilinguals to simultaneous bilinguals would reveal whether the kind of early childhood input given to simultaneous bilinguals affects their use of vocal f0 in a way that the input of speakers who acquire one language much later than the other does not. Studies have shown the effects of age of acquisition on L1 and L2 vowel production (Baker and Trofimovich 2005) and native-like consonant VOT or development of separate phonological categories for consonants (Kang and Guion 2006; Lee and Iverson 2012), for example.

The study outlined in this chapter tests vocal fundamental frequency (f0) level and span of both languages of English-Korean bilingual speakers². Building on the findings of Lee and Van Lancker Sidtis (2017), the expectation is that the two languages will differ in the direction of Korean having a higher level and wider span, even when speakers are engaging in natural conversational speech, instead of participating in facilitated speech tasks. In addition, the subject of study includes simultaneous bilinguals and sequential bilinguals in order to test whether age of acquisition (early versus late) affects f0 differentiation.

3.2 Methods

3.2.1 Interview Subjects and Procedure

The speech data used in this chapter come from the spontaneous speech of bilingual Korean Americans who were interviewed between November 2017 and August 2018³. Because the same data is used for chapters 4, 5, and 6, as well, I will use this section to describe the data collection, preparation, and analysis in full detail, while referring back to this section in subsequent chapters.

Interviewees were recruited through a combination of personal connections, fliers posted around the campuses of UC Berkeley and UCLA, and advertisements through email newsletters and social media. The recruitment text (see Appendix B.1) was advertised as a study of bilingualism and language attitudes specifically for second generation or 1.5 generation Korean Americans who were able to read and speak English and Korean. This meant that the sample size was self-selecting for Korean Americans who were bilingual in speech and literacy, leaving out, among others, Korean Americans who could speak but not read Korean, or Korean Americans who felt that their fluency was too low to hold a long conversation. The sample also purposely left out international students from Korea (who would not identify as

²In this paper, I use f0 instead of “pitch”, which refers to the perceptual dimension of frequency.

³The procedures for recruitment, consent, data collection, and data analysis described in this section were approved by the Institutional Review Board of the University of California, Berkeley on March 18, 2016 (ID: 2016-01-8238; PI: Keith Johnson), and all study personnel completed the ethical training required by the Collaborative Institutional Training Initiative Program.

Table 3.1: Phase 1 interviewers and interviewees.

Gender	AC (male)	CJ (female)	FZ (male)	AP (female)	MC (female)
Female	1	1	2	6	6
Male	0	2	0	0	5

Korean American), and first-generation Korean Americans (or adult Korean immigrants), who are less likely to be present on college campuses.

Forty interviews were conducted with Korean Americans for the corpus. Of these forty interviews, twenty-three were conducted by myself and four trained undergraduate research assistants during the academic year of 2017-2018, which I will call Phase 1 of data collection. Phase 1 interviews took place in the Sociophonetic Area for Recording Conversational Language (“SpARCL”), which is part of the Phonetics and Phonology Laboratory housed in the UC Berkeley Department of Linguistics. The experimental setup involves a recording studio that is outfitted to resemble a living room, where the interviewer sits on an armchair, across from the interviewee, who is seated on a sofa. A coffee table, side tables, lamps, and sound-proofing material that doubles as decor complete the “casual” atmosphere for the interview. Interviewer and interviewee both wear lapel microphones that record audio directly into a laboratory computer, hidden behind a curtain in the same room. This setup is designed to ensure interviewee comfort and minimize some effects of “laboratory speech”, while also contributing to “stylistic diversity” in speech research (Wagner et al. 2015).

During Phase 1, four undergraduate researchers and I conducted twenty-three interviews, broken down by interviewer and interviewee gender in Table 3.1. In addition, it is important to note that interviewers AP and CJ identify as 1.5 generation Korean Americans, while FZ, MC, and I are all of East Asian descent but neither ethnically Korean nor native or heritage speakers of Korean⁴.

During Phase 2, which took place between July and August 2018, I conducted seventeen more interviews in various locations in and around Los Angeles County (see Table 3.2). Using a portable Zoom H4N audio recorder and one lapel microphone for the interviewee, I met my interviewees wherever was convenient for them, including homes, local libraries, and office space generously lent to me by a member of the community⁵. The recording quality of Phase 2 interviews is noticeably different from the Phase 1 interviews, especially in its variability, but it is more than good enough for acoustic analysis.

The undergraduate assistants were trained in standard sociolinguistic interview procedures (Becker 2013), as well as in the modified procedure for this project. Together, we came up with questions to ask participants that would have them talk about their lives

⁴I acknowledge the possible effects of accommodation (Pardo 2006) as an important consideration, due to the effects of the observer (Cukor-Avila 2000), and regret not being able to thoroughly investigate this potential flaw in this chapter and the subsequent chapters. I maintain that the relevant data will be available for future investigation.

⁵Many thanks to Mrs. Deborah S. Lim for the office space on Wiltshire Boulevard.

Table 3.2: Phase 2 interviewers and interviewees.

Gender	AC (male)
Female	10
Male	7

and opinions on ethnic identity and language use, without being too invasive or revealing any of the research aims of the study. Interviewees were introduced and welcomed to the laboratory or recording space in a mix of English and Korean. Then, the actual interviews always began with the interviewer asking, in Korean, for the interviewee to give a short self-introduction. This was followed by more questions, in Korean, about the interviewee’s background, family, and hobbies. At the conclusion of the Korean interview, the interviewer asked the interviewee to read some text on a document to the best of their ability. The document contained four short narratives written in *hangul*, the Korean writing system (see Appendix B.3). Next, the interviewer switched to English and asked the interviewer to sign consent forms and other research-related documents. This brief administrative “pause” or “buffer” gave the interviewee time to “switch modes” from Korean to English. The interview then continued in English, with questions more specific to the interviewee’s experiences with language, ethnic identity, and Korean culture (see Appendix B.2). Interviewees were allowed to code-switch between Korean and English at any time, and were allowed to skip any question they did not wish to answer.

In general, the Korean portion of the sociolinguistic interview lasted 2 to 17 minutes (mean=8.8 minutes), and the English portion lasted 7 to 52 minutes (mean=33.03 minutes). The Korean reading portions lasted between 1 and 13 minutes (mean=3.6 minutes). Total interview time was around one hour.

The forty speakers ranged in age from 18 to 55 years old (mean=24.6). There were twenty-six interviewees who were born in the United States or immigrated with their families prior to the age of three (“second generation”), of whom 15 identified as female and 11 as male. There were fourteen interviewees who were born in South Korea and immigrated with their families as children (“1.5 generation”), of whom 11 identified as female and 3 as male.

A note on the categorization of generational status: the categorization is slightly different from that used in Chapter 2, where the cutoff between 1.5 and second generation is between 3 and 4 years, not 2 and 3. In addition, one subject in this sample immigrated at age 16, which I have categorized here as 1.5 generation, but which would have been categorized as first generation in Chapter 2. Finally, Korean Americans who spent several months or years living in Korea during their youth but still spent a majority of their childhood in the United States were categorized as 1.5 in Chapter 2 but are categorized as second generation here.

Specifically, Subject 19 was born in New Jersey, then moved with his family back to South Korea, where he lived for only one year before moving back to the United States (this time, to California). Subject 26 had the same experience: six months spent in South Korea

as an infant, before relocating to his birthplace in the United States. Subject 29 lived in Korea between the ages of 2 and 5. Subject 20 was born and raised in the United States, but then spent three of her adolescent years (ages 13 to 16) living in South Korea, followed by one year in Japan. All four of these interviewees were categorized as second generation.

On the other hand, Subject 33 was born in South Korea and moved to the United States at age 3. Then, at the age of 10, she moved back to South Korea, where she lived until she was 20 years old. Subject 33 was categorized as 1.5 generation.

Another difficulty in the categorization of generational status is that many interviewees had varying definitions of what it meant to be a second generation, first generation, or 1.5 generation Korean American. For more discussion on this topic, please see Chapter 6.

3.2.2 Data Analysis

The interviews were transcribed manually by my research assistants and myself using the TextGrid function of Praat (Boersma and Weenink 2016). Each TextGrid had four tiers, one for each combination of speaker (interviewer and interviewee) and language (Korean and English). All intelligible speech was transcribed as heard, including stutters, speech errors, instances of code-switching, and novel words or non-words, all of which were included in a customized pronunciation dictionary for the purposes of forced alignment. Laughter, coughs, and other non-speech sounds were excluded so that the forced aligner would skip them.

The multi-tiered TextGrids were then force aligned by phone and word to two-channel audio using the Penn Forced Aligner in English (Yuan and Liberman 2008) and kp2fa in Korean (Yoon and Kang 2012), via a wrapper function created for the Berkeley Phonetics Machine (Sprouse and Johnson 2016). This allows individual segments and words from the transcript to be matched to their place in the audio file with great efficiency, though not without some computer-generated error. For example, overlapping and simultaneous speech was included in the TextGrid transcriptions, with the reasoning that as most of the interviews were recorded in two channels, the forced aligner would be directed to the correct channel for each speaker. However, some amount of signal overlap will have contributed to errors in alignment. Any alignment errors caught in the English interview section were hand-corrected and re-aligned, though it was not deemed possible to catch every error. Overall, the occurrence of alignment and tracking errors is estimated to be negligible (i.e., washed out as “noise” in the data) compared to the number of total tokens used in the analyses.

Formant data from the recordings was extracted using a series of scripts that employed the IFC method (Ueda et al. 2007) to measure raw fundamental frequency (f0) and formants (F1, F2, F3, and F4) at 10-millisecond intervals throughout an entire recording. In order to mitigate the effects of the outliers generated by the IFC method and the forced alignment, the raw measurements (per subject) were treated using the `smoothn` module (Garcia 2010) with a smoothing parameter of 10 and robust smoothing⁶.

⁶For more on smoothing, see Section 4.2.2.

Next, each vowel was split into ten equally-spaced timepoints. Because the f0 and formant measurements were automatically taken every ten milliseconds, the smoothed measurements were slotted in to the timepoints. For example, a vowel that lasted 0.1 seconds (or 100 milliseconds) would have 10 automatically calculated measurements, each of which would be slotted in to one of the 10 timepoints, while a vowel that lasted 0.2 seconds (or 200 milliseconds) would have 20 automatically calculated measurements, and every other one would be slotted in to the 10 timepoints. Vowels shorter than 0.1 seconds thus included some repeated measurements in the 10 timepoints. However, for this analysis, only the fifth timepoint (or the vowel midpoint) was included in the measurement of fundamental frequency. In addition, only the measurements from vowels were used, as consonants generally have unreliable measurements for fundamental frequency; hence, “vocal” fundamental frequency.

Data cleaning continued with the exclusion of obvious tracking errors (e.g., f0 of 0 Hz during vowels), outliers (i.e., data points above and below two standard deviations from each subject’s mean), code-switched words (i.e., English words uttered during the Korean interview and vice versa), and unstressed vowels of English, due to the possible effects of vowel reduction (Moon and Lindblom 1994). Finally, values in Hertz were converted from Hertz to semitones with a base of 100 Hz for the purposes of cross-gender comparison, using the following formula:

$$semitone = \frac{(\log_x - \log_{100})}{\log_2 \frac{1}{12}}$$

Four independent native speakers of Korean were asked to rate a randomized one-minute sample of speech from each subject’s Korean interview on two 5-point Likert scales for strength of accent in Korean and level of proficiency in Korean. For the level of accent, raters answered the question, “How much do they sound like a native speaker during their interview?” on a scale from “sounds exactly like someone from Korea” to “sounds like Korean is not their first language.” For the level of proficiency, raters answered the question, “How much ease does the speaker have speaking in Korean during their interview?” on a scale from “no problem whatsoever communicating” to “clearly struggling to communicate ideas”. Five independent raters also rated a randomized one-minute sample of speech from each subject’s English interview on similar 5-point Likert scales for accent and proficiency in English.

3.2.3 Subject selection criteria

For the data in this chapter, six of the forty subjects were excluded for scoring below 3 on both the Korean accent and Korean proficiency scales, and one subject was excluded due to a recording error, for a total of thirty-three subjects. The age range of these subjects was 18-55 (mean=25.09±7.27). Of the second generation subjects, twelve identified as cisgender female and eight as cisgender male. Of the 1.5 generation subjects, ten identified as cisgender female and three as cisgender male. All of the 1.5 generation interviewees were born in Seoul or the Seoul metropolitan area (Gyeonggi-do), with the exception of one interviewee, a female, who

Table 3.3: Demographic information for 33 Korean American interviewees who scored above average on scales for Korean accent and Korean proficiency.

Gender	Second generation	1.5 generation
Female	n=12 (born in USA) AOA=0	n=9 (born in Seoul) AOA=3 (3), 8 (2), 10 (3), 16 n=1 (born in Busan) AOA=5
Male	n=8 (born in USA) AOA=0	n=3 (born in Seoul) AOA=9, 10, 12
Sum	mean age=24.38±4.89	mean age=25.69±10.2; mean AOA=8.23±3.88

was born in Busan. Every interviewee had at least one parent who was born and raised in Seoul. Basic demographic information about the thirty-three subjects is provided in Table 3.3.

In terms of language acquisition, all of the 1.5 generation interviewees reported learning Korean first, then acquiring English upon immigrating to the United States. Thus, they could also be characterized as early sequential bilinguals. (Note, however, that most Korean children are exposed to minimal English even in South Korea, as it is a compulsory subject in the country’s public education system.) Second generation interviewees were simultaneous bilinguals, as most reported learning Korean at home as their first language, then acquiring English either at home, in their neighborhoods, or at school once they reached schooling age. Two subjects reported English as their first language, and only one reported using only English at home; all other interviewees reported use of only Korean or a mix of Korean and English with their family (i.e., parents or caregivers).

Overall, the crucial difference between this population and the population studied in Lee and Van Lancker Sidtis (2017) is that the current study’s subjects acquired English at a much earlier age on average, and can be split into two categories of bilingual acquisition: simultaneous bilingualism (all of the second generation interviewees) or early sequential bilingualism (the 1.5 generation interviewees).

3.2.4 F0 level and span calculation

F0 level was calculated as mean f0 from the smoothed vowel midpoint measurements (Mennen et al. 2012). The f0 per word was the average of every stressed vowel in a word (and every vowel in a word for the Korean data, since Korean is not a stress-timed language), and the f0 per subject was the average of the per-word measurements. A greater value indicates a higher f0 level, and a lower value indicates a lower f0 level.

To determine f0 span, or the extent to which the high and low ends of an individual’s f0

range are differentiated, the coefficient of variance (ratio of standard deviation to mean f_0 in Hertz, then converted to semitones) as well as four range measurements were calculated. The first range was the interquartile range (IQR) of each subject's f_0 . The difference between the upper quartile and the lower quartile was calculated, giving the spread of the middle fifty percent of the f_0 measurements per speaker (hence, coding as "rg50"). Then, using percentile calculation functions, the middle eighty percent, the middle ninety percent, and the middle ninety-eight percent ranges were calculated ("rg80", "rg90", "rg98"). Each range calculation encompasses a greater proportion of the f_0 data. A greater value for any of these ranges indicates a wider f_0 span, and a lower value indicates a narrower f_0 span.

3.3 Results

3.3.1 F0 level

Figure 3.1 demonstrates the results for one interviewee, Subject 17, as an illustrative example.

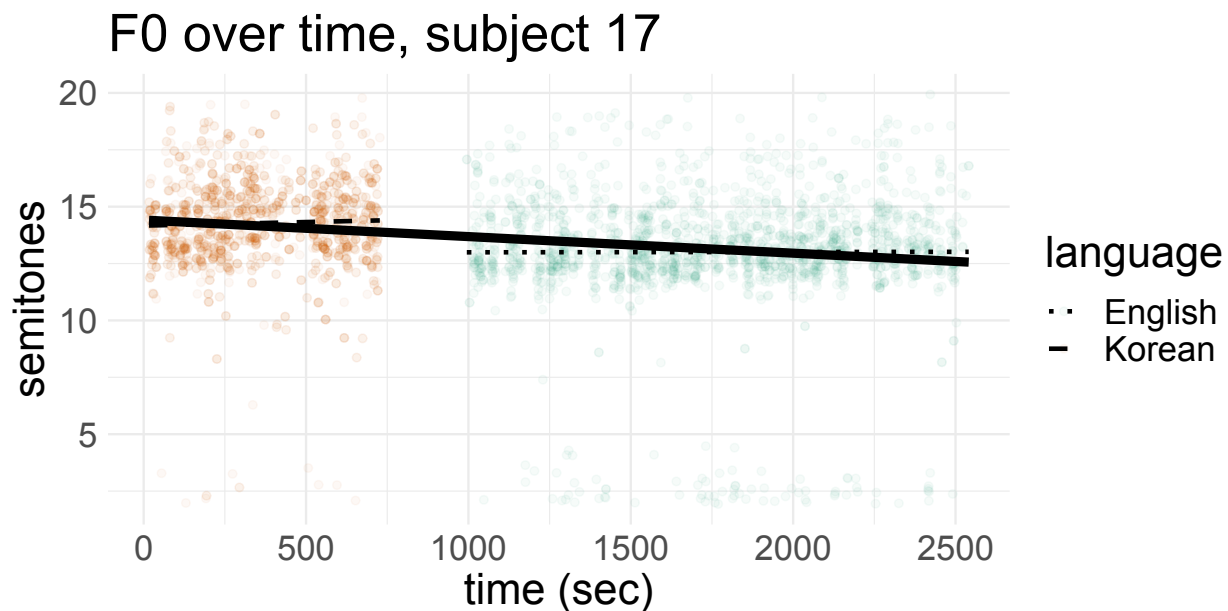


Figure 3.1: f_0 measurements over the course of a bilingual interview for one subject, an 18-year-old 1.5 generation female. Each dot represents the f_0 of a vowel uttered during the interview, with Korean speech (on the left) occurring first, followed by English speech (on the right), after a short period of silence. The regression lines were calculated for each language separately (dashed, dotted) as well as pooled (solid), using `lm` smoothing in R.

It is clear that while f_0 varies widely over the duration of the interview, the Korean and English sections of the interview also differ. The orange dots on the left, representing f_0

measurements from Korean words, cluster at a higher f0 value in semitones, compared to the green dots on the right, which represent f0 measurements from English words. (Code-switched words, such as English words occurring during the Korean interview, were excluded from analysis.)

This pattern, which is evident in one subject, also held when all the interviewees were pooled by gender. Figure 3.2 illustrates overall f0 measurements from all interviewees, separated by gender and language. Despite considerable overlap, f0 measurements from Korean words were greater on average than f0 measurements from English words by up to five semitones.

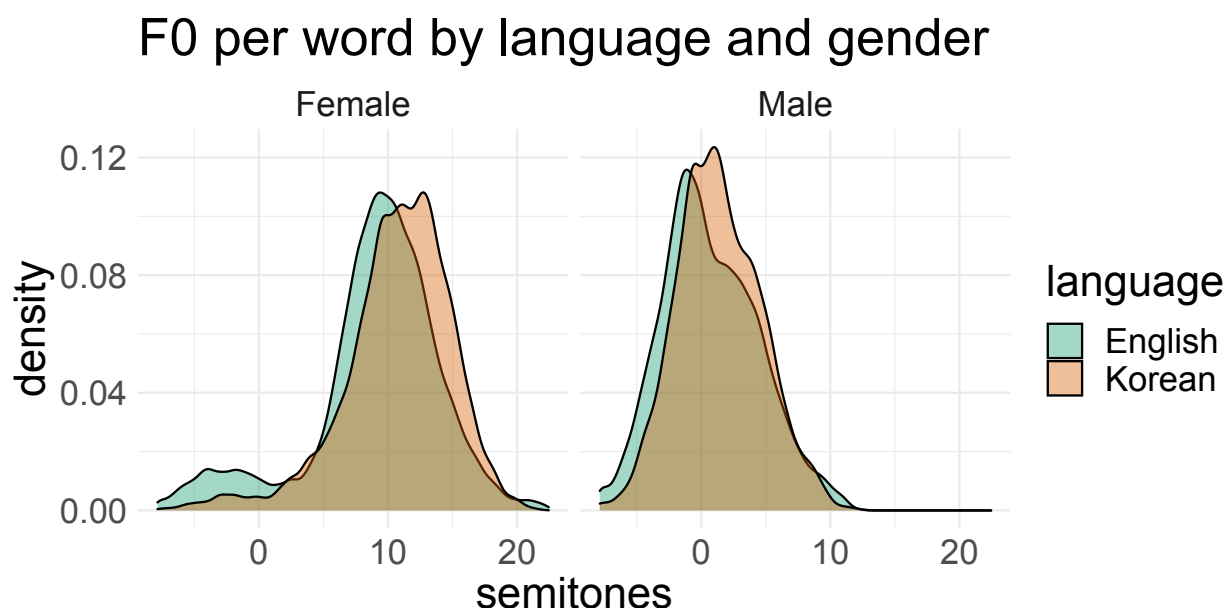


Figure 3.2: Distribution plots of f0 measurements for all interviewees, separated by gender and language. On average, male-identified interviewees had lower f0, and English f0 measurements were lower than Korean f0 measurements.

Another way to illustrate the data is to use the mean f0 per subject for each language. As illustrated in Figure 3.3, every subject had a higher mean f0 in Korean compared to English, since each point in the plot is located to the right of the identity line.

To test for the significance of the observed difference, two linear mixed effects models were fit on the word-level f0 measurements and per-subject f0 means (in semitones), with fixed effects of gender, generation, and language spoken, and a random effect of subject, according to the formulas:

```
model1 <- lmer(f0_wd_st ~ language * Gender + Generation + (1|subject))
model2 <- lmer(f0_subj_st ~ language * Gender + Generation + (1|subject))
```

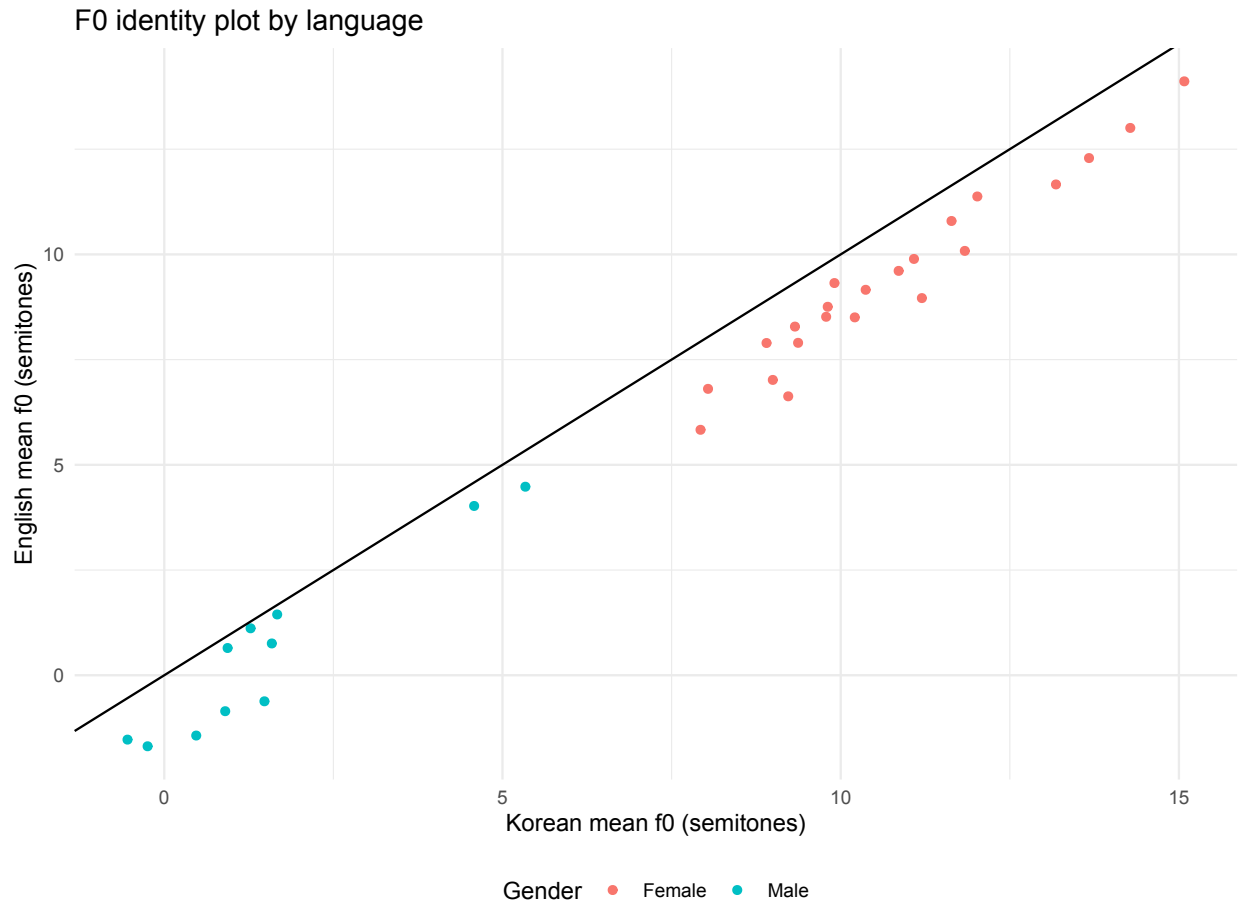


Figure 3.3: Identity plots for mean f0 per subject, by language and gender. Every subject had a higher Korean mean f0 than their English mean f0, indicated by the position of every point to the right of the identity line ($y=x$).

Results from the models (see Table 3.4 and Table 3.5) show that the interviewees' Korean was significantly higher than their English, regardless of gender or generational status. An expected effect of gender was found, with male speakers having lower f0 than female speakers. There was no effect found for generation; that is to say, second generation and 1.5-generation Korean Americans did not behave differently in terms of f0. However, an interaction between language and gender indicates that male and female speakers had somewhat different language effects.

Table 3.4: A linear mixed effects model was fit on the data to determine the effects of language, speaker gender, and speaker generation on mean f0 of a particular word in semitones (f0_wd_st).

	<i>Dependent variable:</i>
	f0_wd_st
languageKorean	1.348*** (0.034)
GenderMale	−8.506*** (0.759)
Generation2nd generation	−1.165 (0.733)
languageKorean:GenderMale	−0.499*** (0.069)
Constant	10.015*** (0.588)
Observations	115,777
Log Likelihood	−331,173.700
Akaike Inf. Crit.	662,361.300
Bayesian Inf. Crit.	662,428.900

Note: *p<0.1; **p<0.05; ***p<0.01

3.3.2 F0 variance

As for f0 span, the hypothesis was that in these bilingual speakers, Korean speech would have a wider span, indicated by greater ranges and greater variance. Figure 3.4 shows the coefficient of variance for gender groups, by language. As with f0 mean, the two generational groups did not differ, so the two groups are pooled for the visualization. Male speakers had lower variance than female speakers. Variance appeared to be greater in English than in Korean for both male and female speakers.

To test for the significance of the observed difference, a linear mixed effects model was fit on the word-level f0 variance measurements (“cv”), with fixed effects of gender, generation, and language spoken, and a random effect of subject, according to the formula:

```
model <- lmer(cv ~ language * Gender + Generation + (1|subject))
```

Results from the model (see Table 3.6) show that subjects’ f0 variance was affected by language and gender, with no interaction effect of the two factors⁷.

⁷In previously published work (Cheng 2020), an interaction effect of language and gender was found, with

Table 3.5: A linear mixed effects model was fit on the data to determine the effects of language, speaker gender, and speaker generation on mean f0 of each subject in semitones (f0).

	<i>Dependent variable:</i>
	f0
languageKorean	1.377*** (0.123)
GenderMale	-8.579*** (0.736)
Generation2nd generation	-1.245* (0.703)
languageKorean:GenderMale	-0.368* (0.213)
Constant	10.061*** (0.568)
Observations	66
Log Likelihood	-95.925
Akaike Inf. Crit.	205.850
Bayesian Inf. Crit.	221.177

Note: *p<0.1; **p<0.05; ***p<0.01

3.3.3 Interquartile Range (IQR) and other ranges

Wider span is also indicated by higher values for ranges such as interquartile range. Figure 3.5 illustrates the data organized by language, gender, and range type. It is clear that male ranges are lower than female ranges in general, and that English ranges tend to be wider than Korean ranges. The size of the difference depends on how large of a range is taken: the values for the 50% range are nearly indistinguishable across all groups, but much clearer when looking at 98% range.

A linear mixed effects model was fit for each of the ranges in order to test for the effects of language, generation, and gender on f0 span, according to the following formulas:

```
model <- lmer(rg(50) ~ language * Gender + Generation + (1|subject)
model <- lmer(rg(80) ~ language * Gender + Generation + (1|subject)
model <- lmer(rg(90) ~ language * Gender + Generation + (1|subject)
model <- lmer(rg(98) ~ language * Gender + Generation + (1|subject)
```

no effect of language alone.

Table 3.6: A linear mixed effects model was fit on the data to determine the effects of language, speaker gender, and speaker generation on coefficient of variance of f0 for each subject (cv).

	<i>Dependent variable:</i>
	cv
languageKorean	−3.660*** (0.435)
GenderMale	−3.806** (1.616)
Generation2nd generation	1.755 (1.516)
languageKorean:GenderMale	0.808 (0.754)
Constant	−27.225*** (1.237)
Observations	66
Log Likelihood	−158.157
Akaike Inf. Crit.	330.314
Bayesian Inf. Crit.	345.641
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01

Table 3.7: A linear mixed effects model was fit on the data to determine the effects of language, speaker gender, and speaker generation on f0 IQR (1), 80% range (2), 90% range (3), and 98% range (4) per subject, in semitones.

	<i>Dependent variable:</i>			
	rg50 (1)	rg80 (2)	rg90 (3)	rg98 (4)
languageKorean	-0.057 (0.197)	-2.780*** (0.556)	-3.763*** (0.480)	-3.612*** (0.453)
GenderMale	-0.645 (0.463)	-3.894*** (1.246)	-5.312*** (1.435)	-6.103*** (1.436)
Generation2nd generation	0.727* (0.416)	1.723 (1.109)	1.575 (1.325)	1.145 (1.332)
languageKorean:GenderMale	-0.119 (0.342)	1.573 (0.962)	1.992** (0.831)	1.584** (0.784)
Constant	3.641*** (0.348)	10.050*** (0.933)	14.169*** (1.090)	19.747*** (1.093)
Observations	66	66	66	66
Log Likelihood	-94.802	-156.352	-157.138	-155.499
Akaike Inf. Crit.	203.603	326.704	328.276	324.998
Bayesian Inf. Crit.	218.931	342.032	343.603	340.325

Note:

*p<0.1; **p<0.05; ***p<0.01

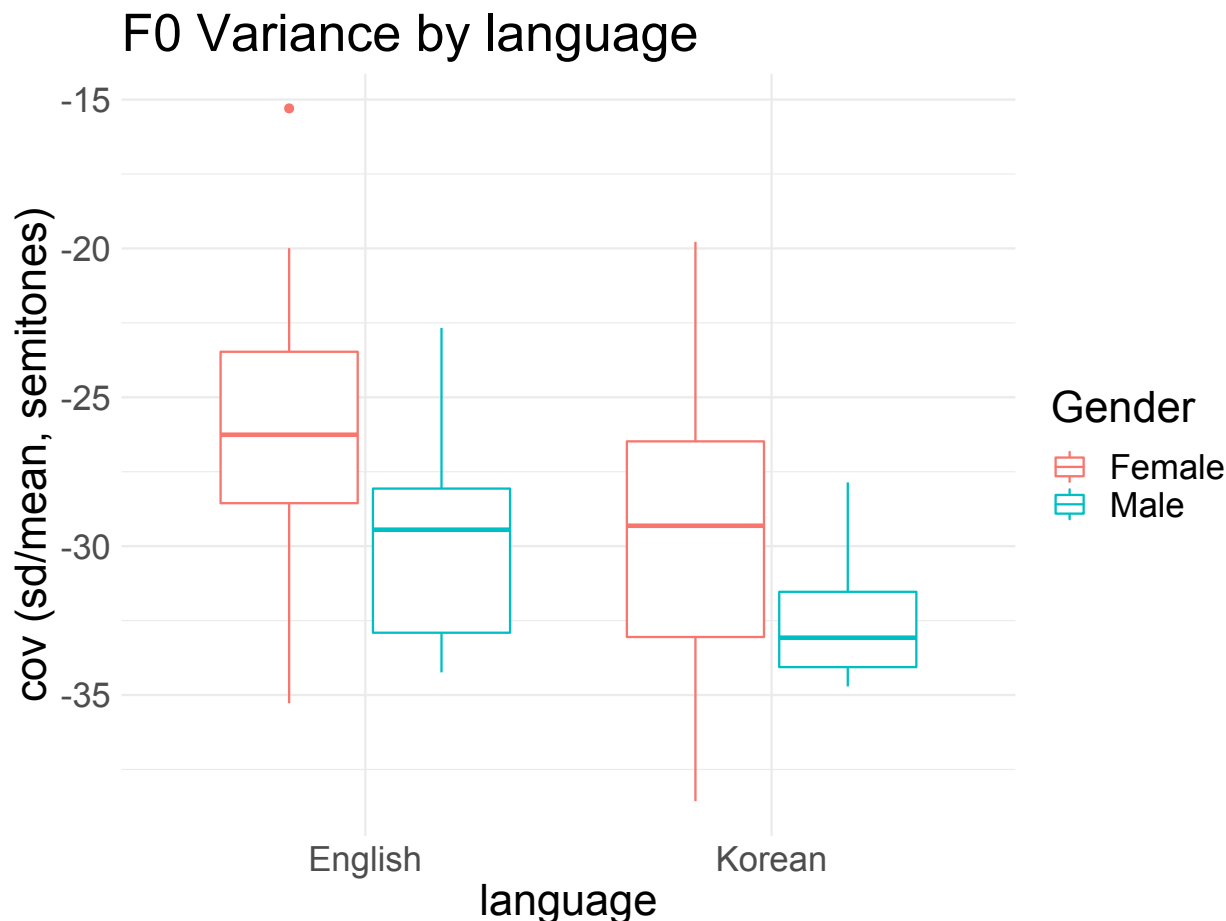


Figure 3.4: Means and distributions of f0 variance (coefficient of variance) for gender and language. Male speakers had lower variance than female speakers, and both male and female speakers had lower variance in Korean than in English. No interaction effect was found.

Results from the model (see Table 3.7) show that subjects' generational status was not a factor in their f0 ranges. However, the language being spoken did influence f0 ranges at 80%, 90%, and 98%. Speaker gender was found to be significant – male speakers had a narrower f0 span than female speakers – but at 90% and 98% ranges, an interaction effect of language and gender was confirmed⁸.

However, it is clear that the type of range selected for analysis plays a large role in the interpretation of the data. For example, I ran a separate model on the four ranges that included interaction effects between language and generation, gender and generation, and all three, according to the formulas:

⁸Once again, in previously published work (Cheng 2020), only interaction effects of language and gender were found, with no effect of language alone.

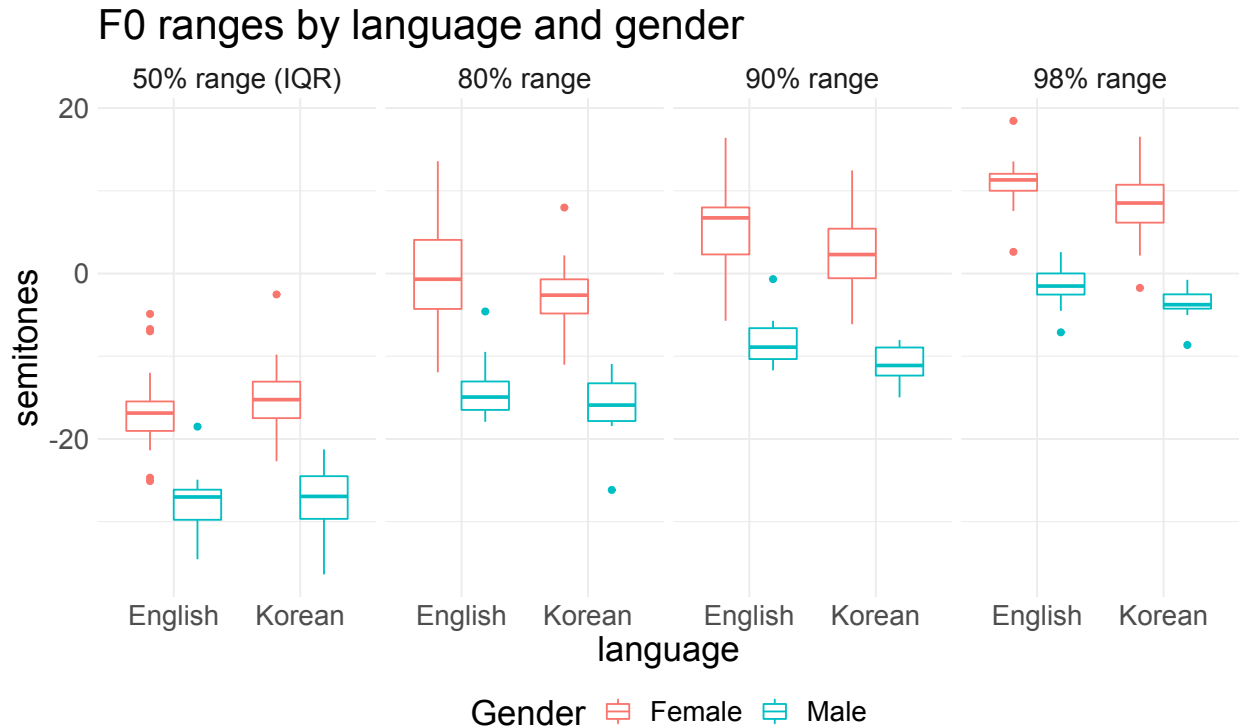


Figure 3.5: Means and distributions of f0 range (IQR, 80%, 90%, and 98% range) for gender and language. Significant effects of gender and language were found for the 80-90% ranges, but not for the IQR. At 90% and 98% ranges, an interaction effect of language and gender was found.

```
model <- lmer(rg(50) ~ language * Gender * Generation + (1|subject))
model <- lmer(rg(80) ~ [etc.]
```

In this case, only the lower two ranges (50% and 80%) showed any effects besides language: an effect of generation on the range, as well as an interaction between gender and generation. In this interaction effect, second generation male speakers demonstrated higher span in English than in Korean, second generation female speakers demonstrated higher span in Korean than in English, and 1.5 generation female speakers demonstrated lower span than second generation female speakers, but did not differ across languages. The results for IQR are illustrated in Figure 3.6 and the model with three-way interactions can be found in Table 3.8.

Table 3.8: A linear mixed effects model was fit on the data to determine the effects of language, speaker gender, and speaker generation on f0 IQR (1) and 80% range (2), which included generational status in a three-way interaction, instead of two-way interactions.

	<i>Dependent variable:</i>	
	rg50 (1)	rg80 (2)
languageKorean	0.016 (0.302)	-2.035** (0.827)
GenderMale	0.678 (0.777)	-0.654 (2.152)
Generation2nd generation	1.344*** (0.505)	3.466** (1.400)
languageKorean:GenderMale	-0.167 (0.629)	0.103 (1.721)
languageKorean:Generation2nd generation	-0.135 (0.409)	-1.366 (1.119)
GenderMale:Generation2nd generation	-1.973** (0.945)	-4.890* (2.618)
languageKorean:GenderMale:Generation2nd generation	0.099 (0.765)	2.363 (2.094)
Constant	3.304*** (0.373)	9.099*** (1.034)
Observations	66	66
Log Likelihood	-91.139	-149.954
Akaike Inf. Crit.	202.279	319.909
Bayesian Inf. Crit.	224.175	341.805

Note:

*p<0.1; **p<0.05; ***p<0.01

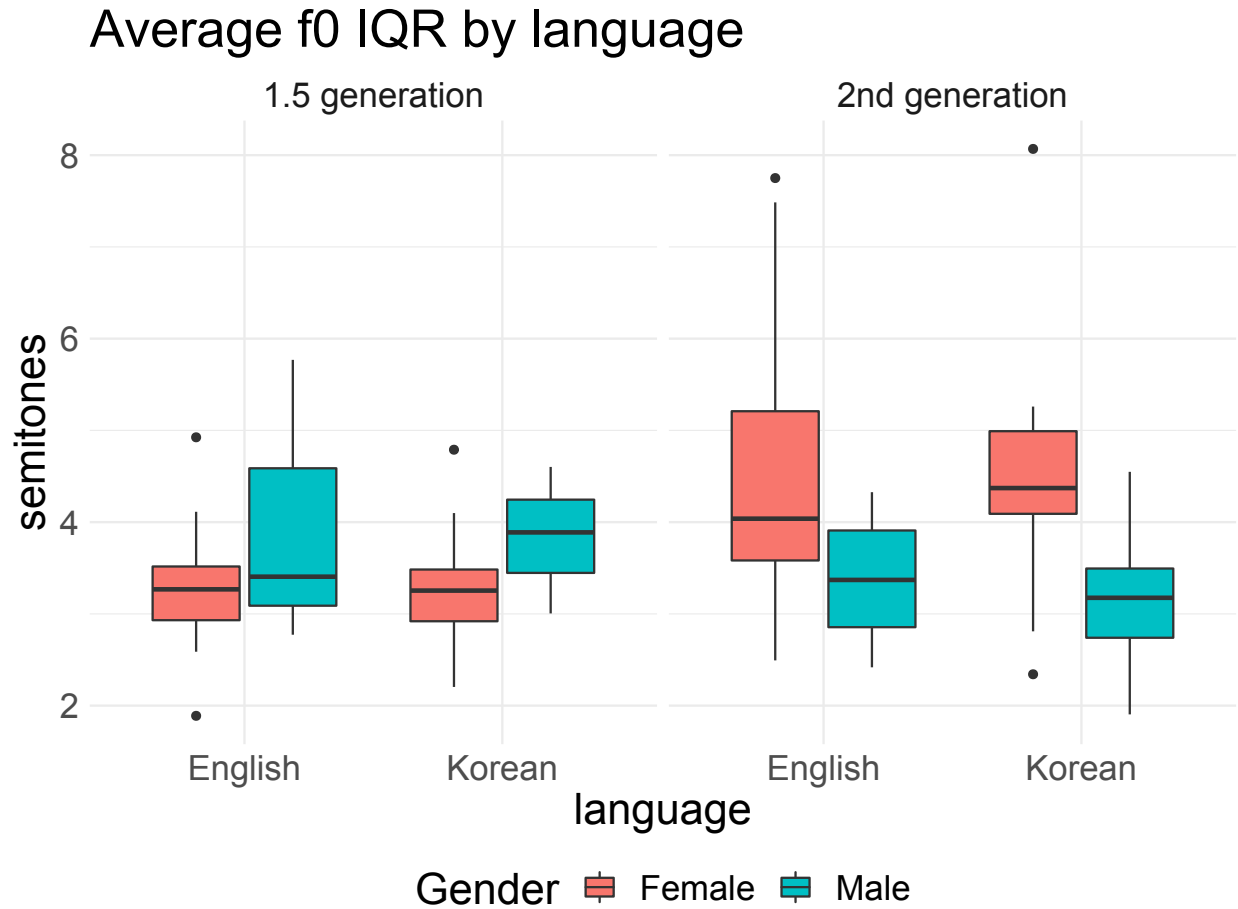


Figure 3.6: Means and distributions of f₀ IQR for gender, language, and generational status. According to the model that included three-way interactions, significant effects of generation and a small interaction effect of gender and generation were found for IQR (as well as for 80% range, but not for 90% and 98% ranges).

3.4 Discussion

The hypothesis that in bilingual speakers, Korean speech would have a higher f0 level was demonstrated to be correct. However, the hypothesis that Korean speech would also have a wider f0 span was not supported; instead, Korean tended to have a lower span than English, though this depended also on speaker gender and generational status when looking at interquartile range.

Although the difference is basic and significant, the present data cannot tell us what the cause of the difference is, and one can only speculate. There are four hypotheses that warrant further investigation.

First, it could be that the difference is purely phonetic, or due to differences in the phonetic inventories of English and Korean. For example, the fortis and aspirated consonants in Korean are known to raise the f0 of subsequent vowels, in comparison to lenis consonants (and onset-less vowels). As suggested in Lee and Van Lancker Sidtis (2017), the regular occurrence and use of these kinds of consonants might push up the average Korean f0 in a way that English does not. This explanation would account for the finding that the middle fifty percent of the f0 measurements for both languages do not significantly differ. However, this f0 raising effect only occurs at the beginnings of accentual phrases (Cho and Jun 2000), and fortis and aspirated consonants are not common consonants to begin with. The relative rarity of this f0 raising phenomenon in casual speech means that it is an unlikely contributor to the overall greater values for Korean f0.

Second, it could be that the suprasegmental phonological structure of Korean and English (i.e., prosodic structure) differs in a way that increases overall Korean f0 (or decreases English f0). This idea is supported by the studies of German and English (Mennen et al. 2012) and Japanese and English (Graham 2014) that specifically looked at f0 range at crucial intonational points of sentence-long utterances. Unfortunately, that level of specificity in the f0 analysis is beyond the scope of the current study (although the data would certainly be amenable to it).

Third, the difference could be socio-indexical. In light of the past socio-cultural and pragmatic studies of “pitch” (Ohara 1999; Loveday 1981), one could hypothesize that a similar means of linguistic performance could be at work, whereby Korean Americans speak Korean with a higher f0 due to social expectations. It is unlikely that gender performance is the key factor here, however, since both male and female speakers in this study consistently spoke Korean with a higher f0. And unlike Loveday (1981), the speakers in this study were not restricted to conventional politeness expressions, but were engaging in uninterrupted natural conversation. Even in a study of acoustic correlates of Korean politeness (Brown et al. 2014), the honorific expressions in Korean were found to have a lower average f0 than non-honorific ones. It is difficult to explain overall higher f0 in Korean with appeals to gender and politeness.

Finally, it is also unlikely that the influence of using a second language played a role. Although Lee and Van Lancker Sidtis (2017) discuss the idea that speaking a foreign language may raise f0, the speakers in the current study – including the 1.5 generation Korean

Americans, but especially the second generation Korean Americans – acquired English at an early age and would not consider English to be a foreign or second language. Many of the speakers do consider Korean to be a heritage language or “home language”, and some reported a lack of confidence in their Korean skills. But because they were childhood acquirers of the language, they cannot be considered L2 Korean learners, either. In the end, there were no significant effects of age of acquisition (or generational status) found in the f0 level data, and neither did Korean proficiency appear to affect the observed phenomenon of higher f0 in Korean, as all of the subjects used in this analysis were rated as proficient in Korean by independent raters.

3.5 Methodological notes

One drawback of the data collection method is that the two portions of the interview were not counterbalanced (such that some interviews would begin in English and end in Korean). It is thus not possible to determine whether the order of languages in the interviews played a role in the results.

Many sociolinguistic interviews conducted in this manner analyze only the middle eighty percent of the duration of an interview, because the beginning of an interview may be affected by the interviewee’s heightened awareness of being recorded (perhaps resulting in higher f0, or other effects of careful speech). The analysis of the current study included a test of whether time affected the f0 measurements, by adding time (using the start time, in seconds, of each vowel) as a fixed effect into the linear mixed effects model, and found no significant effect.

It is plausible that because Korean was always the first language in an interview, the Korean f0 measurements were biased to be higher. However, there was no evidence in the data of a general decrease in f0 over time within language. For example, in the visualization of data from the subject in Figure 3.1, the regression lines made for each language demonstrate that during the interview, her f0 slightly rises over time, rather than lowers. The rise is visible in both languages; yet there is a significant drop in f0 between the Korean and the English portions of the interview, such that the overall regression line for the entire interview has a negative slope, reflecting the overall drop in f0 when the subject began speaking in English.

Another potential drawback is that the study population did not include first generation bilingual Korean Americans (i.e., recent immigrants) who do not have the same associations and experiences as second and 1.5 generation Korean Americans when it comes to the Korean language. A future course of study would also include first generation or adult immigrant speakers with a complementary profile of language experience and proficiency, in order to compare the three generational groups.

In addition, it would be beneficial to collect speech data from non-Korean bilingual speakers of Korean and English (i.e., L1 English learners of Korean), once again to see if the same pattern holds. Similar to the first generation Korean Americans, if non-native

bilingual speakers, who do not have the same culturally-mediated experience with Korean as second and 1.5 generation Korean Americans, demonstrate the same pattern as above, it would point more strongly toward purely linguistic (that is to say, phonetic, phonological, and/or prosodic) explanations for the difference in f0 between Korean and English.

3.6 Conclusion

This chapter has examined vocal f0 level and span in the natural speech of bilingual speakers of Korean and English and found a significant difference in f0 level. One can be sure that anatomical differences play no role in this robust cross-linguistic difference. F0 span was found to be dependent on speaker gender as well as language spoken. Finally, the study compared simultaneous bilinguals (second generation Korean Americans) to sequential bilinguals (1.5 generation Korean Americans) and found no significant difference between the two groups in f0 level, and only minor differences in f0 span when looking at interquartile range that disappeared when increasing the range to 90% or 98%.

With respect to other acoustic and phonetic research, the results of this study indicate that analyses of f0 span should use multiple types of ranges, since the results of different ranges may differ considerably.

On a broader scale, it is demonstrably important to account for the effects of bilingualism (or a bilingual mode of speaking) when conducting research with natural speech. A bilingual speaker may have different average f0 values for each of the languages they speak, depending on what the languages are, or which language was spoken in childhood. (Many phonetic studies that are not about L2 acquisition are limited to “effectively” monolingual speakers, but may only ask for “native” speakers of the language in question, and should account for additional languages, if they do not already do so.)

Further research is recommended in the areas of examining cross-linguistic f0 differences at certain points in the prosodic structure of Korean and English utterances, as well as collecting natural speech data from the other bilingual populations mentioned in Section 3.4. Careful linguistic and ethnographic study is recommended in order to pinpoint some of the myriad possible socio-indexical influences, including the influence of heritage speaker status, on f0 in Korean and English, which may further inform our understanding of bilingualism as both a linguistic and cultural phenomenon.

In the next chapter, I will continue the cross-linguistic comparison of an acoustic variable, this time turning to vowel quality in English and Korean.

Chapter 4

Maintenance of phonological distance in the back vowel trajectories of English-Korean bilinguals

Their children call, bitter words
of a strange tongue // Hearts
down, they're walking heavy 'til
the dying's done

Monsters Calling Home, Run
River North

In this chapter, I argue that bilingual Korean Americans have differing vowel systems for English and Korean and resist cross-linguistic interference. The difference can be located in the high back rounded vowels: English /u/ is fronter than Korean /u/, and English /oʊ/ is backer than Korean /o/. In terms of vowel trajectories, the monophthongal Korean /o/ appears to show evidence of diphthongization similar to that of English /oʊ/. However, only the English vowels undergo a process of backing due to the presence of a following lateral segment (/l/); Korean vowels do not undergo this phonological assimilation. Although language spoken was a significant factor in vowel quality, the speaker's Age of Arrival did not appear to affect vowel quality, thus showing how acquisition patterns cannot always be solely modeled on age-related variables alone.

4.1 Introduction

As memorably demonstrated in Grosjean (1989), a bilingual is “not two monolinguals in one”. Grosjean's argument was for a “wholistic” view of bilingualism, in which both languages that a bilingual person speaks affect one another and create a shared phonological system. However, this does not necessarily mean that the phonemes of both languages are

mixed together. In what ways does a bilingual's phonological system reflect both internal organization and the effects of two languages?

Some evidence from second language acquisition studies indicates that a speaker's native language, or L1, changes in response to acquisition of the second language, or L2 (Dussias and Sagarra 2007; Chang 2013b, 2019). Research in language processing and psycholinguistics corroborates this. As a speaker of one language learns a second language, "in effect, each language begins to resemble the other, with bilinguals looking less like monolinguals in either language as cross-language contact and proficiency increase" (Kroll et al. 2014:161).

Much of the past research on bilingualism has focused on sequential bilingual speakers who have a clear L1 and L2. For example, Baker and Trofimovich (2005) studied early versus late Korean-English bilinguals and the effect of Age of Acquisition on the degree and direction of L1 and L2 vowel system interactions. The early group arrived in the United States from South Korea as children or young adolescents and acquired English at that time, while the late group arrived as adults and acquired English as adults. Baker and Trofimovich found that the early bilinguals' two languages influenced one another more, as determined by an identified merger of the English TRAP and DRESS vowels that was influenced by Korean but not replaced by the Korean system. The late bilinguals demonstrated a more unidirectional influence of Korean on English. On the other hand, Guion (2003)'s study of early versus late Spanish-Quechua bilinguals found that the early bilinguals maintained clearly separate systems of vowels, while the late bilinguals tended to have a more mixed system.

A comparison of English and Korean vowels is interesting not only due to the similarities and differences between them, but because of the ongoing sound changes that are affecting each language's vowel system. Figure 4.1 illustrates the California English and "Standard" (Seoul) Korean vowel spaces, adapted from Clopper et al. (2005) and Lee (1999), respectively. The set of English front vowels includes /i, e, ɪ, ε, æ/, while the Korean front vowels include /i, e, ε, ø/. The set of English back vowels includes /u, ʊ, o, ɑ/¹, while the Korean back vowels include /u, ʊ, o, ʌ/. Note that the Korean /ʌ/ is further back than the (central) English /ʌ/.

The Korean vowels /e/ and /ε/ are currently undergoing a merger to /ε/, one which may be complete in production in all young speakers of Korean from three major dialect groups (Eychenne and Jang 2015). The California English vowels are also in the process of sound change, one that encompasses more than just one merger. This ongoing sound change is known primarily as the California Vowel Shift (Eckert 2008a). It has been studied extensively within California (Hinton et al. 1987; Hagiwara 1997; Bucholtz et al. 2007; Hall-Lew 2011; Podesva 2011; Podesva et al. 2015; D'Onofrio 2015), with early research neatly summarized in Kennedy and Grama (2012), as well as in other areas in the western half of North America, where it has been given other names. Dialectal research that specifically focuses on the change in low back vowels (the COT-CAUGHT merger) describes it as the "Elsewhere Shift" (see Stanley (2020:14-28) for an extensive review).

¹/ɔ/ is merged with /ɑ/ in California English due to the COT-CAUGHT merger (Kennedy and Grama 2012).

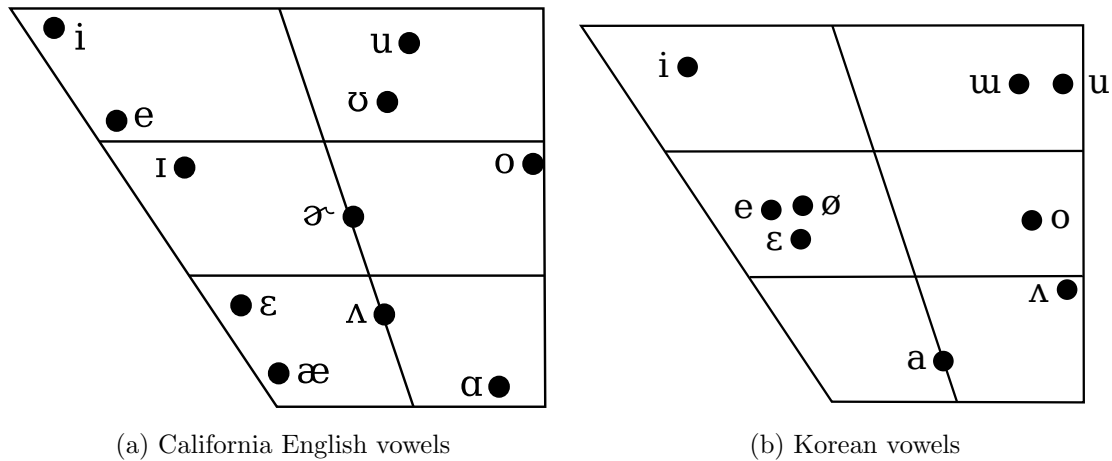


Figure 4.1: (a) Vowel space of “Western” English, adapted from Clopper et al. (2005). (See also Hagiwara (1997).) Does not include the diphthongs /aɪ, ɔɪ, aʊ/. (b) Vowel space of Seoul Korean, adapted from Lee (1999). Does not include diphthongs or long vowels.

One of the notable aspects of the California Vowel Shift is the fronting of the high back rounded vowels. The fronting of GOAT, or /o/, which is generally understood to be diphthongized to /ou/ in most American English dialects (Fox 1983), was first discussed in Luthin (1987). The fronting of GOOSE, or /u/, was first analyzed in Hinton et al. (1987). Both of these vowels were particularly salient in the burgeoning stereotype of the California “Valley Girl”: a young white woman from the San Fernando Valley of Southern California. Beyond the young, white, and female stereotype, however, the phenomenon of back vowel fronting appears to have spread to Californian speakers of non-white ethnicities, as Fought (1999) found with Chicano English speakers in Los Angeles. And as a change in progress, we should be able to see today a larger proportion of the California English-speaking population in terms of age demonstrating this particular aspect of the shift.

But how do bilingual speakers of California English and another language participate in ongoing sound change? Overall, the second language acquisition literature is lacking with respect to the growing group of bilinguals known as heritage speakers. Though understudied in the field of bilingualism, heritage speakers have the potential to upend what we know about bilingual development and cognition (Polinsky and Kagan 2007; Polinsky and Scontras 2020) and phonological organization (Chang to appear). Heritage speakers either learn two languages (one from a caregiver and one that is spoken broadly in society) simultaneously, or learn a home language as children and switch to the societally dominant language upon entering school.

When it comes to Korean Americans, heritage speakers tend to vary between simultaneous and sequential bilingualism, mostly depending on their Age of Arrival to the United States. For those Korean Americans who were born and raised in the United States, or

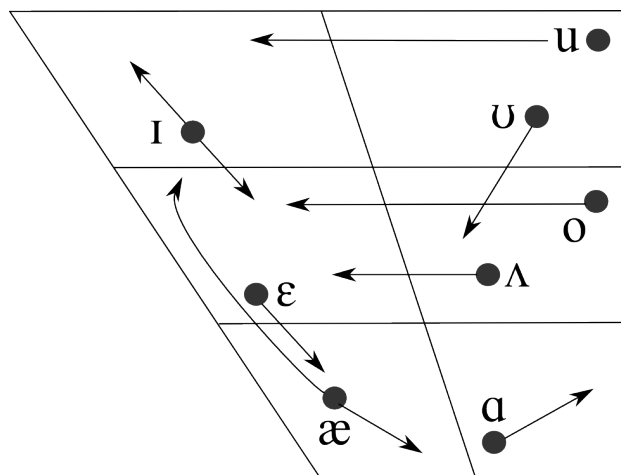


Figure 4.2: The “Northern” California Vowel Shift, adapted from Eckert (2008a).

second generation Korean Americans, they tend most often to be simultaneous bilinguals, hearing English and Korean from their caregivers and immediate environment since birth. Others were exposed to English first when they entered preschool or school, prior to five years of age. Their first language would be Korean, but it is essentially replaced by English as they assimilate to an English-language schooling system. Korean immigrants who arrived in the country as infants and toddlers are also sometimes categorized as second generation immigrants, either by themselves, citing no memory of having lived in South Korea, or by researchers who ascertain that their early childhood experiences in Korea are not qualitatively different from the early childhood experiences of a Korean American child born and raised in a Korean speaking household prior to schooling age.

Those who immigrate as older children and have experienced some schooling in South Korea are the “1.5 generation” immigrants (Park 1999). Having arrived between the ages of three and around sixteen or seventeen, they have usually developed full (if not adult-like) proficiency in Korean prior to their first massive exposure to English upon arrival in the United States. As adults, 1.5 generation immigrants have fully acquired English, and many consider it to be their dominant language. Many 1.5 generation and second generation Korean Americans maintain the ability to speak Korean, but often with some amount of language attrition due to lack of consistent use.

For all of these types of heritage bilingual speakers, the question of which language is the L1 and which is the L2, and whether the traditional classification of L1 and L2 even works, is up for debate. All heritage speakers could be considered “early bilinguals”, but the heritage language experience is radically different from sequential bilingualism as in the case of, for example, students who begin learning a second language as a high school elective, or adults who relocate to a foreign country and begin learning a new language there. This is one reason why the traditional models of Second Language Acquisition, such as the Perceptual

Assimilation Model (Best 1994) or the Speech Learning Model (Flege 1995), are difficult to apply to heritage speakers.

In addition, the overall amount of variability in production within the group of heritage speakers has been noted as being quite high (Polinsky and Kagan 2007), which often makes drawing broad conclusions about the entire group difficult. Yet the literature does contain suggestive, if not conclusive, evidence that heritage speakers demonstrate both influence of the dominant language (i.e., English) on the pronunciation of heritage language phonemes (Knightly et al. 2003; Godson 2004) and the ability to differentiate both language-internal and cross-linguistic contrasts in consonants and vowels (Chang et al. 2011). Chang et al. (2011) in particular argue that although some kind of bidirectional influence of the two languages in the heritage phonological system exists, the early age at which heritage speakers acquired their heritage language helps them maintain both “functional” and “non-functional” contrast (2011:3974) without merging their systems.

In this chapter, I examine heritage speakers of Korean, specifically young adult Korean Americans who identify as either second generation or 1.5 generation and who are bilingual in heritage Korean and California English. I position heritage speakers as being similar to early sequential bilinguals, but predict that Age of Arrival will not affect the relative difference in formant values for back vowels cross-linguistically. In addition, I hypothesize that the variability in production within the group of heritage speakers will be very high compared to non-bilingual or non-heritage speaker groups. Finally, I predict that speakers will generally produce distinct back vowels in both languages, demonstrating a lack of transfer effects from one language’s phonological system to the other.

4.2 Methods

The dependent variables are the first and second vowel formants (F1 and F2), measured from recordings of natural conversational speech in English and Korean from thirty-two interviewees. The vowels in question are the American English mid-high back rounded vowel GOAT, or /oʊ/, and high back rounded vowel GOOSE, or /u/ (which are two of the three high back vowels, the third being the mid-centralized high back rounded /ʊ/), compared to the Seoul Korean mid-high back rounded vowel /o/ and high back rounded vowel /u/ (which are two of the three high back vowels, the third being the high back unrounded /ɯ/). For purposes of comparison and visualization, the English low back unrounded vowel LOT, or /ɑ/, and the Korean low central vowel /a/, were also analyzed.

4.2.1 Subject selection criteria

The data in this chapter come from the same set of bilingual sociolinguistic interviews as described in Section 3.2.1. Of the forty subjects, thirty-two were selected for analysis in this chapter. These thirty-two subjects were identified as Californians due to having been born and raised in California, or having lived in California continuously for at least ten years.

Table 4.1: Demographic information for 32 Korean Americans who grew up in California or resided in California for at least ten consecutive years, including Age of Arrival (AOA).

Gender	Second generation	1.5 generation
Female	n=13 (born in USA) AOA=0	n=6 (born in Seoul) AOA=0.5, 3, 8 (2), 10, 16
Male	n=10 (born in USA) AOA=0	n=3 (born in Seoul) AOA=9, 10, 12
Sum	mean age=24.17±4.71	mean age=27.56±11.38; mean AOA=8.5±4.58

Of the thirty-two subjects, 13 identified as male and 19 as female, and they ranged in age from 18 to 55 years old (mean=25.12 years). Twenty-three identified as second generation Korean Americans, and 9 as 1.5 generation Korean Americans. All of the interviewees were residing in California at the time of the interview. Further demographic information about the Korean Californian subjects can be found in Table 4.1. For this analysis, no subjects were excluded on the basis of their scores on the scales of native-like accent and proficiency in either language (see Section 3.2.2).

4.2.2 Data analysis

First, each vowel token (Korean vowels and stressed English vowels) was split into ten equal-spaced timepoints based on vowel duration. Raw formant values were automatically tracked in Hertz and extracted using `ifcformant` (Watanabe 2001), which measures formant frequencies every 0.01 second (10 milliseconds). Thus, if a vowel were 0.1 second long, each timepoint would be equally spaced every 0.01 second, and if a vowel were 0.2 second long, each timepoint would be equally spaced every 0.02 second. However, the median vowel duration in the entire dataset was 0.08 second (with a mean of 0.1134 second), meaning that a majority of vowels had fewer than ten timepoints to be tracked. In these cases, the data processing script would repeat the formant measurements for the nearest timepoint in order to create ten timepoints.

The next step was to convert the raw Hertz measurements into the Bark scale as a means of normalization, using the following formula:

$$Bark = \frac{(26.81 \times formant)}{(1960 + formant)} - 0.53$$

Next, the formant measurements were smoothed using the `smoothn` module (Garcia 2010) using a smoothing parameter of 10 and robust smoothing. Because the automatic formant extraction script selected formant measurements at set timepoints within a vowel, occasional formant tracking errors may have been amplified, producing “spiked” trajectories as can be seen in Figure 4.3a.

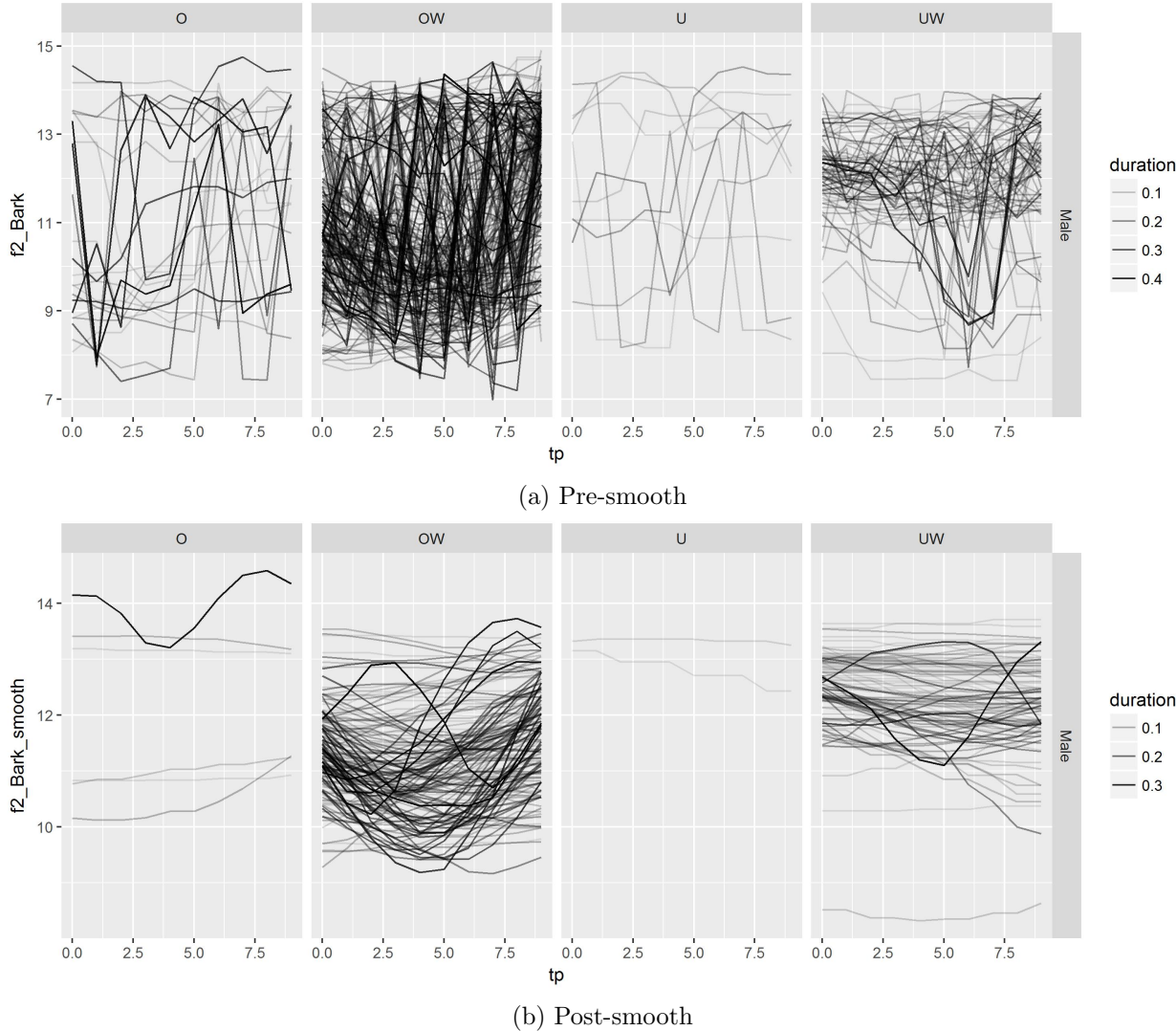


Figure 4.3: Sampled data demonstrating F2 trajectories (Bark) taken at ten equally-spaced timepoints per vowel from the raw (not smoothed) data (a) and the smoothed data (b). In (a), occasional formant tracking errors were amplified by the selection of formant values at timepoints (instead of, for example, using mean values), which complicated the analysis. In (b), formant tracking errors that created outlier points were “smoothed out”, producing more reliable trajectory shapes.

The spikes are, in fact, outliers produced by tracking errors. Smoothing of the raw data was necessary in order to minimize the influence of these outliers and tracking errors. The result of smoothing can be seen in Figure 4.3b. In addition to producing more reliable trajectory shapes for visible analysis, smoothing also created ideal conditions for the generalized additive mixed model analysis. However, it is important to note that smoothing the formant values inevitably shifts them away from their raw measurements, which makes the Bark scale in Figure 4.3b less meaningful.

Raw durations in seconds were log-transformed, and vowels whose duration was considered an outlier using Tukey’s method (above and below $1.5 \cdot \text{IQR}$) were removed from the analysis. Finally, tokens that were the result of code-switching, such as Korean words uttered during the English interview or vice versa, and tokens of /u/ that followed the English palatal glide /j/, were removed from the analysis.

The final dataset used in statistical analysis contained 223,220 observations, representing 22,322 tokens of six vowels from thirty-two speakers, and ten F1 and ten F2 values per token.

Two types of statistical analysis were performed on the vowel formant data. The first was linear mixed effects regression modeling. The models were fit to the F1 and F2 values taken near the midpoint of each Korean vowel and each stressed English vowel (timepoint 4 out of 10). With one measure per vowel token, there were on average 190 tokens of GOAT, 80 tokens of GOOSE, 120 tokens of LOT, 80 tokens of /o/, 40 tokens of /u/, and 180 tokens of /a/ per speaker, and a total of 22,322 tokens.

The second type of analysis was generalized additive mixed modeling. Further detail on the two types of models will be given in the corresponding results sections (4.3.2 and 4.3.3).

The hypothesis, again, was that heritage bilinguals’ corresponding English and Korean back vowels would differ in F1 and F2 due to having acquired distinct vowel systems from an early age, but that there would be some evidence of English influence on Korean. Also, it was predicted that there would be wide variability in this demographic due to the wide variability of language experiences of heritage speakers.

4.3 Results

In this section, I will first present a visual analysis of vowel quality, followed by the two statistical models. In all figures, analyses, and discussions, the English mid-high back round vowel will be represented interchangeably as “OW”², /oʊ/, or GOAT³, and the English high back round vowel will be represented as “UW”, /u/, or GOOSE. The Korean back vowels will

²“OW”, “UW”, “AA”, and other ARPABET notation is used by many forced alignment programs due to the ease of encoding using common characters; each ARPABET symbol (or digraph) has a corresponding symbol in the International Phonetic Alphabet. Note that the Korean ARPABET symbols correspond to the Korean vowels, not the single-character version of ARPABET for English vowels.

³Wells (1982) lexical set notation is used here for the benefit of readers unfamiliar with ARPABET and the IPA, as well as for consistency with the rest of the variationist literature.

Table 4.2: Conversion table for relevant vowels in the International Phonetic Alphabet (IPA), ARPABET, and Wells lexical set notation.

Language	IPA	ARPABET	Wells
English	/oʊ/	OW	GOAT
	/u/	UW	GOOSE
	/ɑ/	AA	LOT
Korean	/o/	O	–
	/u/	U	–
	/a/	A	–

be represented as “O” or /o/ and “U” or /u/. Table 4.2 below illustrates the conversions for ease of access.

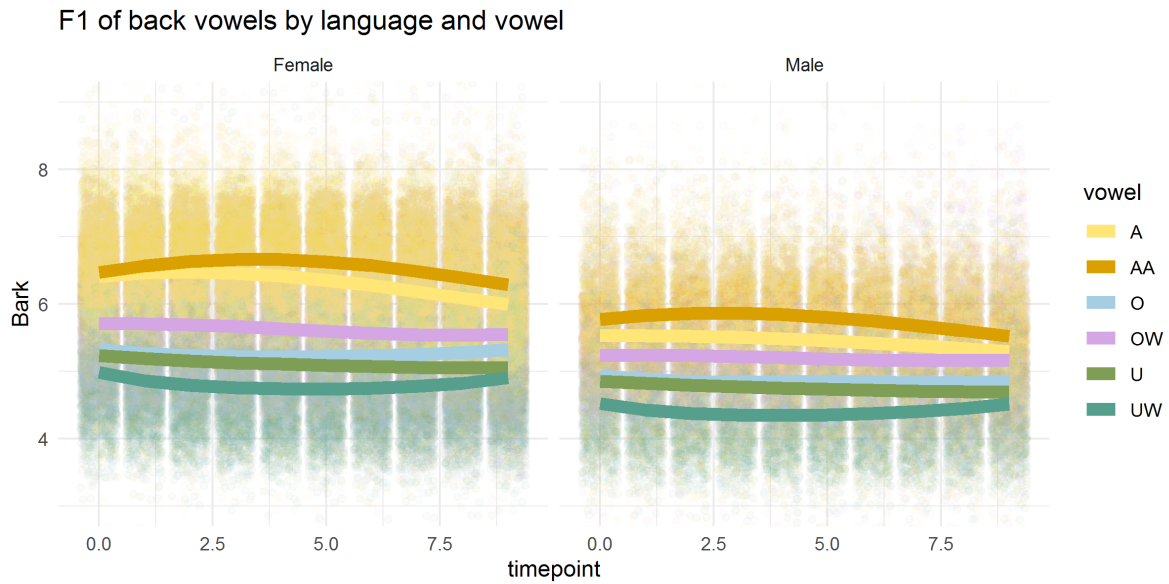
When the mid-high vowels of both languages are discussed as a pair, I will use “OW/O”; and when the high vowels of both languages are discussed as a pair, I will use “UW/U”.

4.3.1 Visual analysis

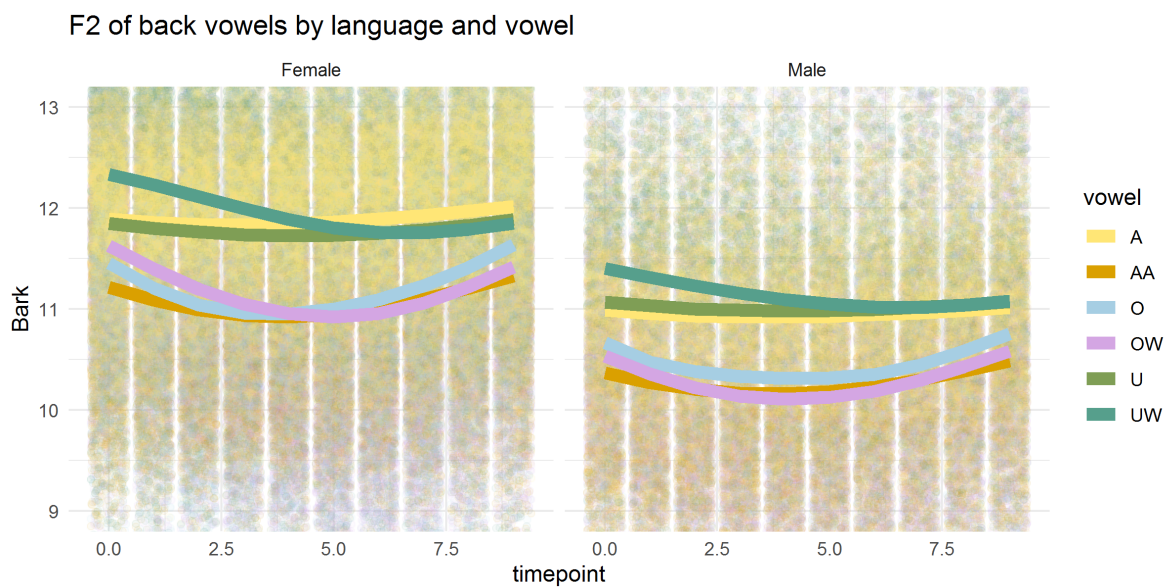
With all subjects normalized and split by gender, the results for F1 measurements of Korean and English back vowels can be seen in Figure 4.4a. All 223,220 points are plotted, with the curved lines representing the means of each timepoint for each vowel. The figure shows measurements of F1 for each of the ten timepoints for GOAT (OW), GOOSE (UW), /o/, and /u/, with LOT (AA) and Korean /a/ added for comparison. F1 of GOAT (OW), /o/, and /u/ decreases slightly or remains constant over vowel duration, while GOOSE (UW) increases slightly, for both male and female speakers. Over vowel duration, vowel targets appear to converge, yet all six vowels still appear to maintain distance. To be more specific, in Figure 4.4a, the closest two lines that represent smoothed average Bark F1 belong to Korean /o/ and /u/, which are a mid-high and a high vowel, respectively. The distance between every other line is greater than that, indicating that in terms of F1, there is a six-way split among the six vowels. (It is also possible that /o/ and /u/ are merged in the F1 dimension, but a two-sided t-test of the mean smooth Bark F1 at the vowel midpoint showed that the values were significantly different from one another ($t=3.6427$, $p=0.0002748$).)

The results for F2 measurements can be seen in Figure 4.4b. Generally speaking, F2 of GOAT (OW) and /o/ is lower than F2 of GOOSE (UW) and /u/, but the trajectories are variable. For female speakers, Korean vowels begin with lower F2 and demonstrate less of a parabolic trajectory, while English vowels begin with higher F2 and visibly fall before rising again towards the end of the vowel. For male speakers, language appears to have less of an effect on the value and trajectories of F2. Compared to F1, the trajectories of F2 for all of the vowels for both gender groups were much more noticeably parabolic, or curved.

In addition, when compared to the low back vowels, both high back vowels pattern with Korean /a/ in terms of F2, while both mid-high back vowels pattern with English /a/.



(a) F1



(b) F2

Figure 4.4: For the vowels GOAT (OW), GOOSE (UW), /o/, and /u/, with LOT (AA) and /a/ for comparison, in English-Korean bilinguals: (a) smoothed Bark F1 across ten timepoints, split by gender, and (b) smoothed Bark F2 across ten timepoints, split by gender.

This is especially pronounced in male speakers, in what looks like a coalescence of the “back” vowels into two categories: back (“O”, “OW”, “AA”) and central (“U”, “UW”, “A”). Female speakers’ trajectories involve too much crossing to categorize them in the same manner.

Finally, it is worth noting that even after Bark normalization, female speakers had generally higher F1 and F2 values than male speakers.

A side-by-side comparison of Figure 4.4 to the same visualization with the pre-smoothed data can be found in Appendix D.1.

In Figure 4.5, the smoothed ten-timepoint data are plotted on a standard F1-F2 vowel chart, with Bark-normalized axes. This figure has also separated the data from high and mid-high back vowels that occur before the lateral phoneme /l/, for reasons that I will detail below. From analyzing this figure, it is clear that Korean /u/ has the most static two-dimensional trajectory of all four of the vowels in question, while all of the English vowels have large, parabolic trajectories. For example, Korean “U” has a small parabolic shape, but it is smaller than the parabolic shape for Korean “A”, which is uncontestedly a monophthong. On the other hand, English “OW” loops far backward in F2 before coming back forward, especially compared to English “AA”, which has a thin parabolic shape but is also a monophthong.

These trajectories are not subject to the linear mixed effects model in the following section, but will be addressed in the generalized additive mixed model in section 4.3.3.

The effect of neighboring segments on the vowel quality and trajectory is observable in Figure 4.5, but in order to illustrate it more clearly, I plotted just the smoothed Bark F2 of each of the four vowels in Figure 4.6 and separated instances of each vowel that were followed by /l/. In this figure, lines rather than points are used to illustrate F2 trajectories, and a striking pattern emerges. For the Korean vowels (“O” and “U”), the trajectories of pre-lateral vowels (“OL” and “UL”) are almost completely overlapping the trajectories of their non-pre-lateral counterparts. This includes instances of the vowel before any other segment or before silence. However, for the English vowels (“OW” and “UW”), the trajectories of pre-lateral vowels (“OWL” and “UWL”) start off lower and have a slightly less curved shape. The effect of the post-vocalic lateral consonant is present for English but almost completely absent for Korean. Thus, an investigation of the immediately neighboring phonemes is included in the statistical analyses in the following sections.

4.3.2 Linear Mixed Effects Model

For the statistical analysis, the mid-high vowels and the high vowels were analyzed separately. The English mid-high back rounded vowel OW (/oʊ/) and the Korean mid-high back vowel /o/ were subject to one analysis, and the high back rounded vowels (/u/) of both languages were subject to another analysis. A base linear mixed effects regression model was fitted on the formant values at a midpoint (the value for the fourth timepoint, out of ten, in smoothed Bark) of a vowel “pair”, using the following code⁴:

⁴For UW/U, 0 would be replaced with U, and for F2, F1 would be replaced with F2.

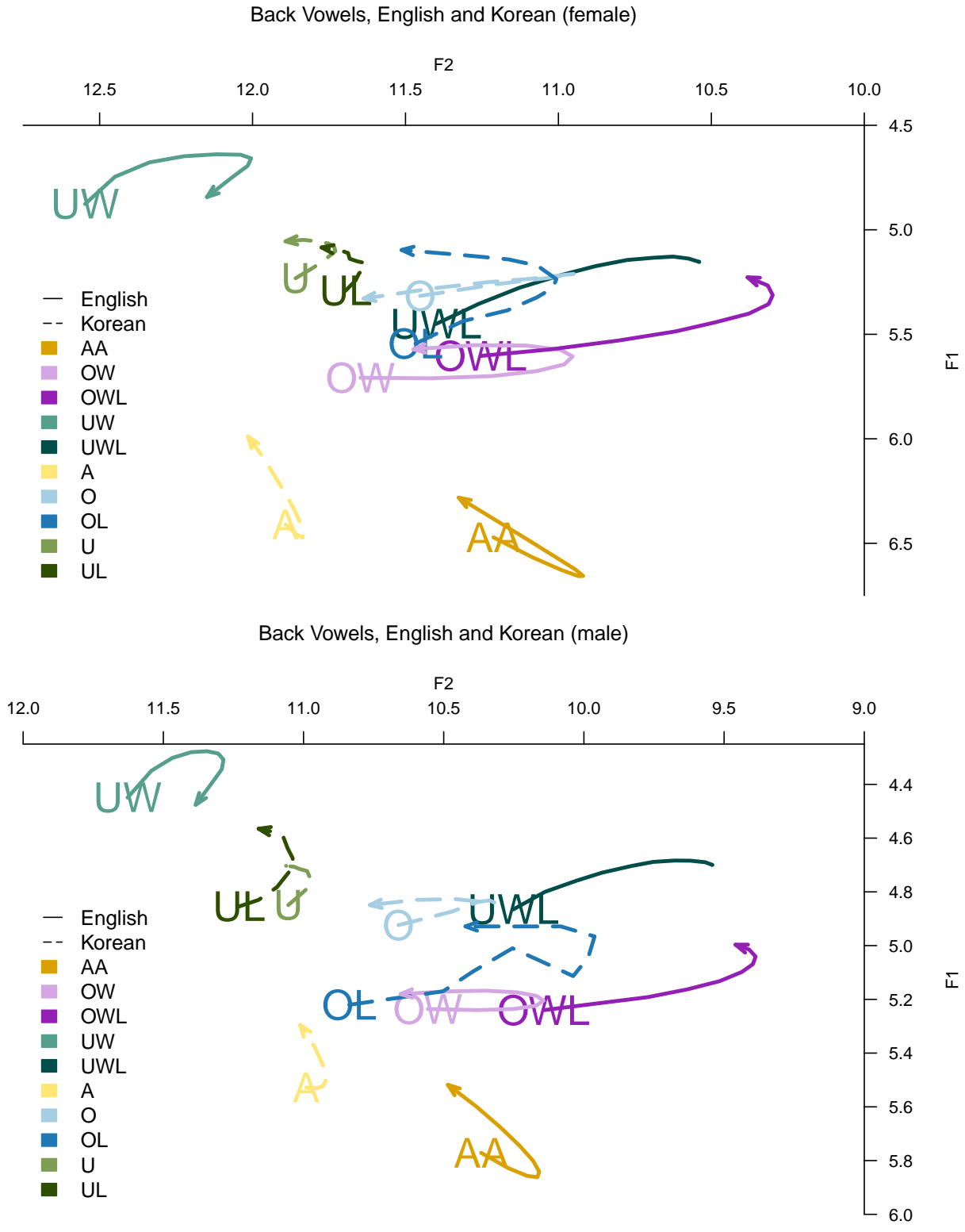


Figure 4.5: Vowel trajectories of GOAT (OW), GOOSE (UW), LOT (AA), /o/, /u/, and /a/, with pre-lateral back vowels separated, split by speaker gender.

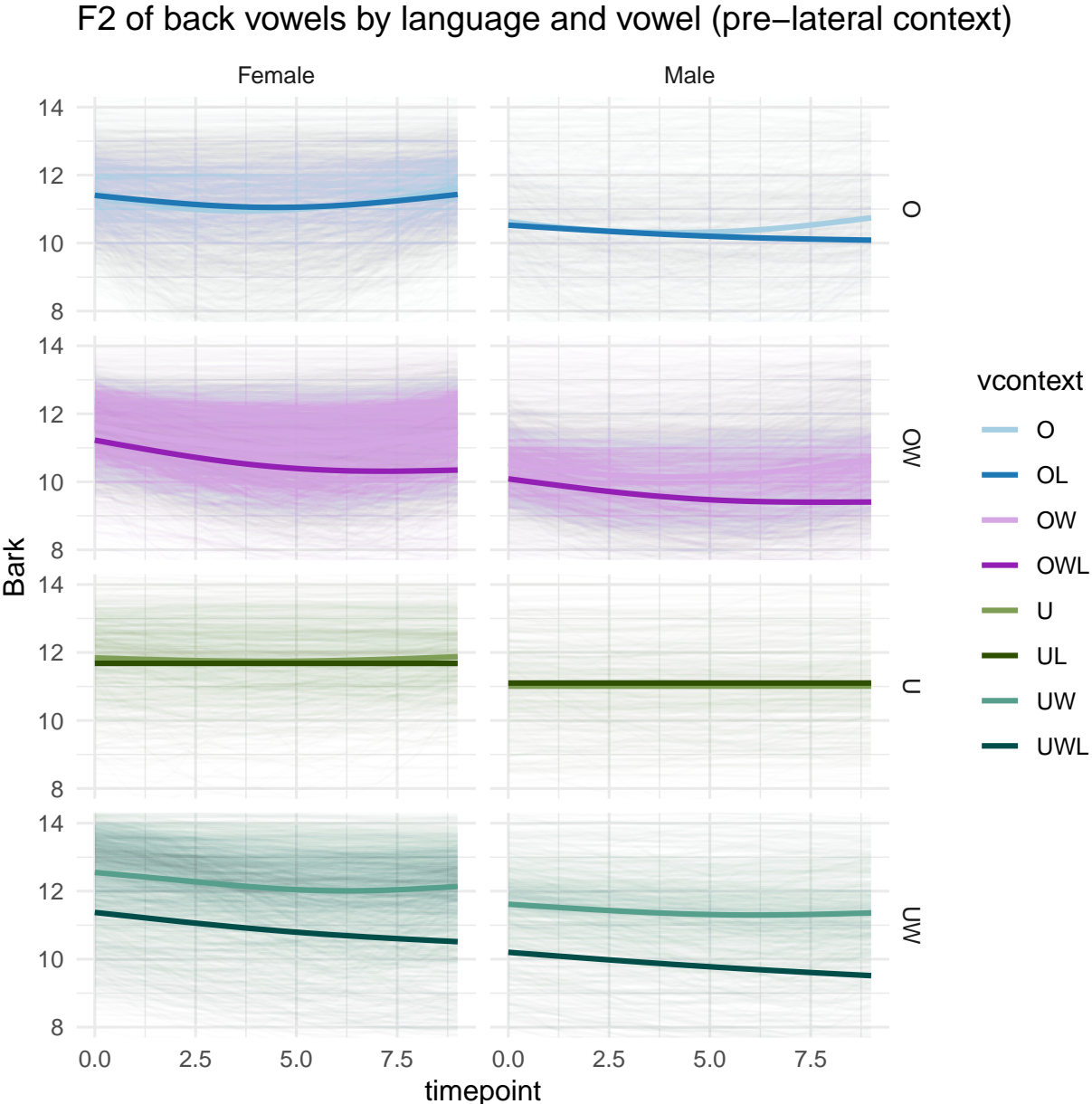


Figure 4.6: Vowel trajectories of GOAT (OW), /o/, GOOSE (UW), /u/, English /a/ (AA), and Korean /a/, with pre-lateral back vowels separated, split by speaker gender.

```
base_lm_0_F1 <- lmer(f1_Bark_smooth_4 ~
  Gender +
  foll +
  prev +
  (1|Subject),
  data = dfw[dfw$vowel %in% 0,], REML=FALSE)
```

Using the data from `dfw` (in which the `vowel` was either “OW” or “O”, or `%in% 0`), the base models tested for the effects of gender, the following segment, and the previous segment, with a random effect of subject to account for the hundreds of repeated tokens per subject. Note that each base model does not assume that the vowels come from different languages; the test models will test for this with language as a fixed effect. The Restricted Maximum Likelihood Estimation (REML) was set to `FALSE`, because the base model and the comparison models would have different fixed effects.

The first test model included the same effects as well as language, to test whether adding the language of the vowel (English or Korean) improved the accuracy of the model in predicting the formant measurement. The second test model further included an interaction effect between language and the following segment, since coarticulatory effects on vowel fronting such as the F2-lowering effect of a following lateral segment may be present in English but not in Korean.

The models were compared using Likelihood Ratio Tests (base model compared to the first test model, then the first test model compared to the second test model) using the `anova()` function in R. The results of the model comparisons can be found in Table 4.3.

From the p-values in Table 4.3, it can be seen that including language improved three of the four models, with p-values well below 0.05 and AIC values decreasing by between 30 and 300. The exception to this is the test model that introduced language to an analysis of the F2 of the high back vowel /u/. Language alone was thus not statistically significant in predicting the F2 difference between the Korean and English /u/. But introducing the interaction effect between language and the following segment did significantly improve the model, with a p-value well below 0.05 and a reduction in AIC of 50. This, I believe, is due to the effect of the following segment on vowel F2 in English, but not in Korean (e.g., the GOOSE vowel in English *pool* would have a lower F2 than usual, but the presence of a syllable-final /l/ in Korean does not significantly lower an already low F2⁵).

The third and fourth test models included speaker generation (second versus 1.5) and speaker Age of Arrival, respectively, as fixed effects in addition to gender, following and previous segment, and the language and following segment interaction. However, none of these models improved the accuracy over the models without generation or Age of Arrival. In Table 4.4, the small Chi-squared values and p-values above 0.05 indicate that the addition of generation and Age of Arrival did not significantly improve the models.

⁵Determination of a pre-lateral vowel was done solely by categorizing vowels that were followed by an /l/ in running speech and thus did not distinguish between a true syllable-final /l/ as in *coal* and an /l/ that served as the onset of a following syllable or even word, as in *colinear* or *so like*.

Table 4.3: Linear mixed regression model comparisons; base models for mid-high back rounded vowels’ F1 and F2, and high back rounded vowels’ F1 and F2, followed by the models that included language and the models that included an interaction between language and following segment. The Chi-squared and p-values were calculated from comparisons of each model to the one in the row immediately above it.

vowel	formant	fixed effect	Df	AIC	Chisq	Pr(>Chisq)
OW, /o/	F1	base	117	16227		
		language	118	15938	291.73	2.2e-16***
		language*following segment	130	15885	76.737	1.723e-11***
	F2	base	117	27398		
		language	118	27302	97.985	2.2e-16***
		language*following segment	130	27303	23.319	0.02514*
UW, /u/	F1	base	94	7566.3		
		language	95	7542.2	25.919	3.561e-07***
		language*following segment	107	7542.8	23.66	0.02262*
	F2	base	94	10901		
		language	95	10903	0.1137	0.7359
		language*following segment	107	10851	76.29	2.095e-11***

Table 4.4: Linear mixed regression model comparisons; addition of generational status (“gen”) and Age of Arrival (“aoa”) as fixed effects to the language*following segment models (which also included the fixed effects of language, gender, and following and previous segment) did not improve model accuracy. The Chi-squared and p-values were calculated from comparisons of each model to the language*following segment model (“lang.*foll.”).

vowel	formant	fixed effect	Df	AIC	Chisq	Pr(>Chisq)	
OW, /o/	F1	lang.*foll.	130	15885			
		lang.*foll.+gen	131	15885	1.7118	0.1907	
		lang.*foll.+aoa	131	15887	0.1839	0.668	
	F2	lang.*foll.	130	27303			
		lang.*foll.+gen	131	27305	0.0839	0.7721	
		lang.*foll.+aoa	131	27305	0.0441	0.8336	
	UW, /u/	F1	lang.*foll.	107	7542.8		
			lang.*foll.+gen	108	7544.0	0.8051	0.3696
			lang.*foll.+gen	108	7544.6	0.1171	0.7322
F2		lang.*foll.	107	10851			
		lang.*foll.+gen	108	10852	0.298	0.5851	
		lang.*foll.+gen	108	10853	0.13	0.7184	

Finally, I used a simultaneous General Linear Hypothesis Test (via the package `multcomp` in R) to conduct a post-hoc Tukey’s test on the means from the language*following segment models. For F1 of OW/O, Korean was determined to have a higher estimate (-0.2362) than English, though the difference was not significant ($z=-1.773$, $p=0.0763$). For F2 of OW/O, Korean was determined to have a lower estimate (0.6263) than English ($z=2.454$, $p=0.0141$). For F1 of UW/U, no significant difference between language groups was found (0.2232, $z=1.308$, $p=0.191$). Neither was a significant difference found for F2 of UW/U (-0.4131, $z=-1.569$, $p=0.117$). The lack of statistically significant results for F1 and F2 of UW/U, which contradict the results of the ANOVA, may stem from the very high number of factors coming from the fixed interactional effect of language and following segment (since there were 65 possible following segments).

The final version of the model, the second test model that included the language*following segment interaction, can be found below. There were four models, one for each vowel pair and formant combination. This code demonstrates just F1 of OW/O:

```
base_lm_0_F1 <- lmer(f1_Bark_smooth_4 ~
  Gender +
  foll +
  prev +
  language +
  language*foll +
  (1|Subject),
  data = dfw[dfw$vowel %in% O,], REML=FALSE)
```

The statistical summaries of the four final models can be found in Appendix D.2.

4.3.3 GAMM analysis

In California English, the mid-high back rounded vowel /oʊ/ is a diphthong whose F2 value changes over the vowel duration, sometimes tracing a non-linear trajectory. For this reason, a statistical analysis of only the midpoint of the vowel does not accurately capture the dimensions of difference between English /oʊ/ and Korean /o/. Linear mixed effects regression models are designed to search for a linear pattern in the data. What I am particularly interested in is whether bilingual Korean Americans’ English /oʊ/ is less diphthongized than typical California English due to influence from Korean (or, conversely, whether their Korean /o/ is more diphthongized due to influence from English), a pattern that is unlikely to be linear.

To that end, a statistical analysis that takes trajectories into consideration by evaluating the same vowel at multiple timepoints will yield more fruitful results. The generalized additive mixed model, or GAMM (Wieling 2018), is a more appropriate tool to analyze and compare formant trajectories. GAMM is essentially a regression model that adapts to non-linear patterns, such as the parabolic shapes observed in Figure 4.5. Following the methods

outlined in Sóskuthy (2017), Wieling (2018), Gahl and Baayen (2019), and Stanley (2020), I used the `mgvc` package in R (Wood 2017) to build GAMMs that predict F2 of a vowel and the `itsadug` package (van Rij et al. 2020) to test and visualize the models.

The first GAMM was a base model that only included language and speaker gender as parametric terms (or fixed effects). Although the final linear mixed effects models created in Section 4.3.2 included following and previous segments and an interaction effect of following segment and language, the GAMM models have simplified the analysis in three crucial ways.

First, only F2 was modeled and analyzed. The models for F1 were run, and model predictions can be found in Appendix D.3, but they are not included in this section.

Second, the only phonological factor included as a parametric term was the pre-lateral environment, coded as `lat`. Including all possible combinations of previous and following segments to the vowels would have made the computation too complex and resulted in an overspecified model.

Third, the fixed effects of language, gender, and pre-lateral context were combined into one parametric term with eight levels in order to create the three-way interaction, rather than calling on each term alone and with its interaction with another term, as is the case with linear mixed effects regression. The combined parametric term, coded as `GLL:`, was used as both a parametric term in the base model, and then also as the smooth term on timepoint (`tp`) in the test model. The result is a model that allows each curve for gender, language, and phonological context to be independent of the others.

As is common practice with GAMM models of vowel production data, I also included log-transformed vowel duration as a parametric term, word as a random smooth, and speaker as a random smooth. Random smooths here (indicated by `s(subject, bs='re')`) are equivalent to random effects in a linear mixed effects regression (indicated by `1|subject`).

Then, I controlled for possible autocorrelation effects in the model by creating an AR1 model (an autoregression model used with time series) and updating the base model to correct the residuals.

The base model was run using the `bam()` function in `mgcv`, with the following formula:

```
gam.0.base.seed <- mgcv::bam(f2_Bark_smooth ~
  Gender_lang_lat +
  duration_log * Gender_lang_lat +
  s(word, bs="re") +
  s(Subject, bs="re"),
  data=dfo, discrete=TRUE)
rho <- start_value_rho(gam.0.base.seed)
gam.0.base <- update(gam.0.base.seed, rho=rho, AR.start=dfo$start.event)
```

Note that this model does not include any smoothing terms for the vowel timepoints, which is the dimension that GAMMs are designed to capture well. The test model included the line `s(tp, by=GLL:, k=10)`, which represents the smooth term. This smooth term helps

the model calculate the F2 measurements over the timepoints (`tp`) of the vowel with a non-linear effect, and it is crossed with the combined parametric term `GLL`: so that each curve can be independent. The number of “knots” (`k`) in the smooth term was set to ten, as there were ten timepoints. The code below shows one of the two⁶ test models.

```
gam.0.test.seed <- mgcv::bam(f2_Bark_smooth ~
  Gender_lang_lat +
  s(tp, by=Gender_lang_lat, k=10) +
  duration_log * Gender_lang_lat +
  s(word, bs="re") +
  s(Subject, bs="re"),
  data=dfo, discrete=TRUE)
rho <- start_value_rho(gam.0.test.seed)
gam.0.test <- update(gam.0.test.seed, rho=rho, AR.start=dfo$start.event)
```

As with the linear mixed effects regression models, I used model comparisons (with `compareML`, rather than ANOVA) to judge the accuracy of the base GAMM model against the test model, which included the smooth term for timepoint. AIC values are reported, but should not be considered reliable, due to the inclusion of the AR1 model. However, p-values are included. In Table 4.5, which lists the results of the model comparisons for both vowels, it can be seen that the test model for OW/O is an improvement over the base model ($p < 0.001$).

Table 4.5: Model comparison of base GAMM and test GAMM for OW/O and UW/U.

Vowel, Formant	Model	Score (AIC)	Edf	Difference	Df	p-value
OW/O, F2	base	42284.88	18			
	test	34777.81	34	7507.065	16	<0.001***
UW/U, F2	base	10903.403	18			
	test	9170.225	34	1733.178	16	<0.001***

The model’s predictions for F2 are visualized⁷ in Figure 4.7a. The trajectories for OW/O F2 clearly follow a parabolic shape, generally starting fairly high, decreasing to about the midpoint, and then increasing at the tail end of the vowel. As decreasing F2 correlates with movement toward the posterior of the oral cavity, it would seem that these vowels all have a tendency to slightly become more back during the beginning of their duration, but move forward at the middle and end.

⁶I performed GAMM analysis for F2 of OW/O and UW/U, but did not test F1 due to time constraints.

⁷I am grateful to Joseph Stanley for his helpful direction on plotting the output of GAMM modeling in R.

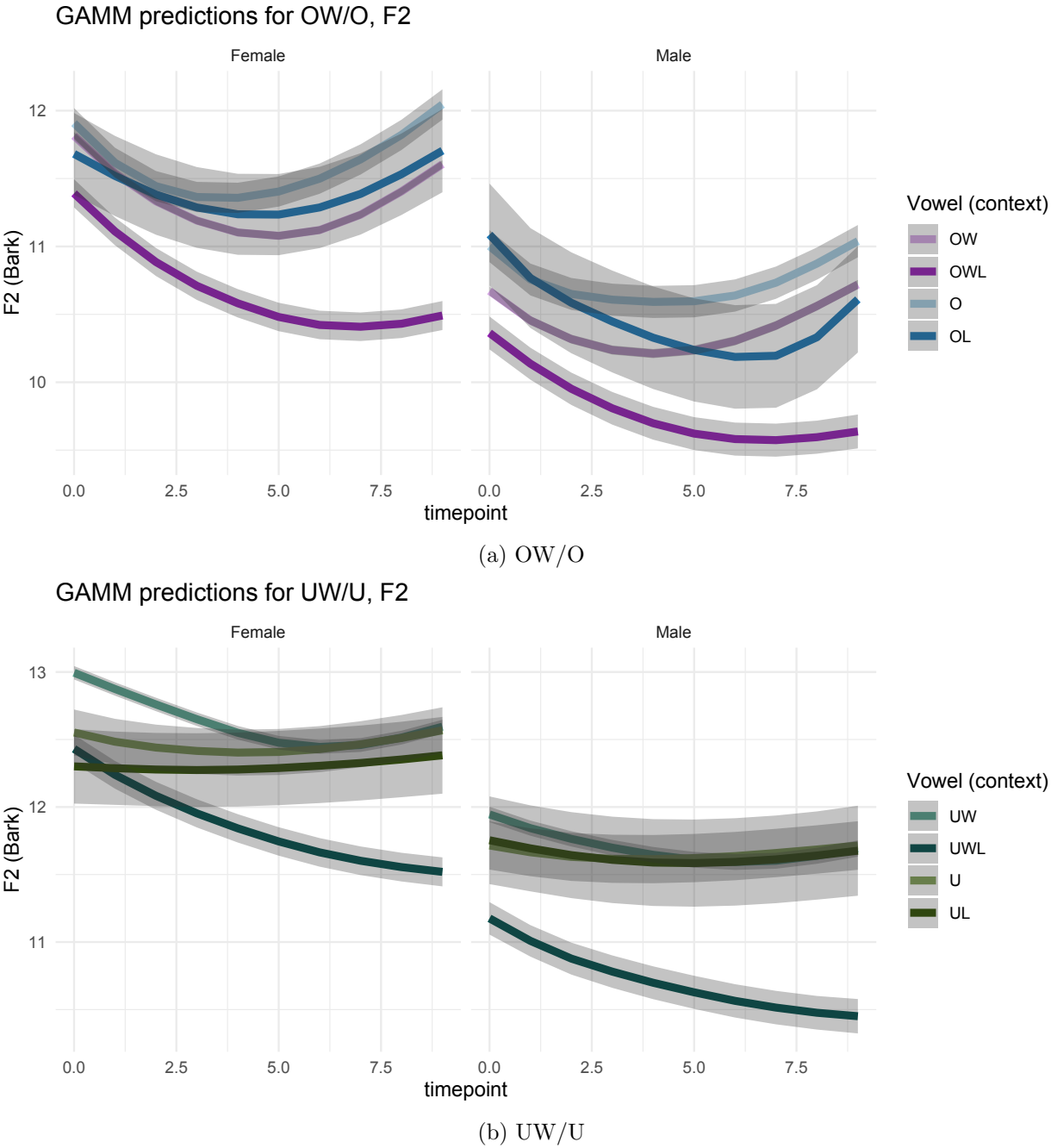


Figure 4.7: Generalized Additive Mixed Model (GAMM) prediction of F2 trajectories of (a) GOAT (OW) and /o/, and (b) GOOSE (UW) and /u/, and their pre-lateral counterparts (GOAL (OWL), /ol/, GHOUL (UWL), and /ul/).

Table 4.6: Generalized Additive Mixed Model summary for GOAT (OW) and /o/.

A. parametric coefficients	Estimate	Std. Error	t-value	p-value
(Intercept)	10.4835	0.0568	184.4762	< 0.0001***
GLL:Female.English.pre-lat	-0.5808	0.1464	-3.9662	0.0001***
GLL:Female.Korean.no-lat	-0.2692	0.0720	-3.7402	0.0002***
GLL:Female.Korean.pre-lat	0.3103	0.3588	0.8649	0.3871
GLL:Male.English.no-lat	-0.6017	0.0418	-14.3985	< 0.0001***
GLL:Male.English.pre-lat	-1.1372	0.1760	-6.4623	< 0.0001***
GLL:Male.Korean.no-lat	0.0929	0.0799	1.1631	0.2448
GLL:Male.Korean.pre-lat	-0.8969	0.3017	-2.9725	0.0030***
duration_log	-0.4371	0.0102	-42.7942	< 0.0001***
GLL:Female.English.pre-lat:duration_log	0.0325	0.0566	0.5744	0.5657
GLL:Female.Korean.no-lat:duration_log	-0.2336	0.0199	-11.7572	< 0.0001***
GLL:Female.Korean.pre-lat:duration_log	0.0985	0.1424	0.6913	0.4893
GLL:Male.English.no-lat:duration_log	0.1419	0.0158	8.9660	< 0.0001***
GLL:Male.English.pre-lat:duration_log	0.1790	0.0627	2.8545	0.0043***
GLL:Male.Korean.no-lat:duration_log	0.2975	0.0225	13.2138	< 0.0001***
GLL:Male.Korean.pre-lat:duration_log	-0.0138	0.1144	-0.1206	0.9040
B. smooth terms	edf	Ref.df	F-value	p-value
s(tp):GLL:Female.English.no-lat	8.7383	8.9850	834.1705	< 0.0001***
s(tp):GLL:Female.English.pre-lat	6.2266	7.6309	64.6262	< 0.0001***
s(tp):GLL:Female.Korean.no-lat	8.6363	8.9713	421.0003	< 0.0001***
s(tp):GLL:Female.Korean.pre-lat	4.3184	5.6405	7.8821	< 0.0001***
s(tp):GLL:Male.English.no-lat	8.4448	8.9343	291.5467	< 0.0001***
s(tp):GLL:Male.English.pre-lat	5.1889	6.6202	31.6297	< 0.0001***
s(tp):GLL:Male.Korean.no-lat	8.1501	8.8497	90.9307	< 0.0001***
s(tp):GLL:Male.Korean.pre-lat	5.2580	6.6907	7.8577	< 0.0001***
s(word)	1117.0557	1404.0000	5.7947	< 0.0001***
s(Subject)	0.9994	1.0000	30043.4323	< 0.0001***

The main exception to this trajectory is the purple line, which represents the pre-lateral English /ou/, which I will call GOAL (“OWL”). This predicted vowel trajectory slopes gently downward throughout most of the vowel duration, and only slightly increases at the very end. This demonstrates once again how the lateral consonant /l/ “pulls back” the vowel in GOAL, but crucially, not in the Korean /ol/ cluster. The model visualization also demonstrates how the Korean /o/ tends to have a higher F2 than the English /ou/, and also how female speakers tend to have a higher F2 than male speakers for all vowels (even with Bark normalization).

Table 4.6 summarizes the final model for OW/O. Most parametric terms and all smooth terms were found to be significant predictors of F2. The exceptions included the parametric term for female, Korean, pre-lateral (i.e., /ol/), male, Korean, not lateral (i.e., /o/), and several of the parametric effects that were crossed with log vowel duration.

A separate GAMM was run for the high back rounded vowels, English GOOSE and Korean /u/, as well as their pre-lateral counterparts. The same modeling process was used, comparing a base model to a test model that included a smooth term for timepoint, crossed with gender, language, and pre-lateral context. Table 4.5 illustrates the results of the model comparison for UW/U. Unsurprisingly, the results are the same as for OW/O.

The model's predictions for F2 are visualized in Figure 4.7b. Compared to OW/O, the trajectories for UW/U are generally less parabolic and more level. For female speakers, GOOSE is more diphthongized, having a falling trajectory that just levels out toward the end. For both female and male speakers, the pre-lateral English /u/, which I will call GHOUL, has a continuously falling trajectory that is also much lower in F2 overall. However, Korean /u/ and /ul/ for both genders remains level and similar throughout the entire vowel duration. Korean /u/ tends to have a higher F2 than its English counterpart. Finally, the model for UW/U predicts the same language-dependent phonological pattern whereby the lateral consonant /l/ changes the F2 of the preceding vowel for English, but not for Korean.

Table 4.7 summarizes the final model for UW/U. Similar to the OW/O model, most parametric coefficients besides female, Korean, pre-lateral (/ol/) and male, Korean, pre-lateral were significant, but a few of the smooth terms were also not found to be significant.

4.4 Discussion

The GAMM analysis corroborates what the linear mixed effects regression analysis demonstrated: that the language being spoken does affect the formant values of the vowels, especially when the phonological context is taken into account. Further, the GAMM analysis shows that the effect occurs throughout the entire trajectory of the vowel, not just at its midpoint.

However, it is also clear from the GAMM predictions, as well as the vowel plots in Figure 4.5, that bilingual Korean Americans produce all of their back rounded vowels with a high degree of overlap. For instance, there is a large amount of overlap between (non-pre-lateral) GOAT and GOOSE and all of the Korean back round vowels for female speakers in Figure 4.5, and in Figure 4.7, it can be seen that the F2 trajectories of most of the vowels besides the pre-lateral GOAL vowel are roughly the same. I interpret this as a reflection of the influence of English on the Korean vowels produced by the speakers in this population, in particular because the curved F2 trajectories are characteristic of California English GOAT, not the monophthongal Korean /o/. For GOOSE, however, the F2 trajectories appear to be much flatter, and thus less diphthongal, which reflects the status of /u/ in both English and Korean as more of a steady-state vowel than its phonologically lower counterpart.

One shortcoming of the GAMM analysis is that it does not fully take into account vowel coarticulation. The addition of the pre-lateral context already introduced a high computational load, and for that reason, other phonological environments, such as a pre-vocalic alveolar segment (which may raise F2), were not analyzed. A future analysis may either incorporate previous and following segments, as the linear mixed effects regression

Table 4.7: Generalized Additive Mixed Model summary for GOOSE (UW) and /u/.

A. parametric coefficients	Estimate	Std. Error	t-value	p-value
(Intercept)	12.0391	0.0851	141.4410	< 0.0001***
GLL:Female.English.pre-lat	-0.7953	0.1313	-6.0589	< 0.0001***
GLL:Female.Korean.no-lat	-1.1502	0.1316	-8.7403	< 0.0001***
GLL:Female.Korean.pre-lat	-0.5637	0.3907	-1.4429	0.1491
GLL:Male.English.no-lat	-0.6064	0.0665	-9.1150	< 0.0001***
GLL:Male.English.pre-lat	-0.7994	0.2066	-3.8696	0.0001***
GLL:Male.Korean.no-lat	-0.7678	0.1805	-4.2548	< 0.0001***
GLL:Male.Korean.pre-lat	0.9395	0.5036	1.8655	0.0621
duration_log	-0.1929	0.0159	-12.1613	< 0.0001***
GLL:Female.English.pre-lat:duration_log	-0.0089	0.0474	-0.1877	0.8511
GLL:Female.Korean.no-lat:duration_log	-0.3491	0.0354	-9.8627	< 0.0001***
GLL:Female.Korean.pre-lat:duration_log	-0.0827	0.1158	-0.7141	0.4752
GLL:Male.English.no-lat:duration_log	0.1153	0.0249	4.6321	< 0.0001***
GLL:Male.English.pre-lat:duration_log	0.3973	0.0719	5.5293	< 0.0001***
GLL:Male.Korean.no-lat:duration_log	0.0758	0.0502	1.5097	0.1311
GLL:Male.Korean.pre-lat:duration_log	0.6882	0.1538	4.4750	< 0.0001***
B. smooth terms	edf	Ref.df	F-value	p-value
s(tp):GLL:Female.English.no-lat	7.6686	8.6453	155.5818	< 0.0001***
s(tp):GLL:Female.English.pre-lat	5.4654	6.9111	94.9387	< 0.0001***
s(tp):GLL:Female.Korean.no-lat	5.8432	7.2840	18.2389	< 0.0001***
s(tp):GLL:Female.Korean.pre-lat	2.1283	2.8267	1.3925	0.2619
s(tp):GLL:Male.English.no-lat	6.2172	7.6233	38.7170	< 0.0001***
s(tp):GLL:Male.English.pre-lat	4.5433	5.9049	31.8263	< 0.0001***
s(tp):GLL:Male.Korean.no-lat	4.4125	5.7570	5.2844	< 0.0001***
s(tp):GLL:Male.Korean.pre-lat	2.6226	3.5042	1.6499	0.1609
s(word)	599.9366	702.0000	13.8769	< 0.0001***
s(Subject)	0.9989	1.0000	12409.1104	< 0.0001***

models did, or only look at vowels that occurred in a similar, perhaps articulatorily “neutral” phonological environment.

Another shortcoming of both analyses in this chapter is that the high instance of within-group variability (e.g., the high ranges of F1 and F2 values within each gender or generational group) was not captured by the models. It is only hinted at with the points in Figure 4.4 and the lines in Figure 4.6. The fact that despite such high variability, clear patterns could still emerge across gender, language, and phonological environment, is further evidence that the patterns in the data are robust.

4.5 Conclusion

Overall, I conclude that for the bilingual heritage speakers in the sample, language affects the realization of F1 and F2 in their back round vowels. In the OW/O pair, the English vowels tended to have lower F2 than the Korean vowels, and the effect of a post-vocalic /l/ on English vowels is a strong lowering in F2, but there is no corresponding effect on Korean vowels. In the UW/U pair, the English vowels tended to have slightly higher F2 than the Korean vowels, except when taking the influence of post-vocalic /l/ into account. In terms of the shape of the F2 trajectory, English and Korean vowels tend to show the same parabolic shape, with the exception of pre-lateral GOAL and GHOUL, which shows a constant lowering of F2.

A past study of Korean and English vowels of two monolingual groups found higher F1 and F2 in English GOAT than Korean /o/, and higher F2 in GOOSE than Korean /u/ (Yang 1996). The present study of heritage bilinguals mostly found the same (arguably) intrinsic vowel quality patterns as Yang (1996), although the lower F2 for English GOAT can be explained by coarticulation. The Baker and Trofimovich (2005) study of bilinguals concluded that early versus late Korean-English bilinguals differed in their production of Korean and English vowels. In this study, I found that neither Age of Arrival nor generational status significantly affected the predictions for F2.

Thus, this chapter provides evidence that for speakers who are early acquirers of two languages with somewhat similar vowel systems, their Age of Arrival (and thus acquisition) does not significantly affect or impair their ability to distinguish the two systems. The original hypothesis of heritage speakers producing distinct vowels is correct from the visual and statistical analysis of the phonological patterning of F2, as well as the visual analysis of F1, although a large amount of overlap between vowel categories in both languages was nevertheless present. The secondary hypothesis of wide variability in the heritage speaker population was indeterminable from the analysis. Further research in this area should look into individual differences among the thirty-two subjects analyzed in this study, as variation was indeed high but could not be captured by the models used.

Additional deeper inquiry might examine the other vowels implicated in the California Vowel Shift. It would seem that the English-Korean bilingual speakers in this study are producing a shifted (fronted) GOAT, and it is quite clear that their GOOSE, on average, is characteristic of a fronted, basically-central California /u/. The importance of studying vowels in specific phonological contexts (i.e., non-pre-lateral) is underscored by the stark differences in F2 reported when comparing GOAT and GOOSE to GOAL and GHOUL. The logical next step would be to examine the front vowels.

Although the speakers' Age of Arrival and generational status did not seem to significantly affect back round vowel production overall, it would be too soon to conclude that all heritage bilingual speakers of English and Korean produce these vowels with the same patterns. In the next chapter, I "zoom out" of the phonetic analysis to ask if Age of Arrival and generational status might still be sociolinguistically marked, in a qualitative analysis of Korean Americans' metalinguistic commentary.

Chapter 5

Metalinguistic commentary: Korean Americans' own attitudes toward Korean American language and identity

If you are Korean-American and from Los Angeles, you have an accent, but they aren't trying to flatten their accent, like I have. They are just carrying that into the character [...]. That's how we get the shift."

Sandra Oh, *Elle Canada*
interview, 2020

In this chapter, I argue that Korean Americans are metalinguistically aware of a “Korean American accent” (which I call an emerging ethnolect), and that their usage of Korean, English, and this Korean ethnolect is influenced mostly by their personal sense of ethnic identity and their connection to large Korean communities such as Los Angeles’ Koreatown, rather than by their use of the Korean language or their parents’ speech. However, Korean Americans struggle to pinpoint what the exact features are of the Korean American ethnolect, instead connecting the “accent” to personae and stereotypes in a way that is typical of higher-order indexical features.

5.1 Introduction

Metalinguistic awareness refers to an individual speaker's ability to reflect upon language as an object, for example, understanding words as signs that are separate from their real-world referents or reflecting on the usage of words in multiple languages while code-switching (Ben-Zeev 1977; Cummins 1978; Jessner 1999). In bilingual studies, the development of metalinguistic awareness in children has been measured with respect to the child's bilingual input, with most findings indicating that bilingual children have more advanced metalinguistic awareness¹ than their monolingual peers.

Soon after children acquire the understanding of language as a system, they develop the ability to map social cues onto the components of language. As early as grade school, children differentiate in their use of language by gender (Davies 2003), and by high school, speakers can easily sort themselves into social groups whose style comprises linguistic patterns (including phonetic, prosodic, lexical, and pragmatic cues) in addition to physical style such as clothing or hairstyle (Cheshire 1982; Eckert 2006b, 2011). At around this time, individuals acquire the ability to engage in metalinguistic commentary, or talking about language and the particular language usage of oneself or others.

Researchers in pragmatics, sociolinguistics, and linguistic anthropology have long used metalinguistic commentary to draw conclusions about patterns of language use. Agha (1998) argues that speakers find it useful to assign others and the world around us to certain "types", regardless of how concrete the boundaries between such types are. (They are, in fact, very "leaky" (Agha 1998:151).) Discussions of language thus "has begun to involve people" (Agha 1998:163) who use it a certain way. The more a discourse of a certain stereotype gets reproduced and connected with certain linguistic variables during metapragmatic narratives and other acts of metasemiotic scrutiny, the more likely the linguistic variable is to become enregistered, or socially recognized as a distinct register (Silverstein 2003). This is how society can elevate Received Pronunciation to the status of "Queen's English" (Agha 2003) or how a set of linguistic features that once denoted class can come to index geography (Johnstone et al. 2006): through talking about talking.

Importantly, individuals in the same speech community also vary in their levels of metalinguistic awareness, as the example of Pittsburghese in Johnstone and Kiesling (2008) reveals: respondents asked about their judgments of /aʊ/-monophthongization gave conflicting answers about its indication of localness, which corresponded peculiarly to whether or not the respondents had the change in their own speech. Johnstone and Kiesling argue that using production and perception data alone is insufficient to understand the meanings of sociolinguistic variables.

In this way, third wave sociolinguistics "pays more attention to speaker agency and the ways in which social meanings are constructed through deployment of linguistic and other semiotic resources" (Zhang 2008:202). To this end, community-based ethnographic research

¹It is important to point out that in cognitive science, "metalinguistic ability" is sometimes conflated with linguistic competence and does not solely refer to abstract thinking of language as an object (Kroll and Bialystok 2013).

in third wave sociolinguistics relies heavily on asking speakers for their metalinguistic commentary, in order to assess what they know about their language use, how they understand themselves to be perceived when they speak, and how they perceive others when they speak.

In this chapter, I analyze the metalinguistic commentary of self-identified Korean Americans from bilingual interviews that took place in various locations in Northern and Southern California. I draw heavily from Kang and Lo (2004), whose interviews with second and 1.5 generation Korean Americans in Los Angeles demonstrate the mutability of the boundary between race and ethnicity, or a “blurring of the lines” for Korean Americans who appear to have no consensus on what it means to be Korean or “Koreanized”. Importantly, when identity is understood as changeable, it is more open to negotiation and re-definition in the context and process of discourse.

My goal is to explore the language ideologies of the consultants and the reported ideologies of their parents and find evidence of similarly shifting boundaries and definitions of Korean American cultural identity. I will delve into the linguistic behaviors that they have noticed and have connected to their ethnicity. This includes the use of an ethnic and/or regional accent in English and the mastery of the Korean language, which has always been a point of contention for heritage Korean speakers (Cho et al. 1997; Lee 2002). In doing so, I attempt to use their metalinguistic commentary – “narratives told by Korean Americans about Korean Americans” (Kang and Lo 2004:95) – to construct a nuanced image of what it means to speak like a Korean American and what social significance it holds to do so.

5.2 Methods

The data in this chapter come from the same bilingual sociolinguistic interviews described in Section 3.2.1. Comments from almost all of the forty subjects are included in the qualitative analysis, although the majority stem from the twenty-six second generation Korean Americans, and six of these are of particular focus (see Section 5.2.1). Due to the qualitative nature of this analysis, no subjects were excluded on the basis of their scores of accent or proficiency in either language.

To reiterate, each bilingual sociolinguistic interview lasted between thirty and seventy minutes, beginning with a casual interview conducted in Korean. This was followed by a reading portion of Korean paragraphs, and a “transitional period” for signing administrative forms presented in English. Finally, the longest part of each session consisted of a directed interview in English, during which consultants were asked questions specifically designed to elicit metalinguistic commentary and general thoughts on language and identity.

The semi-structured English interview included the following questions:

- What do your parents think of your Korean/English skills?
- How would you describe the relationship between your identified ethnicity and your language use?

- Do you feel like yourself when you are speaking Korean/English?
- Do you want others to perceive you as a native speaker of Korean/English?
- What does a Korean accent sound like?

From the answers to these questions arose three themes: the importance of the Korean language to bilingual Korean Americans, the importance of family language policies in developing bilingualism, and the ineffable quality of a Korean American “accent” that arises in this language contact situation. I’ve organized the responses into three sections that address each of these themes: personal understandings of language use, commentary on parents’ opinions toward language use and family language policies; and commentary on the “Korean accent” as an object, separate from one’s own language use, as well as sub-categorizations such as “K-town” accents or Northern versus Southern Californian speech patterns².

Each theme is supported with excerpts from the interviews, transcribed in plain English, including speech disfluencies, pauses (indicated by hyphens or ellipses), and filler words. Ellipses within brackets indicate intervening speech deemed irrelevant, and words within brackets indicate the author’s substitution of clarifying words. Each interview is marked with the a code containing the interviewee’s number and a timestamp. Pseudonyms are used for privacy.

5.2.1 The consultants

The ideas and experiences presented in this chapter come mainly from six consultants: Sarah, Jaehee, Johnny, Eric, Kenny, and Harry. All six of them consider themselves to be second generation Korean Americans, speak English and Korean, and were either born in or grew up in California. They were chosen for representing a varied cross-section of the second generation Korean American community in California, yet giving voice to the most common themes that arose from the second generation interviewees³. A brief biography of each of them follows, and basic demographic information is displayed in Table 5.1.

Sarah was born in Koreatown, Los Angeles in 1989. She lived in Koreatown and in Silver Lake, a city just northeast of Koreatown, until moving to Rhode Island for university. After graduating, she spent two years living in Seoul, Korea, two more years in Boston, and two years in San Francisco, where she currently resides. Her parents are from Gwangju, Korea, but they spent many years in Seoul before immigrating to Los Angeles in 1983, where they now work in the fashion and garment industry and run a laundromat. Sarah currently works at an education startup and is slated to start a doctoral program in Seattle, making her the highest-educated member of her family.

Jaehee was also born in Koreatown, Los Angeles, but in 1999. Her mother was born and raised in Seoul, Korea, and immigrated to the United States when she was in middle

²See Section 1.6.2 for detailed demographic breakdowns of Korean Americans in Northern and Southern California.

³For an in-depth analysis of the 1.5 generation Korean Americans, see Chapter 6.

Table 5.1: Basic demographic information about the six second generation Korean Americans most often referenced in this chapter.

Name	Gender	Birthplace	Childhood	Age
Sarah	female	Koreatown (LA)	Koreatown (LA)	28
Jaehee	female	Koreatown (LA)	Koreatown (LA); Burbank, CA	18
Johnny	male	Los Angeles	Los Angeles	20
Eric	male	Los Angeles	Seattle, WA; Hawai'i	23
Kenny	male	Glendale, CA	Koreatown (LA); La Crescenta, CA	26
Harry	male	New York City	New York City; Irvine, CA	20

school. She recalls that her mother refers to herself as a 1.5 generation Korean American. Her father is from rural South Jeolla Province. Jaehee's family lived in Koreatown and Burbank, a city just north of Los Angeles, and when she was in the fifth grade, they moved to the Santa Clarita Valley, even farther north but still in LA County. The population was about 30% Korean by her estimate. She just moved to Northern California for her first year of university. When Jaehee was in middle school, she watched up to three hours a day of the Korean variety show *Running Man*.

Johnny was born in Los Angeles in 1997. As a child, his family moved around many times, but according to him, they were always "centered in Koreatown, and just spread out" (09-1348). His parents are both from Seoul and immigrated in the early 1980s. Johnny moved to Northern California for school and is currently in his second year, studying mathematics.

Eric was born in Los Angeles in 1995, but only lived there for one year before his family moved to Hawai'i, and then to Seattle, where the Korean community is smaller compared to Los Angeles. His parents are from Seoul and immigrated to the United States in 1991. A fourth year university student, he is currently involved in dance groups, a business club, and the Korean Students Association.

Kenny was born in Koreatown, Los Angeles in 1992. His father is from Seoul and his mother is from a city in the most southern part of the peninsula. His family moved to La Crescenta, California, when he was six months old, and he still lives there today. He describes La Crescenta as a secluded suburb of Los Angeles, where "about thirty percent" of the population is of Korean or Asian descent, but it is still difficult for Korean businesses to gain a foothold, since Koreatown is close enough that people who wanted Korean shops or food could just drive downtown. Kenny has been extremely active in churches and religious organizations for his whole life, including a number of ethnic Korean churches, and explains that the quality of his spoken Korean goes up and down depending on whether he's currently working with a Korean church or not.

Lastly, Harry was born in New York in 1997. At the age of seven, his family relocated to Irvine, California, which is in Orange County, a region south of LA County that has a high percentage of Asian immigrants and Asian Americans. His parents are from Seoul and

immigrated to the United States in the 1980s. Harry is a third year university student who studies Rhetoric. He is currently taking a Korean course designed for heritage speakers and finds it to be fairly easy, admitting that he is only doing so for the easy 'A'.

5.3 The Personal

“What does it mean to speak like a Korean American?”

One of the defining factors of the Korean American linguistic experience is the fact that Korean is the first language learned, having been acquired at home prior to schooling, but in adulthood, English is their dominant language. Indeed, the second generation Korean Americans that I interviewed are all more comfortable speaking in English than in Korean. When they began schooling in the United States, they switched from using more Korean to using more English. Even Eric, who was enrolled in an ESL program when he first began grade school, credits the school environment with his “ironic”⁴ abandonment of Korean in favor of English.

ERIC: [The ESL] program, like, ironically helped me accelerate
the transition towards English, and I picked up really fast.
(12-764)

Of the twenty-six second generation interviewees, twenty-one reported that their first language was Korean, and only two were sure that their first language was English, while three said that they learned both languages simultaneously at home. (1.5 generation Korean Americans almost always learn Korean before learning English, as they are born and raised partly in South Korea.)

However, most of the interviewees continue to speak to one or both of their parents in Korean, or in a mix of Korean and English. Only one interviewee, Charlie, consistently uses English to speak to his parents, because, in his words, “my mom’s really good at English; my dad’s getting better” (29-1249). The rest of the interviewees reported using only Korean to speak to both parents (n=23) or speaking bilingually to one or both parents. Of course, my sample was self-selecting for Korean-speaking Korean Americans. This may point to a correlation between Korean Americans who feel more confident in their Korean speaking

⁴There are two possible ironies present in this statement. The first is that ESL programs are designed to help young students like himself learn English, but sometimes unintentionally cause the students to stop speaking their heritage language. The second is that some transitional bilingual ESL programs are seen by parents and educators alike to be only nominally bilingual (Gersten and Woodward 1995; Shin and Krashen 1996), such that students who do not speak English are allowed to continue not speaking English by their instructor, who is also a native speaker of a non-English language. This, for example, is the situation of Jennifer, an interviewee who was not exposed to any English in her “classroom full of Korean kids” (36-1129) until the third grade. Of course, attitudes toward bilingual education are swiftly changing, and a majority of parents and teachers now support bilingual education (Shin 2000). In any case, I believe that Eric’s intent was to highlight the first type of irony.

ability and those who use Korean with their parents, as there are fewer opportunities to use Korean on a regular basis, apart from in language classes, if not with one's immediate family.

Most of the interviewees believe that ability to speak Korean is crucial for their cultural Korean identity, which is a primary example of Kang and Lo (2004)'s *discourse of agency*, wherein a sense of identity is linked to the individual's behavior or practices. For some, the Korean language is an explicit litmus test that has been applied to them.

JOHNNY: With Koreans, it's like, "How Korean are you? Let me hear you speak." (09-1744)

More importantly, however, Korean language ability is seen as a necessary way to connect to non-English speaking family members, who serve as a connection to Korean traditions and culture. Eric explains that he identifies as Korean simply because his entire family is Korean, and when he goes back to Korea to visit, he realizes that he needs to speak the language in order to communicate. He does believe it is possible to identify with Korean culture even if you do not speak Korean, but the language and culture are so tied together, it is hard to embrace one without knowing the other. This exemplifies the alternative *discourse of disposition*, a reflection of the (perceived) inherent and unchangeable connectedness between identity and language use.

The tension between these two discourses can be quite strong. Sarah is one of the few people who dissents from the discourse of disposition. She says that if she were to lose all her Korean speaking ability, she would feel like she's losing a part of herself, but at the same time does not want to agree with "Korean people who grew up in Korea" (23-2642) that being Korean necessarily means you must speak the language; rather, "it's more of an individual decision." (23-2649) There are ways to identify as Korean that depend less on linguistic ability, including use of a Korean American accent in English, certain ways of dressing, having public school and Korean church as a nexus of social life, possessing worldviews such as *han* and *ceng*⁵ that are based in Korean tradition, and simply having relationships with other Korean people. For Sarah, her Korean identity is tied in part to her language use, but she rejects the notion that it *must* be so for other Korean Americans.

That said, all consultants still believed that knowledge of Korean was important to their identity. In a similar vein, some made comments on their use of English, and how necessary it was for identity formation.

SARAH: I feel like myself when I speak in Korean, but I think it's a different self. [...] I think people's personalities change when they speak in different languages, especially because my— I think I'm a very, like, verbal person in general, and because of my language ability, I am more able to do that in English currently, than I am in Korean. (23-2567)

⁵*Han* and *ceng*, usually transliterated as *jeong* or *jung*, are cultural attitudes and emotions unique to Korean culture that are difficult to translate into English, but roughly could represent "sorrow" (*han*) and "solidarity" (*ceng*).

Sarah prides herself on her bilingual ability, even though she openly acknowledges that her skill in Korean fluctuates based on her immediate surroundings. Her ability to be her most authentic, “verbal” self is best supported by her use of English. Similarly, Harry reports that he sometimes feels like he assimilates better into dominant (white) culture when he’s speaking English.

HARRY: Sometimes, I feel like I’m the most white in communities – it’s when I’m speaking English, and it’s the way I speak English now, and it’s not the way they [Koreans with an accent] use it, you know. [...]

CJ: Do you want other people to think of you as a native, like, English or Korean speaker? Like, which one do you want?

HARRY: Which one would I prefer?

CJ: Mhm.

HARRY: I guess, um, that’s a good question. I think... I think that depends, too. I mean, it depends on who- who I’m around. If I’m with a bunch of white people, I would sort of like to sort of affect that I was born here, and that I was privileged with a life in America. It’s same thing that goes with the Korean community. Sometimes, I use English in the way that I do so I can sort of have social capital. (01-894)

Here, Harry makes a really astute observation that people can and do change the way that they speak depending on who is listening and which parties they intend to impress or gain favor with. Kenny, whose main social circles growing up were all other Korean Americans, agrees.

KENNY: If you’re Korean American and [...] you only hang out with white people for a few months, it goes away for the most part, um, and then it comes back.

AC: Interesting.

KENNY: So I had a friend – she would go to Westmont College in Santa Barbara – it would go away, and then if she came home for a weekend, it would come back [...] ‘cause you start talking like the people around you. (26-2419)

The “it” that Kenny discusses is something he calls the “sticky tongue” accent of Korean Americans and some other East Asian Americans, which I will describe more in detail in Section 5.5.3.

“What does it mean to speak like a Korean American?” The answer, according to a majority of second generation Korean American interviewees, is that to be a Korean

American is to be bilingual to some degree, to assign a certain amount of importance to Korean language ability for the sake of one's personal ethnic identity, and to understand the diversity of associations one makes with one's languages in different social contexts.

5.4 The Parents

"How have your Korean parents influenced your language use?"

There was wide variation among all consultants as to what family language policies were like when they were children. As mentioned previously, many consultants' first language was Korean due to exposure to Korean only from their parents and grandparents. Some consultants were exposed to a little bit of English from elder siblings who were in school. But the onset of massive English input began when they entered kindergarten or first grade at English-only schools. From that point on, they acquired English quickly, and by the end of elementary school and beginning of middle school, it was the dominant language for all of them.

At home, some consultants' parents had a Korean-only policy. This was more common for consultants whose parents could not communicate well, or at all, in English. For example, Johnny uses English at home with his sisters, but switches to Korean when his mother is within earshot.

JOHNNY: Sometimes I'd talk or, like, speak English to my mom,
but like, she'd get mad, 'cause she doesn't know that much
English, so she'd be like, "In this house, only Korean."
(09-1086)

Because Johnny only used Korean at home and rarely outside with anyone besides his parents, he believes that his vocabulary in Korean is severely limited. He knows only enough to get by, and if there is ever a need to express a more complicated topic, the lines of communication may fail.

JOHNNY: Sometimes [my mother] doesn't know the English word
for it, and I don't know, like, the Korean word for it, so
we both look at my sister, and if she doesn't get it, then
all hope is lost. (09-1772)

Parents also instantiated Korean-only language policies at home due to their perception of the child's need to know Korean. Johnny's account is couched explicitly in terms of shame and judgment, echoing his earlier comment about Korean people judging a Korean American's cultural authenticity with a test of language ability.

JOHNNY: My mom used to tell me when I was growing up,
like, you wanna be able to, like, at least speak Korean
well somewhat because, like, other Korean people, they're

gonna look down on you if you look Korean but can't speak it, so they're like, don't make a fool out of yourself, like, *yok mekcima* ["don't bring shame"]. (09-2045)

Similarly, Sarah went to weekend Korean school for a few years, and decidedly did not enjoy it. However, she had to heed a warning from her mother.

SARAH: My mom said, "You know you're gonna totally regret it," um, 'cause everyone else's friends', like, kids, like, you know – they go to college, and then you're gonna regret not being able to speak your language, and she said, "Don't come crying to me when you do," and of course in college I regretted it [laughs] that I didn't try harder. (23-1548)

Sarah speaks exclusively in Korean with her parents, who have limited ability in English. She recalls a funny episode when she was in college, when a peer who was an international student from South Korea pointed out that she spoke Korean with an American accent. Surprised, she then asked her parents why they had never bothered to point this out or correct her. Her mother said, "Well of course you have an accent, you grew up here," and continued that she never thought it mattered that her daughter had an American accent because she could at least still speak the language.

When Sarah returned home after two years in Seoul, her mother did notice her improved Korean with a few good-natured snarky comments about the educated grammar she had picked up. Opinions like these abounded from my interviewees' parents:

- "They think [my Korean] is cute."
- "They tease my spelling and spacing when I text them."
- "They think it's passable."
- "At least it's better than my siblings' Korean."
- "Just okay."
- "They think it's declined."
- "Crappy."
- "They're happy I can communicate with them."
- "Definitely not good, but better than average [among second generation Korean American peers]."
- "Not as good as it used to be."

I've highlighted the negative comments that my interviewees quoted here, although in sum, the comments from parents were about evenly split between negative, positive (e.g., "They think it's decent" or "They say it's surprisingly good") and neutral (e.g., "They don't usually comment on my Korean" or "It's not good, but it's not bad, either").

As stated previously, only one interviewee used exclusively English with their parents, or even with only one of their parents, although hidden in this statistic is the caveat that I explicitly sought out Korean-speaking Korean Americans for this study. Thus, those Korean Americans who use English with their parents may have self-selected out of the study due to not considering themselves eligible for a bilingual interview.

"How have your Korean parents influenced your language use?" From this small sample, it seems that family language policies that enforce Korean only in the household do not prevent children from becoming dominant in English, but not having a Korean-only language policy also does not prevent children from acquiring proficient Korean. A prevailing sentiment among Korean-speaking parents is that their children do not speak Korean "well", but perhaps standards for "proficient" Korean for children who grow up in the United States are lower, such that basic communication skills suffice.

5.5 The Korean American "Accent"

"What does a Korean American sound like?"

When asked what a Korean American voice sounds like, most consultants went for the explanatory route of defining "Korean" voices and "American voices", and placing Korean American voices at odds or in the middle of those two. Interviewees were very quick to describe the hallmarks of L1 Korean-accented English, as described in Schirra (2012): confusion of /l/ and /ɾ/, merger of /i/ and /ɪ/ or /z/ and /dʒ/, and misuse of the articles *the* and *a*. They considered these to be stereotypes of their parents' speech in English, or of "FOBs" (Fresh Off the Boat immigrants, including first and 1.5 generation immigrants).

All of them also agreed that their Korean speech, as Korean Americans who are dominant in English, carries with it a host of markers that identify them as Americans whenever they speak to Koreans from Korea. Emily, a 1.5 generation Korean American, had spent seventeen years in the United States before returning to South Korea for a visit; she was immediately "outed" as an American.

EMILY: So I was twenty five – so seventeen years I had spent in the States, right – and when I went back, I sat in a taxi, I went to Itaewon, right [...] I got into a taxi and the guy said, "Oh, so you grew up eating butter...", *ppete mekko calasscyo?* (40-2089)

However, what I will focus on in this section is the comments that 1.5 and second generation Korean Americans made about their own English. All of them considered themselves to be dominant in English or equally proficient in English and Korean, so none of these

comments were about the stereotypical hallmarks of Korean-accented English. Yet they did describe something that, for example, Harry calls “a strange Korean American accent” (01-1385): some way of speaking English that, to them, marked someone as being a Korean American, even though they usually couldn’t pinpoint exactly what it entailed.

MELANIE: When [Korean Americans] speak English, their accent is... sorry, I can’t describe it. I could hear it in my head, but I can’t describe it. (04-2876)

CATHERINE: And there’s a certain way of talking; I can’t really quite put my finger on it. (37-3232)

RUGYEONG: I hear this slight accent in their English, but not all the time, so I don’t know how to explain it. It’s really, like, subtle... (39-3599)

Descriptors such as “subtle”, “delicate”, and “slight difference” were common. When asked to elaborate, some interviewees settled on describing vowels and consonant sounds. Eric called the accent “inexplicable”, but went on to describe Korean American enunciation as “blocky” (12-1960), while Sungwoo, a 1.5 generation Korean American, described it as having “more edges”, compared to “white English”, which “feels more circle-like, rounded,” and having a better “flow” (27-3283).

In terms of vowels, Kelsey, a second generation Korean American, described Korean Americans’ English as being “a little bit flatter”, in contrast to “American-style English” that has more shape to its vowels (35-3180). This could be interpreted as a reference to either the diphthongization of California English vowels or some aspect of California English intonation.

ADRIAN: I don’t wanna say it’s an accent, ‘cause it’s not really an accent. It’s more like an intonation, I guess, I don’t know... Something about the way they talk I can just tell, like, they’re Korean. (38-2924)

WINSTON: I feel like we almost have our own- even the way we speak English, there’s a very unique way that Korean Americans specifically speak English. I think there’s a lot of inflections in our speech that typical English speakers don’t have, and I think we do it in a very similar way. (32-2411)

Whether a Korean American speaker of English has this accent or intonation pattern was conjectured to be influenced by a number of factors, which boiled down to three types: the influence of spoken Korean on one’s English, the influence of a regional dialect, and the influence of being around Korean Americans, the last of which was cited the most often.

5.5.1 Influence of Korean

While all the interviewees agreed that recent immigrants (such as first or 1.5 generation Korean Americans) would speak English with strong phonological and prosodic influence from their L1 Korean, only a handful of the interviewees thought that second generation Korean Americans would have influence from Korean on English. One of these was Catherine, a second generation Korean American.

CATHERINE: Like, we'll kinda slur some of our words, I think, the way that we say things in English. I think it's influenced by our inflection and the way that we speak in Korean. You know, I can feel some of that, um, the rhythm of my Korean language, you know, infecting- not infecting, but, you know, influencing, the way that my English flows. (37-3351)

Winston says that a certain subset of English lexical items are influenced by Korean, and “some of the English words start to sometimes adapt, like [...] if I were to say *ice cream* in English, I would say *ice cream*, but in Korean, I would say *aisukhulim*⁶. But then I think there comes this hybrid, where the English word starts to adapt a little bit of that Korean way of saying it, so it's not quite the English way; it's not the Korean way; but it's, like, kind of this hybrid, closer to the English side” (32-3110).

Kelsey, who earlier described the Korean American accent as being “flat”, said that she does not intentionally speak in this manner, but did propose that, “I think sometimes I can sense that I'm shifting into that when I've been around my parents long enough” (35-3257).

5.5.2 Influence of Regional Sound Patterns

Yuri, a second generation Korean American who grew up on the East Coast of the United States before moving to Korea, Japan, and finally Northern California, rejects the linguistic influence hypothesis in favor of something more broadly regional.

YURI: Well, I wouldn't say that their English is accented because of Korean. I would say it's more of the general geographical, like, English accent. [...] It would be the combination of, for example, a Korean accent plus East Coast accent equals something different, versus Korean accent plus West Coast accent equals something, like B versus A. [...] I don't think the fact that I was raised in a Korean household affects my English as much as the fact that I was born in the East Coast. (20-2973)

⁶This is a loanword from English into Korean, one of a set of vocabulary items also called “Konglish”.

Like Yuri, many interviewees, in particular the interviewees who were located in Southern California, drew connections between the way Korean Americans speak and broader regional vocal stereotypes that exist in popular discourse, including the persona of the Valley Girl. According to Jennifer, a second generation Korean American who was born in Koreatown and has lived in Southern California for her entire life, when she went to college, her Asian American peers told her that she had an Asian accent, but “not an accent, like, that you hear from people directly from Korea” (36-2180). She describes it as “a Korean American accent that comes out sometimes, and some people say it’s like a mixture of Korean, English, and then a Valley Girl accent.”

Two other interviewees, both women who grew up in Los Angeles, self-identified as having “the Valley Girl accent” and having had it pointed out to them in their adulthood. It is worth mentioning that “the Valley” in geographic terms refers to the San Fernando Valley, which is north of Los Angeles, but that the boundaries of the Valley Girl persona extend far further, easily encompassing all of Southern California and, for some, up into Northern California. Yet Jennifer associates it with the Korean Americans who are from Koreatown, specifically.

JENNIFER: A lot of Korean American girls speak like that in Koreatown, yeah... and I still hear it a lot when I go out nowadays. I don’t know if I do it anymore, I can’t tell, but I can tell when people do it.

AC: Where do you think that came from, ‘cause like, Koreatown is not near the Valley?

JENNIFER: It’s not, but I think Koreatown just made it its own sort of accent. (36-2239)

Jennifer follows this with several demonstrations of high-rising terminals, or “up-talk” (Warren 2016), also calling it “whinier”. When she describes Korean American men from Koreatown, however, it isn’t about the Valley Girl accent. Instead, Koreatown men are still distinguishable as Korean just from their voices, but it has more to do with “word choices” and, importantly, is “completely different from how a OC Korean American talks”. Orange County Korean Americans, apparently, use less slang (26-2365).

Catherine agrees, saying she can tell if she’s speaking to someone who’s Korean “if they’re from the Valley, if they’re from Orange County, if they’re from LA, or if they’re, like, a K-town Korean” (37-3195). Koreans from the Valley are most likely to have use up-talk, while Koreans from K-town “will definitely throw in a lot of Korean when they speak to you in English.”

But it is difficult to draw clear lines without a more direct perceptual dialectological experiment. Other interviewees drew a wide boundary around the Korean American accent that included Orange County and Los Angeles as one region.

JOSEPHINA: I think that there are regional accents. [...] Most of my mom’s side of the family is still in Orange County,

and my cousins have a very particular accent [...] I don't know actually if it's exclusive to Orange County, but, kind of living in Koreatown, I do hear this accent, or it comes out even in, um, like, native English speakers sometimes. [...] My hunch is that there is something to it, at least maybe regionally.

AC: For Southern California?

JOSEPHINA: For Southern California, yeah. That's just my exposure to it; I don't know what it would sound like, let's say, like amongst Koreans in Atlanta or something like that. (30-262)

5.5.3 Influence of Korean American Interlocutors

The last main factor brought up in interviews, and the one which I believe to be the most significant both due to how often it came up and how reasonable of an explanation it is, is that simply being around more Korean Americans makes a Korean American more likely to speak with the "Korean American accent". This is the mark of an ethnolect: that one acquires it from coethnics who already have it, and may use it (consciously or not) as a reflection of their ethnic identity, as a display of ethnic solidarity, and as a means of constantly negotiating and re-negotiating one's identity in discourse (Fought 2006).

The first clue to this is that the Korean American interviewees agreed that people they knew who did not grow up surrounded by Korean people did not have any trace of the accent.

SUNGWOO: I have one friend, uh, she's- she was born here, she's Korean, but she's uh, you know, she's one of those, uh, Koreans that have, like, a lot of white friends, um... And so her English sounds different than a second gen Korean. Like, I could tell...

AC: It sounds white?

SUNGWOO: Yeah. (27-3219)

CATHERINE: When I've met Koreans who grew up, like, in Ohio or Tennessee, in areas where like they were one of the only Korean families, um, they do sound very white, at least to me. (37-3175)

KENNY: You know, you listen to your parents speak in Korean or English, so you adopt a little bit... but you know the [Korean Americans] who have white parents, who are adopted, they don't have it at all. (26-2866)

Jennifer, who earlier described the Valley Girl influence on Koreatown women's speech, also noted that her friends have said that she "speak[s] English like a white girl" (28-2444). Her justification for why involves the ethnic makeup of her upbringing:

JENNIFER: I wanna say it's because I was exposed to more Korean Americans later in life, um, and as well as the culture, I think I was raised, uh, with more Caucasian peers and non-Korean peers for at least, like, at least my elementary phase. So that could be it; maybe I got started young. (28-2568)

The interviewees who do acknowledge that they have it most often reference it in the context of speaking with other Korean Americans. Kelsey says she hears it "when it's, like, Korean Americans speaking English in, like, a Korean American setting: at a church, for example" (35-3180). Winston also brings up the church context:

WINSTON: People [will] tell me, like, 'Hey, [Winston], you kind of have an accent.' And when I listen to myself, I do hear it, and it's very similar to the way a lot of my Korean American friends speak, um... and I hear the most when I'm at a Korean American church, because everyone's just Korean American, right? So whenever people speak English, there's a very, uh, specific way that we speak English. (32-2444)

Winston goes on to describe the accent in terms of intonation, as others have done: "We're almost singing, in a way... we're going up and down a lot more often than the average English speaker" (32-2475).

Then, there was something that Kenny brought up in conversation, that he called "sticky tongue".

AC: Is it important that people perceive your English to be "native"?

KENNY: When it comes to career and stuff, it would help, um, but being in an Asian family, we still have that Asian sticky tongue.

AC: S- Asian...?

KENNY: So there was this whi- My friend had a white girl[friend] that called it that...

AC: Sticky tongue? What does that mean?

KENNY: Uh, it's that we have that slightly Asian accent, she called it sticky tongue, um... now that I think about it, I'm like, that's pretty racist... (26-2364)

In addition to the family factor, though, Kenny stressed that Koreans have it “‘cause we hang out with Koreans” (25-2404), and further suggested that I, his interviewer, “probably have it a little bit less” since I do not hang out with as many Koreans.

The most thorough explanation of the Korean American accent comes from Sarah, who identifies the accent as specific to Koreatown as well as to any social context with a high concentration of Korean Americans, where social trends such as clothing fashion go hand-in-hand with certain vocal characteristics, both of which similarly index a specific Korean American identity.

SARAH: So, growing up in, uh, Koreatown, LA, there's like a specific idea of, like, what that was growing up [...] There were, like, certain ways people dressed, there were certain hobbies that people had, like a lot of Korean American, like, you know, um, kids were, like, friends with each other, right? And, like, it was a whole, like, public school-attending, like, Christian church-attending, like, crowd. (23-2441)

Sarah herself admits, “I think my English sounds really LA, ‘cause I have, totally have, Valley Girl. I have it. It's not going away” (23-4372). One of Sarah's Korean American friends, when they were in middle school, pointed out the way that she spoke as being distinctly *not* Korean American.

SARAH: She used to, like, make me feel bad for, like, not speaking good enough Korean, but I think, like, she would be like, “Oh, you sound really white,” right? So it wasn't that my Korean was bad, it was that I sounded very white when I talked in English, and I think that was because I didn't have, like, the Korean American lisp. (23-2963)

When pressed to define this notion of a “lisp”, which she had brought up on her own, Sarah explained, “I don't even know what you call it; it's not a lisp, it's like an intonation... I really can't describe it. I can't even do [or imitate] it. Maybe, like, it's, it's... like having, like, a very, very light Korean intonation when you're talking in English. I can identify it if I hear it; I can't reproduce it” (23-3772). Again, though it is difficult to define, it is easy to identify, and Sarah knows who speaks with it.

SARAH: I think it's people who are, like, exposed to a lot of Korean media. They have a lot of Korean friends. Um, it's, depending- it's also contextual, I think, like, who they're talking to. A lot of the church people had it. They were sort of, like, born and raised in K-town, had stayed there, had gone to school there, like, live there right now. (23-3772)

On the other hand, some interviewees were adamant that they did not have a Korean American accent. Three female second generation Korean Americans brought up that they had been told that they had accents, while not believing that they did.

JOANNA: [My English-speaking peers] think I have a Korean accent, which is very weird. [...] That's only because I have, like, this speech impediment that I had when I was younger, like, I couldn't pronounce my R's and my T-H's, so I think that that speech impediment is what they're hearing, and they mistake it as, like, a Korean accent. (10-2916)

(It's worth noting that what Joanna calls a speech impediment some would identify as the hallmarks of L1 Korean-influenced English, although Joanna is natively bilingual and has been comfortable in English since she entered school.)

Cassie and Josephina directly blame a kind of systemic racial bias for this identification. "Sorry if I'm not politically correct," says Cassie, "but I know white people always think that I have an accent, but, like, other, you know, like Chinese Americans or Korean Americans, they don't think that I have an accent" (25-1375). Josephina elaborates:

JOSEPHINA: I also hear [that I have "good English"] more when I'm not in California, which makes sense because I have, like, a very native Californian accent, and so, I understand if that gets marked in a different context. But in California, when people say – not even that my English is good – it's like, "You have a very particular accent," that is almost always from, like, white people. [...] Um, I think it's just that whole perpetual foreigner thing with Asians [...] I think it's the whole, you know, hallucinating the accents, basically, um, they perceive an accent where maybe there isn't one. (30-208)

Josephina was the one who argued for a regional Southern Californian Korean American accent, but also decided that having a strong social network of Koreans and Korean Americans played a big role.

What all of this points to is the association of the Korean American accent with being Korean American and spending significant amounts of time with other Korean Americans, not necessarily having direct influence from speaking or hearing the Korean language or adopting characteristics of the regional variants of Southern Californian English. I argue that this is enough to identify Korean American English as being an ethnolect, even if the actual prosodic and phonological properties of it remain unknown.

Several interviewees even compared Korean American English to existing ethnolects (without using the technical terminology). Jessica says, "If I can compare it, I have Hispanic friends who are born here, and their first language is English, but there's something in the

way that they speak that I can even tell is very, like, Mexican American or Salvadoran American" (28-2532). Charlie says, "Even if you're [...] Chinese American, Taiwanese American, Korean American... speaking English is not gonna sound the same to, like, a white person American or a Black person American, 'cause they have their own accents, too" (29-2732).

Kenny brings up the notion of code-switching, or style-shifting in and out of Korean American English.

KENNY: You know, like, the regional dialects, and how like Black people, they have to change it, so they say Black people have two ways, two languages: there's like the Black vernacular English and then "interview talk"? So it's that same idea. We can- we can hide it. (26-2866).

Overall, interviewees tried their best to stay away from explicit judgment of the accents or vocal characteristics that they used to identify other Korean Americans, but most of them felt strongly about their ability to use a "K-dar". "I have, like, this Korean radar, my husband calls it," says Stephanie, "so if I identify that someone is possibly Korean and speaking in English but with an accent, I might just ask them, like, 'Oh, are you Korean?'" (33-3109).

"I know sometimes I don't present as looking Korean," explains Catherine, "but as soon as I open my mouth, most people can tell I'm Korean" (37-3336). "Even the way we say the word *Korean*," she adds, "It's a little different."

This aligns almost exactly with the notion of linguistic markers (Labov 1972a) or Silverstein (2003)'s second order of indexicality. It is hard to pinpoint just one sociolinguistic variable here; it could be some aspect of vowel pronunciation ("flatter" vowels could be more monophthongal) or consonant pronunciation ("soft" consonants could be more lenited or devoiced). It could have to do with prosody, speech speed, or even specific lexical items, like the aforementioned *Korean*. Whatever it is, it is salient enough for Korean Americans to use it as an imperfect Shibboleth, identifying those in the in-group and distinguishing them from the out-group. It is not yet salient enough for most Korean Americans to imitate it; indeed, most of them, even when pressed, could not or would not imitate it or describe specific acoustic characteristics.

Higher orders of indexicality occur when a sociolinguistic variable ceases to become associated just with the demographic group that uses it as a resource for identity expression, and broadens to be associated with other types, such as personality traits, which may not be relevant to the original group. For example, the high-rising terminal associated with young women of the San Fernando Valley in Southern California (as well as most young people all across California) no longer simply indexes youth, whiteness, and femininity, but also negatively-valenced traits such as vapidity or shallowness, due sexist stereotypes and the spread of the variable in question.

Curiously, when it comes to the Korean American ethnolect, despite its ineffable nature, or perhaps partly because of it, confluences of this unknown set of acoustic markers and intra-

ethnic stereotypes regarding Koreans in cities, suburbs, and counties have already begun to rise to the surface.

5.6 NorCal versus SoCal

If the Korean American accent is indeed an ethnolect, should we expect it to be present in a majority of Korean Americans? Sarah, who brought up the idea of the “lisp”, thought for a moment before clarifying that she has never heard any of her Korean American friends from the Bay Area speak with the kind of accent that she associates most strongly with this specific second generation Korean ethnic identity. She reasons that the Bay Area is extremely different from Los Angeles, “where, you know, for blocks and blocks you see street signs in, you know, Korean; like, it’s very easy to live there and never speak English” (23-4098).

Again and again, interviewees associated the large Korean footprint in Southern California (or “SoCal”) with resulting patterns of language use (in both English and Korean) among the Korean Americans who grew up there, in contrast with the smaller footprint in Northern California (or “NorCal”) and its consequences for Korean American language use. The concept of a Korean American “social geography” – a social map⁷ that details not just where people live and move, but where they create meaning and a sense of place (Abelmann 2009) – has come up often enough that it warrants its own discussion.

Though interviewees were not deliberately asked to choose which region had more Koreans or was “more culturally Korean,” most were asked to compare the two regions and allowed to answer freely. Seventeen interviewees identified SoCal as having more Korean people (while twenty-three did not specify), which is true to the past and present demographics. Nine interviewees explicitly cited the SoCal Koreans as having better Korean skills compared to NorCal Koreans, while only one claimed that NorCal Koreans were better. On the other hand, three interviewees said that SoCal Koreans were more Americanized, or less culturally Korean, while twelve said that this dubious claim to fame belonged to NorCal Koreans. Two interviewees did not have an opinion on Northern Californian Koreans, but stressed that within Southern California, Orange County was distinctly more Americanized than Los Angeles itself. This information is summarized in Table 5.2.

Table 5.2: Interviewee opinions on cultural, demographic, and linguistic differences between Koreans from Northern and Southern California.

Opinion	NorCal	SoCal	Neither/Did not specify
Has more Korean people	0	17	23
Better Korean language skills	1	9	30
More Americanized/less Korean	12	3	15

⁷For a literal map, containing a perceptual dialectology of Northern versus Southern California, see Bucholtz et al. (2007).

While once again, many respondents declined to pass judgment on Korean Americans from a particular region or make any generalizations, distinct trends emerged from their unfiltered thoughts that demonstrate how ethnic identity is filtered through regional stereotypes. The driving force behind the difference between NorCal and SoCal Korean Americans seems to stem from the high density of Korean Americans and Korean immigrants in Los Angeles County, compared to the more spread-out nature of the Korean community in the San Francisco Bay Area. But the differentiator between Los Angeles County and Orange County has less to do with population numbers and more with the urban-suburban cultural divide.

5.6.1 K-town and “That Boba Life”

The interviewees who believe that SoCal Koreans are generally “more Korean” discuss their adherence to traditional Korean culture, ability to speak Korean, and connectedness to other Koreans and Korean Americans.

ERIC: SoCal Koreans [...] really embrace that Korean American lifestyle, in a way, like... that boba life. [...] They literally speak more Korean, they consume more Korean media, and, like, they are very involved in Korean church, for example. (12-2229)

The reference to “boba life” is from a song by the popular Chinese American YouTube vloggers the Fung Brothers that rhapsodizes about the joys of being a young Asian American in San Gabriel Valley (SoCal) or other Asian cultural enclaves (Zhang 2019), or ethnoburbs (Li 2019). Boba is easy to find in Koreatown, too. Jaehee believes that K-town is the hub of all things Korean in Southern California, calling it a “condensed community” with “everything in one place”, and somewhere people can come back to as a home, even if they live in the suburban areas of Los Angeles County. Part of SoCal Korean culture, according to Jaehee, is being aware of nationally lesser-known Korean American entertainers such as Dumbfoundead, being able to name popular restaurants in K-town despite not living there, and supporting the LA Dodgers because of Ryu Hyun-jin, a South Korean player who pitched for the team from 2013 to 2019.

Johnny was the one exception. He believes that NorCal Koreans are “more Korean” than those from SoCal. Having grown up entirely in Southern California, his only experience of Korean Americans not from SoCal came from those he has encountered at Berkeley, who seem more in touch with Korean culture than he or his peers from home were. At the same time, Johnny also claims that all the Korean Americans he knew growing up spoke exclusively English, and he mentioned once that he aligned himself culturally with the non-Korean, majority-Hispanic areas outside of Koreatown.

JOHNNY: I am Korean American, but I feel like when I was in Koreatown, I didn't very much, like, side myself with, like, the Korean population. (09-1860)

Other interviewees hinted at a similar idea, arguing that in SoCal, you're either "really Korean or really not" (06-1824). One interviewee, Christina, said that in terms of fashion sensibility, the SoCal Korean Americans adhered more to American beauty standards, while NorCal Korean Americans might as well be "walking in the streets of Seoul" (13-2962). She called SoCal Korean Americans "more whitewashed." Harry makes an association between "Americanization" and toughness, centering a possible different experience with cultural assimilation.

HARRY: I think [SoCal Korean Americans are] a bit more Americanized, and I also think they're a little bit more tougher, a little bit more rougher, because I think they've had a harder time, to be honest. But, in NorCal, the Koreans are sort of, I don't know [...] when I see Koreans in NorCal, I always see them as sort of, like, an isolated group, you know, where in SoCal everyone's always together and jumbled up. So I think there's, uh, I think there's moreso of like, um, integration in the south than in the north. (01-1438)

Harry believes that NorCal Korean Americans are isolated from other Koreans, spread out, without any central urban area like K-town, the "social nexus" (Park and Kim 2008), to bring them all together.

5.6.2 Americanized Asians

The collective Korean identity of Southern California is considered stronger than that of Northern California, and as a result...

CASSIE: They're more whitewashed, all the NorCal Koreans that I can think of. (25-2620)

Korean Americans from NorCal, SoCal, and even outside of California mostly held the same perspective. Joanna says that NorCal Koreans are "in between a FOB and, like, a very Americanized Asian," (10-2726) adding that in terms of personality, they are a little bit more reserved than their SoCal counterparts. Continuing the stereotype of quiet, suburban Asians, Melanie explicitly evokes tropes of the urban-suburban divide.

MELANIE: I've thought honestly that SoCal people have a slightly more fuck-it attitude. [...] They're a little bit more gangster than NorCal Koreans are, I don't know. I think NorCal Koreans are a lot more, like, to the book and conservative, and, like, I imagine play the violin or something, um, and [...] slightly more sheltered in a way. (04-2704)

What does this have to do with language? First of all, Korean Americans associate being “Americanized” or “whitewashed” with having worse speaking skills in the Korean language. Joanna’s experience, having grown up in Santa Clara County and Alameda County, was that her Korean friends in school generally had “little to no knowledge of Korean” (10-3036). John, who grew up in Los Angeles County and Orange County but moved to NorCal to attend college at UC Davis, describes the Koreans he met there as “super Bay Area,” by which he means, “didn’t really speak Korean” (31-3583). Korean Americans from Los Angeles, on the other hand, grew up in a place where waitstaff at Korean restaurants would address you in Korean automatically if you presented as East Asian, which is just one of the many cultural characteristics of Koreatown and high-density Korean neighborhoods in LA County and Orange County that give young Korean Americans simply more opportunities to speak and hear Korean.

But beyond Korean skills, as has been noted in the previous section, being surrounded by Korean immigrants and Korean immigrants also affects one’s English. Esther, a second generation Korean American who moved to Los Angeles from New York when she was ten years old and now attends Berkeley, says that she has yet to meet “a NorCal Korean who has a Korean accent when they talk in English, ‘cause their English is just so, like, really good” (08-1875). The construction of a zero-sum accent game emerges from the dichotomies the interviewees tended to evoke: the more culturally Korean you are, the better your spoken Korean will be, and the less you will have of the Korean American accent (or L1 Korean-accented English).

5.6.3 Bubbles

Interestingly, interviewees who had grown up in Southern California tended not to have many opinions of Northern California, but were quick to draw distinctions between Koreatown and/or Los Angeles County versus Orange County. Because Orange County has neighborhoods with high Korean density just like Los Angeles County, the difference here cannot stem from the population numbers alone, but has more to do with common tropes of what it means to have grown up in a suburban neighborhood. In interviews with SoCal Korean Americans who had nothing to say about NorCal, those who grew up in Orange County cities like Irvine, Anaheim, and “the suburbs” were universally portrayed as “quiet” and “reserved”, less likely to go to bars at night and experience urban nightlife. “K-towners” were, in Charlie’s words, “ratchet.”

CHARLIE: I don’t have a formal term. They like to party more, they’re more adventurous, they go out more, they drink a lot more... Um, in terms of, like, their language, that kind of influences that, because they speak at a much more, like, “ghetto” Korean-type accent, which is a actual thing. (29-3082)

Charlie goes on to compare Koreatown Korean Americans to portrayals of the “young delinquent” trope in Asian dramas, including speech that is “sharp”, “harsh”, full of “short jabs” and swear words. It should be noted that he is speaking from personal experience, as Charlie self-identifies as having been part of “a party crowd” in South Pasadena during his early twenties. Kenny describes something similar when he insists that Los Angeles Korean Americans are “more sarcastic” and use more slang than the “proper” Korean Americans of Orange County or (all of) Northern California. Jemma, who is from Orange County, was introduced to this kind of thinking once she went to college, realizing for the first time that many Korean Americans harbor a specific stereotype of Koreatown.

JEMMA: People will introduce themselves, like, “Oh, I’m from Koreatown,” and they’re Korean, and literally, people, like, start laughing. Like, “Oh, you’re one of those.” [...] People think that Koreans from Koreatown are very narrow-minded, and, like, yeah, and they’re in a bubble. (03-2029)

However, she adds that Irvine, where she grew up, is also a bubble, in the sense that kids who grow up there are culturally sheltered and have very little understanding of what life is like outside of their own city. In contrast to a wild, reality television-esque stereotype of Koreatown, Kelsey introduces the “obedient” Orange County Korean American.

KELSEY: I’ve heard people say that, like, Koreatown Korean Americans are, like, you know, more secular, or party more, um, or...

AC: I’ve heard that there’s even that reality TV show, “Koreatown”...

KELSEY: Yeah, yeah [...] that’s what I kind of have in my mind, whereas, like, Orange County Korean Americans tend to be more “by the book” and obedient, like, more Christian, um, but I think a lot of that has to do with class. (35-3397)

She adds that her general perception of immigration from Korea is that recent immigrants without existing family ties or a certain amount of capital tend to land in Koreatown and urban areas first, until they make enough money to “move out to the suburbs”, which is perceived as more comfortable and less grimy or difficult than Koreatown. Jessica goes as far as to map the quiet and reserved stereotype of an Orange County Korean American onto specific vocal characteristics. Comparing it to “this sort of relaxed way of speaking,” she says that a lot of her “OC friends are monotone; they don’t seem to have any, um, fluctuation, or even excitement, sometimes, when they speak” in English (28-3093). It is worth noting that Kelsey is from Orange County and Jessica is from Los Angeles County. The stereotypes of each region’s own crop of young Korean Americans are shared by representatives of both sides.

5.7 Conclusion

The goal of this chapter is to use Korean Americans' metalinguistic commentary to paint a picture of the mosaic of Korean American ethnolinguistic identity. From Korean Americans' reflections on their own language use, I conclude that Korean Americans believe in the importance speaking Korean as a means of expressing and also accessing their Korean ethnic identity. As a whole, the Korean Americans interviewed traded more in discourses of agency – pinning their Korean identity on practices that they could control – than in discourses of disposition. However, some amount of gatekeeping is often alluded to, as if some entity that has more authority or more claim to authentic Korean-ness uses linguistic ability as a measuring tool for Korean Americans, who are disadvantaged from the start due to having grown up in a country where English, not Korean, is the *lingua franca*.

Given that, the role of Korean-speaking caregivers might be expected to be of utmost importance. Yet Korean immigrant parents' influence on their children's language abilities was not given much attention in the narratives that the interviewees sketched out regarding their family's language policies or language attitudes. Interviewees (who, to reiterate, were a self-selecting group of proficient bilinguals) reported that their parents felt positive, negative, and neutral about their Korean language abilities in equal proportions. Besides the half-serious, half-joking common remark that Korean Americans will always disappoint their parents a little bit when it comes to their Korean language ability, parents' language ideologies do not seem to play a large role in their children's linguistic identity.

The notion of having a Korean American accent in English was more salient to many interviewees. Several immediately identified a kind of voice, or a set of vocal characteristics, which they associated with being Korean American, specifically a second generation Korean American who had natively acquired English (and also Korean). Who had this accent, and why, was the topic of many conjectures throughout the interviews. Answers included the influence of speaking the Korean language, the influence of regional sound patterns in Southern California English, and the influence of being “surrounded by Koreans”. It is in these discussions of the Korean American accent – which I call an *ethnolect* – that Agha (2003)'s development of types comes into sharp focus.

Korean Americans mostly associate their *ethnolect* (whether they call it a special intonation, an accent, or a “lisp”) with those in their community who have grown up among many Korean immigrants and other Korean Americans. If you grew up in a Korean bubble, whether that is the bubble of Koreatown or the bubble of a suburban Korean enclave in Irvine or Fullerton, you will have it. If you are heavily involved in the Korean American Protestant church community, you will have it. It is marked, and directly contrasted with both Korean-accented English and (native) white English, although some interviewees also conflate it with the stereotypical white Valley Girl accent. There are echoes here of the “slipperiness” that Kang and Lo (2004) discuss when it comes to self-ascription and other-imposition of categories such as who speaks with what accent, who is a “SoCal-er”, or even who is “Korean” or “Korean American”.

Conflations of ethnic, urban, and linguistic identity are thus difficult to tease apart. Ko-

reatown may be the “mecca” of the Korean diaspora in California, but Korean Americans representing suburban areas can also claim the Korean American ethnolect. In the meantime, Korean Americans draw distinctions between the stereotyped personalities of Korean Americans from either region, which bleed into stereotyped vocal characteristics such as “quiet” Orange County Korean voices or “sharp” K-town voices. Outside of Southern California, NorCal Korean Americans with limited exposure to the urban-suburban divide consider all of SoCal, as a synecdoche of LA, to be where Korean ethnic identity is the strongest and where the forces of cultural assimilation to white America the weakest. SoCal Korean Americans, in turn, tend to stereotype NorCal Koreans as a lonely, whitewashed group whose connections to other Koreans are as tenuous as their connections to Korean culture and identity.

Using Korean Americans' own words, we are able to draw a picture of their valuation of linguistic ability and behavior and link some of the trends that emerge to ideologies of cultural assimilation and regional stereotypes. Unfortunately, what metalinguistic commentary cannot do, at least without an accompanying sociolinguistic perception experiment, is determine which specific acoustic variables are being enregistered as the Korean American ethnolect. Korean Americans agree that their “accent” is undefinable, yet 100% identifiable.

Chapter 6

The 1.5 generation

The constant cry is that you
belong here, or you make
yourself belong, or you must go.

Native Speaker, Chang-rae Lee

This final chapter¹ is about the “in-betweeners”. I provide a history of the concept of “1.5 generation” to frame a modern understanding of immigration, racialization, and Korean American identity. I then question whether 1.5 generation Korean Americans today understand the intersection of their ethnic identity and linguistic practices similarly to how it has been documented in the past, arguing that as the demographic makeup of Korean American communities becomes more diverse, 1.5 generation Korean Americans feel less obligated to act as cultural brokers between Korean and American cultures.

I further contend that 1.5 generation Korean Americans are not separable from second generation Korean Americans or first generation Korean immigrants in their use of several sociolinguistic variables of American English, including back vowel monophthongization, fortition, and word-final stop release. Drawing on speech and demographic data from fourteen 1.5 generation Korean Americans and case studies of three of these Korean Americans, I show how their English speech (in production and perception) is better modeled by their language environment during their childhood years in the United States than generational status alone.

¹This chapter is a revised version of: Cheng, A. (2018). 1.5 Generation Korean Americans: Consonant and Vowel Production of Two Late Childhood Arrivals. *UC Berkeley PhonLab Annual Report*, 14, 189-220.

6.1 Introduction

6.1.1 History and theory of 1.5 generation Korean Americans

The notion of “1.5 generation” first arose in reference to the documentation of foreign-born Polish youths who came of age in the United States in the early 20th century, differentiated from their peers born in the United States. In some of the earliest sociological research, the term used was “half-second” generation (Rumbaut 2004:1166). Rumbaut continued to use “one-and-a-half” and “1.5” in his research on foreign-born youths from Cuba and various Southeast Asian countries (Rumbaut 2005). Thus, it was around the 1970s when “1.5 generation” caught on in the Korean American community as a way to refer to child immigrants. In Korean, a direct translation is used: *ilcem osey*.

One problem for sociologists and linguists alike is that strictly speaking, the 1.5 categorization is not set in stone. If second generation Korean Americans are born in the United States, and first generation immigrants move here as adults (18 years of age or older), does 1.5 really capture every year in between? Does an infant who arrives in the United States in her parents’ stroller have the same experience and process of ethnic identity formation as a student who arrives just in time to finish his senior year of high school? Clearly not. Oropesa and Landale (1997) describe what they call “decimal” generations, which split childhood immigrants into three further categories: 1.25, 1.5, and 1.75. The closer an immigrant’s decimal is to 2, the closer they are to the experiences of a second generation immigrant, and the closer it is to 1, the closer they are to the experiences of a first generation immigrant (Rumbaut 1997). However, the decimal terminology is not in wide use outside of the field of demography, not even within immigrant communities. “Classic 1.5 generation” (Rumbaut 2004:1167) is defined as childhood immigrants who arrived between the ages of 6 and 12.

Scholars in the Korean American community offer slightly different scales for measuring the 1.5 generation. Park (1999), who considers the concept of 1.5 generation to be influenced by the “knee-high” generational category of Japanese American communities (Park 1999:140), specifies a range of 11 to 16 years old, while Lee (2000) says 6 to 15. Park (1999) also notes that the definition of the term differed among different Korean American communities, as those in New York City defined it as post-junior high or high school-aged immigrants, while those in Los Angeles defined it as childhood immigrants who had finished grade school in South Korea. In general, late childhood to middle adolescence appear to be generally accepted as the period during which a Korean immigrant may come to be classified as 1.5. However, even immigrants who arrived as young children (as early as 3 years old) sometimes do self-identify as being 1.5.

Most of the Korean Americans who participated in this research went with broader “late childhood”-type categorizations when asked about the difference between 1.5 and second generation. The second generation is usually born here or arrives during infancy, while 1.5 generation comes when they are young but are not born here. On the other hand, the line between first and 1.5 is much clearer, mostly because “first generation”, from the perspective of a young Korean American, almost always refers to her own parents.

However, while the age criterion is the most oft-cited deciding factor for generational category, past research indicates that 1.5 generation Korean Americans are also socioculturally distinct from their second generation counterparts. Park (1999) explained that the 1.5 generation, as children, have enough linguistic and cultural experience in Korea that they can act as cultural brokers or intermediaries between their families or Korean immigrant communities and the majority American community, in a way that second generation children (who lack sufficient experience in Korea) cannot. An individual's own sense of belonging to a Korean community – however vaguely defined – may also influence whether they view themselves as second generation or 1.5 generation. Among Park's interviewees were many Korean Americans who considered themselves to be culturally 1.5, though demographically they may have been born in the United States (and thus would be classified as second generation).

There is strong support for the idea that a bicultural Korean American identity – that is, the ability of a Korean American individual to identify with both their ethnic Korean culture and with the majority American culture they live in, and to behave accordingly in different situations at different times – is the most important deciding factor in 1.5 generation membership (Lee 2002; He 2006). Pyon (2010) describes how the 1.5 generation Korean Americans in her study usually felt most comfortable around other 1.5 generation Korean Americans, who could best relate to their experiences of struggling with English and transitioning out of their sense of “pure” Korean identity, but continue to identify strongly as “Korean American” or “Koreanized American” rather than simply “American”.

Much of this work, however, glosses over the linguistic component of identity construction. It is well understood that for Korean Americans, the ability to speak and understand the Korean language is very important to their sense of belonging to the broad idea of a Korean community (Cho et al. 1997; Lee 2002; Shin 2005), as well as for their acquisition and maintenance of the Korean language as adults (Jeon 2008; Kang and Kim 2012; Choi 2015). Yet language ability among Korean Americans of any generation is highly variable. Many Korean American children undergo the familiar pattern: only speaking Korean at home with their families until entering an English-dominant American school, at which point it takes only a few years for their English to catch up and then surpass their rapidly dwindling Korean skills. From this point onward, some young Korean Americans are successful in maintaining proficiency in Korean, while others retain only a smattering of household terms in their vocabulary.

As for English language ability, the aforementioned “few years” that it takes for young Korean-dominant immigrants to learn English may in fact cause severe linguistic insecurity, as students may have enrolled in schools that do not have adequate ESL support. This sometimes has grave consequences for the immigrant students' academic success as well as mental and emotional health (Chee 2003; Pyon 2010). On the other hand, once 1.5 generation Korean Americans adjust to their new lives and the dominant language, they may become indistinguishable from second generation Korean Americans in terms of their English speech.

No study to date has compared 1.5 and second generation Korean Americans in terms of their speech production and perception. Even Park's careful anthropological research, which draws a distinct cultural line between 1.5 and second generation Korean Americans,

was conducted twenty years ago. Enough time has elapsed that the 1.5 generation Korean Americans in her study have grown up and may have third generation children of their own. But “new 1.5 generation” Korean Americans continue to immigrate to the United States and experience both similarities to the “young” 1.5 generation Korean Americans of the 1970s and 1980s as well as some differences.

It would be useful in this context to return to Rumbaut’s theorization of generation, which nods to the concept of “generation as an actuality” (Mannheim 1952) – “contemporaries [...] who are exposed to and defined by the effects of a powerful historical stimulus [...] and develop a shared consciousness about it” (Rumbaut 2004:1162) – while acknowledging that it is both problematic and difficult to measure the “remove” between generational cohorts of immigrants and the “initial” migration event. It becomes ever more difficult as immigration continues and its patterns change alongside the societies on both ends of the movement. All this is to say, it is likely that young adult Korean Americans who immigrated in the 1990s and early 2000s – in my sample, interviewees were aged 18 to 55², with a median age of 22 – have had a different experience of language and ethno-cultural identity formation than the previous cohort of 1.5 generation Korean Americans, who arrived in the 1970s and 1980s (closer in time to the passage of the 1965 Immigration Act).

In this analysis, I find that the very concept of 1.5 generation has changed and become blurrier, especially among second generation Korean Americans who are not aware of any technical generational status labels. Although Korean Americans who consider themselves “in between” first and second still identify with the nebulous category, Park’s distinct characterization of the intermediary 1.5 Korean American youth did not emerge. It was more common for Korean Americans of the 1990s (and younger) to be unsure of what the 1.5 category really was than for them to identify with it in terms of cultural equidistance. A healthy sense of biculturality existed among both 1.5 and second generation Korean Americans, as did the common refrains of discomfort and lack of belonging. The designation of being 1.5 or second generation appeared to be more defined by a strict place-of-birth criterion than the element of biculturality.

6.1.2 Immigration status and accentedness

To set the scene for what the English of 1.5 generation Korean Americans might be expected to sound like, we turn to past linguistic studies of other immigrant communities. The generation status categories for Korean Americans are, in fact, applicable to immigrants from any country. Most of the literature on second and third generation Asian Americans, whether they be Chinese, Filipino, or Laotian, is concerned with the speakers’ bilingual acquisition (e.g., learning English and maintaining their heritage language) or with phonetic attributes of their English.

Mendoza-Denton and Iwai (1993) were the first to identify the possibility that an accent derived from a non-English L1 (in this case, Japanese), might be “inherited” in suc-

²The 55-year-old 1.5 generation Korean American is a single outlier in terms of her age.

cessive generations, not genetically or as a consequence of the speakers' race, but due to community-level linguistic formation of Japanese American identity and the changes therein over generations.

More recently, a series of studies on the English spoken by Chinese Americans of multiple generations demonstrates the variable ways in which they participate in the sound changes that have been documented in majority white neighborhoods. For example, Wong (2007) studied the use of two sociolinguistic variables native to New York, /ɔ/-raising and /æ/-tensing, in several American-born Chinese, and found back vowel raising present in all speech, but front vowel raising in none. A more detailed analysis revealed that the strength of a speaker's non-Chinese social networks increased their participation in this ongoing vowel shift.

Hall-Lew (2009) and Wong and Hall-Lew (2014) examined similar shifts in San Francisco, finding a related effect: that Chinese Americans in a historically majority Chinese neighborhood were leading some aspects of the California Vowel Shift, with farther fronted vowels than their same-age white counterparts. This was hypothesized to be due, in part, to the community being so homogeneously Chinese. Rather than taking on influence from Mandarin phonology, the majority ethnic group was theorized to have adopted the vowel shift stylistically to index their distinctive social identity (Fought 2006).

For 1.5 and second generation Korean Americans specifically, Lee (2000) examined use of phonetic variables typical of Philadelphia English, but only determined that there was an effect of age of acquisition of English on word-medial /t/-flapping and that none of the participants exhibited use of the Philly "short /æ/" (similar to /æ/-tensing in New York City). They concluded that "the speakers are either not aware that the pronunciation of /a/ is variable and is tensed in certain contexts, or, if they are aware, that they consciously acquire what they perceive to be a non-regional form of English" (Lee 2000:124).

Lee does not, however, examine the possibility of phonological transfer from Korean into English. Lindemann (2003) and Schirra (2012) have identified the phonological characteristics of what may be called Korean-accented English, which is derived mostly from comparisons of native speakers of American English to L1 Korean, L2 learners of English. These include monophthongization of /ɔʊ, u/ (to the Korean /o, u/), /æ/-fronting (to /ɛ/), a merger of /i/ and /ɪ/, /ð/-stopping/, lengthened VOT for English voiceless stops (to match Korean aspirated stops), and probabilistic use of English /l/ and /ɹ/.

The idea is that depending on the parameters relevant to the acquisition of two languages during a Korean American child's infancy and childhood (e.g., quality and diversity of input, age of acquisition, or age of fluency (see Guion (2005); Shin (2005); Jeon (2008); Au and Oh (2009); Kim (2009b); Yeni-Komshian (2009), and especially Kuhl et al. (2008)), the representation of English in the minds of Korean-English bilinguals may vary such that one speaks with a "strong (or perceptible) accent" with the characteristics described above, but another speaks with "no accent" or more subtle use of certain sociophonetic variables.

For 1.5 generation Korean Americans, who are almost all sequential bilinguals who learn Korean to fluency before acquiring English, the effects of phonological transfer cannot be underestimated. And yet, studies routinely find great variability in the extent to which L1

transfer effects are perceptible or even present in the speech of many Korean Americans. This tells us three things: first, that if variability in phonetic production is not an inherent property of 1.5 generation speakers as a group, then at least it ought to be an expected outcome of any macro-level analysis. Second, a 1.5 generation Korean American who speaks English with a less perceptible accent presumably has a command of multiple phonologies (Korean and English). Third, this opens up the possibility that variation on an individual level can be leveraged as part of a person's discursive linguistic construction of identity. This leads us to the phenomenon of style-shifting.

6.1.3 Style shifting

The amount of “accent” in a person's voice, whether it is perceptible to themselves and others or not, has been theorized to be a part of a individual's construction of their own identity. In the same way our choice of shirt color on any given day could be seemingly random but does, in fact, reflect some aspect of who we are, our linguistic choices index, or point to, the individual we desire to be in relation to our interlocutor or to society at large.

Eckert (2008a) pioneered this theory with a sociophonetic study that demonstrated how young children varied in their use of /æ/-raising not just to index their race, but also their status in a local social hierarchy. Participation in the regional sound change (the California Vowel Shift) varied, and was variably perceived, in an intersectional way that implicated gender, class, and ethnicity. The important note to take away from Eckert's discussion of ethnolects is that there is, in fact, far more than just ethnicity at play when we want to deeply analyze a person's voice.

The voices of the 1.5 generation Korean Americans will very likely index their ethnicity, but also their generational status, their gender, and much more. In terms of the use of English, for Korean Americans who grow up in California, their participation in the sound change known as the California Vowel Shift may index a regional identity that interacts with their ethnic identity. Of course, a speaker's participation in the California Vowel Shift may not just be assimilation, but its own stylistic move (Podesva 2011; Podesva et al. 2015); it may index social ranking, divergence from the parental generation, “Americanization”, or even something not explicitly social, such as a pragmatic hedge or hesitance. These multiple dimensions along which a small set of sociolinguistic variables can represent social identities are called the indexical field (Eckert 2008b).

Furthermore, linguistic resources are used variably at every moment. They can be used to create temporally-bound identities as a response to an outside stimulus. For example, in Bourhis and Giles (1977), some English-speaking Welsh participants in the study shifted into perceptibly stronger Welsh accents when their interlocutor had an English accent (compared to when the interlocutor had a French Canadian accent), and one participant code switched completely into the Welsh language when the interlocutor posed face-threatening questions about Welsh identity. More recently, Rickford and McNair-Knox (1994) dove deep into a quantitative analysis of topic-influenced style shifting and found that the use of certain morphosyntactic variables associated with African American Vernacular English (AAVE) was

heavily influenced by addressee and topic (e.g., school and current events versus romantic life, slang, and popular music).

One study of style shifting that pertains to the Asian American experience is Chun (2001), a discourse analytical approach to the lexical choices of a Korean American young adult whose speech is peppered with borrowings from AAVE. Chun demonstrates how this person linguistically negotiates his own ethnic identity and its fluidity in a complex social hierarchy (while not making any claims about whether his speech is at all representative of “Asian American speech”). Several other studies of Asian American youth speech styles also focus on the appropriation of social practices and linguistic features that index African American identity, including Reyes (2005) and Chun (2013). No studies to date have examined linguistic practices of Asian American youth in relation to the speech patterns of the white majority of a community, or sought to concretize such a thing as “Asian American English”, perhaps for good reason.

One of the earliest working assumptions in sociolinguistic research was that social identities determine the nature of an individual’s linguistic utterances (Labov 1966). A modern update – or even reversal – of this idea was established by Bucholtz and Hall (2005): social identities are themselves created by linguistic interaction. That is to say, an individual both consciously uses what they know about existing linguistic stereotypes and subconsciously repeats linguistic habits that are deeply embedded in their everyday interactions to construct, polish, and emphasize a wide range of social identities they may carry, including the fairly fixed categories of gender and race, mutable classifications such as social status, and even short-lived identities in the form of stances (e.g., responding to an utterance with a judgmental tone, or using polite terms of address to index social distance before relaxing into more friendly banter).

The identities of 1.5 generation Korean Americans are always being challenged: are they fully American, or fully Korean? Is it possible to be both? They are always negotiating their identities, in two languages, with a diverse set of interlocutors. At the heart of this chapter is an attempt to discover how 1.5 generational identity is indexed, and how the phonetic properties that are linked to any and all of the many situational identities a 1.5 generation Korean American may inhabit differ from those that are indexical only of a “pure ethnolect” (i.e., a Korean accent). To this end, I describe a study of the perceived accentedness of fourteen 1.5 generation Americans and three in-depth case studies of these speakers’ acoustic attributes and the subtle yet perceptible variation they produce.

I seek to answer two sets of questions, one quantitative and one qualitative. The quantitative: do 1.5 generation Korean Americans speak English differently from second generation Korean Americans? Are these differences perceivable?

The qualitative: In what ways do 1.5 generation Korean Americans view the role of English language ability (compared to Korean language ability) in their identification with Korean culture, with American culture, or as 1.5 generation immigrants? Has this changed from the documented understanding of the 1.5 generation from one generation ago?

6.2 Methods

6.2.1 Sociolinguistic interview

Forty Korean Americans participated in a bilingual sociolinguistic interview, conducted by myself and four bilingual research assistants. Interviewees spoke in casual Korean and English, answering questions about their childhood, present-day life and hobbies, and opinions about language, culture, and identity³.

Interview questions during the English portion of the interview that directly alluded to 1.5 generation Korean Americans' sense of ethnic identity and linguistic behavior included:

- How would you define the term “1.5 generation” (as opposed to first or second)?
- How would you describe the relationship between your identified ethnicity and your language use?
- Do you feel like yourself when you speak English/Korean?
- Is it important to you to speak English/Korean like a native speaker?
- How would you characterize the features of “Korean-accented English”?

The full questionnaire can be found in Appendix B.2.

The recorded interviews were transcribed and annotated by myself and my research apprentices. Due to a recording error, one subject's English interview was excluded from transcription, resulting in thirty-nine interviews with recorded speech data in both English and Korean. These data were analyzed both quantitatively (e.g., acoustic measurements of consonants and vowels) as well as qualitatively (e.g., interviewees' metalinguistic commentary), and they were also used in the accent and proficiency rating task.

6.2.2 Accent and proficiency rating task

Five raters were asked to judge each interviewee's speech. The raters were independent; that is, they completed the rating task without consulting one another. The raters had limited familiarity with the speech data: although they had not performed the task before, they knew that they would be listening to excerpts of interviews with Korean Americans. Of the five raters, three were native or heritage speakers of Korean and rated the Korean speech, followed by the English speech. The other two raters participated only in the English rating tasks.

For the Korean portion of the task, each rater listened to randomized excerpts from the speech of each of the interviews. After listening to an excerpt, they were asked to rate the speaker on a Likert scale of Korean accentedness. On the Likert scale, 5 indicated

³For more detail about the sociolinguistic interview, please see Section 3.2.1.

“sounds exactly like someone from Korea”, and 1 indicated “sounds like Korean is not their first language”. Then, they listened to a different excerpt of speech from each interviewee, randomized once again, and rated the speaker on a Likert scale of ease of speaking in Korean, or proficiency. On this scale, 5 indicated “no problem whatsoever communicating” in Korean, and 1 indicated “clearly struggling to communicate ideas”.

For the English portion of the task, each rater once again listened to randomized excerpts, and rated the accentedness and proficiency of each speaker’s English. On the English accentedness Likert scale, 5 indicated “sounds exactly like a (white) native speaker of English”, and 1 indicated “definitely not a white person”. On the proficiency scale, 5 indicated “no problem whatsoever communicating” in English, and 1 indicated “clearly struggling to communicate ideas”. The complete table of rating scores can be found in Appendix H.

I would like to acknowledge here the potential drawbacks of the way accentedness was “measured” using this methodology, as well as briefly problematize accent as a concept in sociolinguistic research. First, with regard to Korean accentedness ratings, using a scale that associates the highest score with the trait of being “from Korea” implicitly places prestige on the peninsular variety or varieties of Korean. I argue that members of the Korean diaspora, especially in the United States, use the same scale to judge their own Korean language ability. (For example, positively evaluating statements such as “native Koreans cannot tell that I am Korean American when they hear me speak in Korean” (Lee 2002:122).) Jo (2001) explains that Korean Americans who are heritage learners (i.e., students in formal Korean language classes) struggle against an ideology that values “Standard” Korean and its association with nativity. Jo also critiques this ideology as a form of homeland South Korea’s cultural hegemony over diasporic populations. Hoping to strike a balance between getting an honest assessment of voices using an existing cultural framework and (not) perpetuating a potentially harmful language ideology, I made sure that the raters understood that there was no intended stigmatization of non-peninsular varieties of Korean in the rating task.

Second, associating the lowest score on the Likert scale with the trait of not speaking Korean as a first language necessarily creates a dichotomy between natively speaking a peninsular variety of Korean and learning Korean as a second language. But the two are not mutually exclusive. One can certainly sound like they are “from Korea” even if they learned Korean as a second language. I do not intend to make a claim here that non-native speakers of Korean cannot ever also sound like native speakers. I do argue that I have designed this scale as a way to capture the cultural framework that underscores most Korean Americans’ framework of language and identity: the language of prestige is “Standard” Korean as spoken in Seoul, while those who acquired Korean as heritage speakers sometimes do not align with that standard, and those who have no background in Korean whatsoever are further still.

Third, I acknowledge the inherent problems (both theoretical and moral) in asking the raters of English speech to assume a base standard of whiteness when judging accentedness in English. Similar to using Korean native-born status as the highest score for Korean accentedness, this association implicitly places prestige on the speech of white native-born American speakers of English. This is not at all my intention. I decided, after considering the possible implications, to use the “white-sounding” standard for two reasons. First, because

sounding like a white speaker of American English is already one of the possible consequences of certain Asian Americans' racialization – specifically, the kind that assumes that second generation Asian Americans (as well as third generation, fourth generation, etc.) simply assimilate, linguistically and culturally, to middle-class white norms: “another case of the American ‘melting pot’” (Reyes and Lo 2008:7). Second, because the five raters already knew that all of the speakers were Korean American. What they were judging was not race or ethnicity per se, but the plausibility of any particular voice being identified as white, with the prior knowledge that this identification would never be correct.

Indeed, the limited sociolinguistic perception research on Asian Americans' voices has found evidence that Asian Americans who are native speakers of English can be identified as such, distinguishable from native white speakers and speakers of other ethnicities (Hanna 1997; Newman and Wu 2011). But certainly there is variation within Asian American speech communities such that some Asian Americans sound more Asian than others in their English. (This happens to be one of the prevailing themes of this dissertation.) Now, the absence of distinctly Asian-sounding features does not mean that a voice will sound white, even if Korean Americans themselves participate in the creation of this dichotomy (see Section 5.5.3). I must insist that while these Likert scales seem to have set up another false dichotomy of native-born status and whiteness against foreign-born status and Asianness, the raters were well informed that their task at hand carried this risk and could adjust their biases accordingly. For the sake of task efficiency, the English accentedness Likert scale needed to be a simple converse of the Korean accentedness Likert scale.

Although much of the Asian American sociolinguistics literature is currently seeking to disarm the dominant ideologies that falsely equate certain races with Anglophone prestige, this study acknowledges that these ideologies exist and hopes to take advantage of them to discern certain truths about Korean American speech. In sum, what I am calling “accent” here in reference to two languages is actually a measure of natively acquired accentedness in Korean but a measure of white ethnic identity in English. I hereby acknowledge the imperfection of these scales while seeking to demonstrate how they can inform a sociolinguistic analysis of the voice.

6.3 Results

6.3.1 Complex categorization

Table 6.1 summarizes the basic demographic information of the thirty-nine interviewees who were scored in the rating task. Of these interviewees, thirteen had immigrated to the United States as children, between the ages of 3 and 16 years, and one as an infant, at 5 months. These interviewees were categorized as 1.5 generation Korean Americans, while all interviewees born in the United States were categorized as second generation. For more details on the categorization of generational status, please see Section 3.2.1.

A number of interviewees were unsure about their generational status, which both makes

Table 6.1: Interviewees whose speech data was used in the accent rating task, split by generation and gender.

Gen.	Male	Female	Total	Age of Arrival
1.5	3	11	14	0.5, 3 (3), 5, 8 (2), 9, 10 (4), 12, 16
2	11	14	25	0

this data analysis a little bit complicated, but also proves one of the central theses: although much sociological research has defined “1.5 generation” in terms of certain ages of immigration, the truth is that many Korean Americans themselves do not know how they might define “1.5 generation” vis-à-vis first and second generations. The following interview excerpt is illustrative:

MC: Do you consider yourself first, 1.5, or second generation?

CLAUDIA: How does that work?

MC: Hm... Would you like to guess?

CLAUDIA: [...] Is first generation, like, the first, like, people to, like, come over from their family, and then second generation is, like, people who are born here? Okay, technically I wasn't born here, so I'd say, like, 1.5. Yeah. (16-1471)

As it turns out, many Korean Americans of any generational status had rarely put much thought into whether they identified as 1.5 or second generation, and a few were even unsure of the terminology with respect to first generation immigrants. For example, Jemma, who did not identify as 1.5 generation, asked her interviewer whether “first generation” referred to someone who was the first generation born in the United States or the first to immigrate, eventually settling on identifying as Korean American with no generational identifier. (She was born and raised in Irvine, California.) Edison, a Korean American who was born and raised in San Francisco, wondered aloud whether he might be 1.5 generation, because his father immigrated to the United States at the age of 8. (Note that per our working definition, this would categorize Edison's father as 1.5 generation, but Edison himself as second generation.) Edison continued his train of thought by deciding that because his Korean skill set is not very good, “it seems more second gen” (22-1611).

Another complexity arose from Korean Americans who self-identified as 1.5 generation but wouldn't be categorized as such according to the aforementioned definitions. For example, Melanie was born in South Korea, but immigrated when she was only five months old to San Jose, California, with her parents. Having arrived at such a young age, far prior to the onset of speech and with no memories of living in South Korea, I considered categorizing her as second generation. However, in her own words, she did not feel like a second generation Korean American, because her Korean American peers who were born in the United States had citizenship, while she did not. She cited a memory during her childhood when an older

Korean woman, the mother of one of her American-born Korean American peers, told her that because she was not an American citizen, she was “technically” or “legally” the least American of the entire group. Melanie later explained that she was “not really sure what the real definition is” even though she had looked it up in a textbook in the past (04-1767). She insisted that she was not first generation, saying, “I didn’t choose to come here” (04-1801). But she didn’t feel like second generation, either, due to her citizenship status. Thus, Melanie settled on 1.5 as the only in-between category for her. Melanie’s case is similar to that of Harry, born in New York City and raised in Irvine, California, who admitted that his “consciousness is 1.5”, although according to his own strict demographic definition, he is “pretty much as second generation as it gets” (01-761).

Then, there is the case of Korean Americans who have spent a number of childhood years living in Korea. Stephanie, who was born in Seoul and moved to the United States at the age of 3, fit the working definition of 1.5 generation. In addition, she moved back to South Korea at the age of 10, where she continued to live until she was 20 years old.

STEPHANIE: I’m obviously American in a lot of, like, my language and culture. And I’m [...] not second generation, either. I would consider my husband to be second generation. He was born and raised in California. He identifies with Korean culture, but I think predominantly he thinks of himself as American, and then so I’m somewhere in between. So I’m 1.5.

AC: Does this also have to do with the fact that you were actually born in Korea and also lived there for some time, and-

STEPHANIE: I think so, yeah. I think that probably has a lot to do with it.

AC: I’m sort of wondering if people think it is literally a year of immigration sort of deal, or is it a more, sort of, personal feeling?

STEPHANIE: I think people tend to think of it as the former, because I do have friends who maybe speak Korean better than me, and, you know, immersed in the Korean culture more than me who were born and raised in California. But they love watching Korean dramas, or, like, listen to Korean music, so they, in a sense, is c-, they’re culturally more Korean than I am. But when asked point blank, they might say that they’re second generation because they were born here. (33-2150)

Stephanie’s criterion for differentiation between 1.5 and second generation is a good encapsulation of most of the interviewees’ viewpoint: regardless of an individual’s sense of

culture, their generational status is defined mostly by the fact of their place of birth. To be 1.5 generation, you had to have been born abroad.

LISA: Um, those who are born in Korea and had some schooling and then immigrated to America. (15-1228)

JANICE: I wasn't born here [in the United States], but I did spend a pretty large, like, portion of my childhood, so from like fifth grade on... So, I'm, like, 1.5. (17-1441)

YUNA: I know my parents are first generation. I guess I could say I'm a first, but I also came when I was younger, so I would say... I think I've always said I was 1.5. I'm not a second generation, because I wasn't born here. (34-2032)

Whether or not you have any memory of living in Korea seemed to have no bearing on this. Astrid, who immigrated with her parents when she was 3 years old, says:

ASTRID: I think I'm considered 1.5 [...] But also, I have no memories of Korea, because I was so young when we immigrated. (05-1890)

Simply due to her birth, though, Astrid felt like she had stronger ties to Korea than her second generation peers. The tie to Korea as a homeland and to Korean culture was strong among 1.5 generation Korean Americans, but they tended to report being pulled by the United States and American culture, as well, sometimes leaving them in tension.

HOJUN: I guess I wanna be seen as Korean American, not one or the other. (11-995)

Sungwoo, who was born in Seoul and moved to Glendale, California at the age of 12, also cited cultural consciousness as part of his definition of 1.5 generation. Though 1.5 generation Korean Americans had to have been born abroad, there wasn't a set cut-off for age of arrival that differentiated 1.5 from second. Instead, Sungwoo talked about how he felt like he had more in common with his second generation peers.

SUNGWOO: I guess it's more, um, just who you are, who you feel more comfortable around... I'm more comfortable around, like, second gens, than, like, a Korean international student, for example. (27-917)

It is clear that 1.5 generation Korean Americans reported the same themes of feeling caught between cultures, which accords with Park et al. (1990)'s analysis of the bridge-builder or cultural broker role. However, only looking at 1.5 generation Korean Americans' thoughts on this would miss the reality that many second generation Korean Americans feel the same way. For example, Krystal, a second generation Korean American, echoes the same sentiments that many 1.5 generation Korean Americans do.

MC: What ethnicity do you consider yourself?

KRYSTAL: Ethnicity... Um, that's hard to say, 'cause, I mean, objectively, it would be, like, Korean American, right? But sometimes, there are a lot of times where I don't really feel like either. (14-893)

In fact, out of forty interviewees, including both 1.5 and second generation Korean Americans, only a handful denied feeling any conflict between their heritage culture and mainstream American cultures. And nearly all of them reported using Korean at home with Korean-speaking parents⁴, which means that the bridge-building role was available to all of them.

I argue that the cultural consciousness of the 1.5 generation Korean American as described in Park et al. (1990), while it still exists, is no longer limited to 1.5 generation Korean Americans, as many second generation Korean Americans grow up with the same double consciousness, the same tension between cultures, and the same formative experiences of “hyphenated” identity (Choi 2015). It is also important to note that today's Korean Americans define 1.5 generation more strictly in terms of birthplace, such that no American-born Korean American, regardless of their feelings about biculturality, would ever label themselves as 1.5 generation.

Only one interviewee out of the forty might disagree with this conclusion. Emily was the only 1.5 generation Korean American who explicitly mentioned the importance of her generation's bridge-builder role to the definition of 1.5. Importantly, however, Emily was the outlier among interviewees in terms of age. She was born in Seoul in 1963 and immigrated to Los Angeles when she was 8 years old, which places her in the same generational cohort as the subjects studied by Park (1999) and Abelmann and Lie (1995). Emily says:

EMILY: It's a niche. It sounds like... a bridge function. It's like my parents, even though they know English [...] they couldn't really speak it, so it took them a long time [...] And I had to provide – and my generation, and my siblings and cousins – had to do a lot of translating... had to learn the mainstream, and translate the mainstream to my parents in the Korean culture, and also had to translate the Korean ways and Korean culture and mindset to the mainstream. So it's a bridging effect, does that make sense? So in that function, when they say 1.5, that's the role that I was placed in, having immigrated as a child and having been able to adapt very quickly to this culture, and then also being immersed in the other culture and language. (40-2512)

What has changed since the 1970s, when Emily was a child, translating for her parents? Only that many young Korean Americans, regardless of their birthplace, continue to do the

⁴This is unsurprising, as the sample specifically selected for Korean-speaking interviewees.

same work that she did, while at the same time, the Korean American immigrant community has grown enough in size and resources that the burdens of bridge building and cultural brokerage no longer rests only on their shoulders.

In accordance with my interviewees' general consensus that generational status depends on one's birth, I categorized the fourteen interviewees who moved to the United States as infants or children as 1.5 generation. Among these fourteen individuals, the median age of immigration was 8 years. Nine of them identified as being dominant in English rather than Korean, while five described themselves as equally proficient in both languages. All of them reported identifying ethnically as either Korean or Korean American, with no particular trend to any generation group to any particular category (and also, as we shall see, a wide variation in the definitions of "Korean American" and even the word "ethnicity"). In the next section, I examine how their voices were rated in terms of accent and proficiency in both English and Korean.

6.3.2 Quantitative Analysis

First, the results from the rating task are reported. These will be followed by a qualitative analysis of the metalinguistic commentary from specific 1.5 generation Korean Americans.

Unsurprisingly, the proficiency ratings in Korean were higher for the 1.5 generation than the second generation. Yet all of the interviewees were rated as being proficient in English regardless of generational status, with nearly every interviewee scoring above 4.5 out of 5. This is illustrated in Figure 6.1. The outlier among Korean proficiency ratings was Melanie, whom we have discussed before as having immigrated to the United States while she was an infant (and therefore sharing many early childhood experiences as many second generation Korean Americans). The outlier among English proficiency ratings was Rugeyong, a 1.5 generation Korean American who immigrated when she was 16 years old (the highest age in the Age of Arrival range).

Interestingly, the accent ratings in English were also equal between 1.5 and second generation, with a median score for each generation of about 3.75. We can conclude that the Korean Americans in our sample sounded, to our raters' ears, more likely to be confused for a white speaker of English than not, which in turn implies less of a marked Korean or Korean American accent. However, 1.5 generation speakers were not likely to score higher or lower on this scale than second generation speakers. The accent ratings in Korean were the same as the proficiency ratings: 1.5 generation Korean Americans were perceived as sounding more like a native speaker of Korean from South Korea than second generation Korean Americans. These findings are illustrated in Figure 6.2. The same two subjects scored below the interquartile range for accent as for proficiency: Rugeyong, whose English speech was perceived to be the least white-sounding, and Melanie, whose Korean speech was perceived to be the least native-like.

Because generational status did not seem to differentiate English accentedness ratings

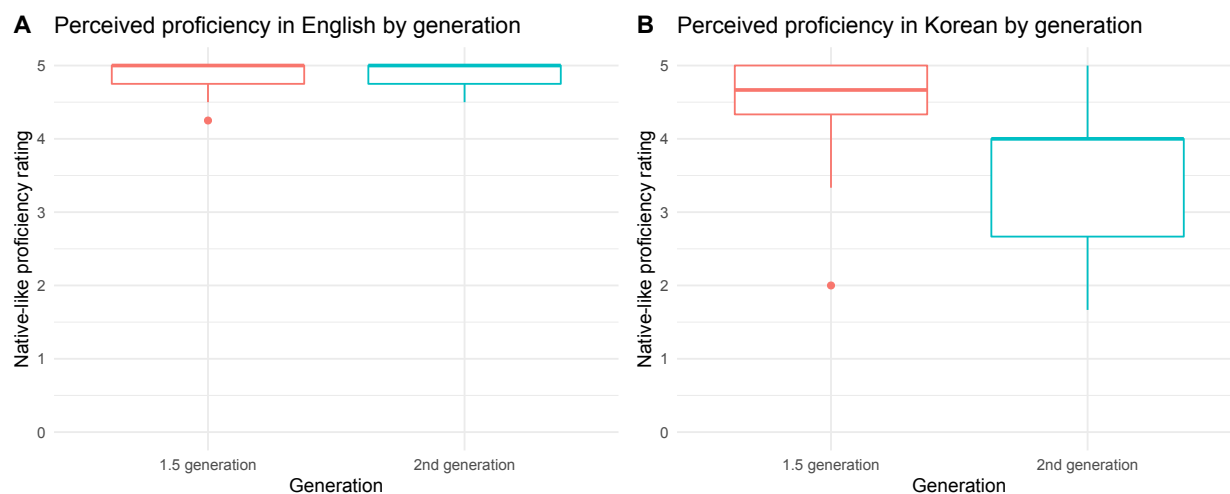


Figure 6.1: Perceived proficiency ratings in English (A) and Korean (B), split by speaker’s generational status. The outlier in (A) is Subject 39 (Rugyeong), and the outlier in (B) is Subject 04 (Melanie).

among Korean Americans, I wondered if Age of Arrival (AOA) would be a better predictor⁵ than generational status alone. As it turns out, there is a significant relationship. A linear regression was fit to the data from 1.5 generation Korean Americans alone, and found that AOA significantly predicted the English accentedness rating ($F(1,12)=5.926$, $p=0.0315$). The model summary can be seen in Table 6.2.

However, it is important to note that the second generation Korean Americans ranged from below 3 to a perfect 5 on their English accentedness scores, which covers nearly the entire range of scores for 1.5 generation Korean Americans. When second generation Korean Americans were added to the model, the relationship between AOA and accentedness fell below the threshold of significance at an alpha of 0.05. The (weak) correlation persists, as illustrated in Figure 6.3.

No other recorded or calculated demographic measurement (including age, gender, and Korean cultural adjacency⁶) came as close to determining English accentedness as AOA. However, even AOA was barely significant as a predictor of accentedness. In the interim, we can conclude that the trait of being 1.5 generation in and of itself does not affect the perception of a Korean American’s English.

⁵Noting, of course, that an exact AOA for some Korean Americans who have moved back and forth between South Korea and the United States does not fully account for their environmental language experiences.

⁶See Appendix F.

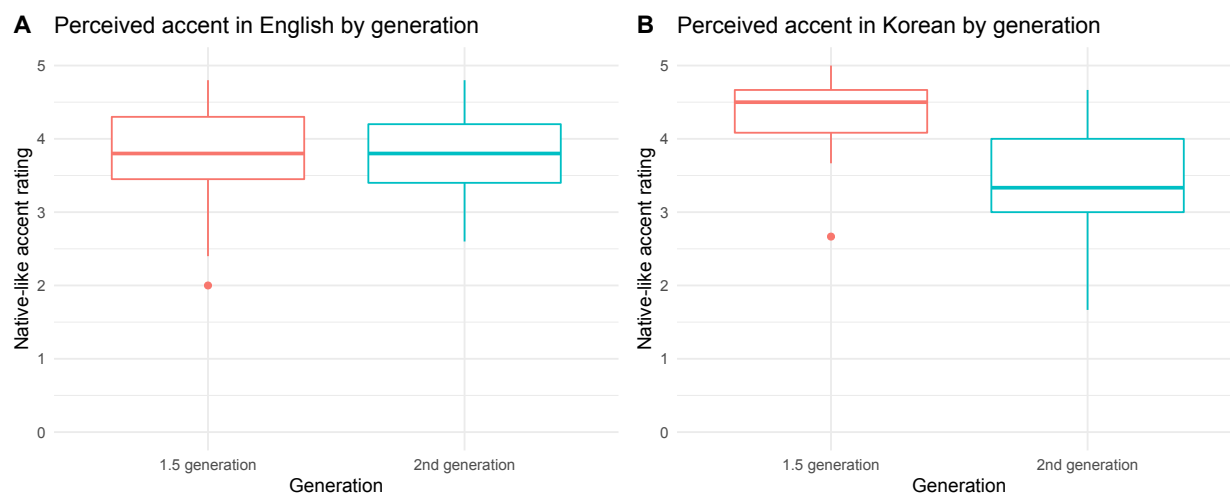


Figure 6.2: Perceived accent in English (A) and Korean (B) by generation. The outlier in (A) is Subject 39 (Rugyeong), and the outlier in (B) is Subject 04 (Melanie).

Table 6.2: Model summary for English accentedness ratings by Age of Arrival (AOA).

<i>Dependent variable:</i>	
mean.accent.eng	
Age.imm	-0.107** (0.044)
Constant	4.534*** (0.382)
Observations	14
R ²	0.331
Adjusted R ²	0.275
Residual Std. Error	0.674 (df = 12)
F Statistic	5.926** (df = 1; 12)
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01

6.3.3 Qualitative Analysis

So, what did 1.5 generation Korean Americans have to say about their English and Korean speech? Many of the themes that emerged involved feeling some amount of doubt about the

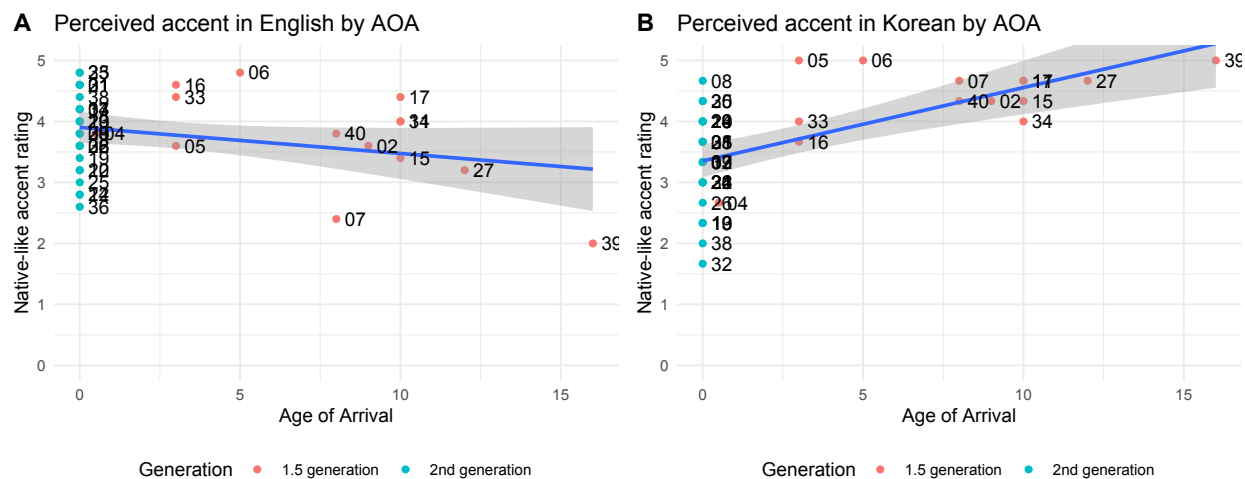


Figure 6.3: Perceived accent in English (A) and Korean (B) by Age of Arrival (AOA).

legitimacy of their Korean identities if they could not speak Korean as well as they wanted to. Hojun, a 1.5 generation Korean American who immigrated at age 10, said, “If you just only speak English, [the Korean community doesn’t] really see you as Korean, that you’re just a Korean American. But if you can communicate with them fluently in Korean, then it’s like you’re one of their own” (11-917). He creates an interesting opposition between Korean and Korean American, implying that only those who can speak Korean fluently would feel like they belong in the former group.

Lisa, a 1.5 generation Korean American who also immigrated when she was 10, took it even further, explaining that over time, if a community lost the heritage language, they might lose the ethnic label, as well.

LISA: If my great-great-great-grandfather moved here from Korea, and I’m, like, the seventh generation living in America, I would definitely- I would probably call myself, like, an American, who only speaks English⁷. So there is a really... I think the relationship [between language and ethnicity] exists when an individual defines themselves as a certain ethnicity and the language the person speaks. (15-1689)

⁷It’s worth nothing here that the assimilatory process that Lisa described is the pattern that has been observed for generations of European immigrants to the United States, such as German and Irish immigrants of the early 19th century and the Eastern European, Jewish, and Italian immigrants who followed in the 20th. However, the large influx of Asian immigrants following the Immigration Act of 1965 has not followed the same pattern, because Asian immigrants in the United States have been racialized in a very different way from European immigrants, such that the stigma of foreignness has prevented them from being seen as

Janice and Sungwoo, who immigrated at the ages of 10 and 12, respectively, expressed similar ideas about the importance of Korean language ability for identification as Korean American.

MC: How important do you think language is in terms of identifying with a culture or ethnicity?

JANICE: I think it's probably one of the most important factors. I have some Korean friends, like, one of them doesn't know any Korean at all, and so he is ethnically Korean, but culturally he's not Korean at all. (17-1492)

JANICE: It seems like [...] if they start to lose Korean, they start to identify more as, like, American, culturally. So I think the more you know a language, the more likely you are to know about that culture and identify more strongly with it. (17-1539)

Sungwoo put it even more bluntly:

AC: So if you couldn't speak Korean, then would you feel like you were less of a Korean person?

SUNGWOO: Yeah, I think I would.

AC: Yeah, okay. You know, there are a lot of Korean Americans who don't speak Korean?

SUNGWOO: Yeah.

AC: Do you feel like they're less Korean?

SUNGWOO: Technically, yeah. (27-1746)

The caveat, of course, is that the 1.5 generation Korean Americans were only expressing identity as Korean or Korean American, not being 1.5 generation Korean American specifically. In fact, many second generation Korean Americans expressed similar views about Korean American identity and the importance of being perceived as a fluent native speaker of Korean. One noted that when she spoke in Korean, she thought that she “turn[ed] more Korean than American,” but when she spoke in English, she would “just be American American⁸” (08-1080).

Among second generation Korean Americans, the idea that needing to speak Korean in order to be “legitimately” ethnically Korean seemed to be met with more resistance.

AC: Do people who are Korean need to speak Korean? Do people who are American need to speak English [...] ?

“only” American in the same way that people who have been racialized as “white” are (Lowe 1996; Tuan 1998).

⁸Which is quite an interesting use of contrastive reduplication.

KELSEY: Oh, I mean, personally, I think- I think that's bullshit.
 [...] I mean, language is obviously an important marker of identity, but, um, I don't see the need to be, like, prescriptivist about it. I'm not here to impose, like, any rules about how people should express themselves, as long as they can express themselves. (35-1892)

But some 1.5 generation Korean Americans felt the same way, such as Emily:

EMILY: ... But just because, you know, somebody's not able to speak in [Korean] doesn't mean that their ethnic identity goes away.

AC: Yeah, so, if you woke up tomorrow and forgot all of your Korean...?

EMILY: I'm still Korean. (40-2869)

In the end, I found it impossible to separate the perspectives of 1.5 generation Korean Americans from second generation Korean Americans. The entire spectrum of viewpoints on what it means to be Korean American and how important the use of the Korean and English languages is to that identity could be found among both generational groups. Members of both generational groups reported that they felt a need to speak better Korean, and had received comments about the quality of their English that highlighted a perceived foreign status. In terms of personal ideologies of language and identity, 1.5 and second generation Korean Americans have more similarities than differences. And perhaps the feeling of double consciousness for bilingual and bicultural Americans was best crystallized by a second generation Korean American:

MC: Do you feel [more] like yourself when you speak in English or Korean?

KRYSTAL: That's another hard one... I think I feel... um, most at myself when I'm free to switch between the two. (14-1074)

Much like 1.5 and second generation Korean Americans could not be easily differentiated according to ratings of their accent in English, they are similar to one another (and, importantly, similarly diverse) in the ideologies of language and ethnicity that they hold.

In the following section, I will analyze in more detail the speech of three 1.5 generation Korean Americans, two female and one male, who have different patterns of speech in English that reflect their 1.5 identity. The analysis includes quantitative and qualitative descriptions of their speech using visualizations from Praat (Boersma and Weenink 2016), as well as qualitative analysis of the content of their speech. In the first case study, I will analyze how Jimin's idiolect falls in between that of a native (white) American English speaker and an adult acquirer of English with Korean as an L1. I further note how the variability in her own

phonological system can be linked to topics and attitudes regarding her Korean background. In the second case study, I will examine how Peter’s language ideologies affect how he perceives Korean-accented English and creates stereotypes of specific Korean American groups. In the third case study, I will examine Hae-in’s speech, which was rated as one of the most “white-sounding” of all the interviewees, in the context of when she began to identify more strongly with her Korean heritage.

Jimin, Peter, and Hae-in all received different scores for perceived “white-sounding” accent in English, as illustrated in Table 6.3. All of them scored very high (between 4 and 5) on the Korean accent scale.

Table 6.3: Demographic information about the three case studies of 1.5 generation Korean American speech production and perception, including ratings of accentedness in English (E) and Korean (K).

Name	Accent (E/K)	Gender	YOB	AOA	Locations
Jimin (S07)	2.4 / 4.67	female	1999	8	Seoul; Fullerton, CA
Peter (S02)	3.6 / 4.3	male	1996	9	Seoul; Cupertino, CA
Hae-in (S06)	4.8 / 5	female	2000	5	Busan; Washington, D.C.

6.4 Case study #1: Jimin

The first case study comes from an interview with Jimin. She identifies as a 1.5 generation Korean American, although when prompted, needed to clarify for herself what that actually meant. After some thought, she said,

JIMIN: I’ve always considered myself 1.5, but...

MC: Mhm.

JIMIN: Now that I think about it... I think second generation would be, like...

JIMIN: K- kids- Korean kids who are born in America. But I came in the middle of my life I guess.

MC: Right.

JIMIN: So I consider that 1.5, yeah. (07-822)

Jimin considers herself fluent in both English and Korean. She was born in Bundang, a large suburb just south of Seoul, to parents who are both from Seoul. At the age of 8 (the “middle” of her life), Jimin immigrated with her parents to Fullerton, California, a city in Orange County, that has a large Korean immigrant population, and lived there until moving to Northern California for college.

As a child, she and her sister spoke with their parents solely in Korean, but she would speak with her sister in English. Outside of the family, Jimin would not use Korean very much, since she went to a school with not many Koreans and attended the English-language services at a local Korean church. Knowing very little English when she arrived, Jimin began to feel equally comfortable speaking in English and Korean when she attended high school. (Alternatively, this could be considered when she no longer felt more comfortable speaking in Korean compared to English.) Today, Jimin feels that her use of both languages is a little bit contextualized.

JIMIN: I think speaking-wise, Korean might be more articulate; like it sounds more logical, um, but writing-wise, I'm more comfortable in English expressing myself. (07-949)

She continues to use Korean with her family and has attempted to speak in Korean with Korean international students on the college campus by attending the meetings of a Korean student association. However, to her disappointment, there was a slight social language barrier.

JIMIN: I chose to join a Korean club, because I wanted to go, like, belong to a larger Korean community.

MC: Mhm.

JIMIN: But at the same time, when I was there, I was like, "Oh, I get to talk to these people, like Koreans," but I felt, like, slightly out of it too [...]

JIMIN: I think it's 'cause they're mostly international students, they're very up to date with, like, Korean trends and... just the way they... talk. [...] I thought I was, like, *fluent* in Korean.

MC: Right.

JIMIN: I think I am, but even then it feels a little different. (07-1059)

When discussing the nature of accents with her peers and friends, Jimin has noted that her friends do think she speaks English with a slight accent that they can pick up on if they talk to her for a long time. And as noted above, she believes that the way she speaks Korean is different from that of the Korean international students at her club. However, her parents have never worried too much, according to her, about whether their daughter's Korean language skills were lacking due to her use of English outside of the home.

MC: What do [your parents] think about, like, how good your English is? Do they sorta see it as... in competition with your Korean skills, that sorta thing?

JIMIN: I think they think it's good enough that I can survive in American society, but it's not worrying them to the point where they're like, "Oh no, what if she loses her Korean identity?" (07-1297)

The notion that language ability, ethnic identity, and adaptation to American culture are all closely linked comes out clearly here, even through an aside. Although Jimin was aware that the overarching subject of the interview was language and identity, in this exchange, the interviewer, MC, did not explicitly mention identity. Yet Jimin's response to the question, like so many others, straightforwardly links English skills with success in American society, and loss of Korean skills with loss of Korean identity.

6.4.1 Consonants

Although Jimin has demonstrable confidence in her language skills, there are aspects of her voice that are not characteristic of a native (white) American English speaker, some of which were easier to discern from just the audio data, and others of which required some acoustic measurements.

The first aspect of note is the articulation of /ð/ and /θ/, the voiced and voiceless interdental fricatives. In American English, these are articulated with the tongue between or just behind the front teeth, and with a duration comparable to that of other fricatives (such as /s/ and /z/).

Native Korean speakers who learn English as a second language are known to have difficulty articulating these two sounds, since they do not exist in the Korean phonological system. In English loanwords into Korean, /θ/ may be substituted with /s/ or /t/, as in "Black Panther" ([pʰʌllɛk.pʰɛnsʌ]) or "Thor" ([tʰɔru]). Its voiced counterpart is usually substituted with /d/, as in "Mother" ([mʌdʌ]). All of these sounds, in American English phonology, are categorized as alveolar sounds, which is a more posterior place of articulation. Hence, the commonly identified marker of Asian-accented English:

JIMIN: They can't do the R's and L's, and they can't do the *thh* sound. (07-1519)

Jimin admits that some aspects of Korean-accented English (specifically Korean, as opposed to a more general "Asian accent") are unknowable to her, as someone who demonstrates some markers of it herself but only realized it when it was pointed out to her. It is telling that in her English speech, the voiceless interdental fricative /θ/ is indeed articulated in between the teeth in the American way, and that is the phoneme she identified as being a point of difficulty for others.

On the other hand, Jimin's articulation of the voiced interdental fricative /ð/ varies wildly, and is always at least partially stopped, or pronounced similar to a /d/. The best example of this arises when Jimin discusses her childhood language use with her parents.

JIMIN: Sometimes I would just say stuff in, like, random English, and my parents would just be like, “Oh, okay.” But **they** would talk to me in Korean. (07-638)

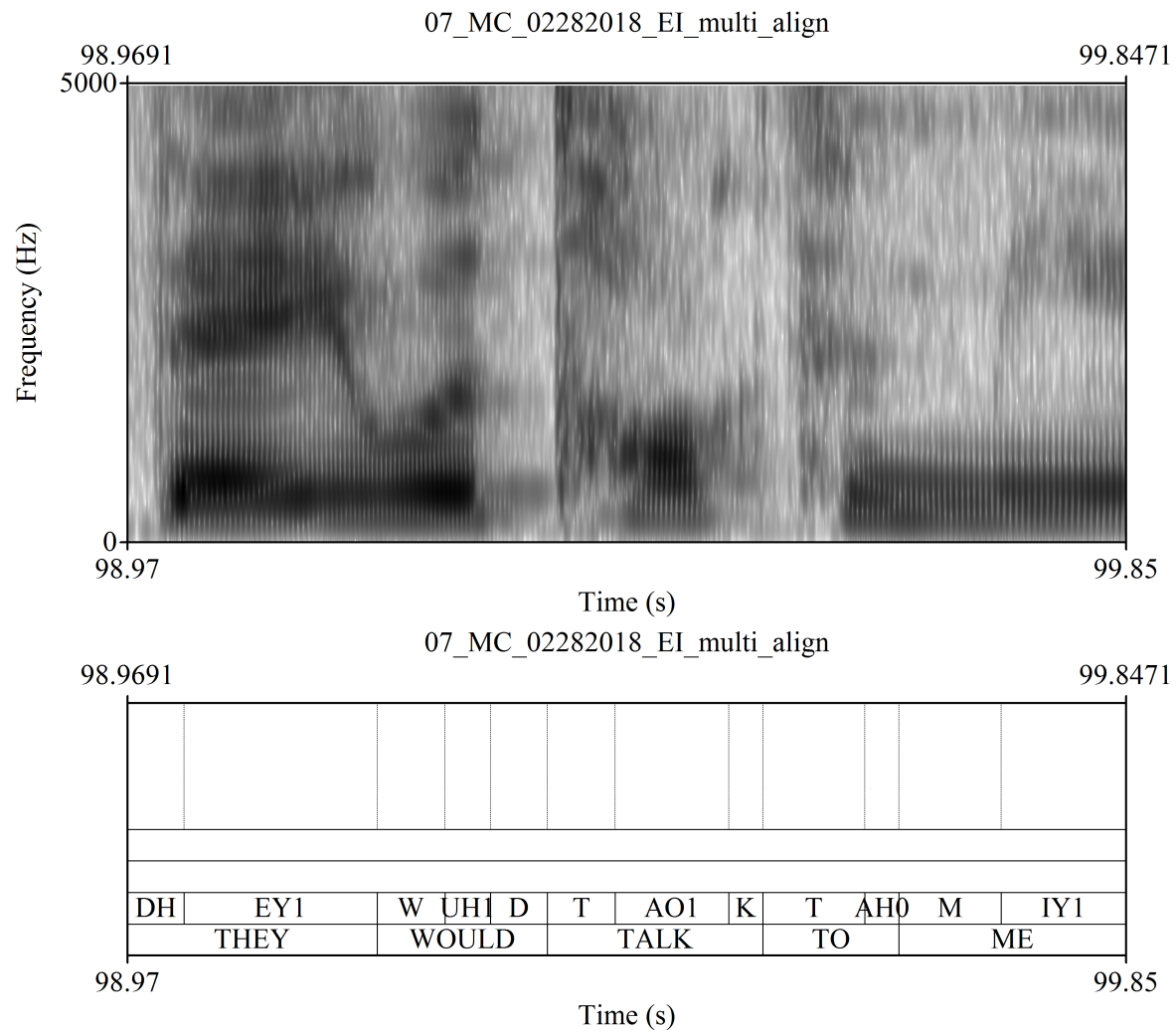


Figure 6.4: Subject 07 (Jimin): “they would talk”, with a characteristic short fricative at the onset of “they” (coded here as “DH”).

The /ð/ in the word “they”, at approximately 98 seconds in the spectrogram in Fig. 6.4, is much shorter in duration than an American English fricative would normally be, which is evidence of stopping⁹.

⁹Thanks to Susan Lin (p.c.) for pointing out that this kind of stopping, or fortition, should be common among any American English speaker in the context of a sentence onset.

Other interesting observations about the coronal consonants in Jimin’s idiolect include longer-than-average Voice Onset Time for onset /t/, as in “hard **to** tell”, as well as frequent /t/-deletion in complex clusters, such as the word “approximately” in Figure 6.5. While /t/-deletion is a common phonological process for native speakers of American English, it is usually replaced with a glottal stop. In Jimin’s token of the word “approximately”, the /t/ is dropped wholesale, without any glottal stop or really any closure of any kind.

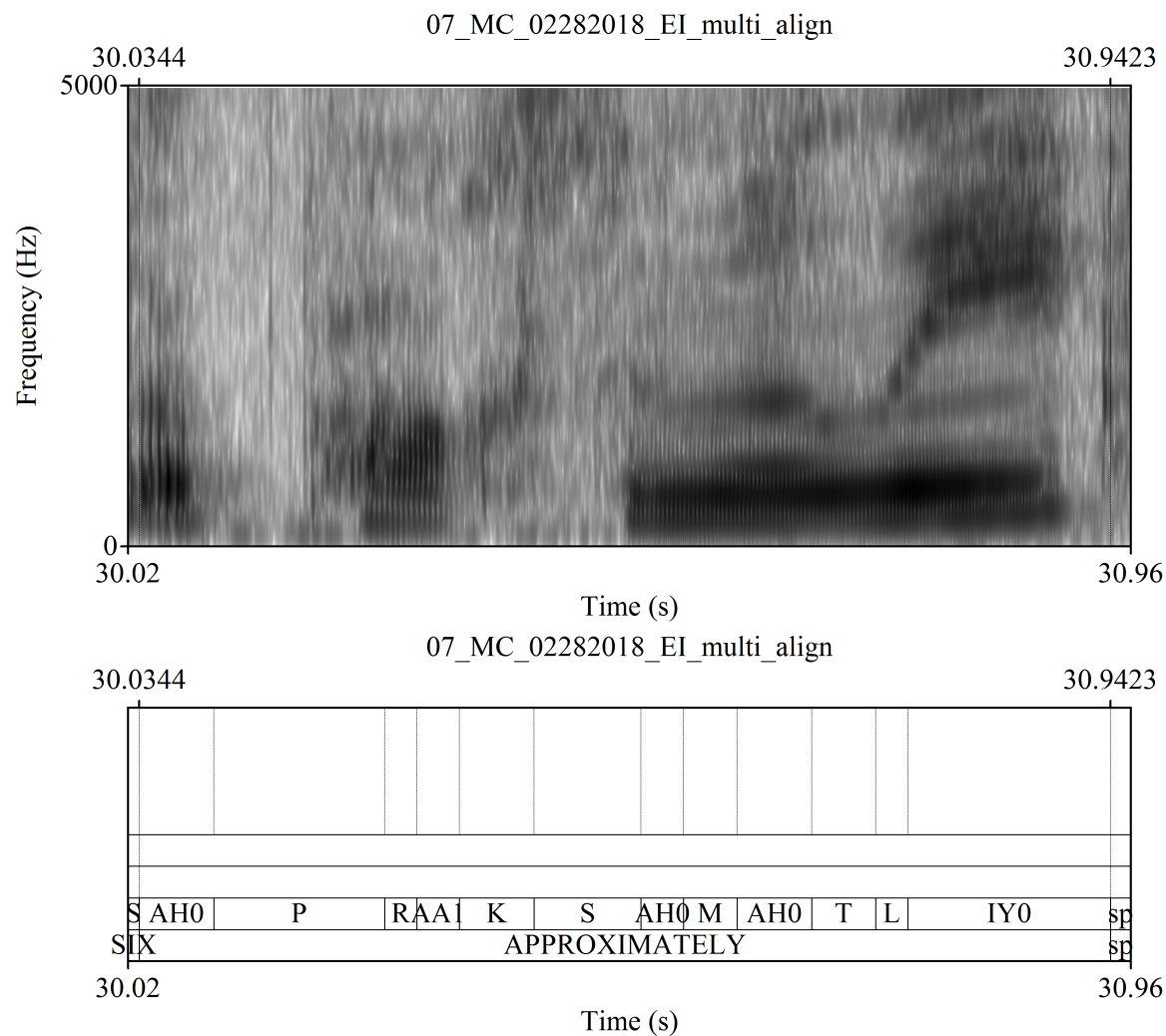


Figure 6.5: Subject 07 (Jimin): “approximately”, highlighting /t/-deletion.

6.4.2 Vowels

The second highly salient aspect of Jimin’s voice is in her use of vowels. In general, her inventory of vowels in English is somewhere between that of what might be considered white

Californian English, or the standard of Orange County, and the standard Korean vowel inventory.

One example is in the vowel /aʊ/, as in “out” or “about”. In Californian English, this diphthong is raised and tense in the beginning (/a/), then quickly moves toward the mid-back vowel (/ʊ/). One characteristic of Korean-accented English is that because there are no diphthongs in the Korean vowel inventory, diphthongs are realized as two vowels in hiatus. This means that they will be slightly longer in duration than an English diphthong. In addition, the Korean vowel inventory has an /a/ that is farther back than the American English /a/ to begin with, and it does not have /ʊ/ at all. So, in pronouncing /aʊ/, a Korean-speaking learner of English may have a longer, backed vowel overall: [a:ʊ].

In Jimin’s speech, we do find noticeably backed /a/, /æ/, and /aʊ/¹⁰. In particular, her pronunciation of the filler word “yeah” has the most instances of a backed /æ/ vowel. But it is also highly variable.

Variability in the acoustic measurements of a vowel is, of course, expected. Even monolingual American English speakers will produce lots of variability over the course of a dialogue for all of their vowels. But the variability is also a gold mine for analysis.

In particular, I would like to focus on the realization of the high back diphthong /oʊ/, as in “go” or “so” in Jimin’s speech. As a person from Southern California, it is expected that her realizations of /oʊ/, as well as the high back vowel /u/ (as in “two”), will be fronted, as part of the ongoing California Vowel Shift.

To test for the quality of Jimin’s /oʊ/ vowels, I extracted sixteen tokens of the vowel in monosyllabic words with either no coda or a bilabial consonant coda. The formant values were taken at each diphthong’s midpoint and then plotted on an F1×F2 plot (Figure 6.6). Each token was coded for the word it was taken from, the context in which the word was used, and whether it sounded (based on my own judgment) like a typical fronted Californian /oʊ/.

Indeed, it was found that /oʊ/ was quite variable in Jimin’s speech. But some tokens were easily identifiable as being backed (rather than fronted, per the California Vowel Shift). As can be seen in Figure 6.6, the five backed tokens had the lowest F2 values, indicating backness. These tokens were also monophthongized, which is to say that they surfaced as closer to the Korean /o/ vowel than an American English /oʊ/.

The best example of this is in the word “home”, when Jimin is describing the Korean cuisine she ate while growing up.

MC: What sort of food did you grow up eating?

JIMIN: **At home** mostly Korean food. (07-1166)

The token of “home” in the excerpt above has an F2 value of 870 Hz, which places it far to the back of Jimin’s vowel space. Other backed /oʊ/ tokens occur in the word “go”, uttered in the context of joining a Korean Students Association: “I chose to join a Korean

¹⁰This is most evident in words like *at*, *talk*, *yeah*, and *about*.

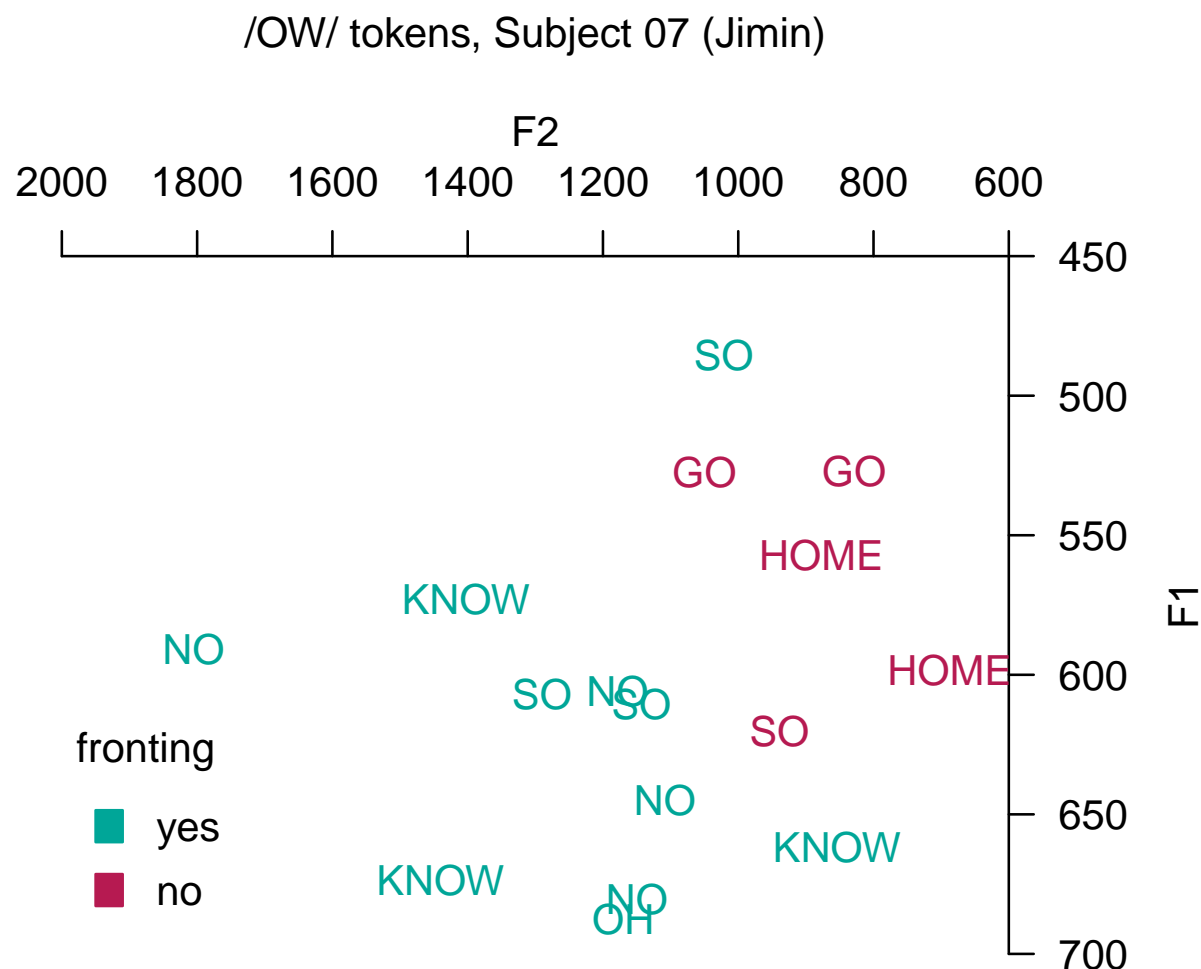


Figure 6.6: Tokens of /ou/ from Jimin’s interview, with audibly fronted tokens in blue and audibly backed tokens in red.

club because I wanted to **go**, like, belong to a larger Korean community” (820 Hz), and a discussion of Korean American immigrant communities on the East Coast: “You could almost be like, live here [...] without speaking English pretty much, but like, if you **go** to more suburban regions, I think, then your English is probably gonna get better. Like you’ll be more Americanized” (1040 Hz).

These tokens are among the audibly backed instances of /ou/ in Jimin’s speech, which was, again, generally very backed for an American English speaker. This could be due to the influence of Korean phonology in her speech, having been raised in Korea for the first half of her life. That said, Jimin is also capable of producing /ou/ tokens that are shifted in the California style.

In two instances of the word “know”, Jimin produces very audibly fronted vowels. The

first, with an F2 of 1440 Hz, occurs in a discussion of her parents' perception of their daughter's English:

MC: What about English?

JIMIN: I think they think my English is p- [laughter]

MC: [laughter]

JIMIN: They probably won't **know**, but I think they think my English is good.

MC: Yeah. (07-1281)

The second, with an F2 of 1400 Hz, occurs when Jimin talks about loving the diversity of cuisines in the United States.

JIMIN: But I was really happy when I came to America 'cause I love, like, other country foo- I didn't **know**, but-

MC: Right, right.

JIMIN: Obviously. But when I grew up, I was like, "Oh man, I love Mexican food," so, yeah. (07-1172)

A third token of "know" is not as far fronted as the other two, with an F2 of 850 Hz, but it also happens to be lowered, with an F1 of 660 Hz. This still serves to differentiate it from a monophthongal /ou/ in two dimensions (F1 and F2). This final token occurs when Jimin is asked what Korean-accented English would sound like, and she says, "I actually wouldn't **know**, 'cause, um, I've heard that I have them!"

By far the most salient example of the fronted /ou/ is the token of "no" that is has the highest F2 value, at around 1800 Hz. This long, drawn-out vowel was uttered in response to the interviewer's question of whether she spoke English at her church in Orange County. Consider the exchange:

MC: Was it a Korean church?

JIMIN: Yeah, it was a Korean church.

MC: Kay. Would you say that, mostly, you would speak in Korean there?

JIMIN: ... **Nooo**

MC: No?

JIMIN: Yeah, I- 'cause I was in the youth ministry, and we spoke English. (07-748)

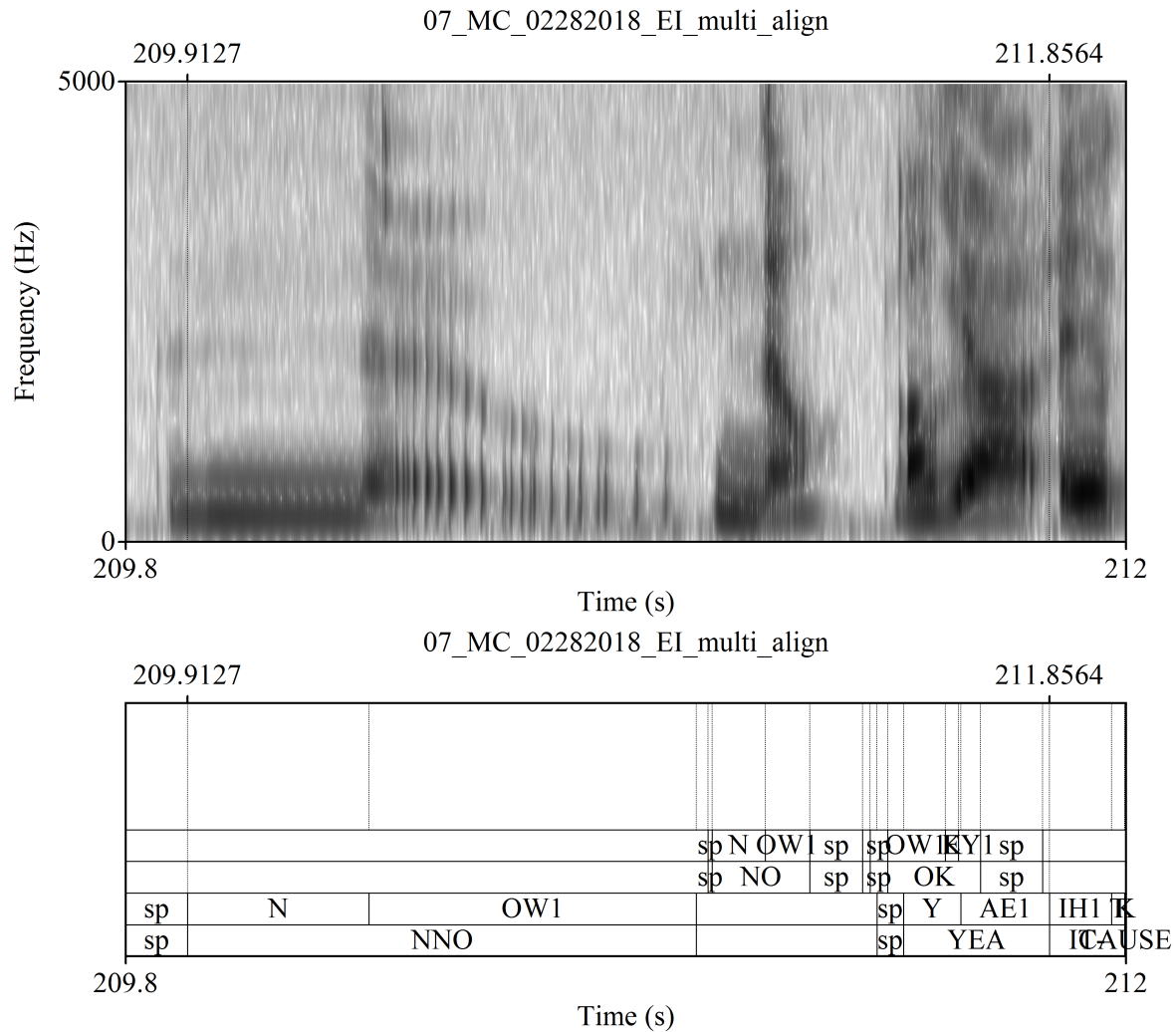


Figure 6.7: Subject 07 (Jimin): “Nooo... yeah.”

Jimin’s long “no” was uttered after a slight pause for thought, and was itself elongated, with large amounts of creaky voicing, to demonstrate hesitation (see Figure 6.7). It was not exaggerated in order to emphasize the denial, nor was it overtly used for social affect. However, it is relevant that the frame of reference for Jimin’s speech act here was the use of English in a supposedly Korean environment. Compare it to the other tokens of “no” in the same interview. The following was taken from earlier, when Jimin describes speaking in Korean with her parents even after moving to California:

MC: Then after you came to America, like, um, with your family, did you start speaking in English to them?

JIMIN: **No**, I think I continued speaking Korean to them **at**

home. (07-611)

The “no” token here is far less fronted, with an F2 of about 1100 Hz. In addition, the token of “home” is extremely backed with an F2 of about 690 Hz. When Jimin talks about feeling like she was always an a minority ethnic group growing up, her “no” has an F2 of about 1150 Hz, and when she alludes to talking with her friends about her accented language, her “no” has an F2 of about 1180 Hz.

Though we are drawing from only a handful of tokens, it is striking that so far, the instances in which we find the less-fronted versions of Jimin’s /oʊ/ vowel are when she negotiates her identity as a Korean and the use of the Korean language, whereas the most fronted instances of /oʊ/ occur in defense of the use of English or appreciation of American culture. It is consistent with the concept of accent divergence (Bourhis and Giles 1977), which “can be used to emphasize one’s ethnic identity and allow an in-group speaker to feel psychologically distinct from an out-group member” (1977:129). These findings are also similar to Chun (2001), which analyzed one Korean American male’s variable use of syntactic and phonological markers of African American Vernacular English as a means of negotiating his Asian American identity.

6.5 Case study #2: Peter

Our second case study comes from a 1.5 generation male, aged twenty-one, who reports that he gets “mixed reviews from people” (02-1017) on whether he has a marked accent in his English. Peter was born in Seoul and immigrated to Northern California with his parents at the age of 9. Although Peter studied English only cursorily while in school in Korea (as part of a standard national curriculum), he had only two years of English classes before moving to the United States and did not consider himself fluent when he arrived. However, Peter does claim that he became comfortable using English at around age ten or eleven, and soon thereafter became dominant in English.

CJ: So which language are you most comfortable with right now?

PETER: English... yeah.

CJ: And when you think, do you think in English?

PETER: Yeah, I think so. I think only time I use Korean when I think is when I count, like small numbers. (02-496)

A development time from receptive to productive bilingualism of only one or two years is fairly quick for a child immigrant like Peter, who used Korean at home with monolingual parents and grandparents. It was faster, for example, compared to Jimin, who immigrated at about the same age but did not feel comfortable with English until high school, and to other 1.5 generation interviewees who generally cited middle school as the age of onset of

comfort in speaking in English. (This also happens to be the most commonly cited age at which second generation Korean Americans report that they began to lose their Korean ability.)

Early studies in phonological acquisition of L2 English speakers indicate that the age of acquisition of English is the most significant predictive factor in amount of accent (Flege et al. 1999), although it is acknowledged that it is more accurate to consider “age of L2 learning” (including AOA and the age “at which [participants] could first speak English comfortably” (1999:92)¹¹). In Yeni-Komshian (2009), Korean American participants were broadly categorized as Korean-dominant, English-dominant, or roughly balanced in their language competence, and it was found that the English-dominant group, on average, arrived at age 6 and reported feeling comfortable in English around age 7. The balanced group, on average, arrived at age 11 and reported feeling comfortable in English around age 12. So it is not surprising, given past research, that Peter’s acquisition of English was fairly quick, but he happens to be ahead of the curve compared to other participants in the current study.

Peter has a clear personal definition of what it means to be Korean American of a particular generation.

PETER: I think I’m 1.5, or second, yeah

CJ: How would you define 1.5?

PETER: I think it’s people like me who are... born in Korea, but most of their growth and, like, childhood is marked by their American side [...] (02-836)

CJ: And second gen?

PETER: It’ll be like, yeah. So like when you’re either born in America or you come at such an early age that you have almost no memory or background of your, like, home country, but mostly just in America, yeah. (02-872)

Although he initially says “1.5 or second” in self-identification, the definitions he later gives plant him squarely in the 1.5 category (“people like me”). Peter makes a few additional remarks that distance himself from the two other categories, first gen and second gen. In one instance, he is describing how the ethnically Korean community he has here, including friends at a largely Korean American local church, is not especially marked by use of the Korean language. That is to say, he does not speak in Korean to the other Korean Americans he knows. However:

CJ: Do you speak Korean with any of, like, [your church’s] people or...?

¹¹See also Jia et al. (2006) and Flege (2007) for a discussion of confounding variables and Luk and Bialystok (2013) for what the authors call “age of onset of active bilingualism”.

PETER: Sometimes... like, there's, like, one girl who's, like, from Korea, so sometimes I help her out in Korean, but... no, it's mostly in English. (02-748)

With emphasis placed on how this fellow congregant is “from Korea”, Peter implies that he is not from Korea, even though he was born in Seoul and lived there until age nine. This utterance distances himself from first generation Korean Americans.

He also comments on second generation Korean Americans, not necessarily creating opposition between himself and the second generation Korean Americans he knows, but casting doubt on the legitimacy of their language skills. As context, Peter was given Korean language lessons from his mother, who is a Korean literature teacher, and today he believes that it is important to retain his Korean speaking skills.

CJ: So is it important to you to, like, speak Korean like a native speaker?

PETER: Personally? Um, I personally think it is important to retain your, like, mother tongue, um. I don't know if you need to speak like a native, but I think you should be conversational. (02-907)

The fact that he has been told (by his parents and others) that he speaks Korean with an accent does bother him (“I think it's a pride thing”), although he's not too concerned as long as he can communicate. But soon after, he highlights the existing stereotype of Korean Americans with poor command of Korean (implied to be second generation Korean Americans):

CJ: Then when you speak Korean, do you want people to think of you as like native Korean speaker?

PETER: [...] Yeah, I think I would want them to think I'm competent enough to, like, speak and express myself and not be viewed as like a stereotypical Korean American that, like, doesn't know how to use, like, *contaysmal*¹² or [laughs] things like that. [...] Again, I think that's in most contexts, especially in, like, churches, or like, in families, like, I don't wanna sound like a baby. (02-1100)

Here, he frames the stereotypical Korean American as someone who does not know how to express their thoughts and who speaks Korean like a baby.

A similar kind of blanket judgment is echoed in Peter's casual descriptions of the differences between Koreans who are from Northern California (NorCal) and Southern California (SoCal). He admits that having grown up in Northern California, he has a bias for his home turf.

¹²A form of polite address that is part of Korean morphosyntax, and it has nothing to do with accent or phonology.

PETER: [Laughter] I think it's like a personal low opinion 'cause I'm from NorCal. I think NorCal Koreans are a little less like... bad? Or, like [laughter] I feel like they're less, like, cliquy and less um... like, dramatic? And less social, too, also. I think SoCal Koreans are a lot more, like, social together, a lot of them know each other and because of that, like, there's always, like... stories and rumors going around. That's, like, my perception of SoCal Koreans... yeah. (02-1438)

Overall, SoCal Koreans are viewed rather negatively in Peter's eyes. However, when asked to describe any linguistic differences, he also deems them as generally better in their Korean skills compared to NorCal Koreans.

CJ: Do you think there's any differences when they speak Korean?

PETER: Yeah, I- I've noticed that, um, SoCal Korean American-like, Koreans are, like, a little stronger. They're, like, faster, and they're a lot more, like, slangier. Whereas- and I think more of them, like, are good with hearing and, like, understanding. But then, like, NorCal Koreans, like, in general, have less... like, less Korean abilities, and then they're also, like, they use more Konglish¹³ and stuff, and yeah.

CJ: What do you mean by, like, "stronger"?

PETER: It's like a very general stereotype but [laughter] and I think it's just... It's like, you know how there's, like, the Valley Girl accent in SoCal, it's like, it's like, it's not like a *sathwuli*¹⁴ in Korean, but they're just like... Yeah, just like, [...] I hear a lot of them using, like, certain Korean words very, like, loudly or, like, in an elongated way, or stuff like that, yeah [laughter].

CJ: Okay... Do you have any opinions on-

PETER: I'm so bad, it's so stereotypical, yeah.

CJ: [laughter] It's okay, um, do you have any opinions on, like, Koreatown Koreans?

PETER: Ye- that's I think mostly what I'm basing off of, like K-town Koreans, yeah, or like, Torrance Koreans, yeah. (02-1511)

¹³Korean mixed with English, or English words transferred into the Korean phonological system.

¹⁴One of several recognized regional dialects of Korean that clearly marks the speaker as being from anywhere but Seoul.

Clearly, Peter holds fairly strong language and ethnic ideologies and does not shy away from casting implicit or even explicit judgments on specific groups of people. There is slight judgment of SoCal Koreans for being loud, shallow, and perhaps unrefined, and he places himself squarely in opposition to them. At the same time, NorCal Koreans tend to be worse at Korean, which aligns with the negative stereotype he cited earlier for second generation Korean Americans, another group he categorizes himself in opposition to.

6.5.1 Word-final stop release

Peter's explicit ideologies for English language skills are similar: he believes that it is important to have a good command of English, especially in the context of his academic community, since it is the lingua franca. We can turn now to an analysis of Peter's English. Having been told by many that he speaks English with an accent, Peter strives to "be eloquent" and to speak as naturally as he can.

In fact, when Peter says the word "eloquent", he pronounces the word-final /nt/ cluster with a heightened /t/-release. In the entire phrase, he uses clear word-final stop release several times:

PETER: Think [k[̚]] sometimes I do, yeah. I d- I don't want them to be thinking about my **accent** [t^h]... or anything, but rather what I'm saying, so I think [k^h]... Yeah. I try to be **eloquent** [t^h] and I think [k^h] I try to... speak [k] as naturally as I can. (02-1044)

(His speech here is also marked by more hesitations, a fronted /u/, lowered pitch, and frequent creaky voice.) A quick survey of every word-final /nt/ cluster in Peter's speech throughout the interview, pared down to only instances of words that did not occur before a homorganic consonant (e.g., excluding "important that", "want to"), found five instances of heightened /t/-release, as well as five instances in which /t/ could have been released but was not.

There is variability in Peter's word-final /t/-release. Most of the time, he does use an audible release at a word boundary, which from a purely phonological level is evidence of transfer from Korean. Because Korean does not allow complex codas such as /nt/, a word such as "accent" will be broken into three syllables: [ɛk.sen.t^hu], with an epenthetic vowel at the end. This could account for the aspirated /t/-release words in Table 6.4. However, there are other instances of phonologically similar words that do not have a released /t/.

Thus, I examine the semantic context in which Peter utters each of these words to see if there could be some pattern to the variation beyond a purely phonological explanation. Peter releases /t/ when he is discussing both his Korean language skills (e.g., counting, expressing himself) and his English language skills (e.g., his accent and his eloquence); he does not release /t/ when discussing his Korean language skills and the nature of different kinds of Asian-accented English. There is no evidence to suggest that the mere topic of one language or the other motivates the variation.

Table 6.4: Variable release in world-final /nt/ clusters for Subject 02 (Peter).

released	word	context	time
	count	“[the] only time I use Korean when I think is when I count , like...”	02-496
	content	“[if] I can fully express myself [in Korean] [...] I’m content with it”	02-939
	accent	“I don’t want them to be thinking about my accent [in English], or...”	02-1044
	eloquent	“I try to be eloquent , and...”	02-1044
	accent	“there’s like the Valley Girl accent in SoCal”	02-1543
unreleased	word		
	competent	“I would want them to think I’m competent enough [in Korean]”	02-1100
	accent	“I think it does build up to be part of an Asian accent , but...”	02-1778
	accent	“Asian accent is such a broad term”	02-1783
	accent	“especially when it’s, like, Chinese or Taiwanese acce- accent , it’s...”	02-1783
	different	“it’s, like, very different from Korean accents”	02-1783

However, the released /t/ words all occur during a portion of Peter’s interview during which he is considering his own speech carefully, regardless of language, with the exception of one instance in which he mentions the Valley Girl accent. This is important, because /t/-release has been shown to index hypercorrectness and care in speech as stances, even as it co-indexes specific personae such as nerd girl or orthodox Jew (Bucholtz 2001; Eckert 2008b), known for being articulate.

The unreleased /t/ words, in contrast, all occur within a specific interval of time, at the very end of Peter’s interview, during which he discusses accented English (with the exception of one instance of describing his motivations for speaking Korean fluently). For the majority of these twenty-five seconds of deliberation aloud, Peter speaks fairly quickly, and does not release /t/ in any words. (Out of six words with final /k/, such as “think” and “like”, he releases /k/ twice). In this case, the lack of /t/ release can be justified phonetically by greater speech speed, but I argue that it also indexes here a lack of care in speech that is indicative of when Peter talks about any group that he construes as an Other.

In other words, when he discusses his own speech, he takes great care to be eloquent and releases /t/. But when the topic is non-Korean Asian Americans who speak with accents, his rate of /t/ release decreases, and when the topic is Korean Americans from Southern California, another group he distances himself from, his rate of /k/ release also suddenly

drops.

PETER: Yeah, I- I've noticed **that** [t^ɿ], um, SoCal Korean American **like** [k^ɿ] Koreans are, **like** [k^ɿ], a little stronger. They're, **like** [k^ɿ], faster, and they're a lot more, **like** [k^ɿ], slangier. Whereas- and I **think** [k^h] more of them, **like** [k^h], are good with hearing and, **like** [k^ɿ], understanding. But then, **like** [k^ɿ], NorCal Koreans, **like** [k^h], in general have less... **like** [k] less Korean abilities, and then they're also, **like** [k^ɿ]...

Like all social users of language, Peter makes use of the variation that his dual phonological system allows (unreleased word-final consonants are available in both English and Korean) to index certain traits and stances. On one end of the spectrum is hypercorrect, clear English, which he uses to discuss his own language use (identity: articulate, educated English speaker, good communicator; stance: careful, thoughtful), and on the other is faster English, with less release, which he uses to discuss groups and individuals who are distinct from or in opposition to himself (identity: *not* first or second gen, *not* from SoCal; stance: patronizing, knowledgeable).

6.5.2 /ð/-stopping

When asked about the specific acoustic characteristics of Korean-accented English, Peter cites trouble with /l/ and /ɹ/ (as did most interviewees), and the breaking of diphthongs (e.g., “sky” as [ska.i], also called hiatus). He also notes that Koreans have “a lot of troubles with [...] the theta sound, the T-H sound”.

It is perhaps possible that, as Peter's own pronunciation of theta, or /θ/, is generally free from such “troubles”, he is once again establishing an opposition of himself versus “Koreans”, here comprising presumably L1 Korean speakers or first generation Korean Americans, rather than all ethnic Koreans. Note the use of third person pronouns and other underlined keywords in his descriptions below:

PETER: Think um, Koreans, like, because each, like- it's so- the language itself is so, like, syllable-ized, I think they don't get, like, they're not good at pronouncing, like... [...] I hear a lot of people like, *again* [əgeɪn], they say like *a-gain* [ə.ɡeɪn], or stuff like that. (02-1607)

That said, Peter did not explicitly mention another strong and common effect of phonological transfer for Korean L1 learners of English, and one that he happens to display with very high consistency: fortition of the voiced interdental fricative, or /ð/-stopping.

The Korean consonant system does not possess any interdental fricatives (in fact, English is rather unique in having them), but it does have alveolar stops that tend to become dental, which Cho et al. (2002) call “denti-alveolar”. Thus, /ð/ in English words such as “this”

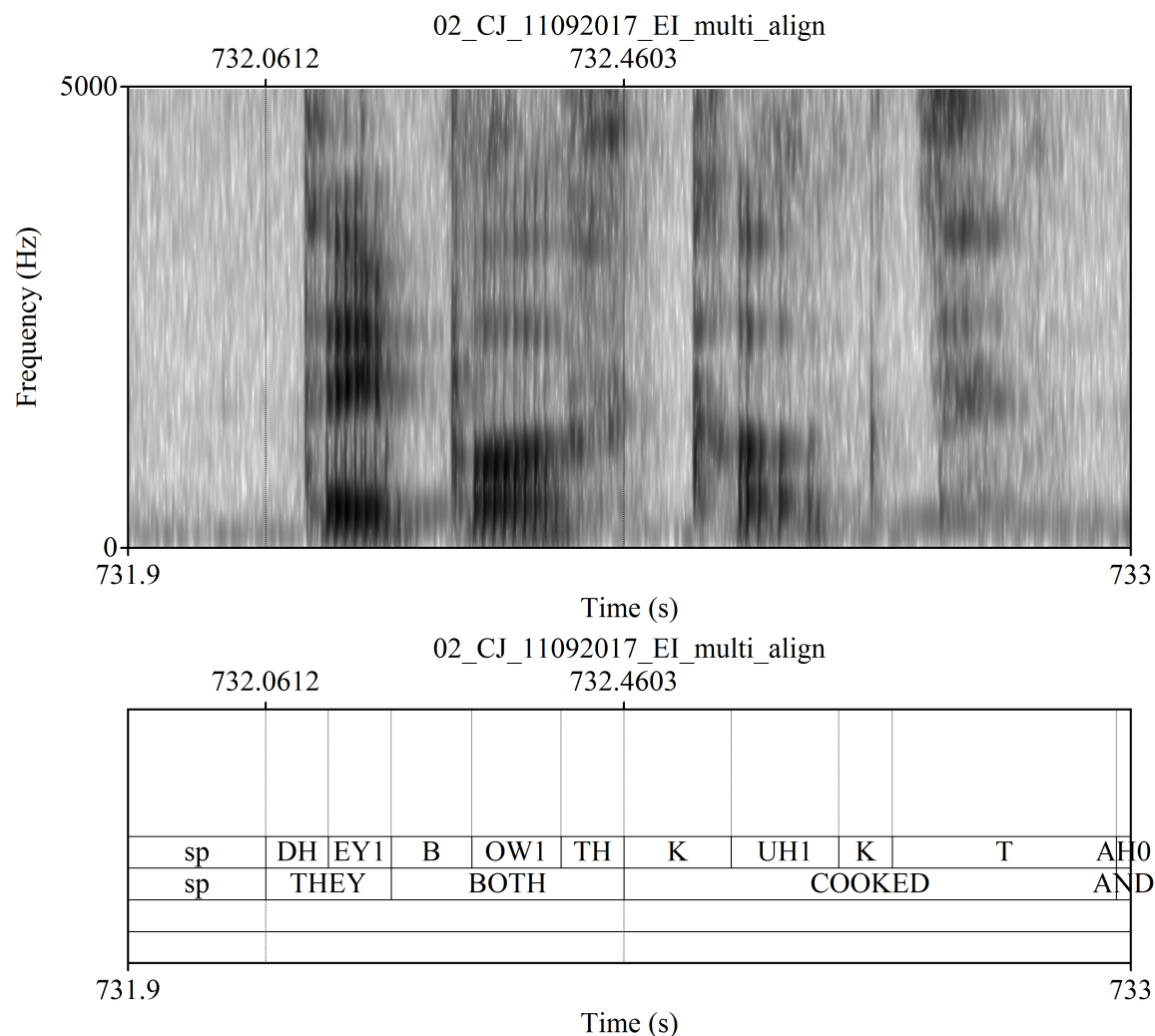


Figure 6.8: Subject 02 (Peter): “They both cooked.”

often surfaces as [d]. Examples of this abound in Peter’s speech. In Figure 6.8, you can see relatively short duration of the fricative in “they”, especially compared to the longer, un-stopped [θ] in “both”.

It is possible that the variance in /ð/-stopping is due in part to coarticulation, or is at least phonologically conditioned, since the variance we see in Peter’s speech is relatively low (especially compared to Jimin). For example, when Peter discusses the definition of the word *diphthong*, he says “even though they’re together”, and of the three underlying /ð/ phones in that phrase, only the second one (in “they’re”) is stopped. The first one is word-initial, following a word-final nasal; the third one occurs intervocalically.

I took duration measurements from every instance of a word-initial /ð/ in Peter’s speech

throughout the entire English portion of the interview. This resulted in about one hundred tokens, all of which were function words (e.g., *this*, *that*, *those*, *there*, *the*, *they*, *though*). Tokens were also coded for their topic, the previous segment (whether a space or the final phone of the previous word), and whether there was audible stopping. Figure 6.9 organizes the tokens by previous segment and audible stopping.

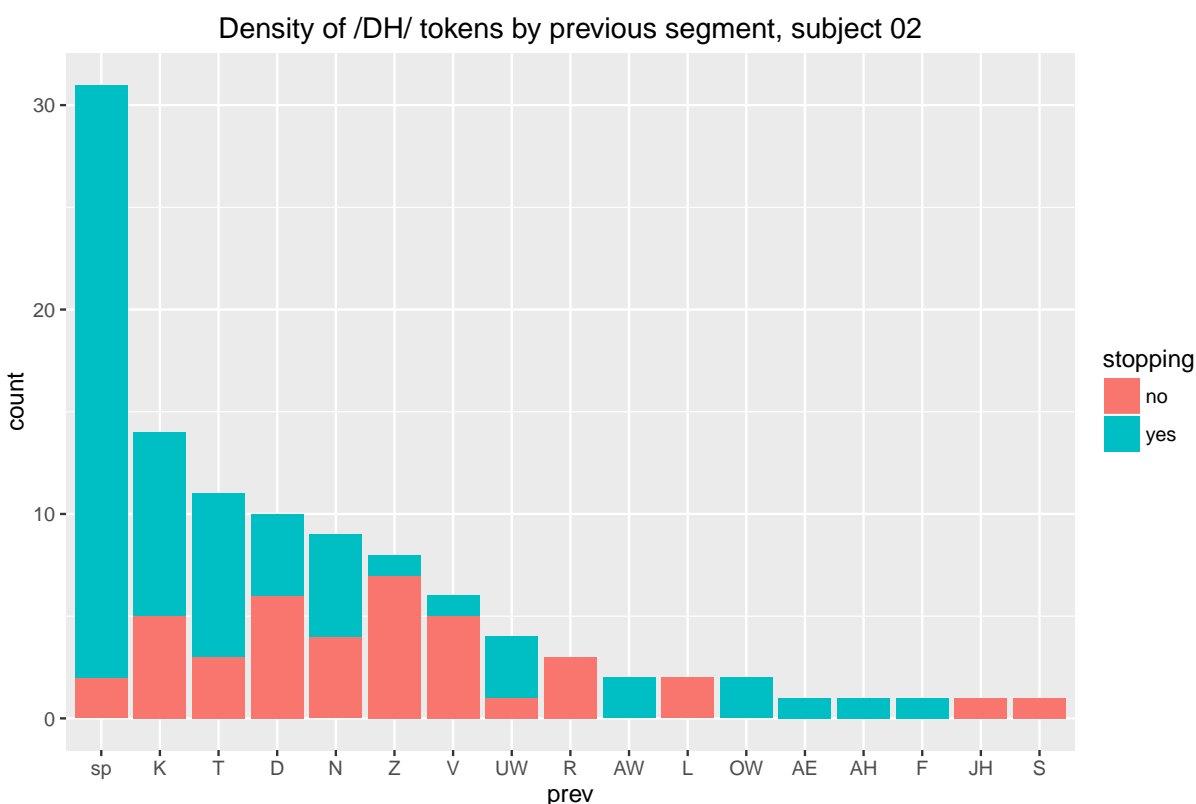


Figure 6.9: Countplot of occurrences of /ð/-stopping in Peter’s speech, which occurred more often following certain phonological contexts, such as after a pause or after a vowel, than in other contexts.

It is clear to see from the colors of each bar that certain phonological contexts, such as a preceding fricative or affricate (e.g., /s, z, v, dʒ/) or a preceding liquid (/l, ɹ/), discourage fortition. However, because these segments were manually coded, it is possible that compensation for coarticulation is at play here. For a more objective measurement, I examined phone duration. For un-stopped /ð/, this meant measuring the duration in seconds (from the onset of frication until the onset of the subsequent vowel), and for completely stopped /ð/, surfacing as something closer to [d], the measurement was of burst duration (from burst onset until vowel onset). It was hypothesized that the stopped /ð/ tokens would have shorter durations.

The results are displayed in Figure 6.10. The stopped tokens, in blue, have a slightly shorter duration than the un-stopped tokens; it is clear that the presence of a few outliers pulls the average up a bit. But an independent t-test showed that there was no significant difference between the unstopped (mean=0.027) and stopped (mean=0.025) groups ($t=1.26$, $p=0.21$).

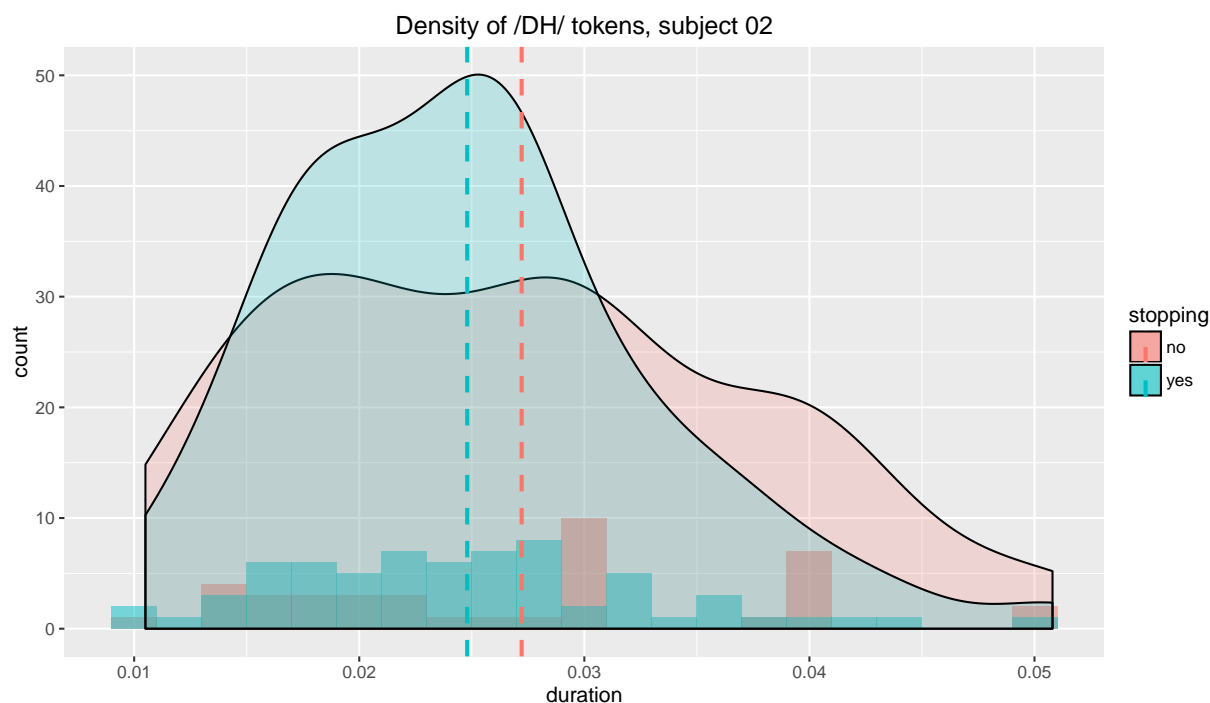


Figure 6.10: Density plot of durations of tokens of /ð/ in Peter’s speech, coded as being stopped or not stopped. The two distributions had virtually indistinguishable mean durations ($p=0.21$).

This supports the hypothesis that /ð/-stopping could be simply phonological: an /ð/ following a /z/ is discouraged from undergoing fortition. But it is not an inviolable rule: from Figure 6.9 we can see exceptions, such as the one instance in which /ð/ following /z/ was stopped, or a few instances in which /ð/ following a pause was not. As we did for Jimin’s /ou/ tokens in the first case study, we will now turn to these outliers or exceptional cases.

The tokens of /ð/ that follow /v/ and /z/ are not stopped in most cases, but there is one exception for each context. One instance occurs when /ð/ follows the /z/ in “because”

PETER: There’s [d] always, like... stories and rumors going around [laughter], that’s, like, my perception of SoCal Koreans, yeah [laughter]

CJ: Do you mean that as in, like, like, here? Rumors and stuff?

PETER: Or, like, just **because their** [d̥] community is, like, tighter and denser, like, things just happen more, I think, yeah. I think they're [d̥] a lot more emotional, too. (02-1577)

All three instances of /ð/ are stopped in this short excerpt, but the exception is in the post-fricative context, where we would not expect stopping to occur. In another instance, /ð/ following /v/ is stopped, but this occurs when Peter is talking about what it means to be 1.5: “I think it’s people like me who are... born in Korea, but most **of their** growth and, like, childhood is marked by their American side.”

So far, there doesn’t seem to be a pattern. If we examine the inverse exceptions, however, we find that while /ð/ after a pause usually results in stopping, the two instances of fully fricated /ð/ occur when Peter discusses the importance of using English in his current environment:

PETER: ... I find it important that [d̥] I am able to express myself and understand others, um, fully, um. And I think especially being in [this school], like, the [d̥] academic language has, like... it’s it is **important that** [ð] language is, it’s just that [d̥] way that [d̥] communication is carried out, in, **like, the major form** [ð], so. Yeah, but I, again, don’t think speaking *like* a native is a requisite, yeah. (02-979)

For reference, all tokens of /ð/-initial words in a three-minute window around the excerpt above, and their segment durations, were plotted over time in Figure 6.11. The dashed lines indicate where the excerpt begins and ends. For context, the subsequent one hundred seconds are also included in Figure 6.11, during which Peter discusses his own accent in English and then moves on to the stereotype of Korean Americans with poor Korean skills that was covered earlier.

Indeed, the longest durations of the /ð/ segment, whether perceived to be stopped or not, occur towards the end of the excerpt, when Peter is describing how crucial it is to speak English for the purposes of successful communication. These durations also fall around 1.5 standard deviations above the mean duration or greater. Of course, he hedges on an explicit judgment of accented English by saying he does not believe native-like fluency is required. Stating an implicit valuation (or lack thereof), however, does not necessarily mean that implicit biases can’t come through in some way (Campbell-Kibler 2012).

I argue that because Peter takes great care with his speech when giving his metalinguistic commentary on English, the acoustic consequences – longer /ð/ duration and less frequent stopping, and slower speech speed overall – index his stance of privileging English and of the persona of a thoughtful and intellectually-minded individual. This is linked to his identity as a 1.5 generation Korean American, one who does not use Korean all that much in his daily life apart from speaking to his parents. He is a 1.5 generation Korean American, not “from Korea” like the woman from his church. Peter positions himself in opposition to other

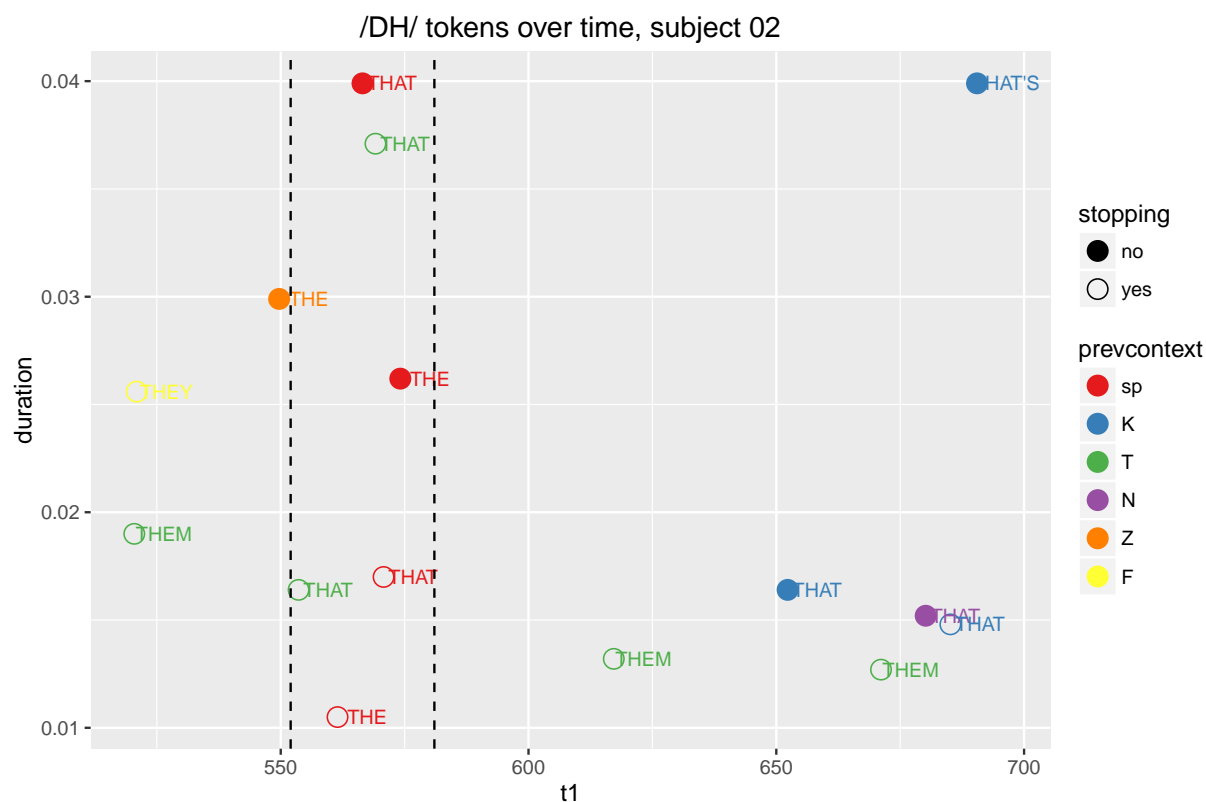


Figure 6.11: Tokens of /ð/ in Peter’s speech, plotted over time in seconds (during the interview) and split by presence of stopping and by previous phone.

groups whose language use he freely challenges, such as first generation immigrants with their accented English or Southern Californian Korean Americans whose slang is fast and loud.

One of the central theses in Fought (2006) is that ethnicity, as a social construct, is always created oppositionally, in an us-vs.-them (or me-vs.-them) mentality. Evidence from the content of Peter’s interview shows that generational category for Korean Americans can also be created oppositionally. Furthermore, the stances he takes or the identities he assumes by reifying generational category are further emphasized in the minute acoustic details of his accent. Peter’s projection of his 1.5 generation identity through his speech is a revealing explanation for the variation.

6.6 Case study #3: Hae-in

The last case study is of Hae-in, who was born in Busan, South Korea, and immigrated to the Washington, D.C. and northern Virginia area with her mother when she was 5 years

old. As her father stayed behind in South Korea to continue to support the family, Hae-in is one of many *kileki* (“goose”) families that voluntarily undergo transnational separation for economic reasons (Finch and Kim 2012). As a child, Hae-in spent four months out of the year in South Korea and has had as much formative time in her country of birth as in the United States. She said that her family and peers consider her Korean language ability to be “pretty good”, and it continued to be her foremost language until she was about 9 years old (06-626). However, she does not consider her family to be very traditionally Korean, owing to the fact that both of her parents had some tertiary education in Western countries.

HAE-IN: My mom was educated in Britain, and my dad spent some time in America, so I don’t think we’re very Korean. I would say, on a scale of one to ten, we’re maybe a four or five. [...] They were exposed to very Western ideologies. They’re definitely not misogynistic... They suck at English, though. (06-1575)

Hae-in considers herself to be even more exposed to such Western ideologies: in her words, “definitely culturally American.” She uses her mixed cultural identity as part of the defining factor for being 1.5 generation, but enjoys what she calls the flexibility that 1.5 generation Korean Americans have with the customs and values of both cultures (06-1055).

However, growing up “in the South,” as she says, Hae-in never identified strongly with being Korean. That is, until she arrived in Northern California and joined a college campus relatively teeming with other Koreans and Korean Americans. From that point forward, she began to use Korean more outside of her immediate family and felt an increase in her sense of Korean identity. This would be the natural consequence of her newfound membership in a familiar “geography of ethnicity” (Park 1999:159).

AP: So, how would you describe the relationship between your identified ethnicity – you said Korean – and your language use?

HAE-IN: Mm... I would say that... Let’s see. I don’t think I would have identified as Korean before I came to college, ‘cause I didn’t speak as much Korean. But because the community that I primarily hang out with at Berkeley is Korean... I feel like my ethnicity as Korean, and my use of the language, has increased exponentially. (06-1089)

Hae-in iterates again later on that she feels “obliged” to use Korean more in her daily life because she is surrounded by many more ethnic Koreans in college compared to the white-majority neighborhood where she grew up:

HAE-IN: ... We didn’t have as many Koreans as we could.

AP: Mm, right.

HAE-IN: So it wasn't usually good for you to identify as anything other than, um, American.

AP: Oh... I see. So would you say that influenced your, um, perception of ethnicity when you were there?

HAE-IN: Oh yeah.

AP: Okay.

HAE-IN: And it definitely influenced my, uh, use of the language. 'Cause I wouldn't use it in public. (06-1136)

The environment that surrounded Hae-in as she grew up is likely to have strongly influenced the way she speaks English as an adult. Her English has one of the highest “white-sounding” accentedness scores, but her Korean is also extraordinarily high-scoring in native-like accentedness.

One example of this is in her English mid central lax vowel when compared to its Korean “counterpart”; both are represented in the IPA as /ʌ/. In Figure 6.12, a comparison of her English and Korean values demonstrates that instances of the English vowel (“AH”) are truly at the center of her vowel space, whereas the Korean vowel (“EO”) is actually a back vowel. In this way, Hae-in’s English vowel space looks very typical of American English (if not Californian English: note the fronted /u/, but also keep in mind that Hae-in grew up in Virginia, not in California), with very little obvious influence from her Korean vowels.

The English data used in Figure 6.12 comes from stressed syllables only, but in Hae-in’s fast running speech, the appearance of the unstressed version of the mid central lax vowel, /ə/, is also rampant. Hae-in reduces the *-ed* morpheme following /t, d/ (e.g., *started*, *wanted*) with incredible frequency, sometimes deleting the first /t/, and at other times reducing the vowel to almost nothing. An example of this can be seen in Figure 6.13. The TextGrid in this figure actually demonstrates an error in forced alignment, as the algorithm attempted to locate two stops (/t/ or /r/, followed by /d/) in Hae-in’s speech. But the articulation of the flapped /t/ and the word final /d/ was so rapid, in fact, that they register only as one burst in the spectrogram.

In English /t, d/ reduction is a common phenomenon (Raymond et al. 2006), but because the resultant consonant, the flap /r/, is not common in this phonological context in Korean, a lack of reduction can be seen as a marker of more Korean influence. Hae-in demonstrates almost no Korean influence in her English, with her high rate of flapping and reduction, her typical American English mid central vowel, and even a relatively low fundamental frequency (f0) for a cisgender female. As discussed in Chapter 3, bilingual Korean Americans tend to use a higher f0 in Korean than in English. Because this may be influenced by sociocultural expectations of Korean speakers tied to femininity and high-pitched voices (Ohara 1999), it may be that Hae-in’s voice, among the lowest of all twenty-six female interviewees at an average of 170 Hz in Korean (compared to the grouped female mean of 192 Hz) and 153 Hz in English (cf. 175 Hz), was rated as more white-sounding partly thanks to its perceived pitch.

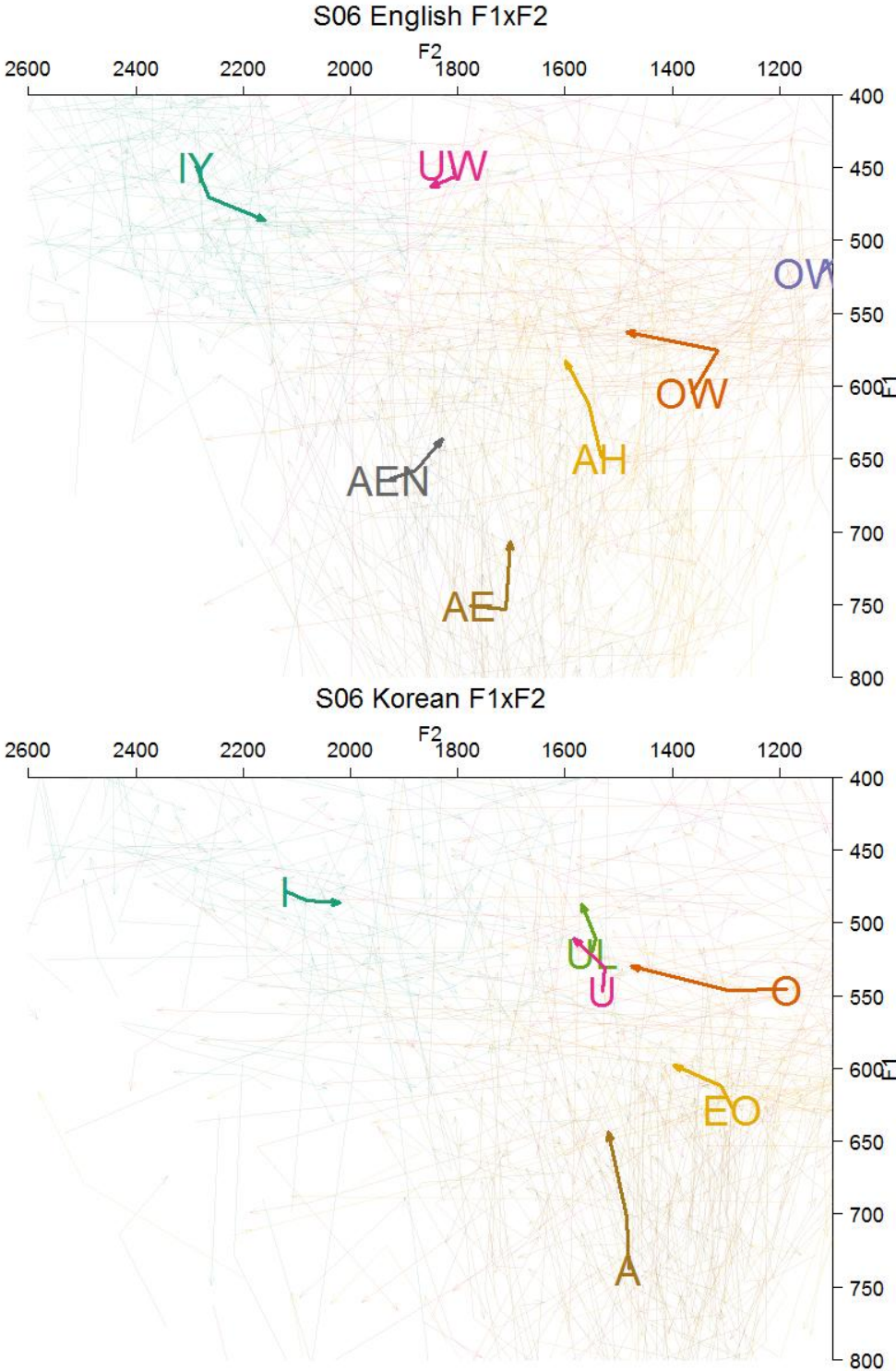


Figure 6.12: Comparative vowel spaces of Subject 06 (Hae-in), with English on top and Korean on bottom.

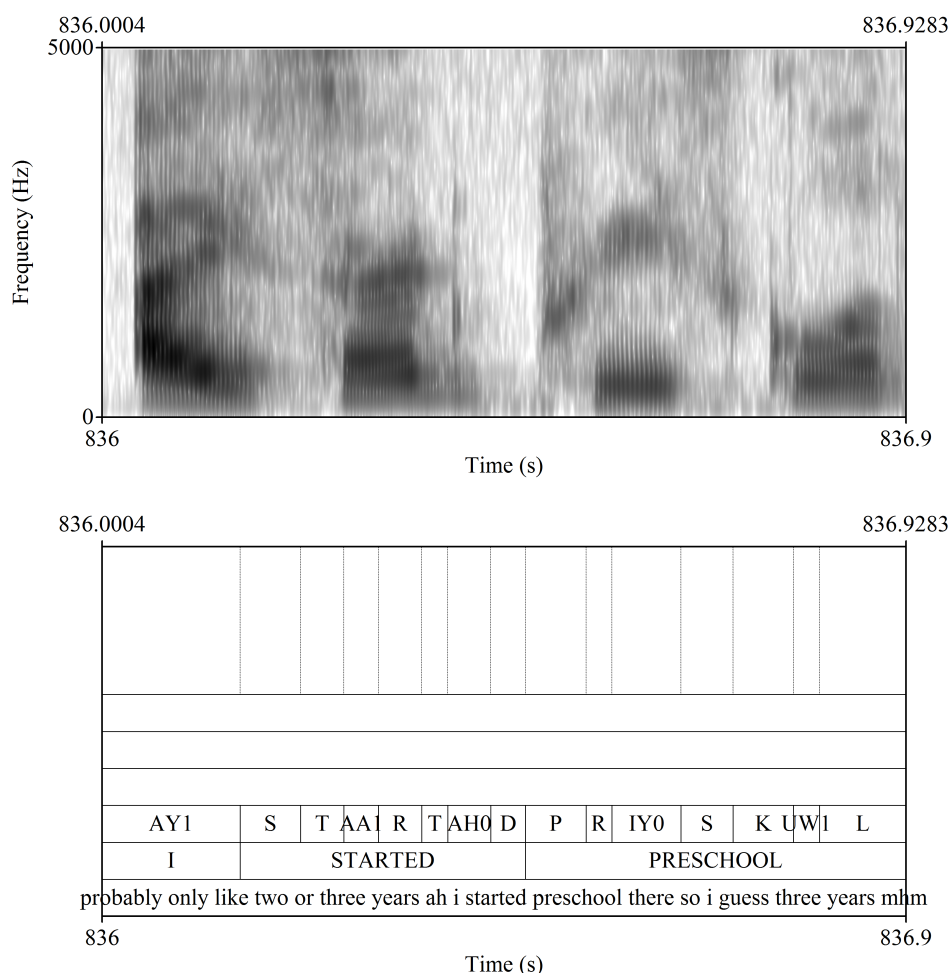


Figure 6.13: Subject 06 (Hae-in): “I started preschool.”

In contrast to Jimin and Peter, Hae-in represents the 1.5 generation Korean American who speaks “like a white person”, usually from the East Coast, and matches the stereotypes that many Californian Korean Americans have of non-Californians (see Chapter 5). However, this doesn’t mean that Hae-in is “whitewashed” or that her Korean skills are bad. As a 1.5 generation Korean American and a member of a transnational, bicultural, and bilingual family, she is actually very good at Korean, and the perception study indicates that her Korean voice reflects this. Hae-in herself considers the maintenance of her heritage language to be important, additionally stressing the need for individual agency in the decision. Her viewpoint is a strong example of Kang and Lo (2004)’s discourse of agency, with respect to the negotiation of Korean American identity.

HAE-IN: I think it’s important to speak Korean like a native if

you want to, like, if you want to retain that part of your culture, not necessarily because you are ethnically Korean. (06-1276)

6.7 Conclusion

Park (1999) writes: “The process of identity formation about [1.5 generation] Korean Americans is situational and complex, and yet contradictory and compartmentalized” (1999:158). Not only is their identity formation complex, even self-identification is complex. From the aggregate responses of forty Korean Americans, fourteen of whom identified as 1.5 generation, I conclude that the idea of generational category between first and second is fuzzy and contested, and certainly different in some key ways from Park (1999). 1.5 is still a “highly conscious category [...] invoking certain responsibilities” (Park 1999:143), but those responsibilities seem less obvious today, as 1.5 generation Korean Americans mostly cited birth place as the primary justification for their categorization. Feelings of in-betweenness and burden of cultural brokerage were secondary. In addition, many second generation Korean Americans shared the same sentiments about language and culture, “operating in two culturally-coded systems of behavior with different assumptions and logic, different practices and outcomes” (Park et al. 1990:158).

1.5 generation Korean Americans only really stood apart from second generation Korean Americans in their average scores for accentedness ratings in Korean, as they were much higher on average. In English, both groups were rated surprisingly similarly. Age of Arrival to the United States did predict accentedness ratings for both Korean and English better than generational status (albeit with a small sample size of speakers and listeners), which lends some support to the idea that Rumbaut (2004)’s “decimal generations” (1.25, 1.5, 1.75, etc.) might work better as categories for sociological and linguistic analysis than the very broad “classic 1.5.” (Of course, AOA itself works just fine as a continuous predictive variable.)

Qualitative analysis of the interviewees’ metalinguistic commentary discovered consistencies with Park (1999), Lee (2002), and Choi (2015) in that overall, Korean Americans strongly associate Korean language use with Korean identity. Within the 1.5 generation group, an individual’s language use (command of Korean, level of non-native phonological features in English, etc.) will vary widely. With the three case studies, I demonstrated how several sociolinguistic variables in an individual’s speech can be linked to utterances that semantically or pragmatically demonstrate stance toward or away from Korean identity, and also that there is no zero-sum game when it comes to speaking with native-like accents in both languages.

The limitations of this study are that it draws on only a handful of case studies. The 1.5 generation Korean Americans are a diverse group. Almost by definition, they don’t fit in any of the categories that we may want to create, although I am personally dissatisfied by categorizing them only via a lack of categorization. Still, any conclusions drawn about the

entire group must be taken with a grain of salt, and that includes this conclusion: the 1.5 generation are commendable for the ways in which they have daily evaluated their sense of self with respect to strong and sometimes conflicting ideologies of language and culture and personal histories of struggle. I tip my hat to their efforts to negotiate their ethnic identity.

EMILY: In my mindset, I was always Korean, you know? It's like, yeah, you know, you may think you're white, but look at yourself, you're yellow, right? [...] I go [to Korea], I'm like, this isn't home.

AC: Yeah.

EMILY: And I don't know anybody here, and I don't- they think I'm strange, right? And they don't know what I'm talking about. And I speak the language! It has nothing to do with the language. So when I came [back to LA], I'm like, this is home, you know? And this is where I grew up. This is, um, the culture that I'm aware of. [...]

AC: Uh-huh.

EMILY: It's just... it's wherever you are, that's where you are at... Does it mean I'm American? I guess so. Does it mean I'm just American? No, I come from somewhere, right? (40-2903)

Chapter 7

Conclusion

In this dissertation, I have sought to answer many different questions related to the phonetic and sociolinguistic practices of bilingual Korean Americans. Although my dissertation research cannot begin to capture everything about this diverse and understudied group, I hope that it sheds some light on aspects of their language use that future research can build upon. In this conclusion, I address each of the questions I asked in Section 1.1.

I asked, “In what ways does an individual’s sense of ethnic identity support their participation in an ongoing regional sound change?” In Chapter 2, I discuss how 1.5 and first generation Korean Americans are participating in the VOT-f₀ tradeoff sound change that has mainly been found in speakers of Seoul Korean, but second generation Korean Americans are not. In Chapter 4, 1.5 and second generation Korean Californians demonstrate more similarities than differences in the amount of back vowel fronting (an aspect of the ongoing California Vowel Shift) that they demonstrate in their English. Finally, in Chapter 6, I analyze the narratives of ethnic identity formation among 1.5 generation Korean Americans, arguing that 1.5 generation Korean Americans form their identity as distinct from second generation Korean Americans (and vice versa), but less along the dimension of cultural knowledge or maintenance, and more along the dimension of native-born citizenship. Thus, for Korean Americans, the importance of generational status is demonstrated in their participation in sound changes in Korean, but not in English. This is not to say that a stronger sense of Korean ethnic identity supports participation in Korean sound change; there is merely a correlation demonstrated here, not a causation. (It may very well be that a stronger sense of Korean identity, being 1.5 generation, and acquiring Seoul Korean as a child are all auto-correlated, as is implied by the analysis of Korean cultural adjacency in Appendix F.)

I asked, “Beyond participation (or not) in sound change, what new innovations are Korean Americans bringing to English and Korean?” In Chapter 2, although I focus on the VOT-f₀ tradeoff sound change in Korean, I provide some evidence that Korean Americans use both VOT and f₀ in order to create contrast between the five stop types of Korean and English in a combined phonological system. In addition, I find that whether or not a speaker participates in this tradeoff, listeners of Korean do not use this linguistic variable to judge proficiency

in Korean. In Chapter 5, I explore the ways that Korean Americans imagine a “Korean American accent”, which I call an ethnolect. In many ways, this ethnolect has the properties of L1 Korean accented English. But what Korean Americans focus on is something that can’t always be described in segmental terms; they can identify it if they hear it, but sometimes cannot even reproduce it. I argue that Korean Americans have been innovating Korean American English, an ethnolect that is most associated with Korean Americans from urban neighborhoods with high Korean density such as Koreatown, LA. However, the properties of this ethnolect have yet to be fully explored.

I asked, “In sociolinguistic analysis, how should ethnic identity be quantified as a potential factor in usage of certain linguistic variables?” I have discovered throughout the process of doing this research that ethnic identity is a very tricky factor indeed. For example, from my discussions in Chapter 3 and Chapter 6, it is clear that the varying definitions of “1.5 generation” make it difficult to analyze the statistically significant effects of a somewhat fuzzy social category on quantifiable language patterns. In addition, it is difficult to quantify “ethnic identity” itself. In Appendix F, I have attempted to score Korean Americans’ adjacency to Korean culture, but there’s good reason that this analysis has gone into an appendix: it was a kludgey and imprecise process with minimal results. On the other hand, in Chapters 5 and 6, I have, to the best of my ability, demonstrated that ethnic identity is still very important to Korean Americans and remains deeply intertwined with their perspectives on language behavior and ideology. Qualitatively speaking, ethnic identity must always be considered as a social factor. It’s just hard to measure.

I asked, “Do Korean Americans have speech patterns in common with one another in English that are distinguishable from those of their non-Korean peers? Do they have common speech patterns in Korean that are distinguishable from those of their non-American peers?” Indeed, I believe that the Korean American ethnolect of English is a real phenomenon, as discussed in Chapter 5. Some traits of this ethnolect may include backed back vowels (Chapter 4) or other segments affected by Korean phonology, although an ethnolect is not the same as a non-native accent. In addition, to the extent that the Korean spoken by Korean Americans is influenced by their dominance in English, the dominant and prestige language of the United States, some Korean Americans speak Korean differently enough from Koreans in South Korea to the extent that they are easily recognized by their American accents. Unfortunately, as this work does not explicitly compare Korean Americans to non-Korean Americans or to non-American Koreans, the full extent of their unique speech patterns can only be hypothesized.

I asked, “Besides ethnicity, what other social and linguistic factors affect the ethnolects of Korean American English or Korean American Korean?” Korean American English seems not to be influenced very much by generational status or Age of Arrival. Gender plays a role in the pitch differentiation of the two languages (Chapter 3) and in the formant trajectories of back vowels; and of course, the immediately neighboring segments around back vowels also influence their height and backness (Chapter 4). As for Korean, according to Korean Americans’ own reports (Chapter 5), parental attitudes toward the importance of maintaining Korean did not seem to affect their ability to speak Korean (as all interviewees

could speak Korean, but their parents did not necessarily encourage this across the board). Certainly, home language policies help with Korean language maintenance, as is the case for all heritage languages in the United States, but most interviewees were motivated to maintain their Korean out of a sense of needing it for their own personal benefit. The extent to which this affects their production of Korean is unclear. Greater cultural adjacency was correlated with a more native-like accent rating in Korean, but had no correlation with native-like accent rating in English (Appendix F).

Finally, I asked, “How do Korean Americans evaluate the relationship between their ethnic identity and their language use? Do they believe that Koreans and/or Korean Americans speak a certain way due to their ethnic identity?” In short, Korean Americans continue to believe that speaking Korean is an important – albeit not essential – part of their Korean identity. They believe that many Korean Americans speak a recognizably distinct variety of English and Korean due to their ethnic identity, but that this is modulated by the people they spend the most time with. For example, Korean Americans who grow up in majority-white neighborhoods with little access to Korean communities such as Koreatown tend to speak much less like the archetypical Korean American; they “sound white”.

Some, but not all, Korean Americans speak Korean in a way that is consistent with the changes documented in Seoul Korean. Some, but not all, Korean Americans speak English in a way that is consistent with the changes documented in California English. However, some, but not all, Korean Americans speak English in a very Korean American way, which may be related to California English only insofar as the attributes have arisen in the speech of Korean Americans in a Californian hub of the Korean diaspora: Koreatown, Los Angeles. Some, but not all, Korean Americans can easily recognize this pattern of speaking, identifying it as one that they have heard from other Korean Americans. The Korean Americans who talk about this pattern indeed describe it as we would an ethnolect: attributing the linguistic patterns to an individual’s having a Korean ethnic identity and associating with other Koreans while in the United States.

Interestingly, when many Korean Americans are asked to define their ethnic identity, they choose a negative definition: “neither (fully) Korean nor (fully) American”. 1.5 generation Korean Americans, in particular, are likely to insist on the in-between-ness of their identity. A few, however, go for a positive definition: “both Korean and American,” creating a new identity out of the synthesis of the two. Korean Americans may rarely think of a positive definition in terms of their ethno-cultural labeling, but on the other hand, they often think of Korean American speech as positive and productive. Korean American speech is never “neither Korean nor American” (or Anglophone), but tends to be identified as a mix of both. I propose a new way of thinking about ethnolects that borrows from the idea of creating a new culture from the synthesis of two others: rather than couching ethnolects as one language under the influence of another (or, as is too commonly the case with heritage languages, one language undergoing attrition at the onslaught of another), we may instead view the genesis of ethnolects and heritage languages as the result of compounded innovations that draw on aspects of the two other languages in a contact situation.

That said, when it comes to specifying what segmental and suprasegmental phonetic

attributes (to say nothing of morphosyntactic, lexical, semantic, and pragmatic attributes) make up this ethnolect, most everyone is still in the dark, myself included. The scope of the dissertation was never to create a sociophonetic atlas of a new ethnolect, but to begin the work toward such a detailed understanding of language and ethnicity in an immigrant community. The phonetic and sociolinguistic data I have collected and analyzed reveal quite a lot about the accents and ideologies of bilingual Korean Americans. Hand-in-hand with a qualitative analysis of Korean Americans' metalinguistic commentary, I hope that I have helped lay the groundwork for a truly comprehensive, culturally relevant, and theoretically progressive understanding of *kyopho mal*: Korean American speech.

Appendix A

Laboratory speech: Materials

A.1 Korean production stimuli

The following Korean sentences and words were used as stimuli in the production task described in Chapter 2. All transcriptions are in Yale Romanization, with the target word of each Korean sentence in boldface. Note that the “natural” sentences here do not all put the target word in an AP-initial position, which is not consistent with the research that locates the VOT-f₀ tradeoff sound change specifically in this prosodic environment. The words were incorporated into a neutral carrier phrase that did put them in AP-initial position.

Sentence (natural context)	Target Word	Target Consonant
희종이 방에서 있다.	pang	P
요즘은 나의 간이 아프다.	kan	K
지하철의 칸이 정말 크다.	khan	K
오늘은 어제보다 덜 찮다.	tel	T
고양이 털이 너무 많다.	thel	T
아빠가 상을 받았다.	sang	S
성민은 이 책의 장을 벌써 봤다.	cang	C
어떤 사람이 창을 열렸다.	chang	C
우리 당은 선거에서 이길겁니다.	tang	T
닭고기로 탕을 만들 수 있다.	thang	T
축구는 발로 공을 차는 놀이다.	pal	P
내 동생은 팔 가지고 장난을 친다.	phal	P
아기가 엄지를 빨고있다.	ppal	P
이 사과는 셔서 먹기 힘들다.	sye	S
인도의 서쪽은 중동이다.	se	S
유람선에서 멀미를 느낀다.	filler1	NA
서울의 심장은 한강이다.	filler2	NA
이 셔츠는 양털로 만들었다.	filler3	NA
내 조카가 양탈을 부린다.	filler4	NA
이 지방에는 눈이 안 온다.	filler5	NA

Word (in carrier phrase: 나는 X 라고 해요 / nanun X lako hayyo)

아가 aka	탕이 thang(i)	짜다 ccata	의사 uysa
요새 yosay	셔 se	차다 chata	방문이 pangmwun(i)
세대 seytay	셔 sye	눈이 nwun(i)	얻다 etta
간이 kan(i)	써 sse	남이 nam(i)	받다 patta
간이 kkan(i)	발이 pal(i)	너 ne	쉽다 swipta
칸이 khan(i)	팔이 phal(i)	멀이 mel(i)	책상이 chayksang(i)
덜이 tel(i)	빨이 ppal(i)	말이 mal(i)	유자차 yucacha
떨이 ttel(i)	불이 pwul(i)	물이 mwul(i)	숙이 sswuk(i)
털이 thel(i)	풀이 phwul(i)	도로 tolo	
장이 cang(i)	뿔이 ppwul(i)	무료 mwulye	
짱이 ccang(i)	그 ku	새것이 saykes(i)	
창이 chang(i)	크 khu	위 wi	
당이 tang(i)	꼬 kku	혀 hye	
땅이 ttang(i)	자다 cata	인이 in(i)	

A.2 English production stimuli

The following English sentences and words were also used as stimuli in the production task described in Chapter 2. The “natural” sentences were designed to elicit certain vowels, although the vowel analysis was not included in the chapter. The target words are in boldface.

- I don't know **who** had the bag.
- She said that they **flew** here yesterday.
- She took my **hand** and began walking.
- I put on a **hat** when it's bright out.
- His friend hopes to join the best **band** at school.
- He has never seen a **bat** in a zoo.
- Who is the **man** in the back room?
- If both **men** are eating, leave them be.
- I saw a **woman** go into the store.
- If the **women** get caught in the rain, they will be upset.
- When the **pope** visited, my dad was happy.
- My **best** friend knows all about my past.

The following words were elicited within a carrier phrase, “Say X again.”

flew, boo, who,
both, hope, pope,
hand, hat, band, bat, app, man,
men, heft, best, left,
woman, food, hook,
women, hip, pig,
beak, wing,
glove, but, cuff, what,
shirt, sang, right, sword, like, neither, hate

A.3 Perception stimuli

The following eight sentences were used as stimuli in the perception task; four in each language. Some speakers did not make a usable recording of some sentences, in which case the recordings were discarded from the perception experiment. All transcriptions are in Yale Romanization, with the target word of each Korean sentence in boldface.

- (1) Yocumun nauy **kani** aphuta
these-days I-POSS liver-NOM hurt
'My liver has been in pain these days.'
- (2) Cihacheluy **khani** cengmal khuta
subway car-NOM very large
'The subway car is very large.'
- (3) Onulun eceypota **tel** cwessta
today-FOC yesterday-comp less cold-PST
'Today was less cold than yesterday.'
- (4) Koyangi **theli** nemwu manhta
cat fur-NOM too many
'There is so much cat hair!'
- (5) My best friend knows all about my past.
- (6) She said that they flew here yesterday.
- (7) I put on a hat when it's bright out.
- (8) I don't know who had the bag.

A.4 Perception rating scales

The following text was presented to listeners for each Korean voice they heard. The order of questions for each voice was randomized.

Answer the following questions about the speaker.

- How proficient are they in Korean? (0=not proficient, 4=native-like)
- What would you guess is their age? (0=under 18, 1=18-21, 2=22-25, 3=26-29, 4=30 or over)
- How strong is their American accent? (0=no accent, 4=strong accent)
- How friendly are they? (0=unfriendly, 4=very friendly)
- Since when do you think they have lived in the US? (0=born here, 1=early childhood, 2=early teens (10+), 3=late teens (16+), 4=just arrived)

For the English stimuli, “Korean” was replaced with “English” and “American accent” was replaced with “foreign accent”.

Appendix B

Bilingual sociolinguistic interview: Materials

B.1 Recruitment text

“Korean American Survey. UC Berkeley’s Linguistics Department is looking for individuals who identify as Korean American (2nd generation or 1.5 generation) to participate in a casual bilingual interview. Participants must be able to speak and read both English and Korean (*hankul*); basic to advanced fluency welcome. One or both parents must be Korean, from Seoul or Gyeonggi-do. Compensation is US\$10 for less than one hour. Interested persons may contact Andrew Cheng at ...@berkeley.edu or 510-...-...”

B.2 Korean American Ethnographic Survey

These survey instructions were given to each interviewer during Phase 1 of data collection using bilingual sociolinguistic interviews. A data sheet was also provided so that the interviewer could write down the answers that the interviewees gave for each of the questions.

PART 1: Korean Interview (15 min.)

The beginning of our interview will be conducted in Korean, as far as the subject is able. If there is stumbling, don’t worry about it, but press on in Korean. You can acknowledge that this might be somewhat awkward. Try to avoid code-switching, both for yourself and for the subject.

A. Interviewer Introduction: Introduce yourself briefly (in Korean) and say that the interview will be conducted in four parts. The first part, about 15 minutes, will take place in Korean. This will be followed by reading a few sentences in Korean. Then, a few forms (the IRB consent forms). The last part, about 25 minutes, will take place in English.

B. Subject Introduction: Ask the subject to give a brief self-introduction (*caki sogay*).

C. Random Questions: Light, simple questions such as “What did you do over the weekend?” or “What do you like to do in your free time?” (*Parts B and C may be switched*)

D. Location History: If the following questions have not been answered yet...

- “Where were you born?”
- “Where have you lived?” (All cities/states/countries, and duration of stay)
- “Where are your parents from?” (As specific as possible; important if from Seoul/Gyeonggi-do)
- “What year were your parents born, and when did they come to the US?”

PART 2: Korean Reading (5 min.) *Give the subject the Korean sentences to read.*

PART 3: IRB Forms (English) (5 min.) *You can now casually switch to English. “Okay... that was great! Now, I have some forms for you to fill out before we move to the final part.” Give the subject the IRB consent form to read and sign silently. This “transition” part requires minimal verbal stimulation for several minutes.*

PART 4: English Interview (25 min.) *You can tell the subject that for the last twenty minutes or so, you will ask them questions about their identity and relationship to their languages, and they should be answered in English. You don’t have to literally ask every single question in this part, but try to guide the conversation in such a way that gets you the answers to them as you go.*

A. Language Input and Use

- What language did you start speaking first? (even if not most proficient language now)
- What language(s) did you speak growing up?
 - When did you start speaking English/Korean?
 - When did you start (and/or stop) feeling comfortable speaking English/Korean?
- What do you hear at home?
- What do you speak at home?
 - ... with your parents?
 - ... with your older siblings? (if any)
 - ... with your younger siblings? (if any)
- What language did you use and hear in your neighborhood?

- What about with friends in school?
- If you lived in Korean enclave/community, how much did you interact with them?
- How many years of formal education have you had in each of the languages? (Includes weekend Korean school, primary school in Korea, university-level Korean classes)
- What language do you use when you talk to yourself or count?

B. Identity

- What ethnicity do you consider yourself?
- Do you consider yourself to be the 1st, 1.5, or 2nd generation, if at all?
 - How do you define these terms?
 - How would you describe the relationship between your identified ethnicity and your language use?
- Do you feel like yourself when you speak English/Korean?
- Is it important to you to speak English/Korean like a native speaker?
- Do you want others to think of you as a native English/Korean speaker?
- What was the racial/ethnic makeup of the area (city/neighborhood) in which you grew up?
 - Do you self-identify as belonging to the majority group, or otherwise?
- Do you actively use Korean outside of home?
 - Do you actively try to improve your Korean?
 - Do you tend to order in Korean at Korean restaurants?
- What kind of food did you grow up eating? Did you grow up with Korean food?
- Do you attend church?
 - Does your church primarily serve the Korean community?
 - What language is used at church? What language do you use with church friends?
- Do you watch Korean media?
 - How often? What genre? (Variety shows, music, dramas, news, etc.)
 - Do you use (English) subtitles?
- How ‘Korean’ do you think your family is?

C. Perceptions about Language

- What do your parents think of your Korean/English skills?
- What do your Korean American peers think of your Korean/English skills?
- What do your non-Korean peers think of your Korean/English skills?
- Are there any differences between NorCal vs SoCal Koreans?
 - Behaviorally?
 - When they speak English/Korean?
- How would you characterize the features of “Korean-accented English”? How about “Asian-accented English”? (no right or wrong answer)
 - Are there distinctions (geographic, social, racial) within this group?

B.3 Korean reading text

P32

저녁은 또 뭘 해 먹지? 라면이 있긴 한데. 일주일에 두 세번 해 먹네.
비빔밥이나 뭐 좀 제대로 된 걸 먹고 싶은데. 아, 그냥 중국집에 시켜 먹어야
되겠다.

P33

여보세요? 통신판매부조 업무에 착오가 있으신 것 같네요. 카탈로그에 나온
테디베어를 주문했는데 카드대금에는 웬 잔디깎는 기계가 청구되어 있네요.
우리 집에는 정원도 없거든요. 소비자불만센터로 연결해 주시길 바랍니다.

P21

지난 주말 저녁 약속에 못 가서 죄송합니다. 정말 뵙고 싶었는데 그날 갑자기
사고가 좀 났어요. 막 출발하려고 하다가 갑자기 포도주 한 병 가져가고 싶은
생각이 들어서 급하게 불도 안켜고 지하실로 뛰어 내려가다가 계단에서
넘어져서 발목을 접지렀지 뭐니까.

P23

엄마, 여기 강원도는 너무 좋아요. 날씨가 짹짹하고 햇빛이 내리쬐는
바닷가는 무슨 딴 세상 같아요. 어제는 바닷가 절벽길을 따라 산책을
했는데, 바람이 꽤 불어서 날아가는 줄 알았어요. 별에 글러 피부는 예쁘게
타는데, 하도 아이스크림을 먹어대서 몸무게는 두 배로 늘었습니다.

P39

나는 월요일 아침에 비 오는 게 제일 싫어. 길바닥이 온통 질척해져서 지하철
내려서 회사까지 걸어오는 일이 장난이 아니야. 택시를 타고 싶지만 그게 또
쉽지가 않잖아? 적은 월급으로 신발 사 신을 돈도 없는 마당에. 아, 어디 누가
차 한 대 사줄 사람 없나?

Appendix C

Additional figures for comparison of cross-linguistic f0

The data in this appendix are additional material relevant to Chapter 3.

Figure C.1 illustrates the trajectory of f0 over time for 33 subjects. Subject 17 was used as an example in Chapter 3 (Figure 3.1).

Figure C.2 illustrates the four range calculations (50%, or Interquartile Range/IQR, 80%, 90%, and 98%) for the two languages spoken by 33 subjects.

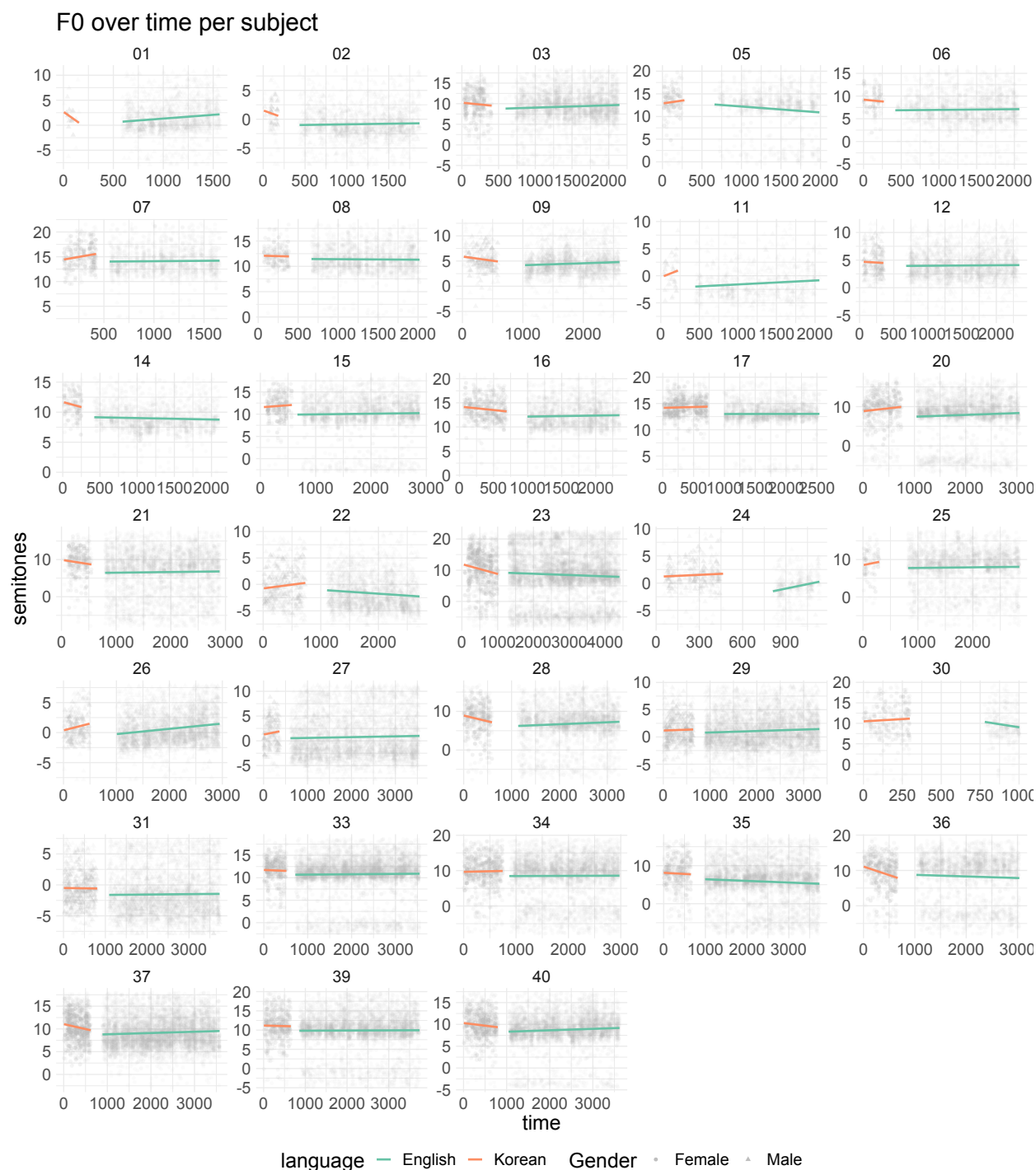


Figure C.1: F0 measurements over the course of a bilingual interview for 33 subjects. Each dot represents the f0 of a vowel uttered during the interview, with Korean speech (on the left) occurring first, followed by English speech (on the right), after a short period of silence. The regression lines were calculated for each language separately (orange for Korean and green for English) using `lm` smoothing in R.

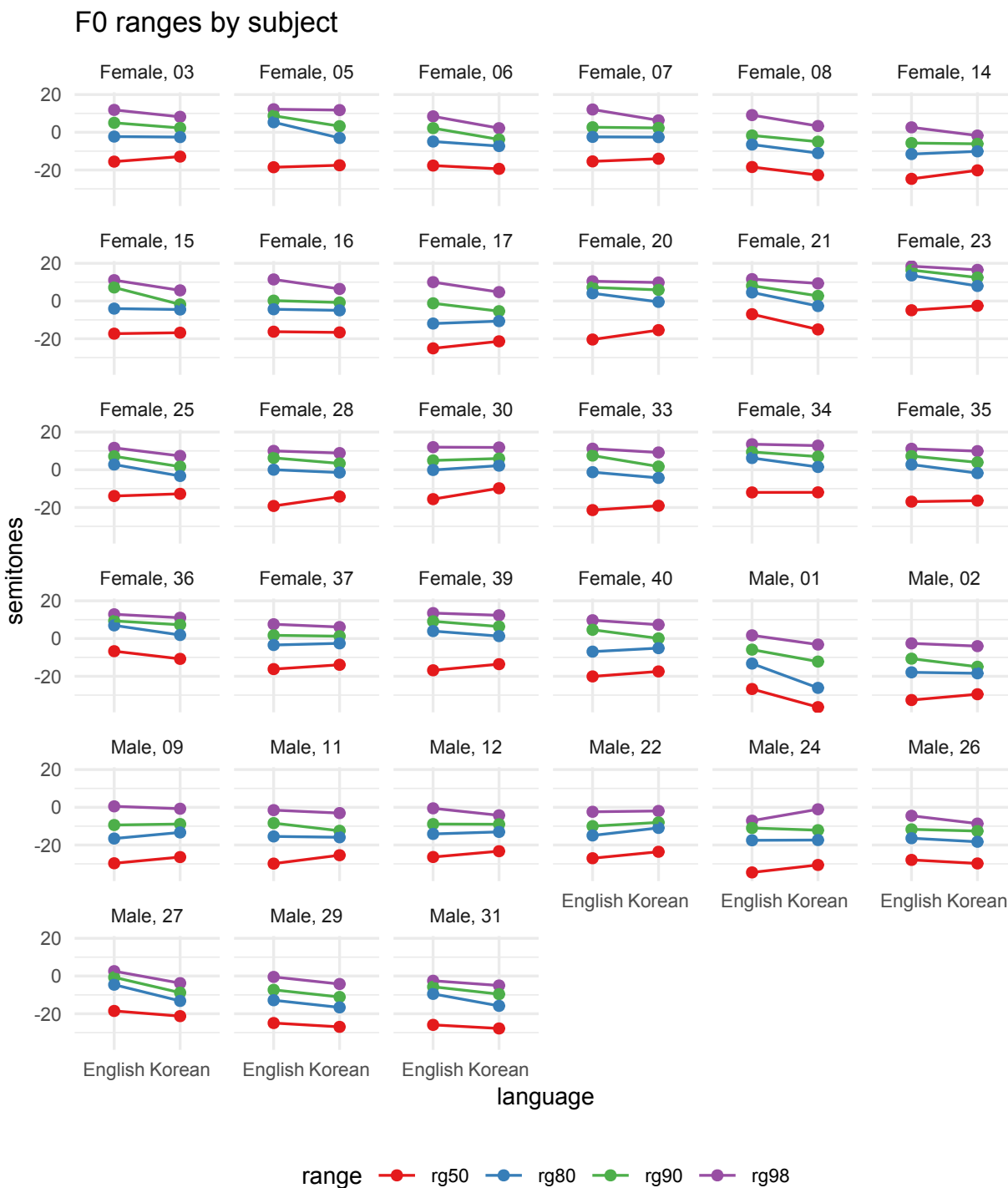


Figure C.2: F0 ranges (50%, 80%, 90%, and 98%) for 33 subjects identified by gender and subject number, with English ranges on the left and Korean on the right.

Appendix D

Additional figures and models for back vowels

The data in this appendix are additional material relevant to Chapter 4, including additional formant plots and the outputs of various statistical models.

D.1 Pre-smooth and post-smooth F1 and F2

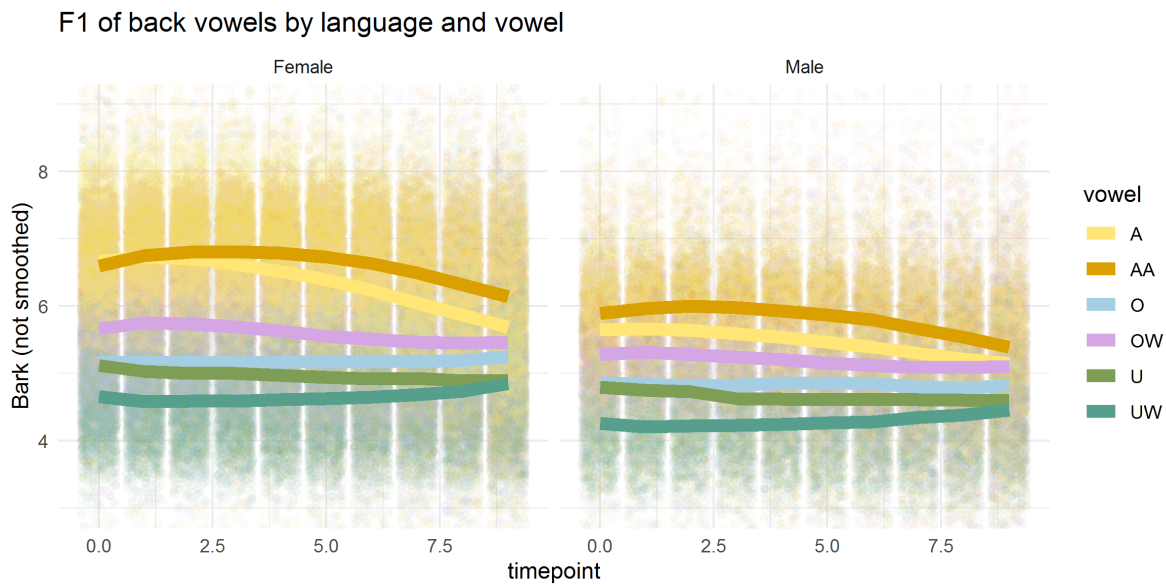
Figure D.1 and Figure D.2 demonstrate the effect of smoothing using the `smoothn` module (Garcia 2010) on F1 and F2 data.

D.2 Full LMER model summaries

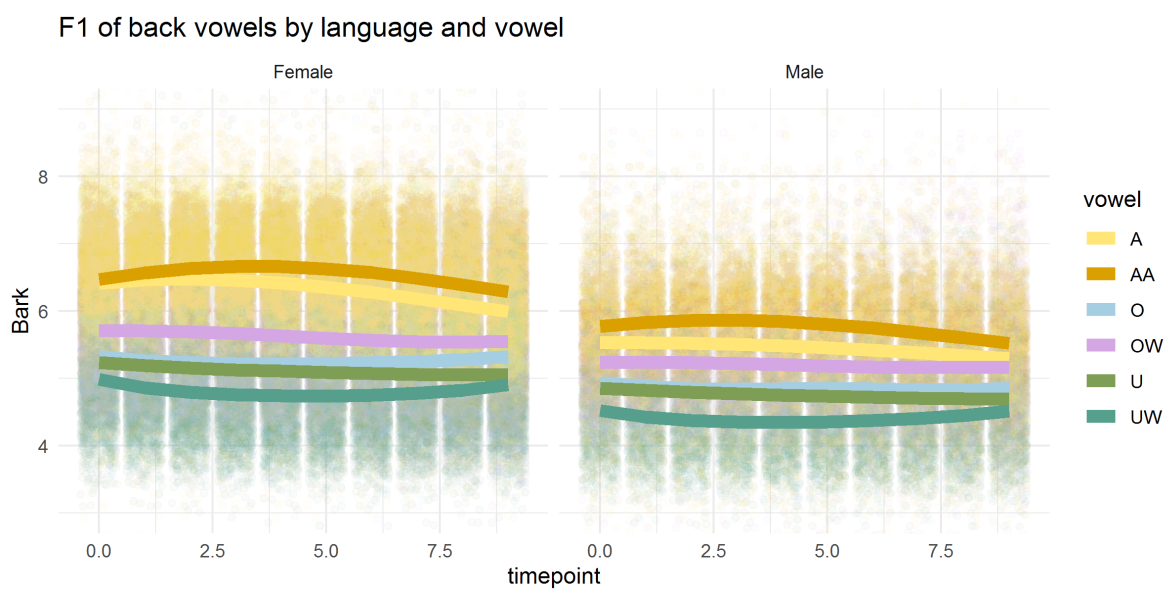
Tables D.1, D.2, D.3, and D.4 contain the full summary of the linear mixed effects regression models for F1 and F2 of the back round vowel pairs, OW/O and UW/U. They have been reduced in size due to the high number of fixed effects (including interactions between the language and every single possible post-vocalic segment).

D.3 GAMM for F1 of OW/O and UW/U

Figure D.3a and Figure D.3b visualize the generalized additive mixed model predictions for F1 (Bark) of the vowel pairs OW/O and UW/U, split by gender, (language,) and pre-lateral context.

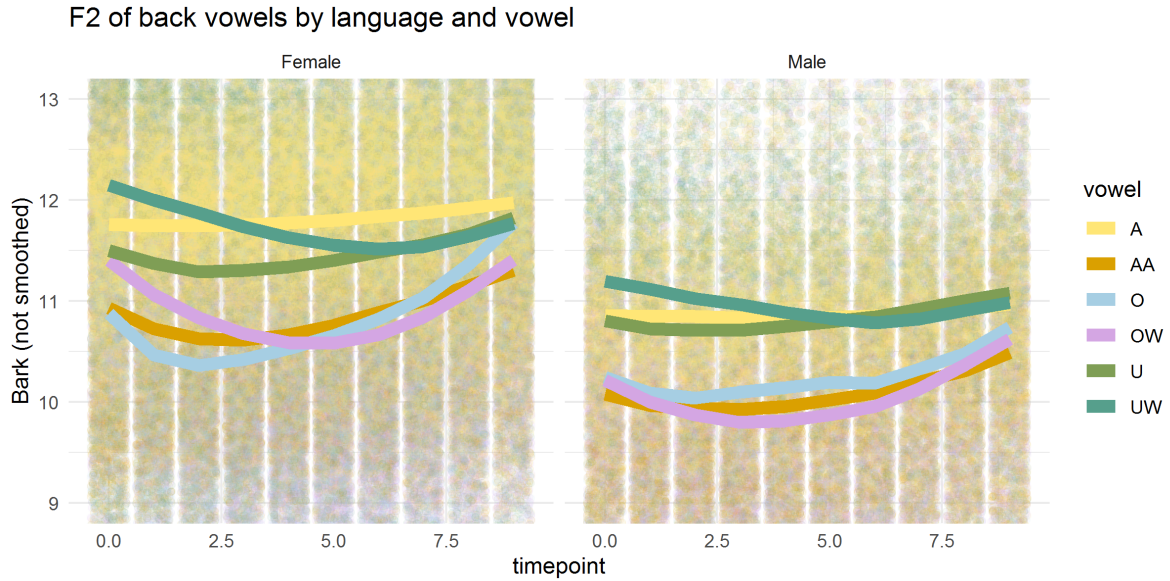


(a) F1, Pre-smooth

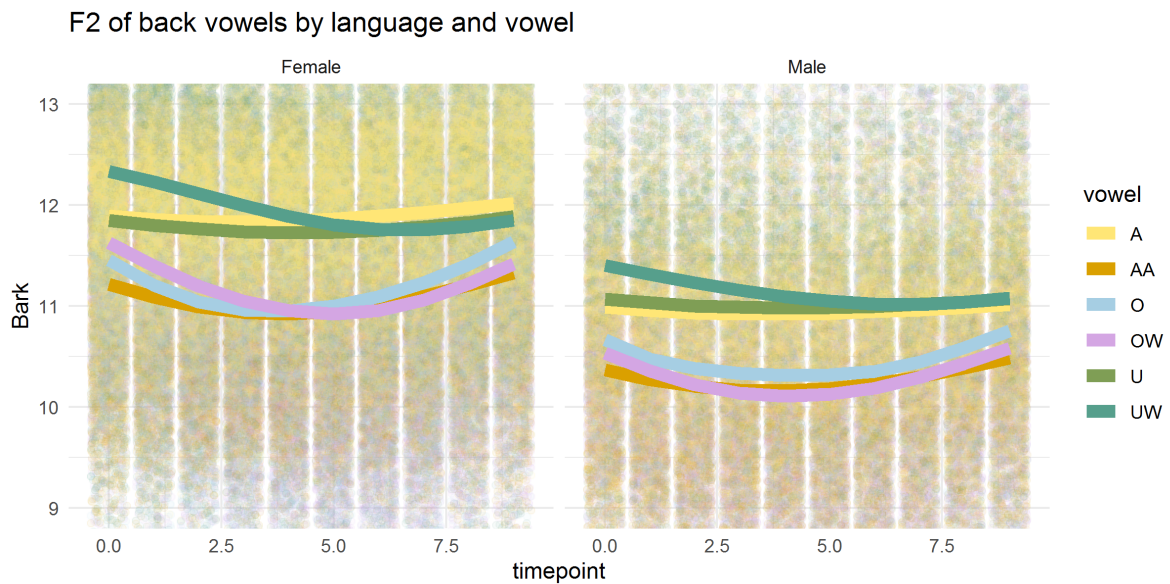


(b) F1, Post-smooth

Figure D.1: For the vowels GOAT (OW), GOOSE (UW), /o/, and /u/, with LOT (AA) and /a/ for comparison, in English-Korean bilinguals: (a) raw Bark F1 across ten timepoints, split by gender, and (b) smoothed Bark F1 across ten timepoints, split by gender.



(a) F2, Pre-smooth



(b) F2, Post-smooth

Figure D.2: For the vowels GOAT (OW), GOOSE (UW), /o/, and /u/, with LOT (AA) and /a/ for comparison, in English-Korean bilinguals: (a) raw Bark F2 across ten timepoints, split by gender, and (b) smoothed Bark F2 across ten timepoints, split by gender.

Table D.1: LMER model for F1 (Bark) of mid-high back round vowels OW and O.

		<i>Dependent variable:</i>	
		fl_Bark_smooth_4	fl_Bark_smooth_4
languageKorean	-0.236* (0.133)	GenderMale	-0.399*** (0.095)
fol2AA	-0.055 (0.216)	fol2AE	-0.001 (0.179)
fol2AH	-0.483*** (0.152)	fol2AO	-0.217 (0.238)
fol2AW	-0.256 (0.224)	fol2AY	-0.016 (0.151)
fol2B	-0.781*** (0.162)	fol2BB	-0.552** (0.222)
fol2C	-0.830*** (0.202)	fol2CH	-0.668 (0.441)
fol2D	-0.780*** (0.177)	fol2DD	-0.821*** (0.301)
fol2DH	-0.758*** (0.152)	fol2E	-0.473*** (0.116)
fol2EH	-0.531** (0.225)	fol2EO	-0.366*** (0.112)
fol2ER	-0.407* (0.209)	fol2EU	-0.455*** (0.140)
fol2EY	-1.221*** (0.302)	fol2F	-0.519*** (0.177)
fol2G	-0.736*** (0.194)	fol2GG	-0.374 (0.239)
fol2H	0.014 (0.094)	fol2HH	-0.296* (0.161)
fol2I	-1.026*** (0.095)	fol2IH	-0.596*** (0.154)
fol2IY	-1.148*** (0.220)	fol2J	-0.956*** (0.097)
fol2JH	-0.771*** (0.225)	fol2K	-0.667*** (0.153)
fol2L	-0.632*** (0.152)	fol2M	-0.540*** (0.156)
fol2N	-0.466*** (0.150)	fol2NG	-0.631*** (0.078)
fol2O	-1.056*** (0.189)	fol2OW	-0.155 (0.183)
fol2P	-0.847*** (0.167)	fol2R	-0.543*** (0.186)
fol2S	-0.678*** (0.157)	fol2SH	-0.679*** (0.170)
fol2sp	-0.326** (0.150)	fol2SS	-0.364 (0.347)
fol2T	-0.841*** (0.140)	fol2TH	-0.747*** (0.168)
fol2U	-1.113*** (0.231)	fol2V	-0.823*** (0.162)
fol2W	-0.673*** (0.156)	fol2WA	0.084 (0.420)
fol2WAE	-1.478** (0.589)	fol2WEO	-0.590* (0.304)
fol2Y	-0.528*** (0.156)	fol2YA	-0.479 (0.590)
fol2YAE	-1.529*** (0.590)	fol2YE	-1.115* (0.593)
fol2YEO	-1.113*** (0.146)	fol2YI	-1.761*** (0.590)
fol2YO	-0.416*** (0.094)	fol2YU	-1.979*** (0.590)
fol2Z	-0.971*** (0.157)	fol2ZH	-0.818*** (0.307)
prevAA1	-0.495 (0.599)	prevAE1	0.392 (0.359)
prevAH0	-0.667*** (0.172)	prevAH1	-0.404** (0.192)
prevAW1	-0.538 (0.599)	prevAY1	-0.416*** (0.158)
prevAY2	-0.466 (0.290)	prevB	-0.546*** (0.125)
prevC	-0.194 (0.254)	prevCH	-0.609*** (0.215)
prevD	-0.488*** (0.120)	prevDD	-0.656*** (0.144)
prevDH	-0.732*** (0.130)	prevE	-0.335* (0.195)
prevEO	-0.354* (0.195)	prevER0	-0.494 (0.359)
prevEU	0.092 (0.432)	prevEY1	-0.295* (0.179)
prevF	-0.426*** (0.165)	prevG	-0.618*** (0.118)
prevGG	0.079 (0.269)	prevH	-0.052 (0.178)
prevHH	-0.437*** (0.132)	prevI	-0.254 (0.171)
prevIH1	-1.017* (0.599)	prevIY0	-0.635*** (0.167)
prevIY1	-0.463* (0.251)	prevJ	-0.578*** (0.125)
prevJH	-0.549** (0.214)	prevJJ	-0.676*** (0.149)
prevK	-0.513*** (0.126)	prevL	-0.597*** (0.129)
prevM	-0.535*** (0.122)	prevN	-0.309*** (0.119)
prevNG	-0.364* (0.192)	prevO	-0.911*** (0.214)
prevOE	-0.613*** (0.161)	prevOW1	-0.277* (0.155)
prevP	-0.660*** (0.129)	prevR	-0.467*** (0.121)
prevS	-0.666*** (0.119)	prevSH	-0.464*** (0.162)
prevsp	-0.218* (0.120)	prevSS	-0.013 (0.360)
prevT	-0.334*** (0.129)	prevTH	-1.721*** (0.598)
prevUW0	-0.904 (0.598)	prevUW1	-0.816*** (0.268)
prevV	-0.754*** (0.229)	prevW	-0.271 (0.171)
prevYEO	-0.421 (0.599)	prevYO	-2.087*** (0.601)
prevZ	-0.689*** (0.147)	languageKorean:fol2AE	-0.130 (0.338)
languageKorean:fol2B	0.090 (0.177)	languageKorean:fol2D	0.104 (0.177)
languageKorean:fol2G	0.028 (0.187)	languageKorean:fol2K	0.294* (0.174)
languageKorean:fol2L	-0.059 (0.157)	languageKorean:fol2M	-0.200 (0.151)
languageKorean:fol2N	-0.281** (0.141)	languageKorean:fol2P	0.627*** (0.219)
languageKorean:fol2R	-0.363** (0.182)	languageKorean:fol2S	-0.120 (0.151)
languageKorean:fol2sp	-0.289** (0.139)	Constant	6.664*** (0.197)
Observations	8,774		
Log Likelihood	-7,812.452		
Akaike Inf. Crit.	15,884.900		
Bayesian Inf. Crit.	16,805.240		

Note: *p<0.1; **p<0.05; ***p<0.01

Table D.2: LMER model for F2 (Bark) of mid-high back round vowels OW and O.

<i>Dependent variable:</i>			
	f2_Bark_smooth_4		f2_Bark_smooth_4
languageKorean	0.626** (0.255)	GenderMale	-0.466** (0.209)
fol2AA	0.746* (0.413)	fol2AE	0.694** (0.342)
fol2AH	0.673** (0.291)	fol2AO	-0.055 (0.455)
fol2AW	0.393 (0.430)	fol2AY	0.781*** (0.290)
fol2B	0.576* (0.311)	fol2BB	0.717* (0.425)
fol2C	1.055*** (0.388)	fol2CH	0.933 (0.845)
fol2D	1.092*** (0.340)	fol2DD	-0.330 (0.577)
fol2DH	1.008*** (0.292)	fol2E	0.978*** (0.222)
fol2EH	0.757* (0.431)	fol2EO	-0.414* (0.214)
fol2ER	0.485 (0.401)	fol2EU	0.110 (0.268)
fol2EY	1.595*** (0.578)	fol2F	1.023*** (0.339)
fol2G	0.635* (0.371)	fol2GG	0.357 (0.458)
fol2H	0.486*** (0.180)	fol2HH	0.947*** (0.309)
fol2I	1.562*** (0.181)	fol2IH	1.046*** (0.296)
fol2IY	1.847*** (0.422)	fol2J	0.845*** (0.185)
fol2JH	1.415*** (0.432)	fol2K	1.259*** (0.292)
fol2L	0.320 (0.291)	fol2M	0.762** (0.299)
fol2N	0.814*** (0.287)	fol2NG	0.595*** (0.149)
fol2O	-0.241 (0.361)	fol2OW	0.751** (0.350)
fol2P	0.942*** (0.321)	fol2R	0.366 (0.356)
fol2S	1.090*** (0.301)	fol2SH	1.564*** (0.326)
fol2sp	0.467 (0.287)	fol2SS	1.167* (0.664)
fol2T	1.195*** (0.268)	fol2TH	0.725** (0.321)
fol2U	-0.425 (0.443)	fol2V	0.693** (0.311)
fol2W	0.339 (0.298)	fol2WA	-0.911 (0.805)
fol2WAE	2.060* (1.129)	fol2WEO	-0.672 (0.582)
fol2Y	1.268*** (0.298)	fol2YA	1.795 (1.131)
fol2YAE	2.532** (1.130)	fol2YE	2.506** (1.135)
fol2YEO	0.540* (0.280)	fol2YI	-0.342 (1.130)
fol2YO	1.423*** (0.180)	fol2YU	1.221 (1.130)
fol2Z	1.000*** (0.301)	fol2ZH	1.231** (0.587)
prevAA1	-0.350 (1.147)	prevAE1	1.290* (0.688)
prevAH0	0.637* (0.330)	prevAH1	0.491 (0.368)
prevAW1	0.121 (1.147)	prevAY1	0.980*** (0.303)
prevAY2	1.059* (0.555)	prevB	0.338 (0.239)
prevC	0.321 (0.487)	prevCH	1.344*** (0.412)
prevD	0.889*** (0.229)	prevDD	0.622** (0.277)
prevDH	0.730*** (0.249)	prevE	0.387 (0.373)
prevEO	-0.371 (0.374)	prevER0	1.087 (0.687)
prevEU	1.290 (0.827)	prevEY1	0.519 (0.343)
prevF	0.630** (0.316)	prevG	0.215 (0.226)
prevGG	0.548 (0.515)	prevH	1.108*** (0.341)
prevHH	0.603** (0.252)	prevI	0.793** (0.327)
prevIH1	1.434 (1.148)	prevIY0	0.935*** (0.320)
prevIY1	0.296 (0.482)	prevJ	0.996*** (0.240)
prevJH	0.886** (0.410)	prevJJ	0.565** (0.286)
prevK	0.241 (0.242)	prevL	0.485* (0.248)
prevM	0.601*** (0.233)	prevN	0.990*** (0.228)
prevNG	0.391 (0.369)	prevO	-0.040 (0.410)
prevOE	-0.020 (0.308)	prevOW1	0.200 (0.298)
prevP	0.165 (0.248)	prevR	0.660*** (0.231)
prevS	0.964*** (0.228)	prevSH	0.972*** (0.310)
prevsp	0.601*** (0.230)	prevSS	2.033*** (0.691)
prevT	0.825*** (0.247)	prevTH	2.028* (1.147)
prevUW0	1.731 (1.146)	prevUW1	-0.828 (0.513)
prevV	-0.433 (0.439)	prevW	0.271 (0.327)
prevYEO	0.015 (1.148)	prevYO	1.583 (1.152)
prevZ	0.799*** (0.282)	languageKorean:fol2AE	-0.069 (0.648)
languageKorean:fol2B	-0.140 (0.339)	languageKorean:fol2D	-0.286 (0.338)
languageKorean:fol2G	-0.180 (0.359)	languageKorean:fol2K	0.284 (0.333)
languageKorean:fol2L	0.009 (0.301)	languageKorean:fol2M	-0.266 (0.290)
languageKorean:fol2N	0.087 (0.270)	languageKorean:fol2P	-0.183 (0.420)
languageKorean:fol2R	-0.006 (0.348)	languageKorean:fol2S	-0.180 (0.289)
languageKorean:fol2sp	-0.394 (0.267)	Constant	9.279*** (0.384)
Observations	8,774		
Log Likelihood	-13,521.490		
Akaike Inf. Crit.	27,302.970		
Bayesian Inf. Crit.	28,223.320		

Note: *p<0.1; **p<0.05; ***p<0.01

Table D.3: LMER model for F1 (Bark) of high back round vowels UW and U.

	<i>Dependent variable:</i>		
	f1_Bark_smooth_4	f1_Bark.smooth_4	
languageKorean	0.223 (0.171)	GenderMale	-0.399*** (0.089)
fol2AA	-0.277 (0.246)	fol2AE	-0.495* (0.282)
fol2AH	-0.535*** (0.204)	fol2AO	-0.458* (0.277)
fol2AW	-0.236 (0.418)	fol2AY	-0.152 (0.231)
fol2B	-1.073*** (0.221)	fol2C	0.314 (0.346)
fol2CH	0.088 (0.693)	fol2D	-0.904*** (0.211)
fol2DH	-0.913*** (0.212)	fol2E	-0.933*** (0.212)
fol2EH	-0.516* (0.277)	fol2EO	-0.275 (0.227)
fol2ER	-0.300 (0.241)	fol2EU	-1.288* (0.662)
fol2EY	-0.967*** (0.375)	fol2F	-0.671*** (0.247)
fol2G	-0.908*** (0.235)	fol2GG	-1.193* (0.647)
fol2H	-0.734*** (0.290)	fol2HH	-0.533** (0.226)
fol2I	-0.662*** (0.178)	fol2IH	-0.669*** (0.216)
fol2IY	-0.850 (0.663)	fol2J	-0.915*** (0.190)
fol2JH	-1.103*** (0.313)	fol2JJ	-1.353** (0.648)
fol2K	-0.821*** (0.218)	fol2L	-0.681*** (0.208)
fol2M	-0.709*** (0.210)	fol2N	-0.706*** (0.224)
fol2NG	-0.638*** (0.180)	fol2OE	-0.150 (0.759)
fol2OW	-0.625* (0.374)	fol2P	-1.090*** (0.212)
fol2R	-0.892*** (0.235)	fol2S	-0.850*** (0.210)
fol2SH	0.014 (0.374)	fol2sp	-0.734*** (0.203)
fol2T	-1.022*** (0.168)	fol2TH	-0.656*** (0.236)
fol2U	-0.359 (0.662)	fol2V	-1.089*** (0.214)
fol2W	-0.748*** (0.211)	fol2WA	-0.675 (0.469)
fol2WEO	0.630 (0.391)	fol2Y	-0.818*** (0.212)
fol2YE	-0.753 (0.472)	fol2YEO	-1.165*** (0.263)
fol2YI	-1.222* (0.648)	fol2YO	-0.358 (0.273)
fol2YU	-1.610** (0.649)	fol2Z	-1.076*** (0.227)
prevAE	-0.730*** (0.155)	prevB	-0.733*** (0.116)
prevC	-0.545*** (0.171)	prevCH	-0.948*** (0.238)
prevD	-1.099*** (0.116)	prevE	-0.813*** (0.279)
prevEO	-0.674*** (0.137)	prevF	-1.115*** (0.151)
prevG	-0.989*** (0.113)	prevGG	-0.840*** (0.304)
prevH	-0.286 (0.414)	prevHH	-1.086*** (0.122)
prevI	-0.460 (0.459)	prevYO	-1.685*** (0.646)
prevJ	-0.784*** (0.121)	prevJH	-1.080*** (0.199)
prevJJ	-1.391*** (0.385)	prevK	-0.402*** (0.129)
prevL	-0.748*** (0.129)	prevM	-0.857*** (0.110)
prevN	-1.043*** (0.132)	prevNG	0.674 (0.477)
prevO	-1.456*** (0.257)	prevP	-0.018 (0.218)
prevR	-0.852*** (0.119)	prevS	-0.798*** (0.121)
prevSH	-1.346*** (0.477)	prevsp	-1.304*** (0.148)
prevT	-1.006*** (0.115)	prevU	-0.938 (0.640)
prevW	-1.591*** (0.466)	prevWA	0.092 (0.643)
prevYEO	-0.393 (0.256)	prevYO	-1.787*** (0.464)
prevYU	-1.984*** (0.643)	prevZ	-1.574** (0.645)
languageKorean:fol2AE	-0.098 (0.337)	languageKorean:fol2B	0.098 (0.208)
languageKorean:fol2D	0.113 (0.200)	languageKorean:fol2G	0.322 (0.213)
languageKorean:fol2K	-0.040 (0.301)	languageKorean:fol2L	-0.127 (0.186)
languageKorean:fol2M	-0.024 (0.181)	languageKorean:fol2N	-0.134 (0.199)
languageKorean:fol2P	0.142 (0.412)	languageKorean:fol2R	0.159 (0.216)
languageKorean:fol2S	0.372* (0.193)	languageKorean:fol2sp	0.204 (0.180)
Constant	6.467*** (0.236)		
Observations	3,782		
Log Likelihood	-3,664.379		
Akaike Inf. Crit.	7,542.758		
Bayesian Inf. Crit.	8,210.225		

Note: *p<0.1; **p<0.05; ***p<0.01

Table D.4: LMER model for F2 (Bark) of high back round vowels UW and U.

	<i>Dependent variable:</i>		
	f2_Bark_smooth_4	f2_Bark_smooth_4	
languageKorean	-0.413 (0.263)	GenderMale	-0.539** (0.221)
fol2AA	-0.954** (0.379)	fol2AE	-0.440 (0.436)
fol2AH	-0.268 (0.314)	fol2AO	-0.290 (0.428)
fol2AW	-0.336 (0.646)	fol2AY	-0.323 (0.356)
fol2B	0.753** (0.341)	fol2C	0.602 (0.533)
fol2CH	1.887* (1.069)	fol2D	0.981*** (0.325)
fol2DH	0.498 (0.327)	fol2E	1.046*** (0.327)
fol2EH	0.074 (0.427)	fol2EO	-0.628* (0.350)
fol2ER	-0.233 (0.372)	fol2EU	-1.605 (1.022)
fol2EY	-0.118 (0.579)	fol2F	0.827** (0.381)
fol2G	0.508 (0.362)	fol2GG	-0.234 (0.999)
fol2H	0.576 (0.447)	fol2HH	0.416 (0.348)
fol2I	1.603*** (0.275)	fol2IH	0.102 (0.332)
fol2IY	0.347 (1.022)	fol2J	1.026*** (0.292)
fol2JH	1.050** (0.483)	fol2JJ	1.576 (1.000)
fol2K	0.667** (0.336)	fol2L	-0.363 (0.321)
fol2M	0.331 (0.324)	fol2N	0.981*** (0.345)
fol2NG	0.935*** (0.278)	fol2OE	0.775 (1.171)
fol2OW	-0.888 (0.577)	fol2P	0.628* (0.327)
fol2R	-0.011 (0.362)	fol2S	0.888*** (0.324)
fol2SH	1.128* (0.578)	fol2sp	-0.059 (0.313)
fol2T	0.851*** (0.259)	fol2TH	0.916** (0.364)
fol2U	0.300 (1.021)	fol2V	0.161 (0.330)
fol2W	-0.174 (0.326)	fol2WA	-0.906 (0.723)
fol2WEO	-0.010 (0.602)	fol2Y	1.020*** (0.326)
fol2YE	0.346 (0.728)	fol2YEO	0.248 (0.406)
fol2YI	1.011 (1.000)	fol2YO	1.361*** (0.421)
fol2YU	0.332 (1.001)	fol2Z	0.852** (0.350)
prevAE	-0.044 (0.240)	prevB	0.384** (0.179)
prevC	1.512*** (0.263)	prevCH	0.755** (0.367)
prevD	1.171*** (0.178)	prevE	-0.522 (0.430)
prevEO	-0.426** (0.211)	prevF	-0.129 (0.233)
prevG	0.179 (0.174)	prevGG	0.581 (0.468)
prevH	0.288 (0.639)	prevHH	0.091 (0.188)
prevI	0.603 (0.709)	prevIYO	1.794* (0.997)
prevJ	0.871*** (0.187)	prevJH	1.463*** (0.307)
prevJJ	0.641 (0.595)	prevK	-0.178 (0.199)
prevL	0.143 (0.199)	prevM	0.215 (0.170)
prevN	0.811*** (0.204)	prevNG	-0.724 (0.735)
prevO	0.359 (0.396)	prevP	0.371 (0.336)
prevR	0.171 (0.184)	prevS	0.878*** (0.187)
prevSH	0.750 (0.736)	prevsp	0.359 (0.228)
prevT	1.069*** (0.177)	prevU	0.252 (0.988)
prevW	0.592 (0.720)	prevWA	0.264 (0.993)
prevYEO	-0.421 (0.395)	prevYO	1.341* (0.715)
prevYU	0.695 (0.991)	prevZ	0.248 (0.995)
languageKorean:fol2AE	1.374*** (0.520)	languageKorean:fol2B	-0.275 (0.321)
languageKorean:fol2D	-0.202 (0.308)	languageKorean:fol2G	0.039 (0.328)
languageKorean:fol2K	-0.065 (0.465)	languageKorean:fol2L	1.028*** (0.287)
languageKorean:fol2M	0.236 (0.279)	languageKorean:fol2N	-0.096 (0.307)
languageKorean:fol2P	-0.780 (0.637)	languageKorean:fol2R	0.608* (0.334)
languageKorean:fol2S	0.309 (0.298)	languageKorean:fol2sp	0.775*** (0.277)
Constant	11.042*** (0.380)		
Observations	3,782		
Log Likelihood	-5,318.415		
Akaike Inf. Crit.	10,850.830		
Bayesian Inf. Crit.	11,518.300		

Note: *p<0.1; **p<0.05; ***p<0.01

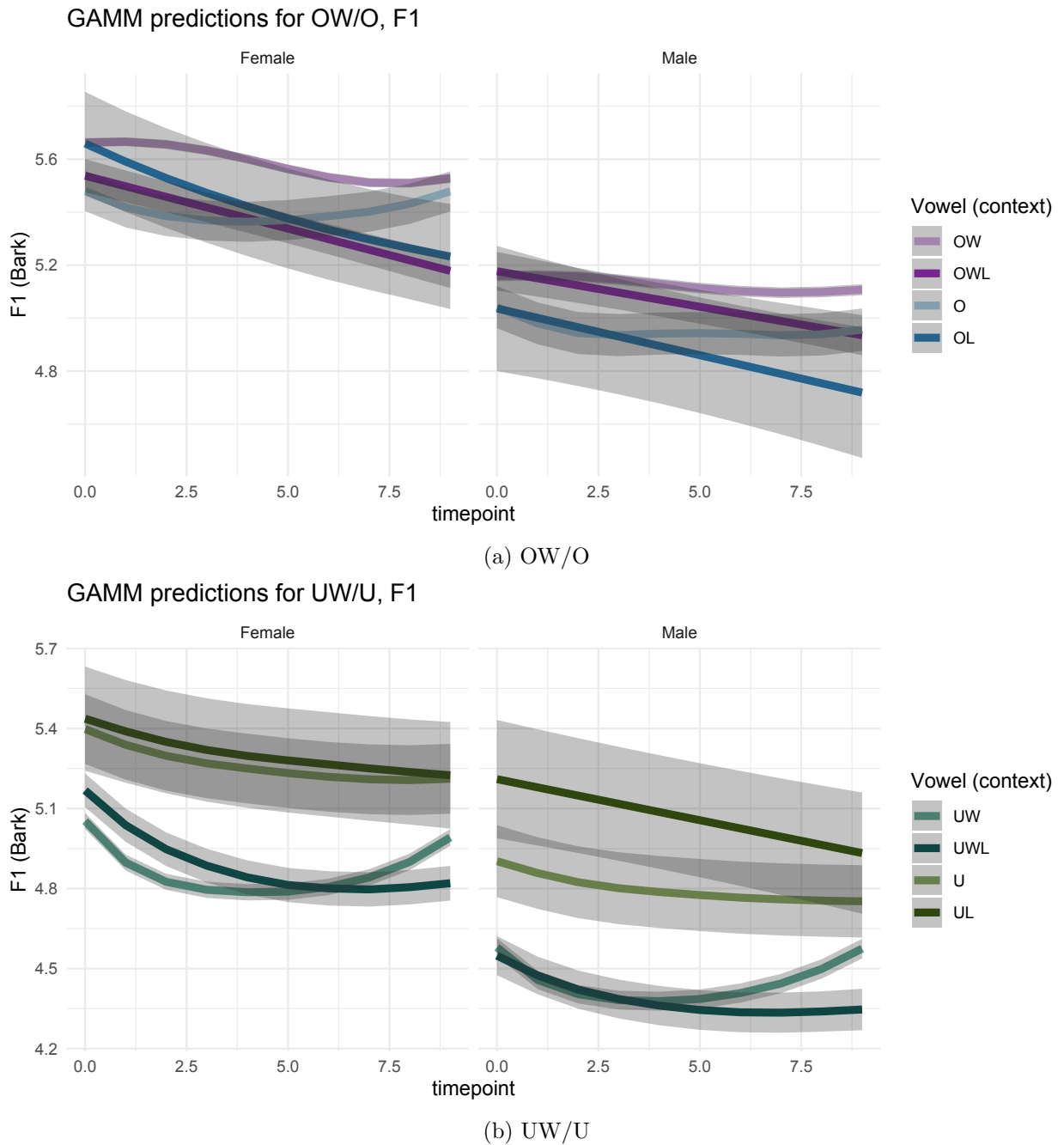


Figure D.3: Generalized Additive Mixed Model (GAMM) prediction of F1 trajectories of (a) GOAT (OW) and /o/, and (b) GOOSE (UW) and /u/.

Appendix E

High back vowel lexical sets

The following 416 English words were categorized as containing the high back rounded vowels relevant to the analysis in Chapter 4.

The lexical set (n=257) of words and other utterances (including incomplete utterances and “non-words”) containing English /ou/ (OW) in a stressed syllable:

ago, almost, alone, although, anecdote, associate, associated, association, associations, audio,

befo-, below, biola, blown, bo-, boat, borrowed, both, broke, broken, cajon, chicago, cho, chose, chosen, close, closed, closely, closer, closest, clothes, clothing, co, coast, code, codes, cody, cohort, cohorts, cold, colder, colloquial, colonialism, component, control, coworker, coworkers, cutthroat,

diagnose, diploma, diplomacy, do-, don-, don't, donate, dont, dope, download, dunno,

emotional, emotionally, emotions, enrolled, episodes, exploded, exposed, exposure,

flow, flows, fo-, focus, focused, fold, folks,

glendora, go, goal, goals, goer, goes, gogos, going, grocery, gross, grove, grow, growing, grown, grows, growth,

hbo, hello, histor-, hoho, hold, holding, holy, home, homeless, homelessness, homework, homeworks, homies, homophobia, hope, hopefully, hoping, hormonal, host, household,

impose,

job, jokative, joke, jokes, jokingly, jose, joseph,

know, knowing, known, knows,

local, located, loma, los, low, lower, lowest,

magnolia, mediocre, minnesota, mo-, mode, mold, moment, moments, monotone, moreover, mos-, most, mostly,

nno, no, nobody, noca-, nope, note, notice, noticeable, noticed,
o, oakland, oc, october, oh, ok, okay, old, older, oldest, on-, only,
open, opened, opening, opens, opposed, opposing, outgoing, over,
overall, overhear, overhearing, overseeing, overwrote, own, owned,
owner, owners,
phone, phonemes, photo, pomona, post, posted, poster, prob, pro-
gram, programmed, prone, pronu-, pros,
quote, quotes,
radio, ramon, ratio, rhode, roast, role, rolling, rosemead, rote, row,
scolding, seoul, show, showed, shows, slow, slower, slowly, snow,
so, social, socialers, social, socially, socio, sociolinguistics, solar, sold,
solely, spoke, spoken, staccato, stolen, stroll, suppose, supposed,
telephone, those, though, throats, throw, throwing, thrown, to-, toe,
told, tomorrow, tone, toned, tones, totally, trophies,
undertones, unquote,
vocab,
whole, woke, wokeness, won't, wrote,
zone, zootopia

The lexical set (n=159) of words and other utterances (including incomplete utterances and “non-words”) containing English /u/ (UW) in a stressed syllable:

absolute, absolutely, actual-, approval, assume, assumed, assuming,
attitude, attitudes, avenue, azusa,
bathroom, beluga, blue, bruce, buddhist, buena, busan's,
choose, chooses, classroom, clue, consume, consuming, contextually,
cool,
do, doing, doodle, dual, dude, due, duper,
exclu-, exclude, excluding, exclusive, exclusively,
flew, fluency, fluent, fluently, food, fool, frappuccinos, frugally,
grew, group, grouped, groups,
honolulu,
improve, improved, improvement, improves, include, included, in-
cluding, influences, influencing, into, introduce, introduced, intro-
ducing,
jewel, jews, junior,
knew,
lewis, loosened, looted, lose, loses, losing, lunar,

moon, move, moved, movie, movie's, movies, moving,
 new, news, newspaper, newspapers, nuance, nuances, nuclear,
 ooh, oops, opportunistic, opportunities, opportunity,
 pooped, preschool, prove, pursue,
 recruit, recruiting, removed, renew, renewing, reproduce, room, room-
 mate, roommates, rooms, rooted, roots, rude, rule, rules, rumors,
 scho-, school, school's, schooled, schooling, schools, scoot, scrutinized,
 secluded, shoes, smooth, soo, soon, soup, stude-, student, students,
 studious, stupid, subgroup, subgroups, suitable, suny, super, superfi-
 cially, superiority, superman, supermarkets, sushi,
 through, to, too, tool, true, tuesday, tutor, tutoring, two,
 webtoons, who, who'd, who's, whom, whose, wo-

(Occurrences of /u/ that followed the palatal glide /j/ (e.g., *use*, *cue*) were removed from the analysis.)

Within each of the two lexical sets defined above, the set of words that contained /ou/ and /u/ before the lateral consonant /l/:

although, below, biola, cold, colder, control, enrolled, fold, go, goal,
 goals, grow, hold, holding, holy, household, know, low, magnolia,
 mold, no, oh, old, older, oldest, role, rolling, scolding, seoul, show,
 slowly, so, solar, sold, solely, stolen, stroll, though, told, whole
 cool, do, dual, fool, grew, honolulu, into, preschool, rule, rules, school,
 school's, schooled, schooling, schools, through, to, too, tool, true, two,
 who

Note that the presence of a post-vocalic /l/ does not distinguish between an /l/ that is parsed as a syllable coda and an /l/ that is the onset of the following syllable. In particular, there are many words that have no consonant coda (e.g., *so*, *into*), in which their status as pre-lateral vowels depends entirely on the onset /l/ of the following word.

Appendix F

Korean cultural adjacency scoring

The Korean cultural adjacency score was developed by myself and Ashika Raghavan, one of my undergraduate research apprentices. Drawing on the surveys of Korean American biculturality in Lee (2002) and Kang and Kim (2012), we sought to create a scale by which a Korean American's adjacency to Korean culture could be measured, in relation to other Korean Americans.

Adjacency to Korean culture is a combination of a myriad of traits, and I will be the first to say that it is impossible to accurately quantify. Nevertheless, I wished to have a way to indicate which Korean Americans in my sample spent none of their time engaging with Korean entertainment in media, never spoke Korean to their parents, never took Korean language classes, and never celebrated Korean traditions with their families, etc., versus Korean Americans who watched Korean television every day, read books in the Korean language, and used only the Korean language with their tradition-honoring Korean families who also only ever ate Korean food at home, etc. These two (purely hypothetical) archetypes of Korean Americans would serve as extreme ends of a spectrum of adjacency to (peninsular and/or South) Korean culture.

The scale was developed using the data from the bilingual sociolinguistic interviews in a post-hoc manner, by which I mean that it was derived after the interviews had all been completed, rather than the other way around (i.e., determining a scale of cultural adjacency and fitting the interview questions to it). Only data about each interviewee's language background, family life, and behavior given during their interview were used in the calculation. The calculation was done in two parts, one for adjacency to Korean culture during childhood, and one during adulthood.

Childhood factors included languages used in the home and heard in the neighborhood during the interviewee's childhood, as well as some personal behaviors such as consuming Korean media and entertainment. This scale's calculation is described in Table F.1.

Adulthood factors included enrollment in formal Korean language classes, years spent living in Korea as an adult, and using Korean on a daily basis at the subject's place of employment. This scale's calculation is described in Table F.2.

For the overall Korean cultural adjacency scores, the raw childhood score (up to 162

Table F.1: Korean cultural adjacency score calculation: childhood factors.

Start	
“How Korean is your family?”	“Very”: +9 “Pretty”: +7 “Middle”: +5 NA: +5 otherwise, use number given on 1-10 scale
	Multiply the above by 10
“Which language are you more comfortable in?”	Korean only: +10 Both English and Korean: +5 English only: +0
“What language did you speak with your father?”	Korean only: +5 Both English and Korean: +3 English only: +0
“What language did you speak with your mother?”	Korean only: +5 Both English and Korean: +3 English only: +0
“Did you attend a Korean church?”	Yes: +10 No: +0
“What language did you use/hear in church?”	Korean only: +5 Both English and Korean: +3 English only: +0
“What language(s) did you hear in your neighborhood growing up?”	Korean: +5 Any other language: +0
“Did you attend weekend Korean school or take formal Korean language classes?”	+2 for every year or two-semester equivalent, up to 10 “Yes”: +5
“Did your family eat mostly Korean food when you were a child?”	Yes: +1
“Do you use Korean to order food at Korean restaurants?”	Yes: +1
“How much Korean media do you consume?”	“A lot”: 5 “Some”: +1 “None”: +0
“Do you use English subtitles when watching Korean media?”	“Never”: +5 “Sometimes”: +3 “Always”: 0
	Divide by 16.2

Table F.2: Korean cultural adjacency score calculation: adulthood factors.

Start	
“Did you take formal Korean classes in university?”	+1 per semester of college-level Korean, up to 8
“Have you lived as an adult in Korea?”	+5 per year of living in Korea, up to 15
“Does your current job involve using Korean on a daily basis?”	Yes: +15 No: +0
Divide by 3.8	

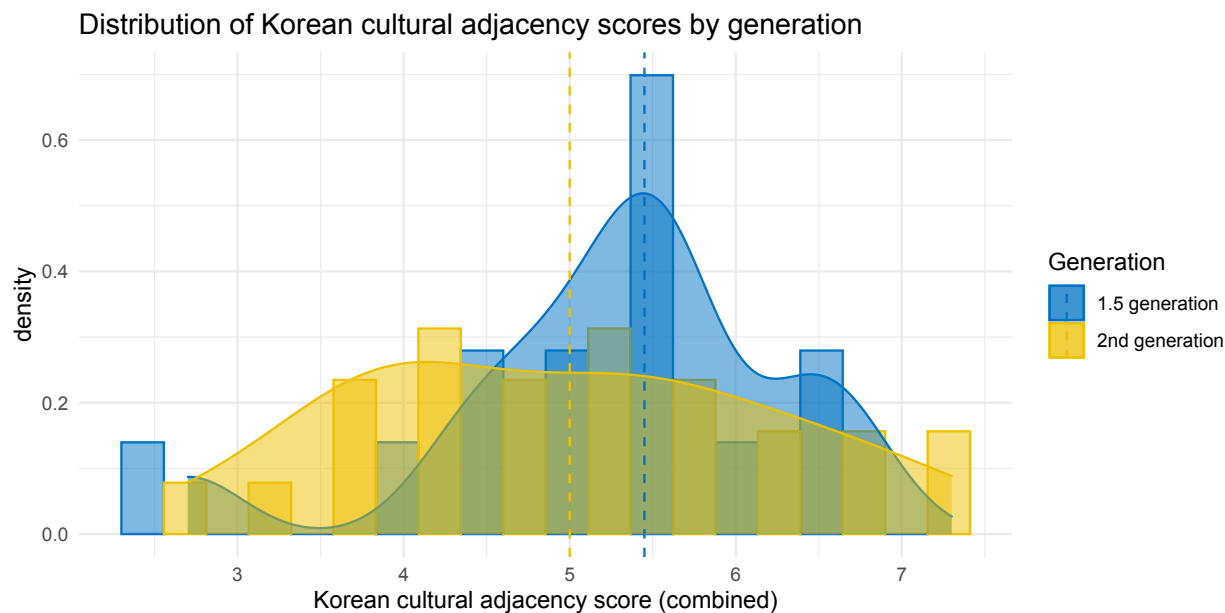


Figure F.1: Distribution and density of Korean cultural adjacency scores by generation, with median values for each generational group indicated by the dashed lines.

points) and the raw adulthood score (up to 38 points) were added, and then divided by 200 to get a weighted score between 0 and 10. The interviewees’ Korean cultural adjacency scores are plotted in Figure F.1. We can see that 1.5 generation Korean Americans tended to have higher scores (mean=5.30, median=5.45), with a large cluster at around 5.5 and a small bump on the higher end of the scale, while second generation Korean Americans were evenly distributed between scores of 2 to 8, with a lower overall mean of 4.97 (median=5). However, a Wilcoxon rank sum test (for unpaired, non-parametric data) showed that the two generational groups did not differ significantly ($r=-0.707$, $p=0.3122$). Thus, we can use the cultural adjacency score as a dependent variable to explore other aspects of speech, such

as the speakers' accentedness ratings (as explored in Section 6.2.2).

In Figure F.2, I have plotted the relationship between cultural adjacency score and each speaker's native-like accent rating for English (above) and Korean (below), with different colors and regression lines for each generational group. When comparing cultural adjacency score to native-like English accent, it appears that there is no strong correlation, as the regression lines for both generations are flat. A Pearson's correlation test found no correlation for 1.5 generation ($r=-0.112$, $p=0.9018$), or second generation ($r=-0.024$, $p=0.9077$).

However, for native-like Korean accent, there is a positive correlation for both 1.5 and second generation Korean Americans, whereby the higher the cultural adjacency score, the higher the native-like accent rating. The correlations were significant for both 1.5 generation ($r=0.635$, $p=0.0147$) and second generation ($r=0.541$, $p=0.0053$).

In addition, 1.5 generation speakers as a whole had higher native-like accent ratings than second generation speakers, as discussed in Section 6.

Although the calculation for Korean cultural adjacency was post-hoc and rather unconventional, these results suggest that a Korean American individual's degree of connection to Korean culture does have an effect on the way their Korean speech is perceived, but does not have any effect on the way their English speech is perceived.

Cultural adjacency scores for all subjects, including childhood factors (KAS.C), adulthood factors (KAS.A), and combined (KAS), can be found in Appendix G.

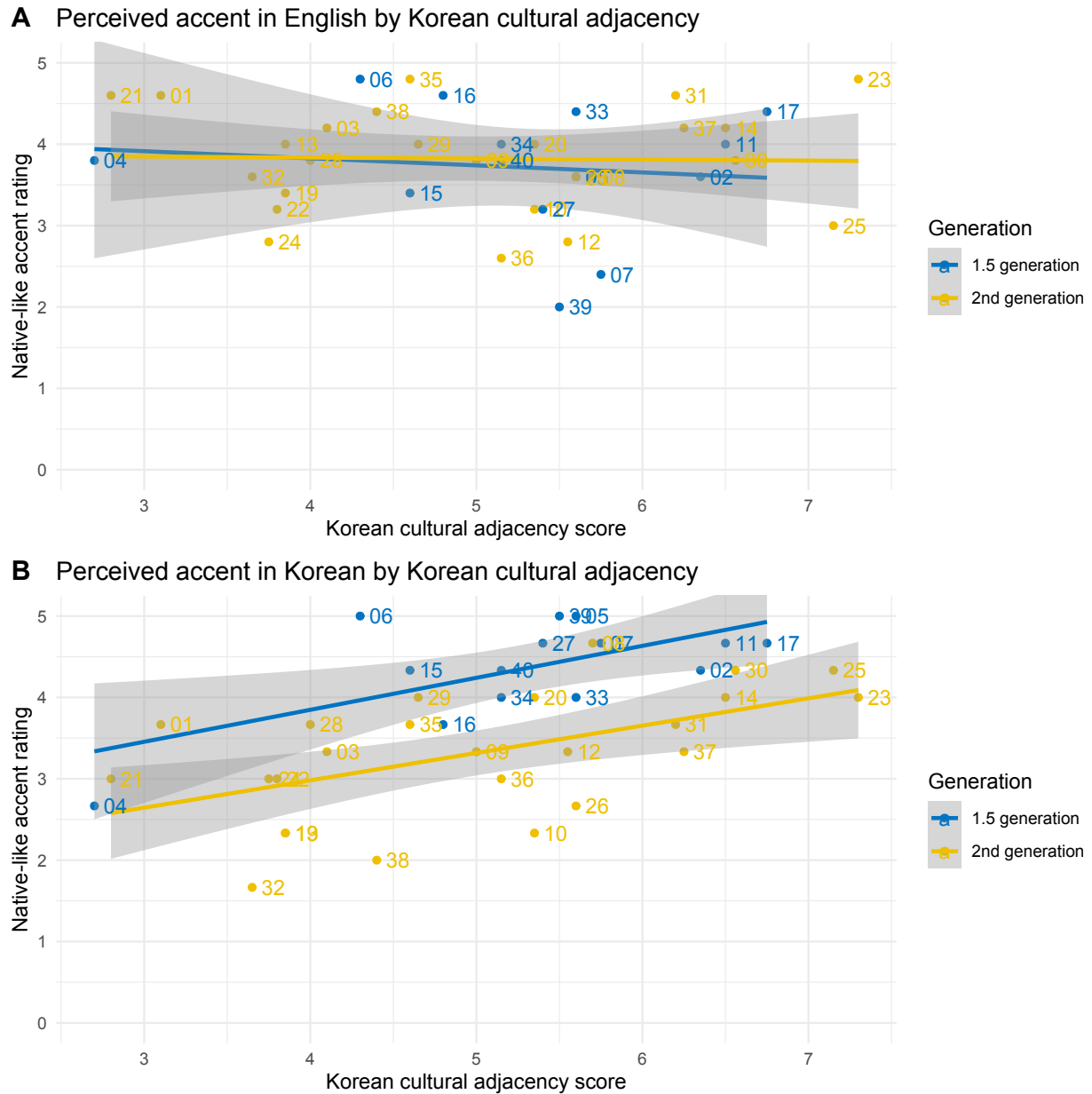


Figure F.2: English (A) and Korean (B) accentedness ratings by speakers' Korean cultural adjacency score and generation.

Appendix G

Bilingual sociolinguistic interview: Subject metadata

Tables G.1, G.2, and G.3 provide sociodemographic data and interview metadata for the forty Korean American interviewees whose speech was analyzed in Chapters 3, 4, 5, and 6. Pseudonyms are used to protect privacy.

Table G.1: Sociolinguistic interviewees and selected sociodemographic data. “KI.dur”, “KR.dur”, and “EI.dur” are the durations (in seconds) of each interview portion: Korean Interview, Korean Reading task, and English Interview. “Int.” are the initials of the interviewer.

Subj.	Mic	Pseudonym	Int.	KI.dur	KR.dur	EI.dur	Age	Gender
01	SPARCL	‘Harry’	CJ	133.93	208.51	1039.2	20	Male
02	SPARCL	‘Peter’	CJ	164.99	103.2	1372.88	21	Male
03	SPARCL	‘Jemma’	FZ	393.57	113.85	1555.54	19	Female
04	SPARCL	‘Melanie’	CJ	213.01	303.12	2244.56	25	Female
05	SPARCL	‘Astrid’	FZ	265.05	107.35	1328.19	20	Female
06	SPARCL	‘Hae-in’	AP	219.82	147.88	1629.21	18	Female
07	SPARCL	‘Jimin’	MC	324.7	100.73	1109.2	19	Female
08	SPARCL	‘Esther’	MC	321.81	109.6	1359	20	Female
09	SPARCL	‘Johnny’	MC	507.5	338.127	1584	20	Male
10	SPARCL	‘Joanna’	AP	435.04	785.41	2440.01	22	Female
11	SPARCL	‘Hojun’	MC	190.47	122.4	1633.1	21	Male
12	SPARCL	‘Eric’	MC	327.4	190.49	1673.73	23	Male
13	SPARCL	‘Christina’	AP	998.68	404.128	1944.4	20	Female
14	SPARCL	‘Krystal’	MC	243.75	138	1702.1	25	Female
15	SPARCL	‘Lisa (Hyejin)’	AP	531.85	82.2	2223.6	26	Female
16	SPARCL	‘Claudia’	MC	631.74	191.34	1374.02	19	Female
17	SPARCL	‘Janice’	MC	734.46	87.33	1561.06	18	Female
18	SPARCL	‘Jaehee’	AP	590.94	NA	NA	18	Female
19	SPARCL	‘David’	MC	646.08	127.51	1312	20	Male
20	SPARCL	‘Yuri’	MC	748.9	129.1	2031.1	19	Female
21	SPARCL	‘Amy’	AP	535.28	164.04	2723.66	27	Female
22	SPARCL	‘Edison’	MC	727	216.2	1622.4	29	Male
23	SPARCL	‘Sarah’	AC	972.84	207.14	3131.8	28	Female
24	Zoom	‘Phil’	AC	409.7	186.8	463	18	Male
25	Zoom	‘Cassie’	AC	295.44	161.98	2848.87	24	Female
26	Zoom	‘Kenny’	AC	498.32	357.99	1947.32	26	Male
27	Zoom	‘Sungwoo’	AC	370.85	203.55	2952.15	23	Male
28	Zoom	‘Jessica’	AC	591.16	294.261	2118.59	21	Female
29	Zoom	‘Charlie’	AC	644.79	242.61	2449.896	25	Male
30	Zoom/Phone	‘Josephina’	AC	536.6	168.3	1070.2	30	Female
31	Zoom	‘John’	AC	803.4	160.6	2665.9	25	Male
32	Zoom	‘Winston’	AC	789.7	264.74	2180.46	26	Male
33	Zoom	‘Stephanie’	AC	508.53	116.86	2831	30	Female
34	Zoom	‘Yuna’	AC	733.97	101.98	2107	32	Female
35	Zoom	‘Kelsey’	AC	653.4	157.4	2751.7	28	Female
36	Zoom	‘Jennifer’	AC	677.98	217.872	2017.36	31	Female
37	Zoom	‘Catherine’	AC	623.87	189.322	2693.756	36	Female
38	Zoom	‘Adrian’	AC	659.18	388.08	2123.65	25	Male
39	Zoom	‘Rugyeong’	AC	651.17	98.71	2894.98	32	Female
40	Zoom	‘Emily’	AC	795.52	100.59	2575.6	55	Female

Table G.2: Sociolinguistic interviewees and selected sociodemographic data. “CA” refers to whether the subject is born and/or raised in California, or has lived in California continuously for at least 10 years. “A.I.” refers to the subject’s Age of Immigration to the United States (i.e., Age of Arrival). In the event of repeated transnational movement, the youngest age is recorded. “Gen.” refers to generational status.

Subj.	Pseudonym	Birthplace	CA	A.I.	Ethnic.self.ident	Gen.
01	‘Harry’	New York	Yes	0	Korean American	2nd
02	‘Peter’	Seoul	Yes	9	Korean American	1.5
03	‘Jemma’	Irvine, CA	Yes	0	Korean American	2nd
04	‘Melanie’	Korea	Yes	0.5	Korean American*	1.5
05	‘Astrid’	Gyeonggi	Yes	3	Korean American	1.5
06	‘Hae-in’	Busan	No	5	Korean	1.5
07	‘Jimin’	Bundang, Seoul	Yes	8	Korean	1.5
08	‘Esther’	New York	Yes	0	Korean	2nd
09	‘Johnny’	Los Angeles, CA	Yes	0	Korean	2nd
10	‘Joanna’	Oakland, CA	Yes	0	Korean American	2nd
11	‘Hojun’	Bundang, Seoul	Yes	10	Korean	1.5
12	‘Eric’	Los Angeles, CA	No	0	Korean	2nd
13	‘Christina’	El Centro	Yes	0	Korean	2nd
14	‘Krystal’	Arizona	Yes	0	Korean	2nd
15	‘Lisa (Hyejin)’	Korea	No	10	Korean	1.5
16	‘Claudia’	Seoul, Korea	No	3	Korean American	1.5
17	‘Janice’	Seoul, Korea	No	10	Korean	1.5
18	‘Jahee’	Los Angeles, CA	Yes	0	Korean American	2nd
19	‘David’	New Jersey	Yes	0	Korean	2nd
20	‘Yuri’	New York	No	0	Korean	2nd
21	‘Amy’	Pittsburgh, PA	No	0	Korean	2nd
22	‘Edison’	San Francisco, CA	Yes	0	Korean	2nd
23	‘Sarah’	Los Angeles, CA	Yes	0	Korean American	2nd
24	‘Phil’	Los Angeles, CA	Yes	0	Korean American	2nd
25	‘Cassie’	Los Angeles, CA	Yes	0	Korean	2nd
26	‘Kenny’	Glendale, CA	Yes	0	Korean American	2nd
27	‘Sungwoo’	Seoul, Korea	Yes	12	Korean	1.5
28	‘Jessica’	Glendale, CA	Yes	0	Korean	2nd
29	‘Charlie’	Los Angeles, CA	Yes	0	Korean American	2nd
30	‘Josephina’	Fullerton, CA	Yes	0	Korean/Korean American	2nd
31	‘John’	Los Angeles, CA	Yes	0	Korean	2nd
32	‘Winston’	Garden Grove, CA	Yes	0	Korean American	2nd
33	‘Stephanie’	Seoul, Korea	No	3	Korean	1.5
34	‘Yuna’	Incheon, Korea	Yes	10	Korean American	1.5
35	‘Kelsey’	Fullerton, CA	Yes	0	Korean	2nd
36	‘Jennifer’	Koreatown, LA	Yes	0	Korean	2nd
37	‘Catherine’	Garden Grove, CA	Yes	0	Korean American	2nd
38	‘Adrian’	Los Angeles, CA	Yes	0	Korean American	2nd
39	‘Rugyeong’	Seoul, Korea	Yes	16	Korean American	1.5
40	‘Emily’	Seoul, Korea	Yes	8	Korean American	1.5

*Subject specified, “I’m closer to American than anything.”

Table G.3: Sociolinguistic interviewees and selected sociodemographic data. “L1” is the subject’s first language. “Eng.comf.age” is the age at which the subject began to feel more comfortable using English. “Lg.dom” refers to the language the subject considers to be their dominant language. “KAS” scores are discussed in Appendix F.

Subj.	Pseudonym	L1	Eng.comf.age	Lg.dom	KAS.C	KAS.A	KAS
01	‘Harry’	Korean	since the beginning- more comfortable than Korean	English	3.77	0.26	3.1
02	‘Peter’	Korean	at an early age- around 10-11	English	7.84	0	6.35
03	‘Jemma’	Korean	around when she entered school	English	5.06	0	4.1
04	‘Melanie’	Korean	1-2 years after starting school (so maybe around 4 or 5)	English	3.33	0	2.7
05	‘Astrid’	Korean	5, confident at 9 years old (5th grade)	English	6.79	0.53	5.6
06	‘Hae-in’	Korean	comfortable/became dominant English speaking at 9 yrs old	English	5.31	0	4.3
07	‘Jimin’	Korean	sixth grade	Both	7.1	0	5.75
08	‘Esther’	Korean	preschool, since beginning school	English	6.98	0.26	5.7
09	‘Johnny’	Korean	after elementary school, by the time middle school started	English	6.05	0.53	5
10	‘Joanna’	English	3 yrs old	English	6.6	0	5.35
11	‘Hojun’	Korean	9 yrs old	English	8.02	0	6.5
12	‘Eric’	Korean	since starting school (kindergarten) through ESL program	English	6.6	1.05	5.55
13	‘Christina’	Korean	2nd grade	English	4.75	0	3.85
14	‘Krystal’	Korean	after starting school, around middle school	English	7.72	1.32	6.5
15	‘Lisa (Hyejin)’	Korean	6th grade	Both	5.68	0	4.6
16	‘Claudia’	Korean	2nd or 3rd grade	English	5.93	0	4.8
17	‘Janice’	Korean	after 2nd grade	Both	8.33	0	6.75
18	‘Jaehee’	Korean	after elementary school	English	5.37	0	4.35
19	‘David’	English	from a young age- more comfortable than Korean	English	4.75	0	3.85
20	‘Yuri’	Both	from a young age	English	6.6	0	5.35
21	‘Amy’	Korean	5 yrs old	English	2.84	2.63	2.8
22	‘Edison’	Both	after starting school	English	4.2	2.11	3.8
23	‘Sarah’	Korean	4 yrs old	English	8.4	2.63	7.3
24	‘Phil’	Korean	preschool, 4 yrs old	English	4.63	0	3.75
25	‘Cassie’	Korean	5 yrs old	Both	7.9	3.95	7.15
26	‘Kenny’	Korean	junior kindergarten, around 4 yrs old	English	6.91	0	5.6
27	‘Sungwoo’	Korean	15-16	English	6.67	0	5.4
28	‘Jessica’	Korean	after starting school	English	4.94	0	4
29	‘Charlie’	Korean	6 years old	English	5.74	0	4.65
30	‘Josephina’	Korean	always been comfortable/dominant in English	English	8.1	0	6.56
31	‘John’	Both	always been comfortable	English	7.65	0	6.2
32	‘Winston’	Korean	5 years old (kindergarten)	English	4.32	0.79	3.65
33	‘Stephanie’	Korean	4 years old (kindergarten)	English	5.99	3.95	5.6
34	‘Yuna’	Korean	around 13-14 years old	English	6.36	0	5.15
35	‘Kelsey’	Korean	4 years old	English	4.75	3.95	4.6
36	‘Jennifer’	Korean	high school	English	6.11	1.05	5.15
37	‘Catherine’	Korean	2nd or 3rd grade	English	7.65	0.26	6.25
38	‘Adrian’	Korean	Kindergarten	English	5.25	0.79	4.4
39	‘Rugyeong’	Korean	18 years old	Both	6.54	1.05	5.5
40	‘Emily’	Korean	10 years old	Both	6.36	0	5.15

Appendix H

Bilingual sociolinguistic interview: Accent and proficiency ratings

The data in this appendix are additional material relevant to any analyses of the bilingual sociolinguistic interview data that involved ratings of accent and/or proficiency in either English or Korean.

Table H.1 shows the ratings of Korean accent and proficiency as described in Section 6.2.2.

Table H.2 shows the ratings of English accent and proficiency as described in Section 6.2.2. Subject 18 was excluded from being rated due to an error during interview recording. Rater AO only completed the accent rating, not the proficiency rating.

Table H.1: Ratings of Korean interview (KI) speech of each of the forty bilingual sociolinguistic interview participants on scales of accent (A) and proficiency (P) by each of three raters (SJ, DP, and EY), as well as mean ratings of each.

Subj	KIA-SJ	KIP-SJ	KIA-DP	KIP-DP	KIA-EY	KIP-EY	mean.A	mean.P
01	2	3	4	4	5	5	3.666666667	4
02	4	5	4	4	5	5	4.333333333	4.666666667
03	3	5	3	4	4	5	3.333333333	4.666666667
04	2	2	3	3	3	1	2.666666667	2
05	5	5	5	5	5	5	5	5
06	5	5	5	5	5	5	5	5
07	4	5	5	5	5	5	4.666666667	5
08	5	5	4	5	5	5	4.666666667	5
09	3	4	3	2	4	3	3.333333333	3
10	3	3	2	3	2	2	2.333333333	2.666666667
11	5	5	4	3	5	5	4.666666667	4.333333333
12	3	4	3	4	4	5	3.333333333	4.333333333
13	2	1	3	3	2	2	2.333333333	2
14	4	5	3	4	5	5	4	4.666666667
15	4	5	4	4	5	5	4.333333333	4.666666667
16	3	4	4	3	4	3	3.666666667	3.333333333
17	5	5	4	4	5	5	4.666666667	4.666666667
18	4	4	4	4	2	2	3.333333333	3.333333333
19	2	1	4	3	1	3	2.333333333	2.333333333
20	3	4	4	4	5	4	4	4
21	2	2	4	3	3	2	3	2.333333333
22	3	1	3	3	3	3	3	2.333333333
23	4	5	4	5	4	5	4	5
24	2	4	3	4	4	4	3	4
25	4	3	4	4	5	4	4.333333333	3.666666667
26	2	2	3	4	3	4	2.666666667	3.333333333
27	5	4	4	4	5	5	4.666666667	4.333333333
28	3	5	4	4	4	3	3.666666667	4
29	3	3	4	4	5	5	4	4
30	4	4	4	4	5	4	4.333333333	4
31	2	3	4	3	5	5	3.666666667	3.666666667
32	2	2	2	4	1	2	1.666666667	2.666666667
33	3	5	4	4	5	5	4	4.666666667
34	3	5	4	5	5	5	4	5
35	2	3	4	4	5	5	3.666666667	4
36	3	1	3	3	3	3	3	2.333333333
37	2	4	4	5	4	5	3.333333333	4.666666667
38	1	1	3	3	2	1	2	1.666666667
39	5	5	5	5	5	5	5	5
40	4	4	4	4	5	5	4.333333333	4.333333333

Table H.2: Ratings of English interview (EI) speech of each of the forty bilingual sociolinguistic interview participants on scales of accent (A) and proficiency (P) by each of five raters (SJ, DP, EY, AR, and AO), as well as mean ratings of each.

Subj	EIA-SJ	EIP-SJ	EIA-DP	EIP-DP	EIA-EY	EIP-EY	EIA-AR	EIP-AR	EIA-AO	mean.A	mean.P
01	3	5	5	5	5	5	5	5	5	4.60	5
02	3	5	3	4	5	5	3	5	4	3.60	4.75
03	4	5	5	5	5	5	3	5	4	4.20	5
04	2	5	4	5	5	5	3	5	5	3.80	5
05	3	5	4	4	5	5	2	4	4	3.60	4.5
06	4	5	5	5	5	5	5	5	5	4.80	5
07	2	5	3	4	2	5	1	5	4	2.40	4.75
08	3	5	4	4	4	5	2	5	5	3.60	4.75
09	3	5	4	4	5	5	3	5	4	3.80	4.75
10	3	5	4	4	4	5	1	4	4	3.20	4.5
11	2	5	4	4	5	5	4	5	5	4.00	4.75
12	1	5	4	4	3	5	1	5	5	2.80	4.75
13	2	5	4	4	5	5	4	4	5	4.00	4.5
14	3	5	4	4	5	5	4	4	5	4.20	4.5
15	3	5	4	5	4	5	2	4	4	3.40	4.75
16	4	5	4	5	5	5	5	5	5	4.60	5
17	4	5	4	5	5	5	4	5	5	4.40	5
18											
19	3	5	4	4	4	5	2	5	4	3.40	4.75
20	3	5	4	5	5	5	3	4	5	4.00	4.75
21	3	5	5	5	5	5	5	5	5	4.60	5
22	3	5	4	5	5	5	1	5	3	3.20	5
23	4	5	5	5	5	5	5	5	5	4.80	5
24	2	5	4	5	3	5	2	5	3	2.80	5
25	3	5	4	5	3	5	2	5	3	3.00	5
26	1	5	4	5	5	5	3	5	5	3.60	5
27	2	5	4	5	4	5	2	5	4	3.20	5
28	3	5	5	5	5	5	2	4	4	3.80	4.75
29	3	5	4	5	5	5	4	5	4	4.00	5
30	3	5	4	5	5	5	3	5	4	3.80	5
31	4	5	4	5	5	5	5	5	5	4.60	5
32	3	5	4	5	5	5	1	5	5	3.60	5
33	4	5	4	5	5	5	4	5	5	4.40	5
34	3	5	4	5	5	5	4	5	4	4.00	5
35	4	5	5	5	5	5	5	5	5	4.80	5
36	1	5	4	5	4	5	1	5	3	2.60	5
37	3	5	4	5	5	5	4	5	5	4.20	5
38	3	5	5	5	5	5	4	4	5	4.40	4.75
39	1	5	3	4	3	5	1	3	2	2.00	4.25
40	3	5	4	5	5	5	2	5	5	3.80	5

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